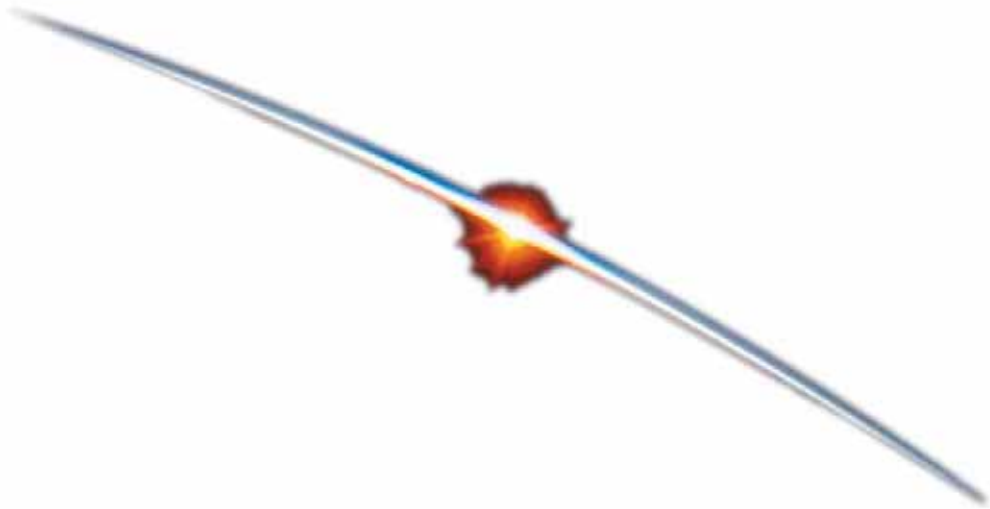
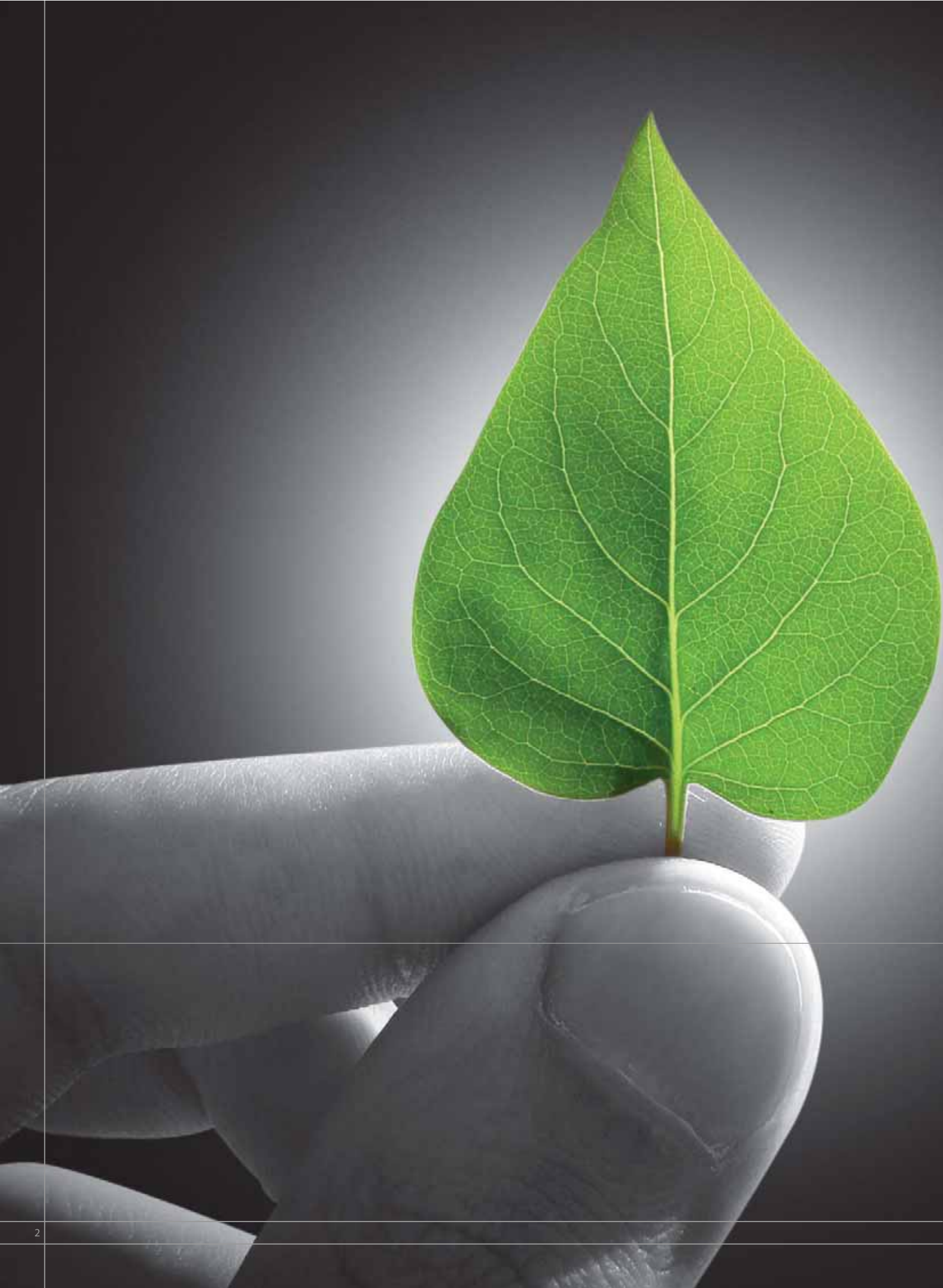


**Fael** **LUCE**<sup>®</sup>  
*doing it better*





## Fael environment friendly

We strongly believe that technique and spirituality can rediscover the harmony that binds them.

We are convinced that what man creates should be linked with the pleasure of sharing what is produced for his well being.

Our raw material is light, essential element for life, and we desire to offer the best that technology can give to create light in its most natural and functional shapes.

We know that we always have to look for

the harmonic convergence between technological performance and the magic of the light sources and we often face endless creative challenges in order to determine the evolution of our products in the most efficient way.

The certainty that what we produce is perfectly integrated in the concept of ecological sensibility of living together and of the culture of energetic saving, so to unite rationality and emotivity.



## A better light, improve the life

The products on offer embody technical performance and functional design, and were devised to be efficient and innovative solutions for the various problems in the field of technical and architectural lighting. Designed and developed according to international regulations, our devices can operate even in the toughest environmental conditions.

The in-house technical lighting laboratory develops high performing optical systems, perfectly balancing technology and modern design based on careful analysis and valuation of the specific requirements of each project.

Our lighting systems are appreciated worldwide for their durability, engineering, easy installation and maintenance, as well as for their design, and our own considerable competence and many years' of experience allows us to adapt to the challenges of the market and create a range of top quality products.

From the start, nearly five decades ago in Italy, FAEL has worked on an international level and now, as a global company, can boast a vast network of distributors all over the world.

Moreover, to get to the heart of the world's most aggressive emerging economies, it now has a production site in Brazil and has arranged an important commercial joint venture in India.

Supporting customers around the world is also a broad range of assistance services including technical lighting design and technical consultancy at all levels.

Now, after nearly half a century of innovation in the lighting sector, FAEL still remains faithful to its simple target – to create products resolving the most pressing technical lighting challenges throughout the world.

This catalogue offers an overview of our offer, with all the technical data and information required to ensure a precise and complete impression of our products.



## Our Plants

**FAEL LUCE Spa** is based in Milan, where it has both its commercial and administrative offices.

The production site uses only the very latest machinery to create the company's entire range of products. Fael Luce Spa offers top of the range production and a large stock of goods ready for delivery.

All production is carried out in-house and the finished and semi-finished products are exclusively from Italy.

The company has been UNI EN ISO 9001/2000 certified since 1997.



## Laboratories

**FAEL LUCE Spa** has developed during the years a modern laboratory in which all the fittings are constantly and carefully tested according to the CEI EN 60598-1 (CEI 34-21) rules.

It's available a proper room for testing against the penetration of fluids to determinate the IP (protection degree). The photometric laboratory is the main support for the research of the Company.

All the optics of the fittings and the prototypes, are constantly subject to the tests for the definition and the line-up of the photometric solid.

The noticed data, according to B- $\beta$  and C- $\gamma$ , measurement systems, are automatically charged in the computer and, using the relevant lighting software, the illuminance values can be determinated.

The laboratory LAB LIGHT is authorized by IMQ to carry out the technical safety tests on our fittings to obtain the ENEC Mark.

The photometric laboratory LAB LIGHT is recognized according the IMQ procedure for IMQ PERFORMANCE certificate of our fittings.



### Design and product development

The development of our products is carried out by CAD 3D and CAD 2D design. The system allows to support the solid model in a such level to be interfaced with specific programs of thermic and optics analysis for the optimization of the lighting fittings.

# The Fael mission: Doing it Better



## Our quality

**FAEL LUCE** Spa got the C.S.Q. - I.Q.N.E.T. quality certification according to UNI EN ISO 9001: 2000 rule.

It's an important recognition of our quality processes which allows our Customers to be absolutely confident in the faithful fulfilment of our engagements and in the continuity of our business relations. These are the main points of the business policy to which FAEL LUCE Spa cannot absolutely renounce.

The **FAEL LUCE** Spa products are manufactured in compliance with the safety CEE 73/23 The products which are included in the installation range foreseen by the CEE Directives ("EMC" 89/336/CEE norm, amended by the 93/68/CEE norm and "BT" 73/23/CEE norm, amended by 93/68/CEE norm) are manufactured in conformity with the main requested qualifications, therefore when they are CE branded, may be put on the market and on the European community. The **FAEL LUCE** Spa products may therefore be used in order to carry out lighting installations in compliance with the European law in force.

The CE marking placed on the product and on the package means conformity to the above directives.



**RoHS**  
compliant

### ROHS 2002/95/CE DIRECTIVE

All the lighting fixtures manufactured by Fael, comply to the European directive "2002/95/CE RoHS" - Restriction of dangerous substances in electrical and electronic equipments.

## Certifications

### Compliance marks

**FAEL LUCE** manufactures its fittings according to international standards to ensure the highest quality at all times.

### Mark of compliance with the European regulations EN + quality system.



The products complying with the safety and performance requirements, together with a Quality system complying with the regulation UNI EN ISO 9001, meet the "ENEC AGREEMENT" and can have a product certification valid for all the signatory countries ENEC that at the moment are:

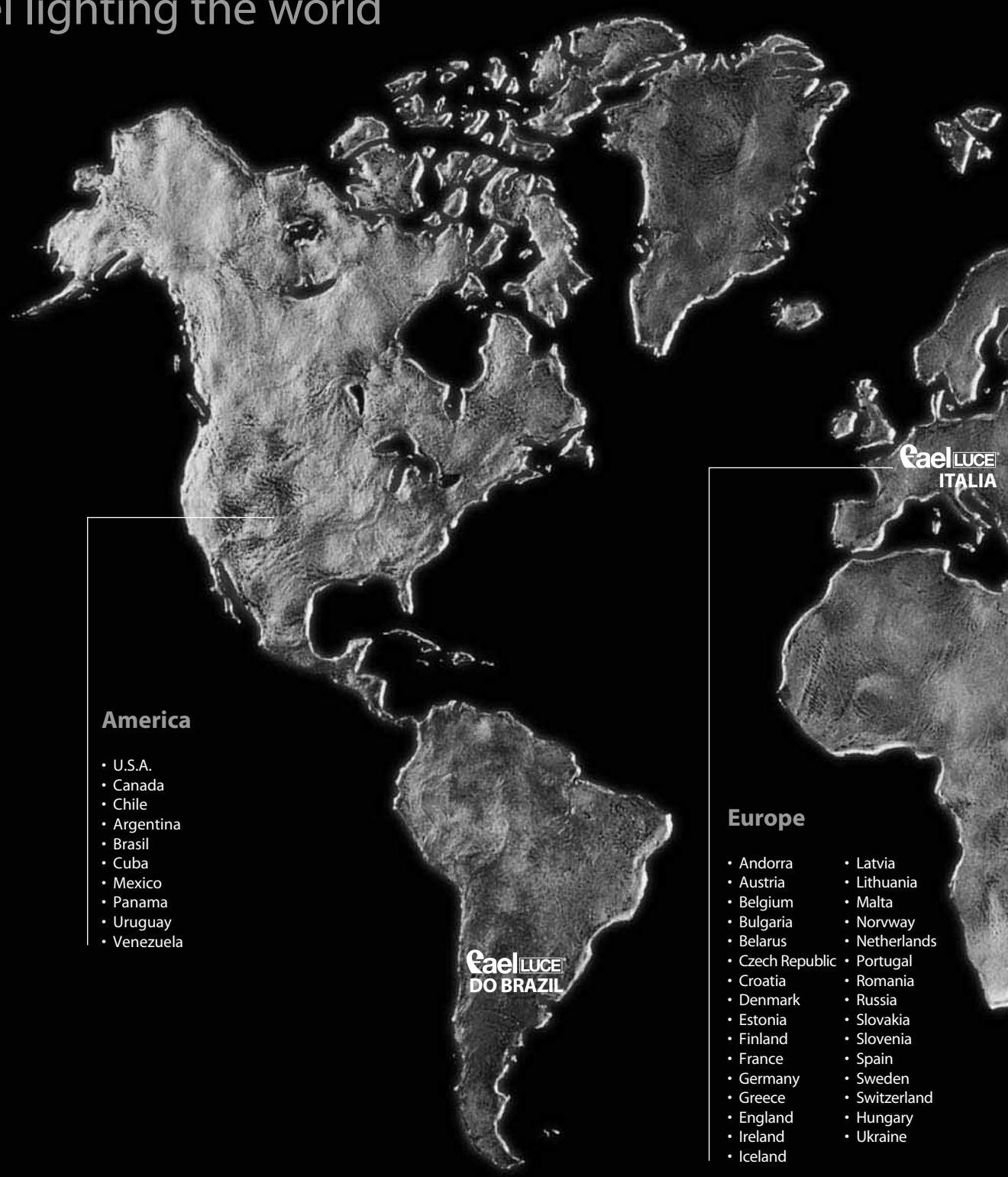
AENOR (Spain)  
CEBEC (Belgium)  
IMQ (Italy)  
IPQ (Portugal)  
KEMA (Netherlands)  
NSAI (Ireland)  
SEE (Luxembourg)  
LCIE (France)  
ELOT (Greece)  
VDE (Germany)  
OVE (Austria)  
BSI (United Kingdom)

SEV (Switzerland)  
SEMKO (Sweden)  
DEMKO (Denmark)  
FIMKO (Finland)  
NEMKO (Norway)  
MEEI (Hungary)  
BEAB (United Kingdom)  
ASTA (United Kingdom)  
EZU (Czech Republic)  
SIQ (Slovenia)  
TUV (Rheinland)  
TUV (PS)

The **marking CE** attests the compliance of the products with the European community regulations. Low tension – electromagnetic compatibility.



# Fael lighting the world



## America

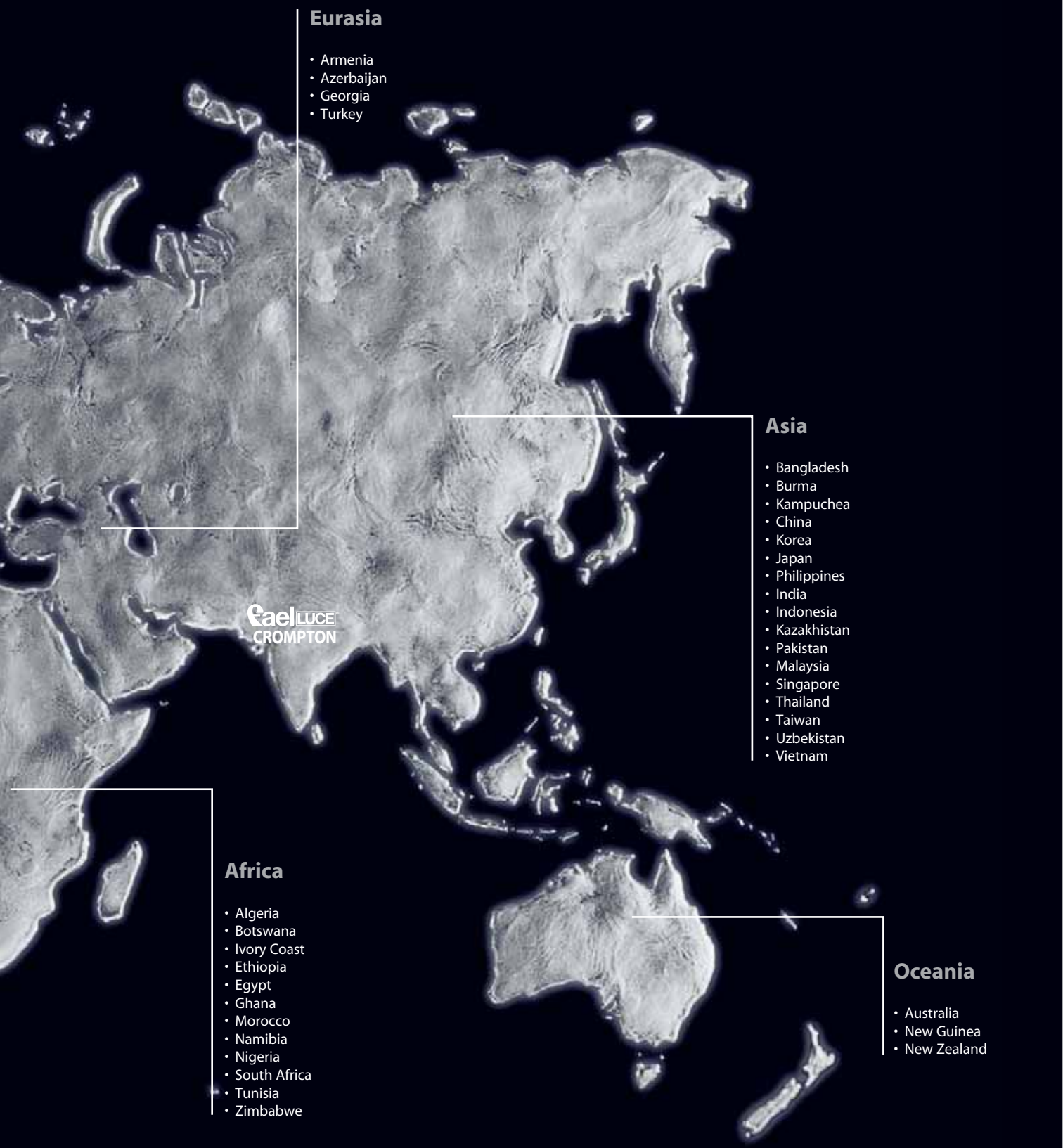
- U.S.A.
- Canada
- Chile
- Argentina
- Brasil
- Cuba
- Mexico
- Panama
- Uruguay
- Venezuela

Fael LUCE  
DO BRAZIL

Fael LUCE  
ITALIA

## Europe

- |                  |               |
|------------------|---------------|
| • Andorra        | • Latvia      |
| • Austria        | • Lithuania   |
| • Belgium        | • Malta       |
| • Bulgaria       | • Norway      |
| • Belarus        | • Netherlands |
| • Czech Republic | • Portugal    |
| • Croatia        | • Romania     |
| • Denmark        | • Russia      |
| • Estonia        | • Slovakia    |
| • Finland        | • Slovenia    |
| • France         | • Spain       |
| • Germany        | • Sweden      |
| • Greece         | • Switzerland |
| • England        | • Hungary     |
| • Ireland        | • Ukraine     |
| • Iceland        |               |



### Eurasia

- Armenia
- Azerbaijan
- Georgia
- Turkey

### Asia

- Bangladesh
- Burma
- Kampuchea
- China
- Korea
- Japan
- Philippines
- India
- Indonesia
- Kazakhstan
- Pakistan
- Malaysia
- Singapore
- Thailand
- Taiwan
- Uzbekistan
- Vietnam

### Africa

- Algeria
- Botswana
- Ivory Coast
- Ethiopia
- Egypt
- Ghana
- Morocco
- Namibia
- Nigeria
- South Africa
- Tunisia
- Zimbabwe

### Oceania

- Australia
- New Guinea
- New Zealand

FAEL LUCE  
CROMPTON

**FAEL LUCE** Spa fills a first rate position among the manufactures of industrial lighting fittings, for big areas, sport courts and street lighting.

For over than 40 years Fael is largely present on national and international markets, where the 70% of the own production is exported. The success of this wide presence is the result of careful choices in innovative and creative solutions, together with research and productive technology investments, with a strict control of the com-

pany proceedings and the high quality standard of the products.

The extreme specialization in the use of light sources for professional use, allowed Fael to achieve a pre-eminent position in carrying out high technical lighting installations.

All the commercial partners may therefore really confide in **FAEL LUCE** Spa which represents a reliable interlocutor for any requirement.

# Our products

## Circular Floodlights



LM One **16**



Sky Cannon **20**



LM 2000 **26**



LM 1000 **32**



Jet 7 **60**



Mach 1 **98**



Mach 5 **74**



Mach 3 **82**



Mach 2 **90**

## Symmetrical Floodlights



LM 2000 **26**



LM 1000 **32**



Jet 2000 **48**



Jet 1000 **54**



Jet 7 **60**



Jet 5 **60**



Mach 1 **98**



Mach 5 **74**



Mach 3 **82**



Mach 2 **90**

Asymmetrical  
Floodlights

High bays

Street  
lightings



LM 2000 **26**



LM 1000 **32**



Jet 2000 **48**



Jet 1000 **54**



Jet 7 **60**



Jet 5 **60**



Mach 1 **98**



Mach 5 **74**



Mach 3 **82**



Mach 2 **90**



Yes Show Refr. **108**



Yes Show Semi-Refr. **108**



Yes Show 425 **108**



Yes Show Tech 425 **108**



Yes Show 450 **108**



Yes Show 500 **108**



Yes Show 560 **108**



Yes Show 600 **108**



Itinera **130**



Smart **124**



Mach 5 Way **142**



Mira **136**



Urbana **146**





## The key-light solution for great sport events

The LIGHTMASTER range is the result of high level research made by our designers and engineers seeking an advanced professional sports lighting system to combine high efficiency light output with multiple optics to achieve the most advanced flexible system for lighting projects. Very careful control of luminous flux system, combined with flux reflecting skirts, give excellent glare restriction and a vast reduction in light pollution.

The compact body, low weight and new design concept, offer the minimum levels of wind resistance also the use of smaller masts. This is the perfect solution for stadium design.

LIGHTMASTER floodlight allows both spectators and players excellent clear vision combined with perfect broadcast quality light levels, showing bright and natural colours with an excellent chromatic balance.



Metropolitano Stadium Merida, Venezuela



Baseball Stadium Guatamare, Venezuela



Ski run Dom, Mosca (C.S.I.)



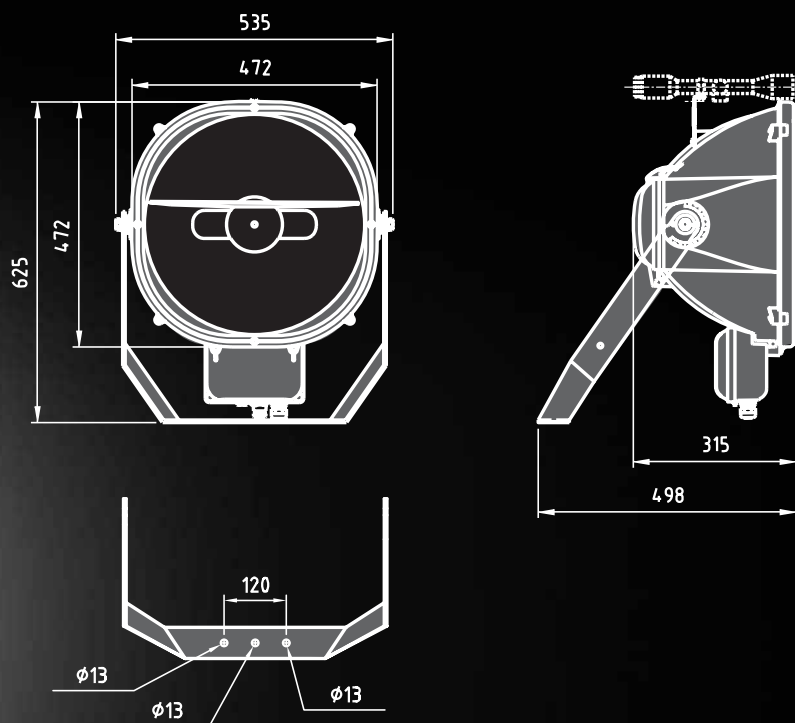
Ski run Almet, Yeusk (C.S.I.)



La Carolina Stadium - Barinas, Venezuela

Velodrome Pruszkow, Poland





## The Lightmaster One

The body, light and compact, manufactured in die cast aluminium, with primary alloy, and low copper content with a high tight rating. The enhanced construction design reduces the weight and allows easy handling when mounting and also for aiming, too. The design with characteristic cooling fins reduces wind resistance to a minimum.

The LIGHTMASTER ONE floodlights have been designed for the lighting of:

- Medium and large stadiums with HD cameras
- Sports Halls
- Large indoor sports areas
- Events and shows in large open areas.

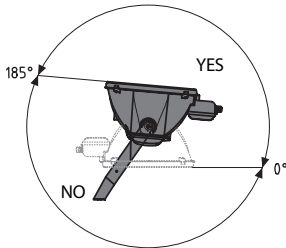
The projectors are suitable for installation on masts and line arrangements at heights up to 50/70 meters above and around the surface area.



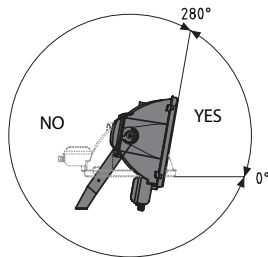
# Technical features of Lightmaster One

## Aiming

## Description



1000W



2000W

The aiming is achieved with a mechanical sighting device (a protractor scale, attached to the side of the unit and indicating the angle of tilt, can be used for pre-aiming) or for more precise aiming, a telescope 6x36 can be mounted on the sighting device (available as an optional extra).

### CHARACTERISTICS

- Body, rear cover and glass frame, in die cast aluminium, with primary alloy and low copper content with a high weather proof rating coated with silver polyester powder.
- Front tempered glass resistant to high temperatures and to thermal shock.
- Anti-ageing gaskets in silicon rubber.
- Hot deep galvanized sheet steel fixing bracket.
- Connection box in special selfextinguish plastic material, complete with ignitor.
- Anti-vacuum device.
- Control gear box in die-cast aluminium IP 65 for class I or in thermoplastic material IP 66 for class II, may be used for the supply of the lamp.
- The mounting distances between the gear box and the body can be up to 50/70 meters, as the ignitor is fitted within the rear housing of the projector.
- Hot Restrike version for short arc lamp available on request ( for 1000 W Hot Restrike specify if it's used for up or down lightings)

### OPTICAL SYSTEM

- High Intensity **rotational reflector**, made by optics C/1, C/2, C/3, C/4, C/5, C/6 for short arc lamps.
- A careful study permits excellent control of the luminous flux and a considerable glare reduction. An accurate reproduction of the light distribution pattern is guaranteed by the two-point fixing of the transversely positioned lamp.

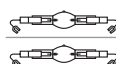
Luminaire designed for indoor and outdoor applications. The projector is ENEC certified for nominal ambient working temperature of 35°C. In case not expressly indicated, we remember that it's approved with a temperature of 25°C. The endurance test of EN 60598-1 point 12.3 has been made at an ambient working temperature of 45°C. During the applications it's possible a temporary working at a temperature not exceeding 45°C.

Wind exposed surface with tilt 70° = 0,20 m<sup>2</sup>

### MOUNTING AND REPLACEMENT

The lamp is located by opening the rear cover, the cover is opened by releasing two strong stainless steel quick release clips. When the rear cover is opened the power is automatically disconnected. The projector is complete with two power resistant knife switches. For the first version when the cover is opened, the power supply to lampholders is directly interrupted. For one security switch version it is compulsory to connect a remote control switch to the poles of the terminal block inside the connection box. When the cover is opened, the remote control switch disconnects the power supply. Lamp replacement is achieved by opening the cover housing at an angle of 110°. In case of lamp failure or at the end of lamp life, it's absolutely necessary to open the switch and to inhibit the ignitor's discharge up to the lamp change.

### LAMPS



MD 2000W short arc

MD 1000W short arc

### COLOURS

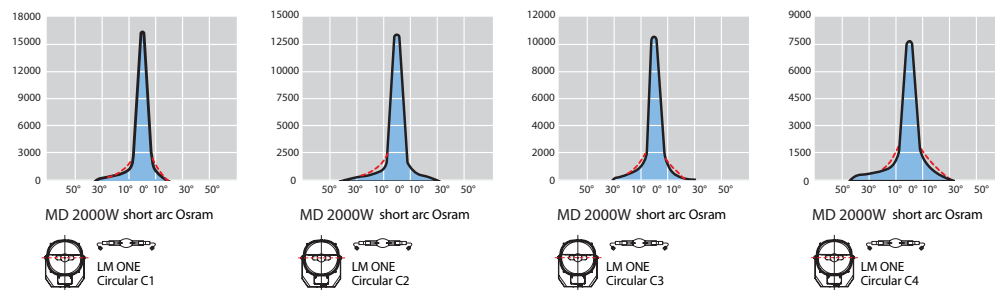
Silver



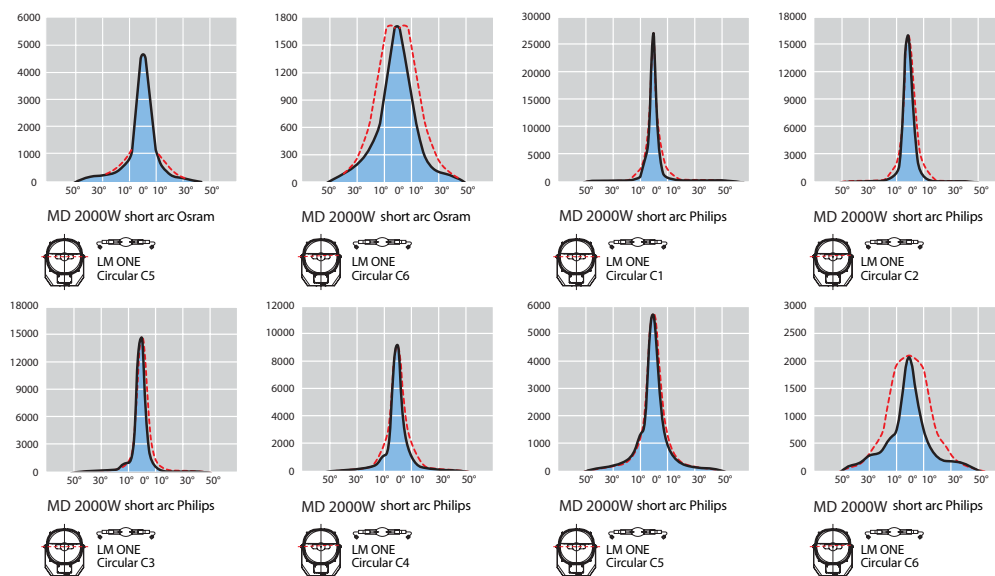
## Photometric data



Circular



Circular



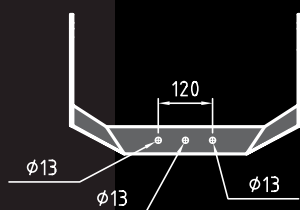
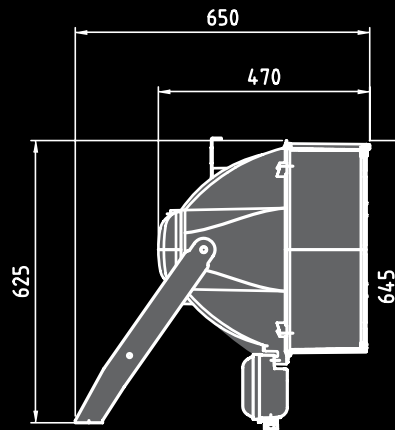
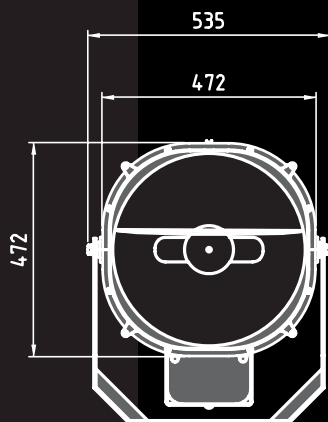
## LIGHTING LEVELS RECOMMENDED BY FIFA FOR TV SHOOTINGS

		VERTICAL ILLUMINANCE			HORIZONTAL ILLUMINANCE			PROPERTIES OF LAMPS	
		Ev Cam ave	Uniformity		Eh ave	Uniformity		Colour temperature	Colour rendering
Class	Calculation towards	Lux	U1	U2	Lux	U1	U2	Tk	Ra
Class V International	Fixed camera	2.400	0,5	07	3.500	0,6	0,8	>4.000	≥65
	Field camera (at pitch level)	1.800	0,4	0,65					
Class IV International	Fixed camera	2.000	0,5	0,65	2.500	0,6	0,8	>4.000	≥65
	Field camera (at pitch level)	1.400	0,35	0,6					

Vertical illuminance refers to illuminance toward selected camera position.







## SKY CANNON light and colour more and more up

Sky Cannon is a perfect and powerful up-lighting floodlight and is a brilliant solution for overheating glass problems risen usually with vertical light output.

Similar up-lighting projectors require use of a special ceramic glass, particularly expensive and extremely breakable.

Die cast booster mounted on the body works as a spacer between the glass and

the light source, allowing a considerable heat reduction and the use of normal safety glass for up-lighting purpose.

A wide range of filters can be used with coloured light output, suitable for very high façades.

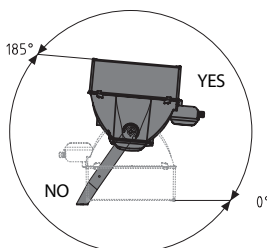
Sky Cannon is also used in sport facilities as it gives an excellent glare control.



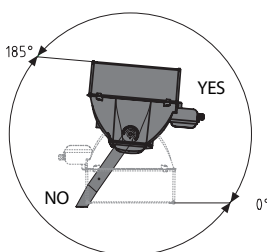
# Technical features of Sky Cannon

## Aiming

## Description



1000W  
Rainbow version



1000-2000W  
Transparent glass

The aiming is achieved with a mechanical sighting device (a protractor scale, attached to the side of the unit and indicating the angle of tilt, can be used for pre-aiming) or for more precise aiming, a telescope 6x36 can be mounted on the sighting device (available as an optional extra).

### CHARACTERISTICS

- Body, rear cover and glass frame, in die cast aluminium, with primary alloy and low copper content with a high weather proof rating coated with silver polyester powder.
- Booster in die cast aluminium coated with black polyester powders complete of front transparent tempered glass.
- Anti-ageing gaskets in silicon rubber.
- Hot deep galvanized sheet steel fixing bracket.
- Connection box in special selfextinguish plastic material, complete with ignitor.
- Anti-vacuum device.
- Control gear box in die-cast aluminium IP 65 for class I or in thermoplastic material IP 66 for class II, may be used for the supply of the lamp.
- The mounting distances between the gear box and the body can be up to 50/70 meters, as the ignitor is fitted within the rear housing of the projector.
- Hot Restrike version for short arc lamp available on request ( for 1000 W Hot Restrike specify if it's used for up or down lightings).

### OPTICAL SYSTEM

- High Intensity **rotational reflector**, made by optics C/1, C/2, C/3, C/4, C/5, C/6. A careful study permits excellent control of the luminous flux. An accurate reproduction of the light distribution pattern is guaranteed by the two-point fixing of the transversely positioned lamp.
- Luminaire designed for indoor and outdoor applications. The projector is ENEC certified for nominal ambient working temperature of 35°C. In case not expressly indicated, we remember that it's approved with a temperature of 25°C. The endurance test of EN 60598-1 point 12.3 has been made at an ambient working temperature of 45°C. During the applications it's possible a temporary working at a temperature not exceeding 45°C.

Wind exposed surface with tilt 70°= 0,22 m<sup>2</sup>

### MOUNTING AND REPLACEMENT

The lamp is located by opening the rear cover, the cover is opened by releasing two strong stainless steel quick release clips. When the rear cover is opened the power is automatically disconnected. The projector is complete with two power resistant one security resistant knife switches. For the first version when the cover is opened, the power supply to lampholders is directly interrupted. For one security resistant version it is compulsory to connect a remote control switch to the poles of the terminal block inside the connection box. When the cover is opened, the remote control switch disconnects the power supply. Lamp replacement is achieved by opening the cover housing at an angle of 110°. In case of lamp failure or at end lamp's life, it's absolutely necessary to open the double-pole switch and to inhibit the ignitor's discharge up to the lamp change.

### THE RAINBOW SERIES

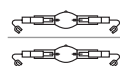
The Sky Cannon Rainbow floodlights for 1000W metal halide lamps are fitted with dichroic filters or glasses coloured with paste, available in blue, red, green and yellow.

The luminaire is intended especially for accent and effect lighting of the fronts of buildings and monuments.



The glass elements coloured with paste are tempered during the production process when powders are added and mixed to bestow the glass with the required colour. The dichroic filter is tempered glass on which ultra-thin layers of dielectric materials are applied during a highly specific and complex production process to let certain wavelengths of light pass through and colour the filter in a precise manner. Dichroic filters let through considerably more light than the glass elements coloured with paste. In certain conditions, and especially in the case of side-lighting, the Sky Cannon Rainbow floodlight with dichroic filter must be fitted with the special black-coated stainless steel screen.

### LAMPS



MD 2000W short arc HQI-TS 2000/DS



MD 1000W short arc HQI-TS 1000/DS

### COLOURS

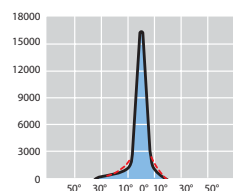
Silver



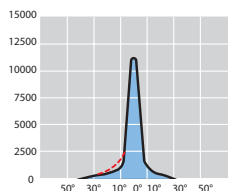
## Photometric data



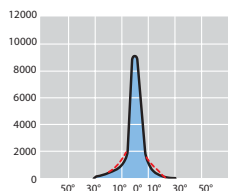
Sky Cannon



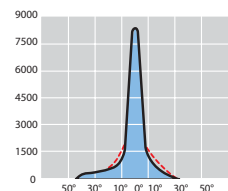
MD 2000W short arc Osram



MD 2000W short arc Osram



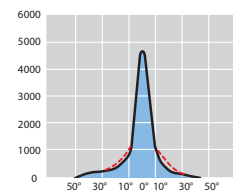
MD 2000W short arc Osram



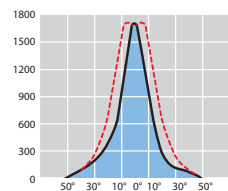
MD 2000W short arc Osram



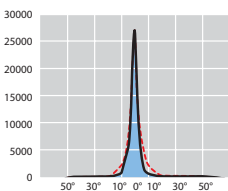
Sky Cannon



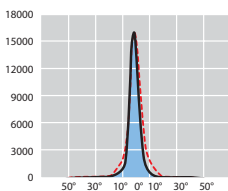
MD 2000W short arc Osram



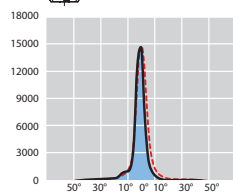
MD 2000W short arc Osram



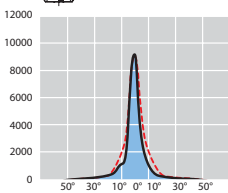
MD 2000W short arc Philips



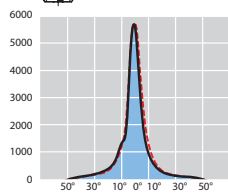
MD 2000W short arc Philips



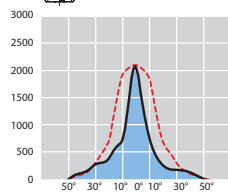
MD 2000W short arc Philips



MD 2000W short arc Philips



MD 2000W short arc Philips



MD 2000W short arc Philips



Sky Cannon Rainbow

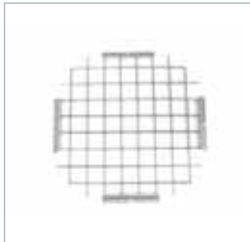
### PERCENTAGE OF TRANSMISSION

Luminaire	Screen type	% of transmission	lux beam (Imax/2)
Rainbow C1	blue dichroic filter	4.1	2x3.5°
Rainbow C4	blue dichroic filter	4.1	2x4°
Rainbow C6	blue dichroic filter	3.3	2x11°
Rainbow C1	blue glass	2.8	2x3.5°
Rainbow C4	blue glass	2.8	2x4.5°
Rainbow C6	blue glass	2.0	2x11°
Rainbow C1	red dichroic filter	6.1	2x4°
Rainbow C4	red dichroic filter	6.1	2x5°
Rainbow C6	red dichroic filter	3.7	2x19°
Rainbow C1	red glass	2.8	2x3°
Rainbow C4	red glass	2.8	2x4°
Rainbow C6	red glass	2.8	2x19°
Rainbow C1	green dichroic filter	23.6	2x3°
Rainbow C4	green dichroic filter	23.6	2x4°
Rainbow C6	green dichroic filter	19.1	2x11°
Rainbow C1	green glass	10.2	2x3°
Rainbow C4	green glass	10.2	2x4°
Rainbow C6	green glass	13.2	2x11°
Rainbow C1	yellow dichroic filter	68.8	2x3°
Rainbow C4	yellow dichroic filter	68.8	2x4°
Rainbow C6	yellow dichroic filter	68.8	2x14°

We kindly ask you to contact our Technical Office to make the lighting calculations. The photometric data are available in two types:  
 a) for software LiteStar version 10, to be used directly in the program (it is not necessary to add any reduction index due to the percentage of transmission of the coloured filters)  
 b) for software Dialux, to be combined with filters foreseen in the program library having transmission index as stated in the table



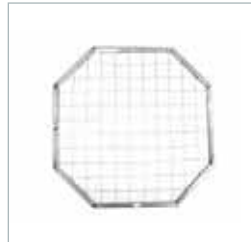
## Accessories and spare parts



**60410**  
Grille.  
Zinc plated and steel coated in silver colour.



**60412**  
Circular louvre.  
Stainless steel coated in silver colour.



**60414**  
Safety stainless steel grid.



**60247**  
Circular booster.  
Stainless steel coated in black colour.

CODE	DESCRIPTION	GROSS WEIGHT (kg)	LAMP TYPE	CBMS
60410	Grille	0,75		
60412	Circular steel louvre	2,10		0,067
60414	Safety stainless steel grid	0,70		
12144	Glass			
10240	Osram lamp short arc 5900°K	0,35	HQI-TS 2000/D/S	
10292	Osram lamp short arc 4200°K	0,30	HQI-TS 1000W/NDL/S	
10293	Osram lamp short arc 5900°K	0,30	HQI-TS 1000/D/S	
07130	5KV-400V ignitor for 2000W	0,35		
06901	Ballast 2000W	15,00	JM 2000W 10,3A 400V	0,003
05145	Capacitor 60uF 450V for 2000W	0,25		
00878	Ignitor 4KV for 1000W	0,15		
02955	Ballast 1000W	10,00	JM 1000W 9,5A 230V	0,0027
04873	Capacitor 100uF 250V for 1000W	0,30		
60247	Additional black circular booster	2,350		0,033

## Product codes

### LIGHTMASTER ONE 1000 - INSULATION CL I

**With two power knife switches when the cover is opened, the power supply to lampholders is directly interrupted.**

CODE	DESCRIPTION	LAMP TYPE	GROSS WEIGHT (kg)	PACKING (pcs.)	CBMS
75201	Silver Body - circular type C1	MD (JM-TS) 1000W short arc	15,5	1	0,127
75202	Silver Body - circular type C2	MD (JM-TS) 1000W short arc	15,5	1	0,127
75203	Silver Body - circular type C3	MD (JM-TS) 1000W short arc	15,5	1	0,127
75204	Silver Body - circular type C4	MD (JM-TS) 1000W short arc	15,5	1	0,127
75205	Silver Body - circular type C5	MD (JM-TS) 1000W short arc	15,5	1	0,127
75206	Silver Body - circular type C6	MD (JM-TS) 1000W short arc	15,5	1	0,127

**With one security knife switch version it is compulsory to connect the remote control switch to the poles of the terminal block inside the connection box. When the cover is opened, the remote control switch disconnects the power supply.**

CODE	DESCRIPTION	LAMP TYPE	GROSS WEIGHT (kg)	PACKING (pcs.)	CBMS
75251	Silver Body - circular type C1	MD (JM-TS) 1000W short arc	15,5	1	0,127
75252	Silver Body - circular type C2	MD (JM-TS) 1000W short arc	15,5	1	0,127
75253	Silver Body - circular type C3	MD (JM-TS) 1000W short arc	15,5	1	0,127
75254	Silver Body - circular type C4	MD (JM-TS) 1000W short arc	15,5	1	0,127
75255	Silver Body - circular type C5	MD (JM-TS) 1000W short arc	15,5	1	0,127
75256	Silver Body - circular type C6	MD (JM-TS) 1000W short arc	15,5	1	0,127

**Execution with hot restrike ignitor is available, on request, for the version with one security knife switch insulation CL I.**

The versions with two power knife switches are available also in insulation CL II.

## Products codes

### LIGHTMASTER ONE 2000 - INSULATION CL I

With two power knife switches when the cover is opened, the power supply to lampholders is directly interrupted.

CODE	DESCRIPTION	LAMP TYPE	GROSS WEIGHT (kg)	PACKING (pcs.)	CBMS
75001	Silver Body - circular type C1	MD (JM-TS) 2000W short arc	15,5	1	0,127
75002	Silver Body - circular type C2	MD (JM-TS) 2000W short arc	15,5	1	0,127
75003	Silver Body - circular type C3	MD (JM-TS) 2000W short arc	15,5	1	0,127
75004	Silver Body - circular type C4	MD (JM-TS) 2000W short arc	15,5	1	0,127
75005	Silver Body - circular type C5	MD (JM-TS) 2000W short arc	15,5	1	0,127
75006	Silver Body - circular type C6	MD (JM-TS) 2000W short arc	15,5	1	0,127

With one security knife switch version it is compulsory to connect the remote control switch to the poles of the terminal block inside the connection box. When the cover is opened, the remote control switch disconnects the power supply.

CODE	DESCRIPTION	LAMP TYPE	GROSS WEIGHT (kg)	PACKING (pcs.)	CBMS
75051	Silver Body - circular type C1	MD (JM-TS) 2000W short arc	15,5	1	0,127
75052	Silver Body - circular type C2	MD (JM-TS) 2000W short arc	15,5	1	0,127
75053	Silver Body - circular type C3	MD (JM-TS) 2000W short arc	15,5	1	0,127
75054	Silver Body - circular type C4	MD (JM-TS) 2000W short arc	15,5	1	0,127
75055	Silver Body - circular type C5	MD (JM-TS) 2000W short arc	15,5	1	0,127
75056	Silver Body - circular type C6	MD (JM-TS) 2000W short arc	15,5	1	0,127

Execution with hot restrike ignitor is available, on request, for the version with one security knife switch insulation CL I.

The versions with two power knife switches are available also in insulation CL II.

### SKY CANNON - INSULATION CL I

With one security knife switch version it is compulsory to connect the remote control switch to the poles of the terminal block inside the connection box. When the cover is opened, the remote control switch disconnects the power supply.

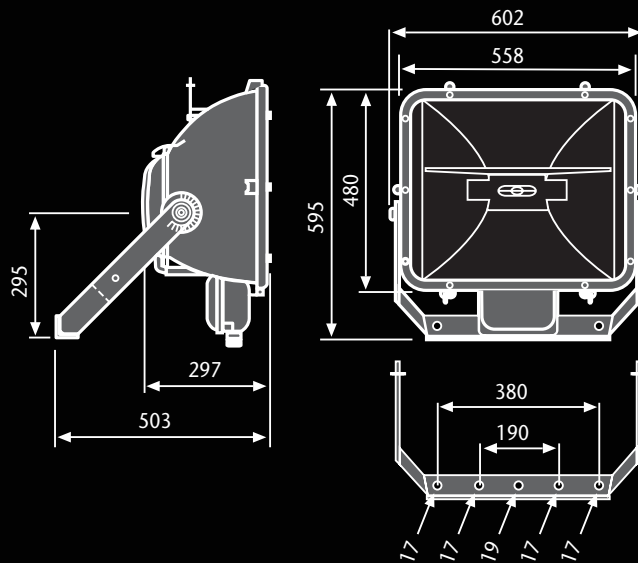
CODE	DESCRIPTION	LAMP TYPE	GROSS WEIGHT (kg)	PACKING (pcs.)	CBMS
75651	Silver Body - circular type C1	MD (JM-TS) 1000W short arc	19,23	1	0,166
75652	Silver Body - circular type C2	MD (JM-TS) 1000W short arc	19,23	1	0,166
75653	Silver Body - circular type C3	MD (JM-TS) 1000W short arc	19,23	1	0,166
75654	Silver Body - circular type C4	MD (JM-TS) 1000W short arc	19,23	1	0,166
75655	Silver Body - circular type C5	MD (JM-TS) 1000W short arc	19,23	1	0,166
75656	Silver Body - circular type C6	MD (JM-TS) 1000W short arc	19,23	1	0,166
75451	Silver Body - circular type C1	MD (JM-TS) 2000W short arc	19,23	1	0,166
75452	Silver Body - circular type C2	MD (JM-TS) 2000W short arc	19,23	1	0,166
75453	Silver Body - circular type C3	MD (JM-TS) 2000W short arc	19,23	1	0,166
75454	Silver Body - circular type C4	MD (JM-TS) 2000W short arc	19,23	1	0,166
75455	Silver Body - circular type C5	MD (JM-TS) 2000W short arc	19,23	1	0,166
75456	Silver Body - circular type C6	MD (JM-TS) 2000W short arc	19,23	1	0,166

### SKY CANNON RAINBOW - INSULATION CL I

With one security knife switch version it is compulsory to connect the remote control switch to the poles of the terminal block inside the connection box. When the cover is opened, the remote control switch disconnects the power supply.

CODE	DESCRIPTION	LAMP TYPE	GROSS WEIGHT (kg)	PACKING (pcs.)	CBMS
75801	Silver Body - circular type C1 BLUE toughened coloured glass	MD (JM-TS) 1000W short arc	19,23	1	0,166
75802	Silver Body - circular type C1 RED toughened coloured glass	MD (JM-TS) 1000W short arc	19,23	1	0,166
75803	Silver Body - circular type C1 GREEN toughened coloured glass	MD (JM-TS) 1000W short arc	19,23	1	0,166
75805	Silver Body - circular type C4 BLUE toughened coloured glass	MD (JM-TS) 1000W short arc	19,23	1	0,166
75806	Silver Body - circular type C4 RED toughened coloured glass	MD (JM-TS) 1000W short arc	19,23	1	0,166
75807	Silver Body - circular type C4 GREEN toughened coloured glass	MD (JM-TS) 1000W short arc	19,23	1	0,166
75831	Silver Body - circular type C6 BLUE toughened coloured glass	MD (JM-TS) 1000W short arc	19,23	1	0,166
75832	Silver Body - circular type C6 RED toughened coloured glass	MD (JM-TS) 1000W short arc	19,23	1	0,166
75833	Silver Body - circular type C6 GREEN toughened coloured glass	MD (JM-TS) 1000W short arc	19,23	1	0,166
75810	Silver Body - circular type C1 BLUE toughened dichroic filter	MD (JM-TS) 1000W short arc	19,23	1	0,166
75811	Silver Body - circular type C1 RED toughened dichroic filter	MD (JM-TS) 1000W short arc	19,23	1	0,166
75812	Silver Body - circular type C1 GREEN toughened dichroic filter	MD (JM-TS) 1000W short arc	19,23	1	0,166
75813	Silver Body - circular type C1 YELLOW toughened dichroic filter	MD (JM-TS) 1000W short arc	19,23	1	0,166
75820	Silver Body - circular type C4 BLUE toughened dichroic filter	MD (JM-TS) 1000W short arc	19,23	1	0,166
75821	Silver Body - circular type C4 RED toughened dichroic filter	MD (JM-TS) 1000W short arc	19,23	1	0,166
75822	Silver Body - circular type C4 GREEN toughened dichroic filter	MD (JM-TS) 1000W short arc	19,23	1	0,166
75823	Silver Body - circular type C4 YELLOW toughened dichroic filter	MD (JM-TS) 1000W short arc	19,23	1	0,166
75840	Silver Body - circular type C6 BLUE toughened dichroic filter	MD (JM-TS) 1000W short arc	19,23	1	0,166
75841	Silver Body - circular type C6 RED toughened dichroic filter	MD (JM-TS) 1000W short arc	19,23	1	0,166
75842	Silver Body - circular type C6 GREEN toughened dichroic filter	MD (JM-TS) 1000W short arc	19,23	1	0,166
75843	Silver Body - circular type C6 YELLOW toughened dichroic filter	MD (JM-TS) 1000W short arc	19,23	1	0,166





## The Lightmaster 2000 series

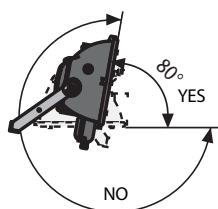
The LIGHTMASTER 2000 floodlight is the result of high level research made by our designers and engineers seeking an advanced professional sports lighting system, sports hall, large indoor sports areas, events and shows in large open areas. The projectors are suitable for installation on masts and line arrangements at heights

up to 50/70 meters above and around the surface area. The compact body, low weight and new design concept, offer the minimum levels of wind resistance also the use of smaller masts. This is the perfect solution for stadium design. Insulation classes I-II. The impact test is 7 J.



# Technical features of Lightmaster 2000

## Aiming



The aiming is achieved with a mechanical sighting device (a protractor scale, attached to the side of the unit and indicating the angle of tilt, can be used for pre-aiming) or for more precise aiming, a telescope 6x36 can be mounted on the sighting device (available as an optional extra).

## Description

### CHARACTERISTICS

- Body, rear cover and glass frame, in die cast aluminium, with primary alloy and low copper content with a high weather proof rating coated with silver polyester powder.
- Front tempered glass resistant to high temperatures and to thermal shock.
- Anti-ageing gaskets in silicon rubber.
- Hot deep galvanized sheet steel fixing bracket.
- Connection box in special selfextinguish plastic material, complete with ignitor.
- Anti-vacuum device.
- Control gear box in die-cast aluminium IP 65 for class I or in thermoplastic material IP 66 for class II, may be used for the supply of the lamp.
- The mounting distances between the gear box and the body can be up to 50/70 meters, as the ignitor is fitted within the rear housing of the projector.
- Available on request Hot Restrike version with one security knife switch for short arc lamp.

### OPTICAL SYSTEM

- The **symmetrical projector**, is supplied with two types of optics:
  - Peened with a wide beam
  - Specular with a narrow beam
- The **asymmetrical projector**, is supplied with two types of optics.
  - Peened with a wide beam with or without flux reflector skin.
  - Specular with a narrow beam in high pure (99,99%) aluminium for high reflectance and efficiency with or without flux reflector skin.

A careful study permits excellent control of the luminous flux and a considerable glare reduction.

**The luminaire can be fitted with a coated stainless steel anti-glare louvre for moving the plane of maximum intensity by 60°, in full compliance with Italy's national and regional legislation on the restriction of light pollution.**

- High intensity **rotational reflector**, made by C1, C2, C3, C4, C5, C6 for short arc lamps, C1, C2, C4 for long arc lamps. A careful study permits excellent control of the luminous flux and very high performances. The flux reflecting skirt reduce the direct glare.

Wind exposed surface with tilt 70°= 0,2540 m<sup>2</sup>

An accurate reproduction of the light distribution pattern is guaranteed by the two-point fixing of the transversely positioned lamp.

Luminaire designed for indoor and outdoor applications. The projector is ENEC certified for nominal ambient working temperature of 35°C.

In case not expressly indicated, we remember that it's approved with a temperature of 25°C.

The endurance test of EN 60598-1 point 12.3 has been made at an ambient working temperature of 45°C.

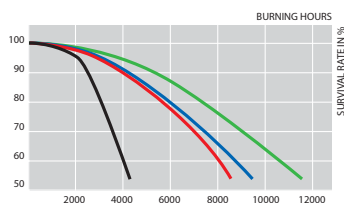
During the applications it's possible a temporary working at a temperature not exceeding 45°C.

### MOUNTING AND REPLACEMENT

The lamp is located by opening the rear cover, the cover is opened by releasing two strong stainless steel quick release clips. When the rear cover is opened the power is automatically disconnected. The projector is complete with two power resistant one security resistant knife switches. For the first version when the cover is opened, the power supply to lampholders is directly interrupted. For one security resistant version it is compulsory to connect a remote control switch to the poles of the terminal block inside the connection box. When the cover is opened, the remote control switch disconnects the power supply.

Lamp replacement is achieved by opening the cover housing at an angle of 110°.

In case of lamp failure or at end lamp's life, it's absolutely necessary to open the double-pole switch and to inhibit the ignitor's discharge up to the lamp change.

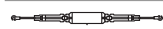


- HQI-TS 2000W/D/S (double ended short arc)
- HQI-TS 2000W/N/L (double ended long arc)
- MHN-FC 2000W (double ended long arc)
- MHN-LA 2000W (double ended long arc)

### LAMPS



MD 2000W short arc



MD 2000W long arc

### COLOURS

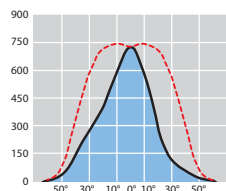
Silver



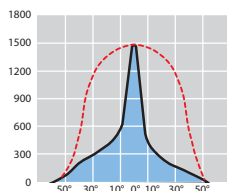
## Photometric data



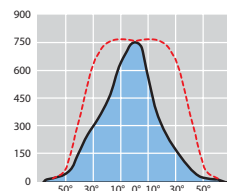
Symmetrical



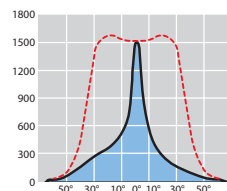
MD 2000W long arc



MD 2000W long arc



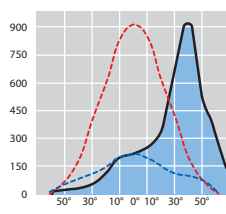
MD 2000W short arc



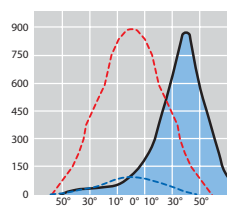
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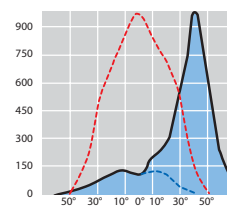
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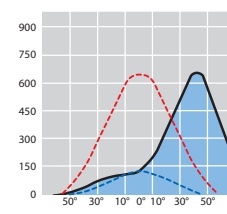
MD 2000W long arc



MD 2000W long arc



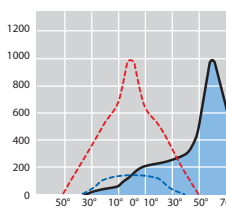
MD 2000W short arc



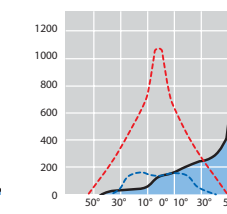
MD 2000W short arc



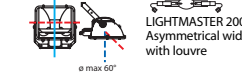
Asymmetrical with louvre



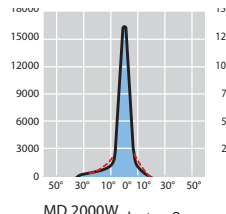
MD 2000W long arc



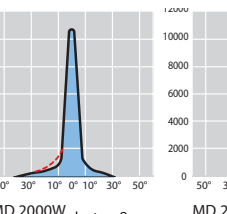
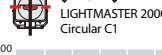
MD 2000W long arc



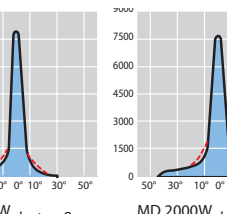
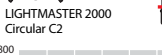
Circular



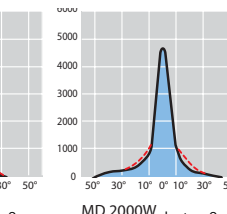
MD 2000W short arc Osram



MD 2000W short arc Osram



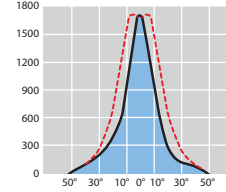
MD 2000W short arc Osram



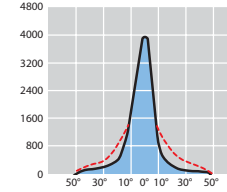
MD 2000W short arc Osram



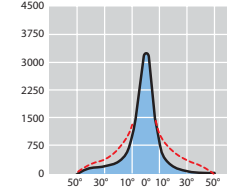
MD 2000W short arc Osram



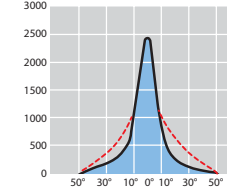
MD 2000W short arc Osram



MD 2000W long arc



MD 2000W long arc



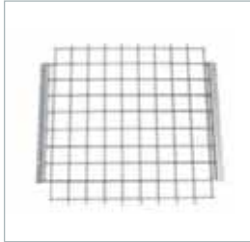
MD 2000W long arc



IP 66



## Accessories and spare parts



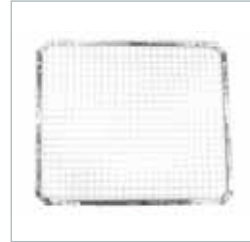
**60286**  
Grille.  
Zinc plated and steel coated in silver colour.



**60285**  
Circular louvre.  
Stainless steel coated in silver colour.



**60287**  
Anti-glare louvre.  
Stainless steel coated in silver colour.



**60288**  
Safety stainless steel grid.



**60289**  
Steel protection louvre.  
Zinc plated and steel coated in silver colour.

CODE	DESCRIPTION	GROSS WEIGHT (kg)	LAMP TYPE	CBMS
<b>60285</b>	Circular steel louvre	3,32	-	-
<b>60286</b>	Grille	1,15	-	-
<b>60287</b>	Louvre for asymmetrical version	1,40	-	-
<b>60288</b>	Safety stainless steel grid	0,85	-	-
<b>60289</b>	Louvre for symmetrical version	1,96	-	-
<b>10240</b>	Osram lamp short arc 5800K	0,35	HQI-TS 2000W/D/S	-
<b>10239</b>	Osram lamp long arc 4100K	0,45	HQI-TS 2000W/N/L	-
<b>10235</b>	Philips lamp long arc 4200K	0,45	MHN-LA 2000W 400V/842	-
<b>10236</b>	Philips lamp long arc 5600K	0,45	MHN-LA 2000W 400V/956	-
<b>13966</b>	Philips lamp long arc 4200K	0,45	MHN-FC 2000W 740-400V	-
<b>07130</b>	5kV-400V ignitor	0,35	-	-
<b>06901</b>	Ballast	15,00	JM 2000W 10,3A 400V	0,0030
<b>05145</b>	Capacitor 60 µF 450V	0,25	-	-

## Product codes

### LIGHTMASTER 2000 SYMMETRICAL - INSULATION CL I

**With two power knife switches when the cover is opened, the power supply to lampholders is directly interrupted.**

CODE	DESCRIPTION	LAMP TYPE	GROSS WEIGHT (kg)	PACKING (pcs.)	PALLET (pcs.)	CBMS
<b>70001</b>	Silver Body - specular	MD (JM-TS) 2000W Osram type short arc	19,40	1	12	0,1377
<b>70002</b>	Silver Body - peened	MD (JM-TS) 2000W Osram type short arc	19,40	1	12	0,1377
<b>70004</b>	Silver Body - specular	MD (JM-TS) 2000W Osram type long arc	19,40	1	12	0,1377
<b>70005</b>	Silver Body - peened	MD (JM-TS) 2000W Osram type long arc	19,40	1	12	0,1377
<b>70007</b>	Silver Body - specular	MD (JM-TS) 2000W Philips type long arc	19,40	1	12	0,1377
<b>70008</b>	Silver Body - peened	MD (JM-TS) 2000W Philips type long arc	19,40	1	12	0,1377

**With one security knife switch version it is compulsory to connect the remote control switch to the poles of the terminal block inside the connection box. When the cover is opened, the remote control switch disconnects the power supply.**

CODE	DESCRIPTION	LAMP TYPE	GROSS WEIGHT (kg)	PACKING (pcs.)	PALLET (pcs.)	CBMS
<b>70011</b>	Silver Body - specular	MD (JM-TS) 2000W Osram type short arc	19,40	1	12	0,1377
<b>70012</b>	Silver Body - peened	MD (JM-TS) 2000W Osram type short arc	19,40	1	12	0,1377
<b>70014</b>	Silver Body - specular	MD (JM-TS) 2000W Osram type long arc	19,40	1	12	0,1377
<b>70015</b>	Silver Body - peened	MD (JM-TS) 2000W Osram type long arc	19,40	1	12	0,1377
<b>70017</b>	Silver Body - specular	MD (JM-TS) 2000W Philips type long arc	19,40	1	12	0,1377
<b>70018</b>	Silver Body - peened	MD (JM-TS) 2000W Philips type long arc	19,40	1	12	0,1377

Special restrike system is available on request only for short arc Osram lamp and for the version in insulation Class I with single security switch only.

The versions with two power knife switches are available also in insulation CL II.

## Product codes

## LIGHTMASTER 2000 ASYMMETRICAL - INSULATION CL I

With two power knife switches when the cover is opened, the power supply to lampholders is directly interrupted.

CODE	DESCRIPTION	LAMP TYPE	GROSS WEIGHT (kg)	PACKING (pcs.)	PALLET (pcs.)	CBMS
70031	Silver Body - specular with deflector	MD (JM-TS) 2000W Osram type short arc	19,40	1	12	0,1377
70034	Silver Body - specular with deflector	MD (JM-TS) 2000W Osram type long arc	19,40	1	12	0,1377
70035	Silver Body - peened with deflector	MD (JM-TS) 2000W Osram type long arc	19,40	1	12	0,1377
70037	Silver Body - specular with deflector	MD (JM-TS) 2000W Philips type long arc	19,40	1	12	0,1377
70038	Silver Body - peened with deflector	MD (JM-TS) 2000W Philips type long arc	19,40	1	12	0,1377
70201	Silver Body - specular	MD (JM-TS) 2000W Osram type short arc	19,40	1	12	0,1377
70202	Silver Body - peened	MD (JM-TS) 2000W Osram type short arc	19,40	1	12	0,1377
70204	Silver Body - specular	MD (JM-TS) 2000W Osram type long arc	19,40	1	12	0,1377
70207	Silver Body - specular	MD (JM-TS) 2000W Philips type long arc	19,40	1	12	0,1377

With one security knife switch version it is compulsory to connect the remote control switch to the poles of the terminal block inside the connection box. When the cover is opened, the remote control switch disconnects the power supply.

CODE	DESCRIPTION	LAMP TYPE	GROSS WEIGHT (kg)	PACKING (pcs.)	PALLET (pcs.)	CBMS
70041	Silver Body - specular with deflector	MD (JM-TS) 2000W Osram type short arc	19,40	1	12	0,1377
70044	Silver Body - specular with deflector	MD (JM-TS) 2000W Osram type long arc	19,40	1	12	0,1377
70045	Silver Body - peened with deflector	MD (JM-TS) 2000W Osram type long arc	19,40	1	12	0,1377
70047	Silver Body - specular with deflector	MD (JM-TS) 2000W Philips type long arc	19,40	1	12	0,1377
70048	Silver Body - peened with deflector	MD (JM-TS) 2000W Philips type long arc	19,40	1	12	0,1377
70211	Silver Body - specular	MD (JM-TS) 2000W Osram type short arc	19,40	1	12	0,1377
70212	Silver Body - peened	MD (JM-TS) 2000W Osram type short arc	19,40	1	12	0,1377
70214	Silver Body - specular	MD (JM-TS) 2000W Osram type long arc	19,40	1	12	0,1377
70217	Silver Body - specular	MD (JM-TS) 2000W Philips type long arc	19,40	1	12	0,1377

## LIGHTMASTER 2000 CIRCULAR - INSULATION CL I

With two power knife switches when the cover is opened, the power supply to lampholders is directly interrupted.

CODE	DESCRIPTION	LAMP TYPE	GROSS WEIGHT (kg)	PACKING (pcs.)	PALLET (pcs.)	CBMS
70061	Silver Body - circular type C1	MD (JM-TS) 2000W Osram type short arc	19,40	1	12	0,1377
70062	Silver Body - circular type C2	MD (JM-TS) 2000W Osram type short arc	19,40	1	12	0,1377
70063	Silver Body - circular type C3	MD (JM-TS) 2000W Osram type short arc	19,40	1	12	0,1377
70064	Silver Body - circular type C4	MD (JM-TS) 2000W Osram type short arc	19,40	1	12	0,1377
70065	Silver Body - circular type C5	MD (JM-TS) 2000W Osram type short arc	19,40	1	12	0,1377
70067	Silver Body - circular type C6	MD (JM-TS) 2000W Osram type short arc	19,40	1	12	0,1377
70069	Silver Body - circular type C1	MD (JM-TS) 2000W Osram type long arc	19,40	1	12	0,1377
70068	Silver Body - circular type C2	MD (JM-TS) 2000W Osram type long arc	19,40	1	12	0,1377
70070	Silver Body - circular type C4	MD (JM-TS) 2000W Osram type long arc	19,40	1	12	0,1377
70072	Silver Body - circular type C1	MD (JM-TS) 2000W Philips type long arc	19,40	1	12	0,1377
70071	Silver Body - circular type C2	MD (JM-TS) 2000W Philips type long arc	19,40	1	12	0,1377
70073	Silver Body - circular type C4	MD (JM-TS) 2000W Philips type long arc	19,40	1	12	0,1377

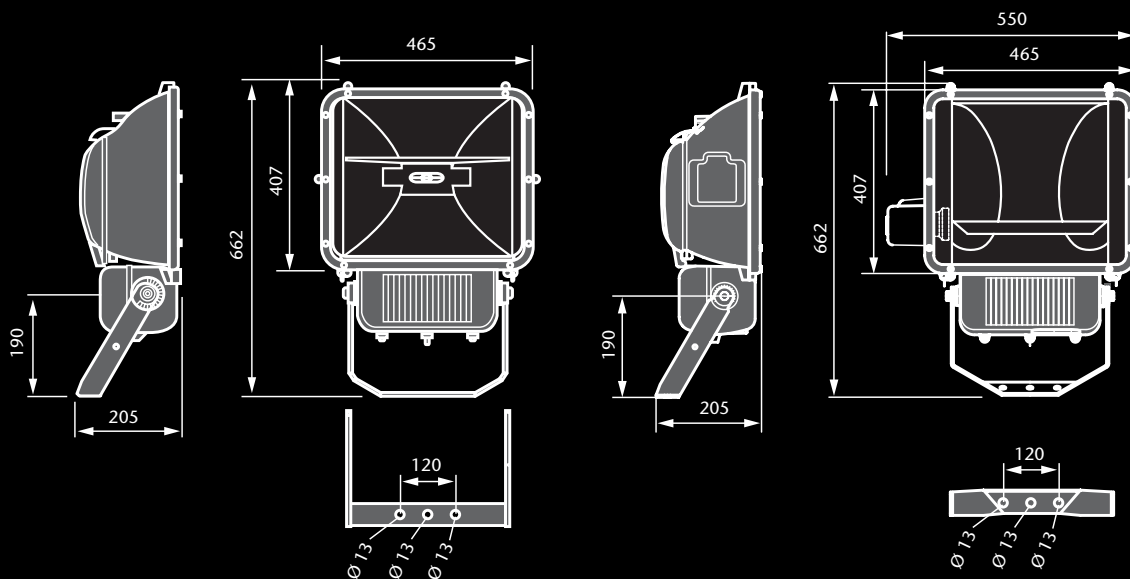
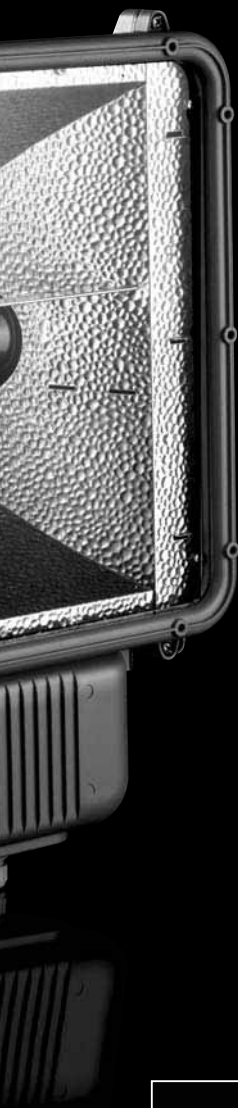
With one security knife switch version it is compulsory to connect the remote control switch to the poles of the terminal block inside the connection box. When the cover is opened, the remote control switch disconnects the power supply.

CODE	DESCRIPTION	LAMP TYPE	GROSS WEIGHT (kg)	PACKING (pcs.)	PALLET (pcs.)	CBMS
70081	Silver Body - circular type C1	MD (JM-TS) 2000W Osram type short arc	19,40	1	12	0,1377
70082	Silver Body - circular type C2	MD (JM-TS) 2000W Osram type short arc	19,40	1	12	0,1377
70083	Silver Body - circular type C3	MD (JM-TS) 2000W Osram type short arc	19,40	1	12	0,1377
70084	Silver Body - circular type C4	MD (JM-TS) 2000W Osram type short arc	19,40	1	12	0,1377
70085	Silver Body - circular type C5	MD (JM-TS) 2000W Osram type short arc	19,40	1	12	0,1377
70087	Silver Body - circular type C6	MD (JM-TS) 2000W Osram type short arc	19,40	1	12	0,1377
70089	Silver Body - circular type C1	MD (JM-TS) 2000W Osram type long arc	19,40	1	12	0,1377
70088	Silver Body - circular type C2	MD (JM-TS) 2000W Osram type long arc	19,40	1	12	0,1377
70090	Silver Body - circular type C4	MD (JM-TS) 2000W Osram type long arc	19,40	1	12	0,1377
70092	Silver Body - circular type C1	MD (JM-TS) 2000W Philips type long arc	19,40	1	12	0,1377
70091	Silver Body - circular type C2	MD (JM-TS) 2000W Philips type long arc	19,40	1	12	0,1377
70093	Silver Body - circular type C4	MD (JM-TS) 2000W Philips type long arc	19,40	1	12	0,1377

Special restrrike system is available on request only for short arc Osram lamp and for the version in insulation Class I with single security switch only.

 The versions with two power knife switches are available also in insulation CL II.





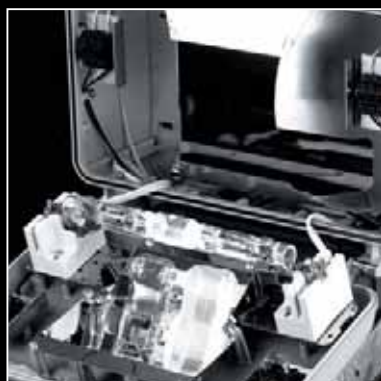
## The Lightmaster 1000 series

The main feature of new LIGHTMASTER 1000 series is the unusual possibility to fit all 1000W discharge lamps, both short arc/ long arc double ended and E40 tubular types.

This new range has infact also been designed to be suitable to E40 tubular lamp, which has a very cheaper price comparing to double ended lamp and a longer life,

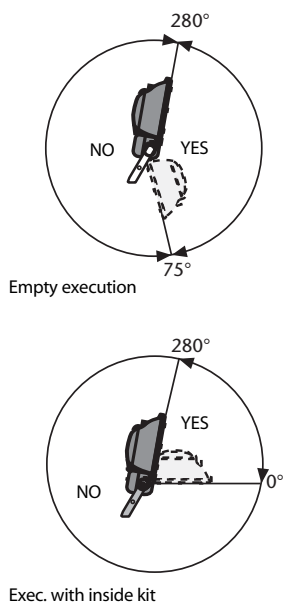
without reducing the high photometric performances.

The large advanced technology system of this high efficiency powerful floodlight makes it suitable for many applications: sport facilities, large and industrial areas such as sea ports, terminal docks, container storage, railway yards and airstrips.



# Technical features of Lightmaster 1000

## Aiming



The aiming is achieved with a mechanical sighting device (a protractor scale, attached to the side of the unit and indicating the angle of tilt, can be used for preaiming) or for more precise aiming, a telescope 6x36 can be mounted on the sighting device (available as an optional extra).

## Description

### CHARACTERISTICS

- Body, rear cover and glass frame, in die cast aluminium, with primary alloy and low copper content with a high weather proof rating coated with silver polyester powder.
- Front tempered glass resistant to high temperatures and to thermal shock.
- Anti-ageing gaskets in silicon rubber.
- Hot deep galvanized sheet steel fixing bracket.
- Gear housing separated from optical housing, complete of ignitor and rear cover made in special self-extinguishing material.
- For the execution with two power switches, the fixture is available complete of incorporated control gear kit, too.
- In the other versions the CABLO SERVICE box, may be used for the supply of the lamp.
- Control gear box in die-cast aluminium IP 65 for class I or in thermoplastic material IP 66 for class II.
- The mounting distances between the gear box and the body can be up to 50/70 meters, as the ignitor is fitted within the rear housing of the projector. Anti-vacuum device.
- Available on request Hot Restrike version with one security knife switch for short arc lamp.

### OPTICAL SYSTEM

- The **symmetrical projector**, is supplied with two types of optics
  - Peened with a wide beam.
  - Specular with a narrow beam.
- A careful study permits excellent control of the luminous flux and a considerable glare reduction.
- The **asymmetrical projector**, is supplied with specular reflector with a narrow beam made in high pure (99,99%) aluminium for high reflectance and efficiency with or without flux reflector skirt.

A careful study permits excellent control of the luminous flux and a considerable glare reduction. **The luminaire can be fitted with a coated stainless steel anti-glare louvre for moving the plane of maximum intensity by 60°, in full compliance with Italy's national and regional legislation on the restriction of light pollution.**

- High intensity **rotational reflector**, made by C1, C2, C3, C4, C5. A careful study permits excellent control of the luminous flux and very high performances. The flux reflecting skirt reduces the direct glare.

Wind exposed surface with tilt 70° = 0,2160 m<sup>2</sup>

An accurate reproduction of the light distribution pattern is guaranteed by the two-point fixing of the transversely positioned lamp. Luminaire designed for indoor and outdoor applications. The projector is ENEC certified for nominal ambient working temperature of 35°C. In case not expressly indicated, we remember that it's approved with a temperature of 25°C. The endurance test of EN 60598-1 point 12.3 has been made at an ambient working temperature of 45°C. During the applications it's possible a temporary working at a temperature not exceeding 45°C.

### MOUNTING AND REPLACEMENT

The lamp is located by opening the rear cover, the cover is opened by releasing two strong stainless steel quick release clips.

When the rear cover is opened the power is automatically disconnected.

The projector is supplied in two versions:

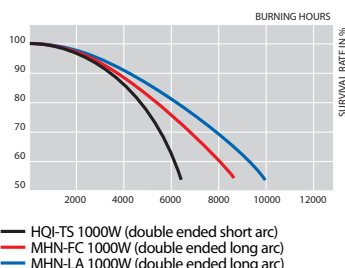
- with two power resistant knife switches.
- with one security resistant knife switch.

For the first version when the cover is opened, the power supply to lampholders is directly interrupted. For one security resistant version it is compulsory to connect a remote control switch to the poles of the terminal block inside the connection box.

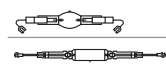
When the cover is opened, the remote control switch disconnects the power supply.

Lamp replacement is achieved by opening the cover housing at an angle of 110°.

In case of lamp failure or at end lamp's life, it's absolutely necessary to open the double-pole switch and to inhibit the ignitor's discharge up to the lamp change.



### LAMPS



MD 1000W short arc

MD 1000W long arc

### COLOURS

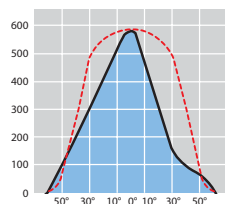
Silver



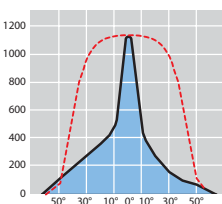
## Photometric data



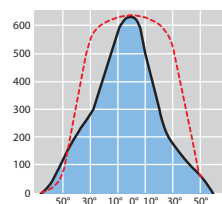
Symmetrical



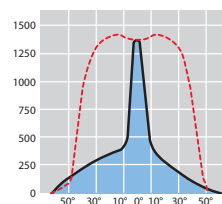
MD 1000W long arc  
LIGHTMASTER 1000  
Symmetrical wide



MD 1000W long arc  
LIGHTMASTER 1000  
Symmetrical narrow



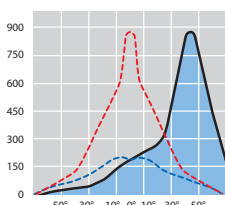
MD 1000W short arc  
LIGHTMASTER 1000  
Symmetrical wide



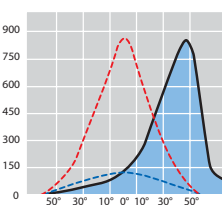
MD 1000W short arc  
LIGHTMASTER 1000  
Symmetrical narrow



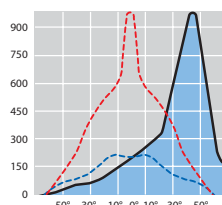
Asymmetrical



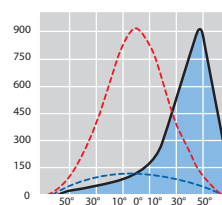
MD 1000W long arc  
LIGHTMASTER 1000  
Asymmetrical specular  
 $\phi$  max 46°



MD 1000W long arc  
LIGHTMASTER 1000  
Asymmetrical specular  
with deflector  
 $\phi$  max 46°



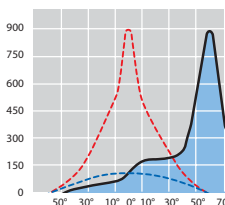
MD 1000W short arc  
LIGHTMASTER 1000  
Asymmetrical specular  
 $\phi$  max 48°



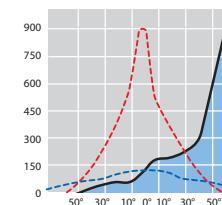
MD 1000W short arc  
LIGHTMASTER 1000  
Asymmetrical specular  
with deflector  
 $\phi$  max 48°



Asymmetrical with louvre



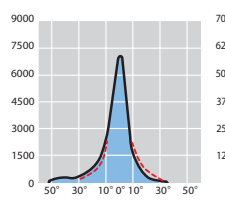
MD 1000W long arc  
LIGHTMASTER 1000  
Asymmetrical specular  
with steel anti-glare louvre  
 $\phi$  max 60°



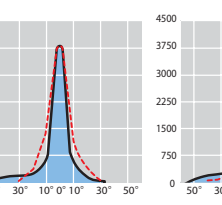
MD 1000W short arc  
LIGHTMASTER 1000  
Asymmetrical specular  
with steel anti-glare louvre  
 $\phi$  max 62°



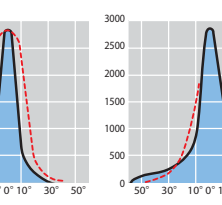
Circular



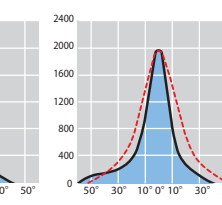
MD 1000W short arc  
LIGHTMASTER 1000  
Circular C1



MD 1000W short arc  
LIGHTMASTER 1000  
Circular C2



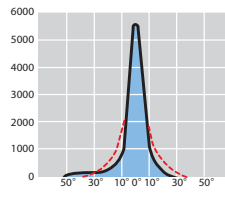
MD 1000W short arc  
LIGHTMASTER 1000  
Circular C3



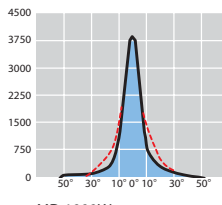
MD 1000W short arc  
LIGHTMASTER 1000  
Circular C4



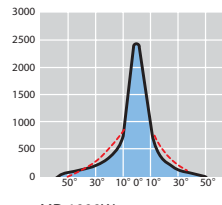
MD 1000W short arc  
LIGHTMASTER 1000  
Circular C5



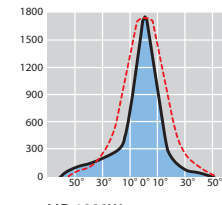
MD 1000W long arc  
LIGHTMASTER 1000  
Circular C2



MD 1000W long arc  
LIGHTMASTER 1000  
Circular C3



MD 1000W long arc  
LIGHTMASTER 1000  
Circular C4



MD 1000W long arc  
LIGHTMASTER 1000  
Circular C5

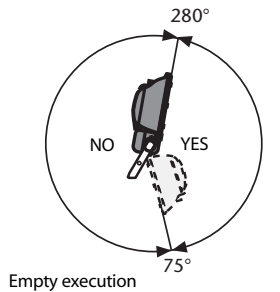
IP 66



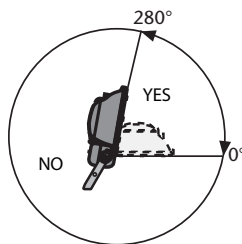
# Technical features of Lightmaster E40

## Aiming

## Description



Empty execution



Exec. with inside kit

The aiming is achieved with a mechanical sighting device (a protractor scale, attached to the side of the unit and indicating the angle of tilt, can be used for preaiming) or for more precise aiming, a telescope 6x36 can be mounted on the sighting device (available as an optional extra).

If the floodlight is placed upside down, open glass frame and turn 180° the reflector to position the deflector above the bulb.

This type of installation is not possible for the wired version (see the drawing with allowed working positions).

### CHARACTERISTICS

- LIGHTMASTER 1000 version suitable to metal halide and high pressure sodium lamps with E40 lampholder.
- Body, rear cover and glass frame, in die cast aluminium, with primary alloy and low copper content (< 0,1%) with an high weather-proof rating coated with silver polyester powder.
- Front tempered glass resistant to high temperatures and to thermal shock.
- Anti-ageing gaskets in silicon rubber.
- Hot deep galvanized sheet steel fixing bracket.
- Porcelain E40 lampholder complete with anti-unscrewing device.
- Gear housing separated from optical housing, complete of ignitor and rear cover made in special self-extinguishing material.

The CABLO SERVICE box, may be used for the supply of the lamp. Control gear box is in die-cast aluminium IP 65 for class I or in thermoplastic material IP 66 for class II.

The luminaire is also available in the version complete with Incorporated control gear kit.

- Anti-vacuum device in teflon.

### OPTICAL SYSTEM

The careful research in multiple optics and the top quality materials guarantee high efficiency light output and an excellent control of luminous flux system, due to the centering lamp device. The luminaire is supplied with 3 different types of light out put:

- The **symmetrical projector**, is supplied with two types of optics
  - Peened for a wide beam.
  - Specular for a narrow beam.
- **Asymmetric**, high efficiency floodlight made of extremely pure specular aluminium. The luminaire can be fitted with a coated stainless steel anti-glare louvre for moving the plane of maximum intensity by 55°, in full compliance with Italy's national and regional legislation on the restriction of light pollution.
- **Circular**, high intensity rotational reflector with flux reflecting skirt.

Wind exposed surface with tilt 70° = 0,2160 m<sup>2</sup>

### MOUNTING AND REPLACEMENT

The lamp is located by opening the rear cover, the cover is opened by releasing two strong stainless steel quick release clips.

### LAMPS



MT (JM-T) 1000W E40

ST (SAP-T) 1000W E40

### COLOURS

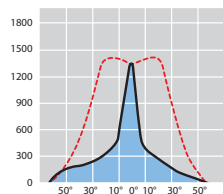
Silver



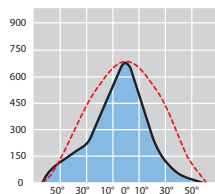
## Photometric data



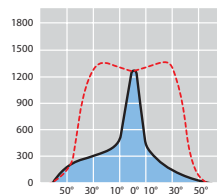
Symmetrical E40



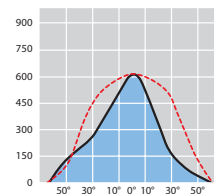
ST (SAP-T) 1000W E40



ST (SAP-T) 1000W E40



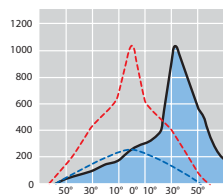
MT (JM-T) 1000W E40



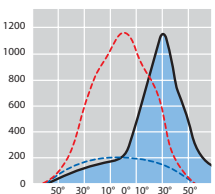
MT (JM-T) 1000W E40



Asymmetrical E40



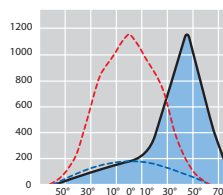
MT (JM-T) 1000W E40



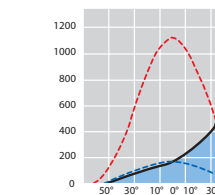
ST (SAP-T) 1000W E40



Asymmetrical with louvre E40



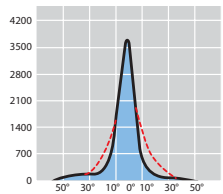
ST (SAP-T) 1000W E40



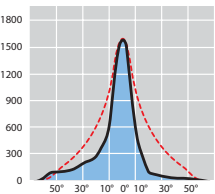
ST (SAP-T) 1000W E40



Circular E40



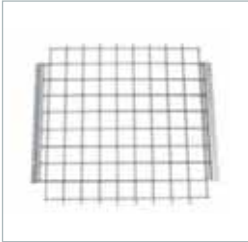
MT (JM-T) 1000W E40



ST (SAP-T) 1000W E40



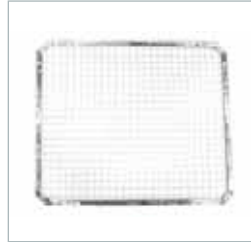
## Accessories and spare parts



**60290**  
Grille.  
Zinc plated and steel coated in silver colour.



**60291**  
Circular louvre.  
Stainless steel coated in silver colour.



**60292**  
Safety stainless steel grid.



**60293-60137**  
Anti-glare louvre.  
Stainless steel coated in silver colour.



**60294**  
Steel anti-glare louvre.  
Zinc plated and steel coated in silver colour.

### LIGHTMASTER 1000

CODE	DESCRIPTION	LAMP TYPE	COLOUR	GROSS WEIGHT (kg)
<b>60290</b>	Grille		Silver	0,87
<b>60291</b>	Circular steel louvre		Silver	2,43
<b>60292</b>	Safety stainless steel grid		-	0,65
<b>60293</b>	Stainless steel anti-glare louvre for asymmetrical version		Silver	0,85
<b>60294</b>	Anti-glare louvre for symmetrical version		Silver	1,35
<b>10292</b>	Osram lamp 4400K	HQI-TS 1000/NDL/S		0,30
<b>10293</b>	Osram lamp 5900K	HQI-TS 1000/D/S		0,30
<b>10294</b>	Philips lamp 4200K	MHN-LA 1000W 230V/842		0,35
<b>10295</b>	Philips lamp 5600K	MHN-LA 1000W 230V/956		0,35
<b>13967</b>	Philips lamp 4100K	MHN-FC 1000W/740 230V		0,35
<b>00878</b>	4kV ignitor			0,15
<b>02955</b>	Ballast			10,00
<b>04873</b>	Capacitor 100 µF 250V			0,30
<b>09263</b>	Glass			-









### LIGHTMASTER 1000 E40

CODE	DESCRIPTION	COLOUR	GROSS WEIGHT (kg)
<b>60137</b>	Stainless steel anti-glare louvre for asymmetrical version	Silver	0,5
<b>60290</b>	Grille	Silver	0,87
<b>60291</b>	Circular stainless steel louvre	Silver	2,43
<b>60294</b>	Anti-glare louvre for symmetrical version	Silver	1,35
<b>09263</b>	Glass		-
<b>00878</b>	4 KV ignitor	-	-
<b>04644</b>	1,2 KV ignitor for JM Philips lamp	-	-
<b>00472</b>	Osram lamp HQI-T 1000W/D	-	-
<b>00475</b>	Osram lamp NAV - T 1000W	-	-
<b>06660</b>	Philips lamp HPI - T 1000W	-	-
<b>07826</b>	Philips lamp SON-T 1000W		0,40





## Product codes

## LIGHTMASTER 1000 SYMMETRICAL - INSULATION CL I

With two power knife switches when the cover is opened, the power supply to lampholders is directly interrupted.









CODE	DESCRIPTION	LAMP TYPE	GROSS WEIGHT (kg)	PACKING (pcs.)	PALLET (pcs.)	CBMS
 <b>70501</b>	Silver Body - specular	MD (JM-TS) 1000W Osram type	13,25	1	20	0,080
 <b>70502</b>	Silver Body - peened	MD (JM-TS) 1000W Osram type	13,25	1	20	0,080
 <b>70507</b>	Silver Body - specular	MD (JM-TS) 1000W Philips type	13,25	1	20	0,080
 <b>70508</b>	Silver Body - peened	MD (JM-TS) 1000W Philips type	13,25	1	20	0,080
<b>70750</b>	 Silver Body - specular	MD (JM-TS) 1000W Osram type	25,40	1	20	0,080
<b>70751</b>	 Silver Body - peened	MD (JM-TS) 1000W Osram type	25,40	1	20	0,080
<b>70757</b>	 Silver Body - specular	MD (JM-TS) 1000W Philips type	25,40	1	20	0,080
<b>70758</b>	 Silver Body - peened	MD (JM-TS) 1000W Philips type	25,40	1	20	0,080

With one security knife switch version it is compulsory to connect the remote control switch to the poles of the terminal block inside the connection box. When the cover is opened, the remote control switch disconnects the power supply.





CODE	DESCRIPTION	LAMP TYPE	GROSS WEIGHT (kg)	PACKING (pcs.)	PALLET (pcs.)	CBMS
 <b>70511</b>	Silver Body - specular	MD (JM-TS) 1000W Osram type	13,25	1	20	0,080
 <b>70512</b>	Silver Body - peened	MD (JM-TS) 1000W Osram type	13,25	1	20	0,080
 <b>70517</b>	Silver Body - specular	MD (JM-TS) 1000W Philips type	13,25	1	20	0,080
 <b>70518</b>	Silver Body - peened	MD (JM-TS) 1000W Philips type	13,25	1	20	0,080

## LIGHTMASTER 1000 ASYMMETRICAL - INSULATION CL I

With two power knife switches when the cover is opened, the power supply to lampholders is directly interrupted.

CODE	DESCRIPTION	LAMP TYPE	GROSS WEIGHT (kg)	PACKING (pcs.)	PALLET (pcs.)	CBMS
 <b>70531</b>	Silver Body - specular with deflector	MD (JM-TS) 1000W Osram type	13,25	1	20	0,080
 <b>70537</b>	Silver Body - specular with deflector	MD (JM-TS) 1000W Philips type	13,25	1	20	0,080
 <b>70701</b>	Silver Body - specular	MD (JM-TS) 1000W Osram type	13,25	1	20	0,080
 <b>70707</b>	Silver Body - specular	MD (JM-TS) 1000W Philips type	13,25	1	20	0,080
<b>70761</b>	 Silver Body - specular with deflector	MD (JM-TS) 1000W Osram type	25,40	1	20	0,080
<b>70767</b>	 Silver Body - specular with deflector	MD (JM-TS) 1000W Philips type	25,40	1	20	0,080
<b>70771</b>	 Silver Body - specular	MD (JM-TS) 1000W Osram type	25,40	1	20	0,080
<b>70777</b>	 Silver Body - specular	MD (JM-TS) 1000W Philips type	25,40	1	20	0,080

With one security knife switch version it is compulsory to connect the remote control switch to the poles of the terminal block inside the connection box. When the cover is opened, the remote control switch disconnects the power supply.

CODE	DESCRIPTION	LAMP TYPE	GROSS WEIGHT (kg)	PACKING (pcs.)	PALLET (pcs.)	CBMS
 <b>70541</b>	Silver Body - specular with deflector	MD (JM-TS) 1000W Osram type	13,25	1	20	0,080
 <b>70547</b>	Silver Body - specular with deflector	MD (JM-TS) 1000W Philips type	13,25	1	20	0,080
 <b>70711</b>	Silver Body - specular	MD (JM-TS) 1000W Osram type	13,25	1	20	0,080
 <b>70717</b>	Silver Body - specular	MD (JM-TS) 1000W Philips type	13,25	1	20	0,080



















Execution with hot restrike ignitor is available, on request, for the version with one security knife switch insulation CL I and Osram lamp.

 The versions with two power knife switches are available also in insulation CL II.










## Product codes

### LIGHTMASTER 1000 CIRCULAR - INSULATION CL I

**With two power knife switches when the cover is opened, the power supply to lampholders is directly interrupted.**

CODE	DESCRIPTION	LAMP TYPE	GROSS WEIGHT (kg)	PACKING (pcs.)	PALLET (pcs.)	CBMS
 <b>70561</b>	Silver Body - circular type C1	MD (JM-TS) 1000W Osram type	13,25	1	20	0,080
 <b>70562</b>	Silver Body - circular type C2	MD (JM-TS) 1000W Osram type	13,25	1	20	0,080
 <b>70563</b>	Silver Body - circular type C3	MD (JM-TS) 1000W Osram type	13,25	1	20	0,080
 <b>70564</b>	Silver Body - circular type C4	MD (JM-TS) 1000W Osram type	13,25	1	20	0,080
 <b>70565</b>	Silver Body - circular type C5	MD (JM-TS) 1000W Osram type	13,25	1	20	0,080
 <b>70572</b>	Silver Body - circular type C2	MD (JM-TS) 1000W Philips type	13,25	1	20	0,080
 <b>70573</b>	Silver Body - circular type C3	MD (JM-TS) 1000W Philips type	13,25	1	20	0,080
 <b>70574</b>	Silver Body - circular type C4	MD (JM-TS) 1000W Philips type	13,25	1	20	0,080
 <b>70575</b>	Silver Body - circular type C5	MD (JM-TS) 1000W Philips type	13,25	1	20	0,080
<b>70781</b> 	Silver Body - circular type C1	MD (JM-TS) 1000W Osram type	25,40	1	20	0,080
<b>70782</b> 	Silver Body - circular type C2	MD (JM-TS) 1000W Osram type	25,40	1	20	0,080
<b>70783</b> 	Silver Body - circular type C3	MD (JM-TS) 1000W Osram type	25,40	1	20	0,080
<b>70784</b> 	Silver Body - circular type C4	MD (JM-TS) 1000W Osram type	25,40	1	20	0,080
<b>70785</b> 	Silver Body - circular type C5	MD (JM-TS) 1000W Osram type	25,40	1	20	0,080
<b>70792</b> 	Silver Body - circular type C2	MD (JM-TS) 1000W Philips type	25,40	1	20	0,080
<b>70793</b> 	Silver Body - circular type C3	MD (JM-TS) 1000W Philips type	25,40	1	20	0,080
<b>70794</b> 	Silver Body - circular type C4	MD (JM-TS) 1000W Philips type	25,40	1	20	0,080
<b>70795</b> 	Silver Body - circular type C5	MD (JM-TS) 1000W Philips type	25,40	1	20	0,080

**With one security knife switch version it is compulsory to connect the remote control switch to the poles of the terminal block inside the connection box. When the cover is opened, the remote control switch disconnects the power supply.**









CODE	DESCRIPTION	LAMP TYPE	GROSS WEIGHT (kg)	PACKING (pcs.)	PALLET (pcs.)	CBMS
 <b>70581</b>	Silver Body - circular type C1	MD (JM-TS) 1000W Osram type	13,25	1	20	0,080
 <b>70582</b>	Silver Body - circular type C2	MD (JM-TS) 1000W Osram type	13,25	1	20	0,080
 <b>70583</b>	Silver Body - circular type C3	MD (JM-TS) 1000W Osram type	13,25	1	20	0,080
 <b>70584</b>	Silver Body - circular type C4	MD (JM-TS) 1000W Osram type	13,25	1	20	0,080
 <b>70585</b>	Silver Body - circular type C5	MD (JM-TS) 1000W Osram type	13,25	1	20	0,080
 <b>70592</b>	Silver Body - circular type C2	MD (JM-TS) 1000W Philips type	13,25	1	20	0,080
 <b>70593</b>	Silver Body - circular type C3	MD (JM-TS) 1000W Philips type	13,25	1	20	0,080
 <b>70594</b>	Silver Body - circular type C4	MD (JM-TS) 1000W Philips type	13,25	1	20	0,080
 <b>70595</b>	Silver Body - circular type C5	MD (JM-TS) 1000W Philips type	13,25	1	20	0,080

Execution with hot restrike ignitor is available, on request, for the version with one security knife switch insulation CL I and Osram lamp.





The versions with two power knife switches are available also in insulation CL II.

## Product codes





## LIGHTMASTER E40 SYMMETRICAL - INSULATION CL I

CODE	DESCRIPTION	LAMP TYPE	GROSS WEIGHT (kg)	PACKING (pcs.)	CBMS
70825	 Silver Body - peened	M 1000W Philips type	25,5	1	0,0946
70826	 Silver Body - peened	M 1000W Osram type	25,5	1	0,0946
70827	 Silver Body - peened	SAP 1000W	25,5	1	0,0946
70833	 Silver Body - specular	M 1000W Philips type	25,5	1	0,0946
70834	 Silver Body - specular	M 1000W Osram type	25,5	1	0,0946
70835	 Silver Body - specular	SAP 1000W	25,5	1	0,0946
 70836	Silver Body - peened	M-S 1000W	13,5	1	0,0946
 70837	Silver Body - specular	M-S 1000W	13,5	1	0,0946

## LIGHTMASTER E40 ASYMMETRICAL - INSULATION CL I

CODE	DESCRIPTION	LAMP TYPE	GROSS WEIGHT (kg)	PACKING (pcs.)	CBMS
70820	 Silver Body - specular	SAP 1000W	25,5	1	0,0946
70821	 Silver Body - specular	M 1000W Osram type	25,5	1	0,0946
70822	 Silver Body - specular	M 1000W Philips type	25,5	1	0,0946
 70838	Silver Body - specular	M-S 1000W	13,5	1	0,0946

## LIGHTMASTER E40 CIRCULAR - INSULATION CL I

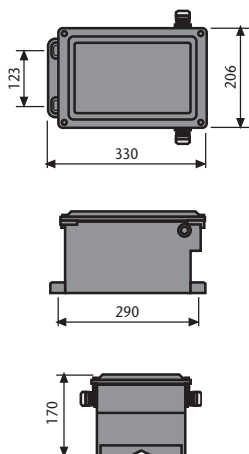
CODE	DESCRIPTION	LAMP TYPE	GROSS WEIGHT (kg)	PACKING (pcs.)	CBMS
70830	 Silver Body - circular	M 1000W Philips type	25,5	1	0,0946
70831	 Silver Body - circular	M 1000W Osram type	25,5	1	0,0946
70832	 Silver Body - circular	SAP 1000W	25,5	1	0,0946
 70839	Silver Body - circular	M-S 1000W	13,5	1	0,0946

 The versions without inside electrical components are also available in insulation CL II.

# Technical features of Cablo Service

## Dimensions

## Description



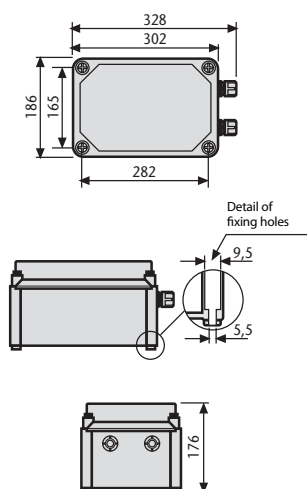
### WATERPROOF REMOTE CONTROL GEAR BOX INSULATION CLASS I

For lamp up to 2000W.

- Die cast aluminium alloy body.
- Cover made by printed aluminium sheet.
- Extractable plate made by steel coated with passivated zinc, for clamp of the complete control gear only for 1000 W.
- Control gear box: 230V - 50Hz, for 1000W lamps 400V - 50 Hz for 2000W lamps.
- Anti-ageing gasket in silicon rubber.
- Line entry hole with cable-joint PG 16 and clamp 6 mm<sup>2</sup>.
- Going out hole cutted screw with cable-joint PG 16 and clamp 6 mm<sup>2</sup>.
- Body and cover are coated with polyester powders in black and silver colour.



**IP 65**



### WATERPROOF REMOTE CONTROL GEAR BOX INSULATION CLASS II

For 1000W and 2000W metal halide lamp.

- Body and cover in special thermoplastic material, high thermal resistant and high resistant to air pollution.
- Line entry hole with cable gland PG 13.5.
- Output lamp hole with cable gland PG 13.5.
- The gear box is complete with ballast and capacitor.
- Power supply 230V 50Hz for 1000W lamps 400V 50Hz for 2000W lamps.
- Suitable for 1000W and 2000W luminaires in Class II.
- Nylon screw terminal clamps 4 mm<sup>2</sup>.
- The mounting distances between the gear box and the body can be up to 50/70 meters, as the ignitor is fitted inside the rear housing of the luminaire.



**IP 66**



## Accessories and spare parts

CODE	DESCRIPTION	GROSS WEIGHT (kg)	PACKING (pcs.)	LAMP (TYPE)	CBMS
<b>60214</b>	Clamps for CABLO SERVICE insulation CL I	0,40	1	-	0,0010
<b>00878</b>	4 KV ignitor	0,21	1	M 1000 Osram	-
<b>04644</b>	1,2 KV ignitor for 1000W Philips lamp	0,08	1	M 1000 Philips	-
<b>05146</b>	1,2 KV - 400V ignitor for 2000W Philips lamp	0,1	1	M 2000 Philips	-
<b>60147*</b>	Empty gear box - Black colour	3,56	1	-	0,0192
<b>60447*</b>	Empty gear box - Silver colour	3,56	1	-	0,0192
<b>05145</b>	Capacitor 60 µF 450V	0,250	1	-	-
<b>05144</b>	Capacitor 40 µF 450V	0,250	1	-	-

\* For 1000W and for extra European countries only

## Product codes

## CABLO SERVICE - INSULATION CL I

CODE	DESCRIPTION	LAMP TYPE	GROSS WEIGHT (kg)	PACKING (pcs.)	PALLET (pcs.)	CBMS
60306 ●		M (JM) 1000W Philips type - Black colour	11,02	1	-	0,0151
60406 ●		M (JM) 1000W Philips type - Silver colour	11,02	1	-	0,0151
60304 ▼		M (JM) 1000W Osram type - Black colour	14,50	1	-	0,0151
		S (SAP) 1000W				
60404 ▼		M (JM) 1000W Osram type - Silver colour	14,50	1	-	0,0151
		S (SAP) 1000W				
60309 ■		M (JM) 1000W Osram type - Black colour	14,90	1	-	0,0151
		S (SAP) 1000W				
		9,3A MASTER MHN-LA 1000W 230V/842 Philips type				
		9,3A MASTER MHN-LA 1000W 230V/956 Philips type				
		9,3A MASTER MHN-FC 1000W/740 230V				
		9,5A HQI-TS 1000W/D/S Osram type				
		9,5A HQI-TS 1000W/NDL/S Osram type				
60409 ■		M (JM) 1000W Osram type - Silver colour	14,90	1	-	0,0151
		S (SAP) 1000W				
		9,3A MASTER MHN-LA 1000W 230V/842 Philips type				
		9,3A MASTER MHN-LA 1000W 230V/956 Philips type				
		9,3A MASTER MHN-FC 1000W/740 230V				
		9,5A HQI-TS 1000W/D/S Osram type				
		9,5A HQI-TS 1000W/NDL/S Osram type				
60303 ■		M (JM) 2000W - Silver colour	20,50	1	-	0,0151
		11,3A MASTER MHN-SA 2000W 400V/856 Philips type				
		11,3A MASTER MHN-SA 2000W 400V/956 Philips type				
		10,3A MASTER MHN-LA 2000W 400V/956 Philips type				
		10,3A MASTER MHN-LA 2000W 400V/842 Philips type				
		10,3A MASTER MHN-FC 2000W/740 400V				
		11,3A HQI-TS 2000W/D/S 400V Osram type				
		10,7A HQI-TS 2000W/N/L 400V Osram type				
		10,3A HQI-T 2000W/D/I 400V E40 Osram type				
60323 ■		M (JM) 2000W - Silver colour	20,20	1	-	0,0151
		8,8A - HQI - T 2000W/N 400V Osram type				
		2000W/N/E/SUPER				
		ask for ignitor cod. 07130 separately				
		8,6A - HPI - T 2000W 400V Philips type				
		ask for ignitor cod. 05146 separately				
60324 ▲		M (JM) 2000W - Silver colour	20,50	1	-	0,0151
		8,6A - HPI - T 2000W 400V Philips type				
60147*		EMPTY CABLE for 1000W - black	3,56	1	-	0,0151
60447*		EMPTY CABLE for 1000W - silver	3,56	1	-	0,0151

\* For extra European countries only

## CABLO SERVICE - INSULATION CL II

CODE	DESCRIPTION	LAMP TYPE	GROSS WEIGHT (kg)	PACKING (pcs.)	PALLET (pcs.)	CBMS
60395 ■		M (JM) 1000W Osram type	13,00	1	-	0,0147
		S (SAP) 1000W				
		9,3A MASTER MHN-LA 1000W 230V/842 Philips type				
		9,3A MASTER MHN-LA 1000W 230V/956 Philips type				
		9,3A MASTER MHN-FC 1000W/740 230V				
		9,5A HQI-TS 1000W/D/S Osram type				
		9,5A HQI-TS 1000W/NDL/S Osram type				
60382 ■		M (JM) 2000W	21,20	1	-	0,0147
		11,3A MASTER MHN-SA 2000W 400V/856 Philips type				
		11,3A MASTER MHN-SA 2000W 400V/956 Philips type				
		10,3A MASTER MHN-LA 2000W 400V/956 Philips type				
		10,3A MASTER MHN-LA 2000W 400V/842 Philips type				
		10,3A MASTER MHN-FC 2000W/740 400V				
		11,3A HQI-TS 2000W/D/S 400V Osram type				
		10,7A HQI-TS 2000W/N/L 400V Osram type				

● With pulse ignitor (1,2 KV) - Max distance from floodlight m 35

▼ With super imposed ignitor max distance from floodlight m 1,5

■ Without ignitor - The fitting needs ignitor Cod. 00878 for MH 1000W - Osram and for all HPS 1000W lamps

▲ With pulse ignitor (1,2 KV - 400V)



## Working high power



This is our company's historical series, thousands of which have been constructed for all kinds of applications, from industry to sport.

Sturdy fixtures at a power ranging from 400W to 2000W.



Bowls Club NSW New South Wales, Australia



Commercial Centre Castorama – Milano – Italy



Kembla Harbour NSW New South Wales, Australia



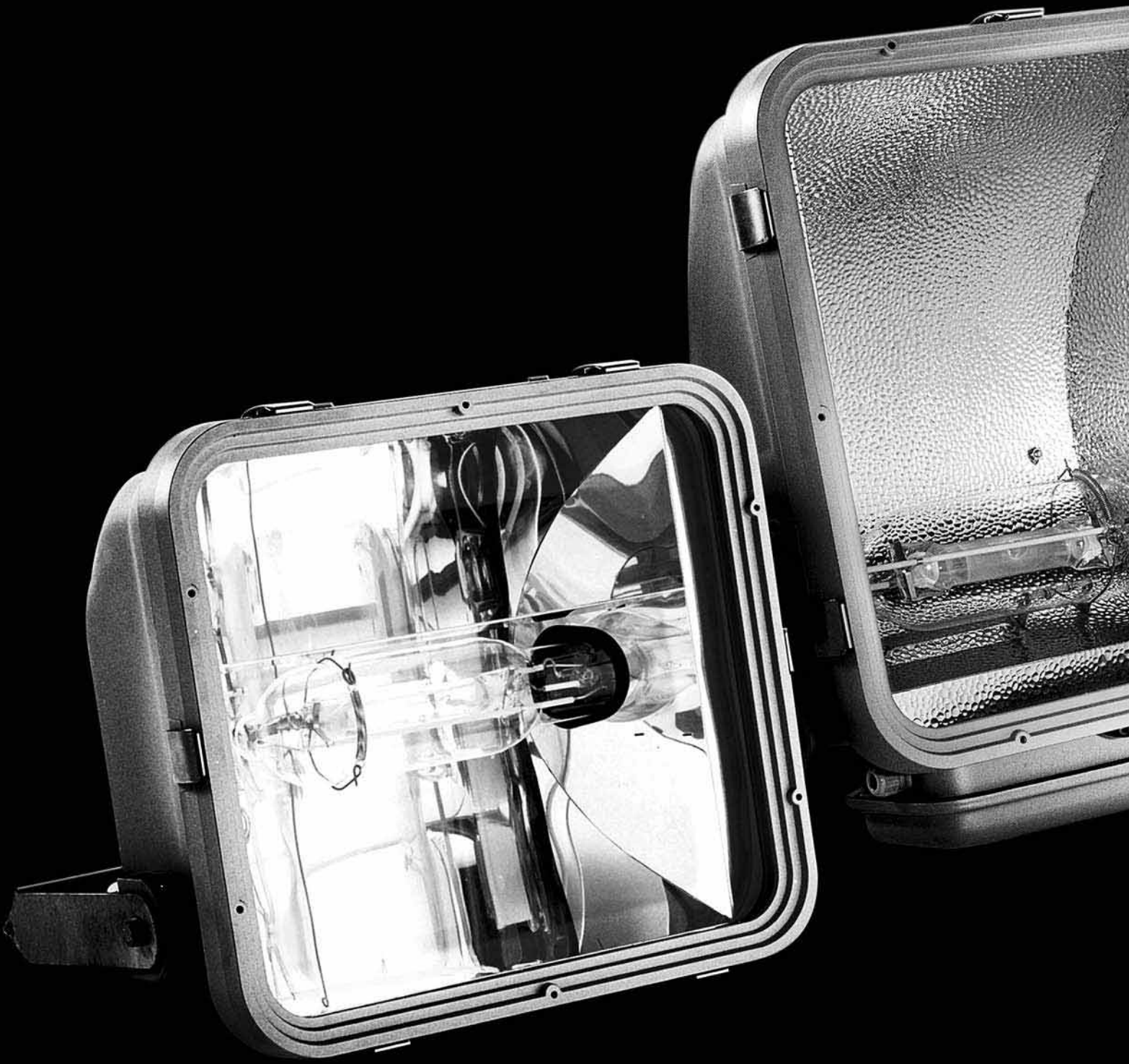
Sikwey Road, Taiwan

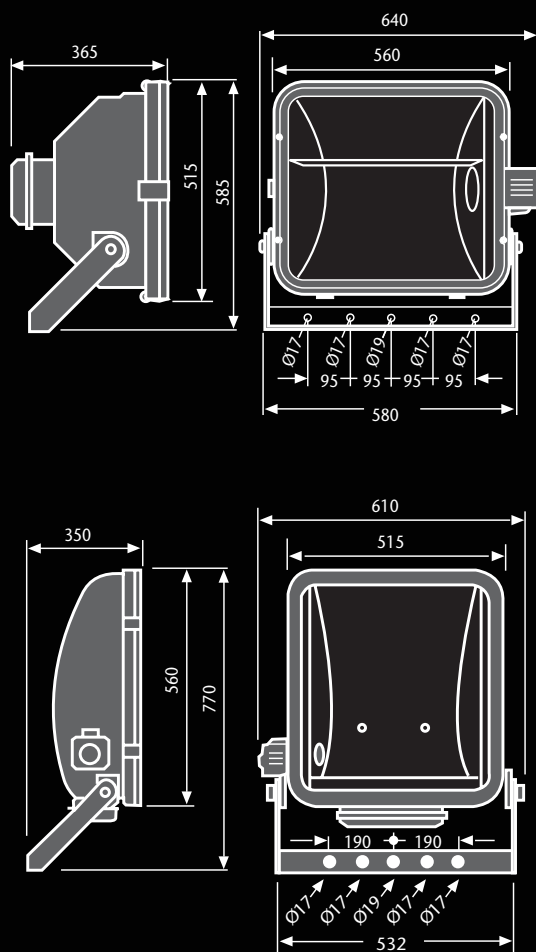


Judo National Institute – Paris - France



Ice Stadium, Regensburg, Germany





## High performance

High efficiency outdoor projector for 2000W metal halide lamps.

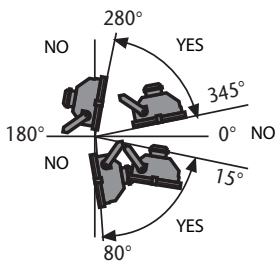
Suitable for lighting of big areas and sport stadiums.



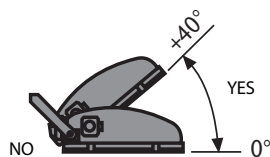
# Technical features of Jet 2000

## Aiming

## Description



Jet 2000 Symmetrical



Jet 2000 Asymmetrical

### CHARACTERISTICS

- Body and cable compartment in pressed sheet aluminium coated with silver polyester powders.
- Glass frame in die cast aluminium with primary alloy and low copper content with an high weather proof rating coated with silver polyester powders.
- Front tempered glass resistant to high temperatures and to thermal shock.
- Anti-ageing gaskets in silicon rubber.
- Stainless steel springs for closing the frame.
- Hot deep galvanized sheet steel fixing bracket with index for vertical orientation.
- The wiring compartment can be used as a junction box, or as housing for the ignitor (to be supplied separately).
- CABLO SERVICE series boxes complete with electrical accessories are available for the power supply of the lamp.
- No-screwing device E40 lampholder, PG 13,5 cable gland.

All the electrical components are suitable for power 230V - 50Hz and the projector is manufactured according to EN 60598/1 rules.

### OPTICAL SYSTEM

- The JET 2000 **symmetrical** projector is supplied with 2 types of optics:
  - Peened with a wide beam.
  - Specular with a narrow beam.
 The presence of the flux reflecting skirt guarantees excellent performances.  
 Wind exposed surface = 0,27 m<sup>2</sup> (with 70° vertical aiming)
- The JET 2000 **asymmetrical** projector is supplied with 2 types of optics:
  - Peened with a wide beam.
  - Specular with a narrow beam made in pure aluminium with very high reflection factor.
 A careful study permits excellent control of the luminous flux and a considerable glare reduction. The floodlight is to be installed with aimings towards the vertical from 0° to 40°.  
 Wind exposed surface = 0,275 m<sup>2</sup> (with 40° vertical aiming)

### SUITABLE LAMPS

- The projector may use 2000W E 40 400 V metal halide lamps with following characteristics:
- 10,3 A with incorporated ignitor Osram type
  - 8,8 A with incorporated ignitor Osram type
  - 8,8 A with outer ignitor Osram type
  - 8,2 A with outer ignitor Philips type.

### LAMPS



MT (JM-T) 2000W E40

### COLOURS

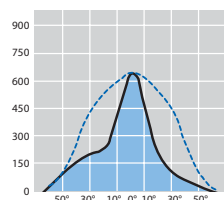
Silver



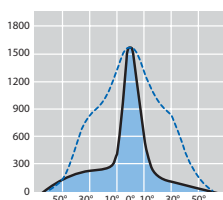
## Photometric data



Symmetrical



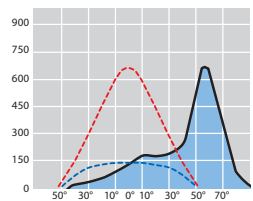
MT 2000W E40  
JET 2000 Symmetrical wide



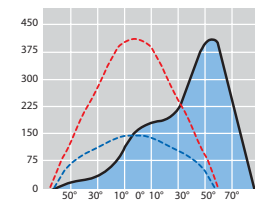
MT 2000W E40  
JET 2000 Symmetrical narrow



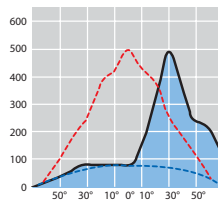
Asymmetrical



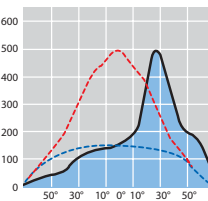
MT 2000 W E40  
JET 2000 Asymmetrical narrow with steel glare louvre



MT 2000 W E40  
JET 2000 Asymmetrical wide with steel glare louvre



MT 2000 W E40  
JET 2000 Asymmetrical narrow with refl. skirt



MT 2000 W E40  
JET 2000 Asymmetrical narrow

## Accessories and spare parts



**60050**  
Steel protection louvre.  
Zinc plated and steel coated in silver colour.



**60051**  
Steel protection grille.  
Zinc plated and steel coated in silver colour.



**60092**  
Anti-glare louvre.  
Stainless steel coated in silver colour.

CODE	DESCRIPTION	GROSS WEIGHT (kg)	LAMP TYPE	CBMS
<b>JET 2000 Symmetrical</b>				
60051	Louvre	2,20	-	0,0190
60050	Grille	1,20	-	0,0055
60060	Frame with glass	5,50	-	0,0260
06891	Philips lamp	0,70	HPI-T 2000W/380V	0,0065
04192*	Osram lamp	0,80	HQI-T 2000W/D/I	0,0065
07131	Osram lamp	0,80	HQI-T 2000W/N/E/SUPER	0,0065
05146	Ignitor 1,2 KV - 400 V for Philips lamp	0,10	-	-
07130	Ignitor 5kV-400V for Osram lamp 2000W SUPER	0,35	-	-
06900	Ballast	15,00	JM 2000W-8,6/8,8 A 400V	0,0030
06901	Ballast	15,00	JM 2000W-10,3 A 400V	0,0030
05145	Capacitor 60 µF 450V	0,250	-	-
05144	Capacitor 40 µF 450V	0,250	-	-
<b>JET 2000 Asymmetrical</b>				
60092	Steel anti-glare louvre	1,35	-	0,0100
60050	Grille	1,20	-	0,0055
11624	Frame with glass	5,50	-	0,0260
06891	Philips lamp	0,70	HPI-T 2000W/380V	0,0065
04192*	Osram lamp	0,80	HQI-T 2000W/D/I	0,0065
07131	Osram lamp	0,80	HQI-T 2000W/N/E/SUPER	0,0065
05146	Ignitor 1,2 KV - 400 V for Philips lamp	0,10	-	-
07130	Ignitor 5kV-400V for Osram lamp 2000W SUPER	0,35	-	-
06900	Ballast	15,00	JM 2000W-8,6/8,8 A 400V	0,0030
06901	Ballast	15,00	JM 2000W-10,3 A 400V	0,0030
05145	Capacitor 60 µF 450V	0,250	-	-
05144	Capacitor 40 µF 450V	0,250	-	-

\* Incorporated ignitor

## Products codes

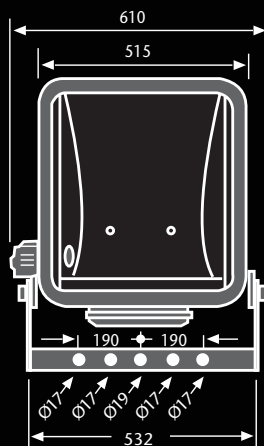
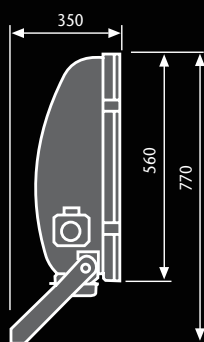
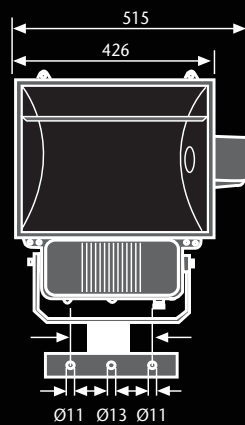
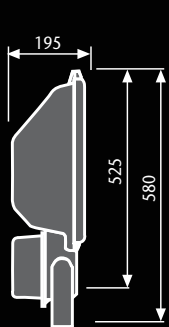
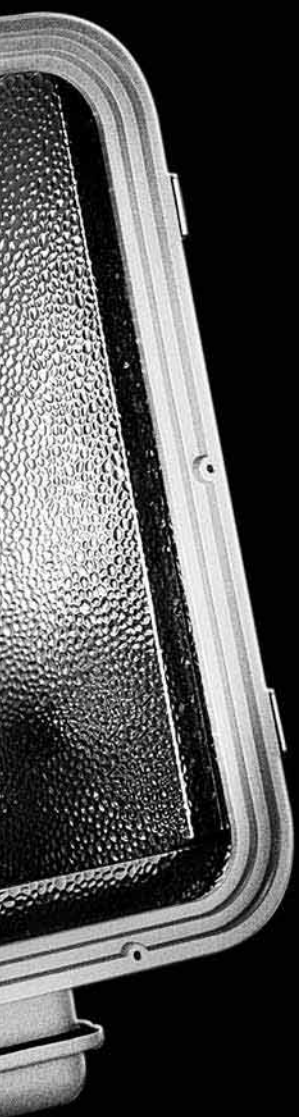
### JET 2000 SYMMETRICAL - INSULATION CL I

CODE	DESCRIPTION	LAMP TYPE	GROSS WEIGHT (kg)	PACKING (pcs.)	PALLET (pcs.)	CBMS
<b>50602</b>	Silver Body E40 symmetrical - peened	M (JM) 2000W	17,60	1	12	0,152
<b>50603</b>	Silver Body E40 symmetrical - specular	M (JM) 2000W	17,60	1	12	0,152

### JET 2000 ASYMMETRICAL - INSULATION CL I

CODE	DESCRIPTION	LAMP TYPE	GROSS WEIGHT (kg)	PACKING (pcs.)	PALLET (pcs.)	CBMS
<b>50611</b>	Silver Body E40 Specular refl. with flux reflecting skirt	M (JM) 2000W	18,60	1	10	0,149
<b>50618</b>	Silver Body E40 Peened refl. without flux reflecting skirt	M (JM) 2000W	18,60	1	10	0,149
<b>50619</b>	Silver Body E40 Specular refl. without flux reflecting skirt	M (JM) 2000W	18,60	1	10	0,149





## High efficiency

Advanced floodlights which combine high efficiency light output with high photometric

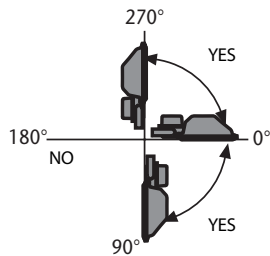
performances they have been designed particularly for outdoor and indoor sports halls.



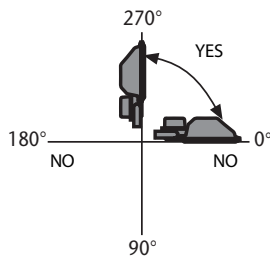
# Technical features of Jet 1000

## Aiming

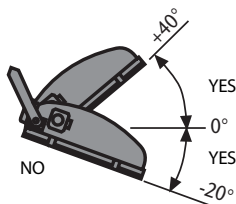
## Description



Jet 1000 Symmetrical



JET 1000 Leader



Jet 1000 Asymmetrical

### CHARACTERISTICS

- Reflector made of highly pure, aluminium sheet, polished and oxidized.
- Front tempered glass resistant to high temperatures and to thermal shock.
- Anti-ageing gaskets in silicon rubber.
- Hot deep galvanized sheet steel fixing bracket, painted only for the JET 1000 symmetrical, with index for vertical orientation.
- The wiring compartment can be used as a junction box, or as housing for the ignitor (to be supplied separately).
- CABLO SERVICE series boxes complete with electrical accessories are available for the power supply of the lamp.
- Anti-screwing out device E40 lampholder. PG 13,5 cable gland.
- All the electrical components are suitable for power 230V - 50Hz and the projector is manufactured according to EN 60598/1 rules.

### Jet 1000 symmetrical

- Body and frame in die cast aluminium with primary alloy and low copper content with an high weather proof rating, coated with polyester powders in black colour, complete with thermally ignitor housing.
- Electrical housing cover made of technopolymer.

### Jet 1000 asymmetrical

- Body and cable compartment in pressed sheet aluminium coated with silver polyester powder.
- Stainless steel springs for closing the frame.

### OPTICAL SYSTEM

- The **symmetrical** optics with two different reflectors (peened and specular) guarantees medium-wide and mediumnarrow beams. The accuracy of these reflectors enables a perfect control of the luminous flux and a considerable glare reduction. The flux reflecting skirt ensures high performances. Wind exposed surface = 0,203 m<sup>2</sup> (with 70° vertical aiming)
- The **asymmetrical** projector is supplied with two types of emissions:
  - **Asy1**: Max. intensity at approx. 50° recommended for the lighting of large areas (aimings towards the vertical between -20° and + 25°)
  - **Asy2**: Max. intensity at approx. 30° recommended for indoor lighting (aimings towards the vertical between -10° and + 40°).
 And with two types of asymmetrical optics:
  - Peened with a wide beam
  - Specular with a narrow beam in high pure (99,99%) aluminium for high reflectance and efficiency.
 A careful study permits excellent control of the luminous flux and a considerable glare reduction.
- **The fixture can be fitted with a coated stainless steel anti-glare louvre for moving the plane of maximum intensity by 62°, in full compliance with Italy's national and regional legislation on the restriction of light pollution.**
- "Leader" version is supplied with incorporated control gear and metal halide 1000W lamp, Osram or Philips. Wind exposed surface = 0,275 m<sup>2</sup> (with 40° vertical aiming)

### LAMPS



MT (JM-T) 1000W E40



ST (SAP-T) 1000W E40

### COLOURS

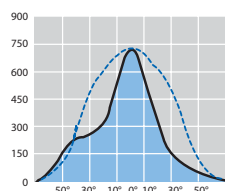
Black (Sym)      Silver (Asym)



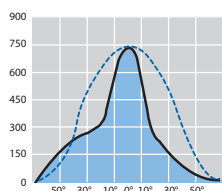
## Photometric data



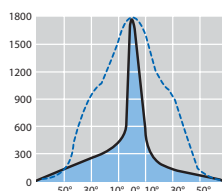
Symmetrical



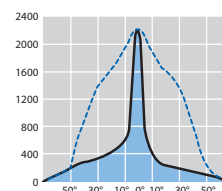
MT (JM-T) 1000W E40  
JET 1000 Symmetrical Peened



ST (SAP-T) 1000W E40  
JET 1000 Symmetrical Peened



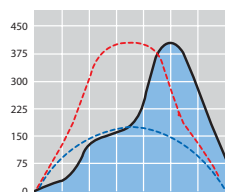
MT (JM-T) 1000W E40  
JET 1000 Symmetrical Narrow



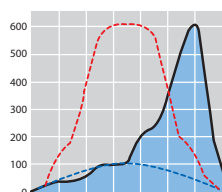
ST (SAP-T) 1000W E40  
JET 1000 Symmetrical Narrow



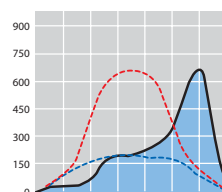
Asymmetrical



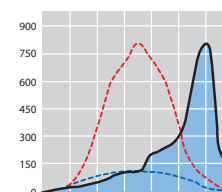
MT 1000 W E40  
JET 1000 Asymmetrical 2 Peened



ST 1000 W E40  
JET 1000 Asymmetrical 1 Peened with deflector

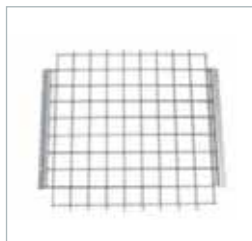


ST 1000 W E40  
JET 1000 Asymmetrical 1 Peened



ST 1000 W E40  
JET 1000 Asymmetrical 1 Narrow with deflector

## Accessories and spare parts



**60349 - 60050**  
Steel protection grille.  
Zinc plated and steel coated.



**60339**  
Steel protection louvre.  
Zinc plated and steel coated in  
black colour.











**60092-60093**  
Anti-glare louvre.  
Stainless steel coated in silver  
colour.

















CODE	DESCRIPTION	GROSS WEIGHT (kg)	COLOUR	LAMP TYPE	CBMS
<b>JET 1000 Symmetrical</b>					
60339	Louvre	1,35	Black	-	0,0100
60349	Grille	0,75	Black	-	0,0030
05769	Glass	1,50	-	-	-
00878	4 KV ignitor	0,21	-	M (JM) Osram - S (SAP)	-
04644	1,2 KV ignitor for Philips lamp	0,10	-	M (JM) Philips	-
<b>JET 1000 Asymmetrical</b>					
60092	Steel anti-glare louvre for Asymm. 30°	1,35	Silver	-	0,0100
60093	Steel anti-glare louvre for Asymm. 50°	1,35	Silver	-	0,0100
60050	Grille	1,20	Silver	-	0,0055
07798	Frame with glass	5,50	Silver	-	0,0260
00878	4 KV ignitor	0,21	-	M (JM) Osram - S (SAP)	-
04644	1,2 KV ignitor for Philips lamp	0,10	-	M (JM) Philips	-

## Product codes

## JET 1000 SYMMETRICAL - INSULATION CL I

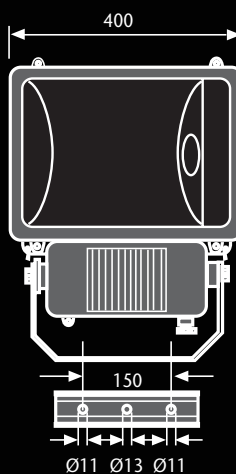
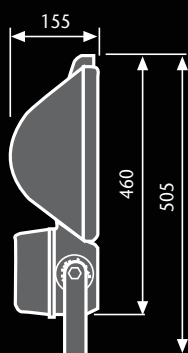
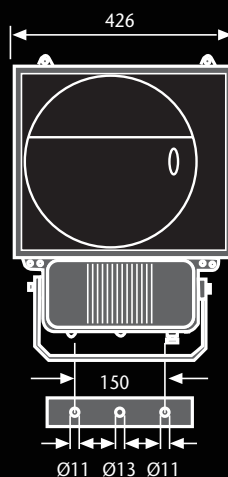
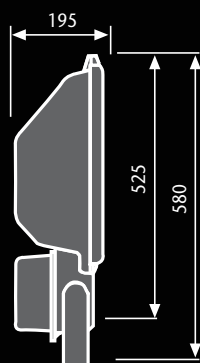
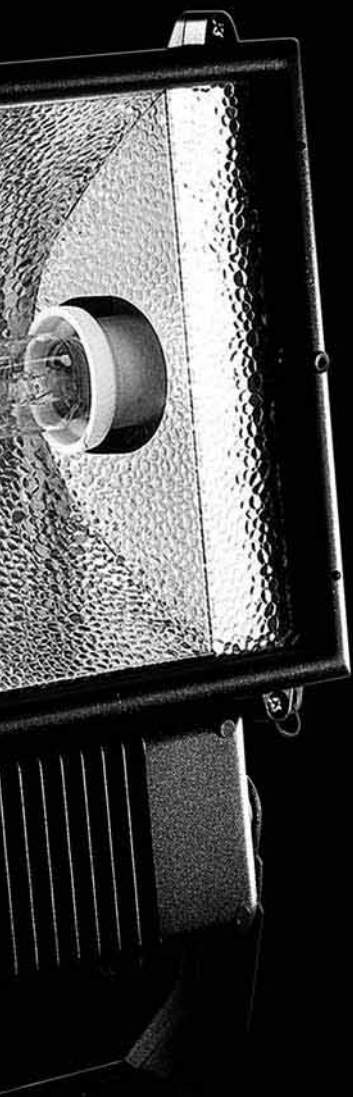
CODE	DESCRIPTION	LAMP TYPE	GROSS WEIGHT (kg)	PACKING (pcs.)	PALLET (pcs.)	CBMS
 <b>50494</b>	Black Body E 40 peened	M (JM) 1000W Osram type	9,70	1	25	0,0648
 <b>50495</b>	Black Body E 40 specular	M (JM) 1000W Osram type	9,70	1	25	0,0648
 <b>50497</b>	Black Body E 40 peened	M (JM) 1000W Philips type S (SAP) 1000W	9,70	1	25	0,0648
 <b>50498</b>	Black Body E 40 specular	M (JM) 1000W Philips type S (SAP) 1000W	9,70	1	25	0,0648
<b>50570</b>	 <b>LEADER</b> peened - Black	M (JM) 1000W Philips type	17,73	1	25	0,0648
<b>50571</b>	 <b>LEADER</b> specular - Black	M (JM) 1000W Philips type	17,73	1	25	0,0648
<b>50693</b>	 <b>LEADER</b> peened - Black	M (JM) 1000W Osram type	20,60	1	25	0,0648
<b>50694</b>	 <b>LEADER</b> specular - Black	M (JM) 1000W Osram type	20,60	1	25	0,0648

## JET 1000 ASYMMETRICAL - INSULATION CL I

CODE	DESCRIPTION	LAMP TYPE	GROSS WEIGHT (kg)	PACKING (pcs.)	PALLET (pcs.)	CBMS
 <b>50612</b>	Silver Body E40 - 50° Peened refl. with flux reflecting skirt	M (JM) 1000W - S (SAP)	18,60	1	10	0,149
 <b>50613</b>	Silver Body E40 - 50° Specular refl. with flux reflecting skirt	M (JM) 1000W - S (SAP)	18,60	1	10	0,149
 <b>50622</b>	Silver Body E40 - 50° Peened refl. without flux reflect. skirt	M (JM) 1000W - S (SAP)	18,60	1	10	0,149
 <b>50623</b>	Silver Body E40 - 50° Specular refl. without flux reflect. skirt	M (JM) 1000W - S (SAP)	18,60	1	10	0,149
<b>50614</b>	 <b>SOLAR</b> - 50° - Silver Peened refl. with flux reflecting skirt	M (JM) 1000W Philips type	27,35	1	10	0,167
<b>50615</b>	 <b>SOLAR</b> - 50° - Silver Specular refl. with flux reflecting skirt	M (JM) 1000W Philips type	27,35	1	10	0,167
<b>50624</b>	 <b>SOLAR</b> - 50° - Silver Peened refl. without flux reflect. skirt	M (JM) 1000W Philips type	27,35	1	10	0,167
<b>50625</b>	 <b>SOLAR</b> - 50° - Silver Specular refl. without flux reflect. skirt	M (JM) 1000W Philips type	27,35	1	10	0,167
<b>50698</b>	 <b>SOLAR</b> - 50° - Silver Specular refl. with flux reflecting skirt	M (JM) 1000W Osram type	28,70	1	10	0,167
<b>50699</b>	 <b>SOLAR</b> - 50° - Silver Peened refl. with flux reflecting skirt	M (JM) 1000W Osram type	28,70	1	10	0,167
<b>50704</b>	 <b>SOLAR</b> - 50° - Silver Specular refl. with flux reflecting skirt	S (SAP) 1000W	28,70	1	10	0,167
<b>50705</b>	 <b>SOLAR</b> - 50° - Silver Peened refl. with flux reflecting skirt	S (SAP) 1000W	28,70	1	10	0,167
 <b>50626</b>	Silver Body E40 - 30° Peened refl. without flux reflect. skirt	M (JM) 1000W - S (SAP)	18,60	1	10	0,149
 <b>50627</b>	Silver Body E40 - 30° Specular refl. without flux reflect. skirt	M (JM) 1000W - S (SAP)	18,60	1	10	0,149
<b>50641</b>	 <b>SOLAR</b> - 30° - Silver Peened refl. without flux reflect. skirt	M (JM) 1000W Philips type	27,35	1	10	0,167
<b>50640</b>	 <b>SOLAR</b> - 30° - Silver Specular refl. without flux reflect. skirt	M (JM) 1000W Philips type	27,35	1	10	0,167

 Asymmetrical versions are available also in insulation Class II.





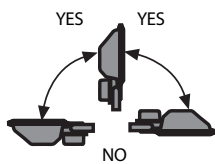
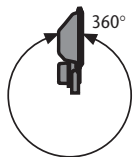
## Energy-saving floodlights

Out-door high-performance floodlights which can be used for a large range of discharge lamps.



# Technical features of Jet 7

## Aiming



400W CL II

## Description

### CHARACTERISTICS

- Body and frame in die cast aluminium with primary alloy and low copper content with a high weather proof rating, coated with polyester powders in black colour, complete with thermally isolated control gear housing. For insulation Class II fixture only in silver colour.
  - Reflector made of highly pure aluminium sheet, polished and oxidized. Tempered glass with silicon rubber gasket.
  - Bracket made of galvanized steel with index for vertical orientation.
  - The removable control gear plate, made out for insulation Class I of a galvanized steel sheet, and for insulation Class II of injection of self-extinguish thermoplastic material, is complete with connectors which allow its quick disassembly during maintenance operations.
  - Electrical housing cover made of technopolymer.
  - Lampholder E 40, cable gland PG 13,5.
- All the electrical components are produced according to the Italian Quality Standards for power 230V - 50 Hz and the projector is manufactured according to EN 60598/1 rules. silver colour.

### OPTICAL SYSTEM

- The **symmetrical** versions with two different reflectors (peened and specular) and the large range of lamps which may be used, guarantee medium - wide and medium narrow beams. The accuracy of these reflectors enables a perfect control of the luminous flux and a considerable glare reduction. The flux reflecting skirt ensures high performances.
- The **asymmetrical** optics, obtained with careful laboratory tests, ensures a perfect control of the luminous flux, with a considerable improvement in the projector's performance and glare reduction.
- The **circular** projector is supplied with 2 types of optics:
  - Glazed with medium - narrow beam.
  - Super bright with narrow beam at highest intensity.
 The baffle avoids the direct glare of the lamp. Operating area: relief lighting, sport courts

Wind exposed surface = 0,193 m<sup>2</sup>

### LAMPS



MT (JM-T) 250 - 400W E40



ST (SAP-T) 250 - 400W E40

### COLOURS

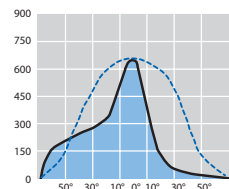
Silver      Black      White



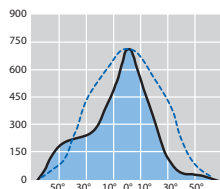
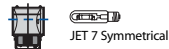
## Photometric data



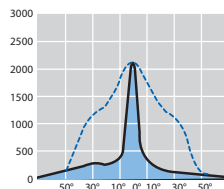
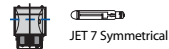
Symmetrical



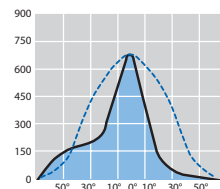
MT (JM-T) 400W E40



ST (SAP-T) 400W E40



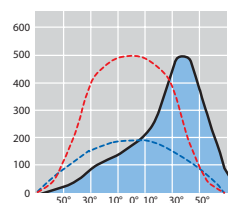
ST (SAP-T) 250W E40



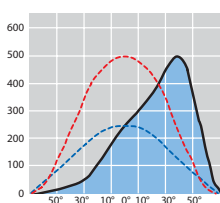
ST (SAP-T) 600W E40



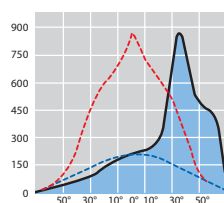
Asymmetrical



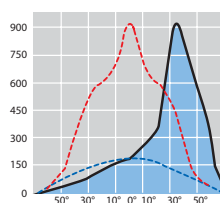
MT (JM-T) 400W E40



ST (SAP-T) 400W E40



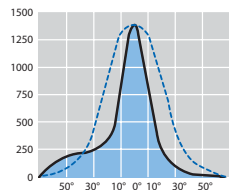
ST (SAP-T) 400W E40



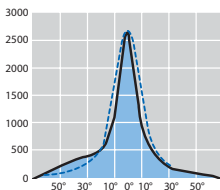
MT (JM-T) 400W E40



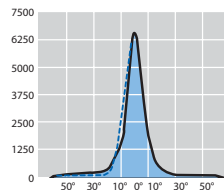
Circular



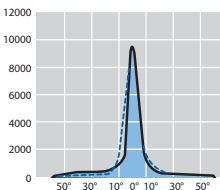
ST (SAP-T) 400W - E40



MT (JM-T) 400W - E40



MT (JM-T) 400W - E40



MT (JM-T) 250W - E40



## Accessories and spare parts



**60099 - 60101**  
Bracket Length 600 mm Ideal for lighting shop-windows.  
Zinc plated and steel coated.



**60349**  
Steel protection grille.  
Zinc plated and steel coated in black colour.



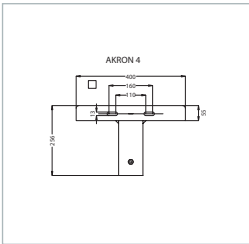
**60339**  
Steel protection louvre.  
Zinc plated and steel coated in black colour.



**60089**  
Top pole mounting device in die cast alluminium Ø 60.  
Zinc plated and steel coated in black colour.



**60085**  
Circular louvre.  
Stainless steel coated in black colour.



**60242 AKRON 4**  
Hot deep galvanized sheet steel accessory for max 4 floodlights 400W max fixing on 76 mm diam. pole.















**60240 AKRON 4**  
Hot deep galvanized sheet steel accessory for max 4 floodlights 400W max fixing on 60 mm diam. pole.

CODE	DESCRIPTION	GROSS WEIGHT (kg)	PACKING (pcs.)	COLOUR	CBMS
60099	Bracket 600 mm	2,70	1	Black	-
60101	Bracket 600 mm	2,70	1	Silver	-
60339	Louvre	1,35	1	Black	0,0100
60085	Circular steel louvre	1,35	1	Black	0,0100
60349	Grille	0,75	1	Black	0,0030
60089	Top pole device Ø 60 mm	1,30	1	Black	-
60242	AKRON 4 Ø 76 mm	14,00	1	Deep galvanized	0,0046
60240	AKRON 4 Ø 60 mm	13,50	1	Deep galvanized	0,0046
05769	Glass	1,50	-	-	-
50530*	Insulation CL I empty gear plate	0,40	1	-	0,0020

\* For extra European countries only












## Product codes

### JET 7 SYMMETRICAL - INSULATION CL I

CODE	DESCRIPTION	LAMP TYPE	GROSS WEIGHT (kg)	PACKING (pcs.)	PALLET (pcs.)	CBMS
 <b>50492</b>	Symmetrical Body E40 peened - Black	-	8,56	1	30	0,0540
 <b>50493</b>	Symmetrical Body E40 specular - Black	-	8,56	1	30	0,0540
 <b>50826</b>  <b>KÖNIG</b>	peened - Black	MT (JM) 400W Philips type	12,94	1	30	0,0540
<b>50533</b>  <b>KING</b>	peened - Black	ST (SAP) 600W	16,85	1	30	0,0540
<b>50535</b>  <b>KING</b>	specular - Black	ST (SAP) 600W	16,85	1	30	0,0540
 <b>50515*</b>  <b>KIT</b>		MT-ST (JM-SAP) 250W	3,82	1	-	0,0057
 <b>50510*</b>  <b>KIT</b>		MT-ST (JM-SAP) 400W	5,23	1	-	0,0057
 <b>50593</b>  <b>KIT</b>		MT (JM) 250W Philips type	3,00	1	-	0,0057













\* Suitable for MH lamps Osram type, see lamps technical specifications.

### JET 7 ASYMMETRICAL - INSULATION CL I

CODE	DESCRIPTION	LAMP TYPE	GROSS WEIGHT (kg)	PACKING (pcs.)	PALLET (pcs.)	CBMS
 <b>50490</b>	Asymmetrical Body E40 peened - Black	-	8,56	1	30	0,0540
 <b>50828</b>	Asymmetrical Body E40 specular reflector - Black	-	8,56	1	30	0,0540
 <b>50486</b>  <b>STRATOS</b>	peened - Black	MT (JM) 400W Philips type	12,94	1	30	0,0540
<b>50534</b>  <b>KING</b>	peened - Black	ST (SAP) 600W	16,85	1	30	0,0540
 <b>50515*</b>  <b>KIT</b>		MT-ST (JM-SAP) 250W	3,82	1	-	0,0057
 <b>50510*</b>  <b>KIT</b>		MT-ST (JM-SAP) 400W	5,23	1	-	0,0057
 <b>50593</b>  <b>KIT</b>		MT (JM) 250W Philips type	3,00	1	-	0,0057

\* Suitable for MH lamps Osram type, see lamps technical specifications.

### JET 7 CIRCULAR - INSULATION CL I

CODE	DESCRIPTION	LAMP TYPE	GROSS WEIGHT (kg)	PACKING (pcs.)	PALLET (pcs.)	CBMS
 <b>50825</b>	Black Body E40	250W	9,10	1	30	0,0540
 <b>50542</b>	Black Body E40	400W	9,10	1	30	0,0540
 <b>50827</b>	Black Body E40 high intensity reflector	250W	9,10	1	30	0,0540
 <b>50824</b>	Black Body E40 high intensity reflector	400W	9,10	1	30	0,0540
 <b>50515*</b>  <b>KIT</b>		MT-ST (JM-SAP) 250W	3,82	1	-	0,0057
 <b>50510*</b>  <b>KIT</b>		MT-ST (JM-SAP) 400W	5,23	1	-	0,0057
 <b>50593</b>  <b>KIT</b>		MT (JM) 250W Philips type	3,00	1	-	0,0057
 <b>50594</b>  <b>KIT</b>		MT (JM) 400W Philips type	4,05	1	-	0,0057

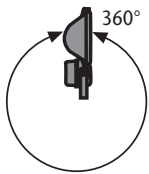
\* Suitable for MH lamps Osram type, see lamps technical specifications.

 All the versions, except the type 600W, are available also in insulation Class II.

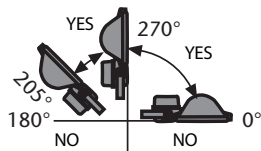
# Technical features of Jet 5

## Aiming

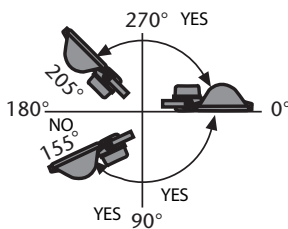
## Description



until to 250W CL I



400W CL II



400W CL I

### CHARACTERISTICS






- Die cast aluminium body and frame coated with polyester powders in black and white colours on request, complete with thermally isolated control gear housing. For insulation Class II fixture only silver colour.
  - Reflector made of highly pure, peened aluminium sheet, polished and oxidized.
  - Variable optics.
  - Tempered front glass with silicon rubber gasket.
  - Bracket made of galvanized painted steel with index for vertical orientation.
  - The removable control gear plate, made out for insulation Class I of a galvanized steel sheet, and for insulation Class II of injection of self-extinguish thermoplastic material, is complete with connectors which allow its quick disassembly during maintenance operations. Electrical housing cover made of reinforced polypropylene.
  - Lampholder E 40, cable gland PG 13,5.
- All the electrical components are produced according to the Italian Quality Standards for power 230V - 50 Hz and the projector is manufactured according to EN 60598/1 rules.

### OPTICAL SYSTEM

- The **symmetrical** versions with two different reflectors (peened and specular), guarantee medium
  - wide and medium
  - narrow beams.
- The **asymmetrical** optics improve considerably the projector's performances and in the same way reduce the glare. The asymmetrical versions with two different reflectors, guarantee a medium-wide beam with peened reflector and medium-narrow beam with specular reflector.

Wind exposed surface = 0,160 m<sup>2</sup>

### LAMPS

	QE (MBF) 250W E40
	SE (SAP-E) 150-250W E40
	ST (SAP-T) 150-250-400W E40
	MT (JM-T) 150-250-400W E40
	ME (JM-E) 150-250W E40

### COLOURS

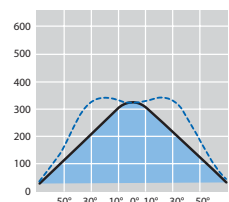
Silver      Black      White



## Photometric data



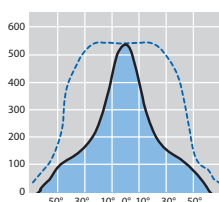
Symmetrical



QE (MBF) 250W - E40



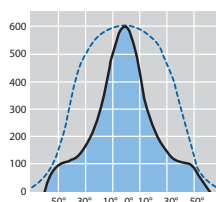
JET 5 Symmetrical



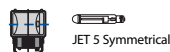
MT (JM-T) 400W - E40



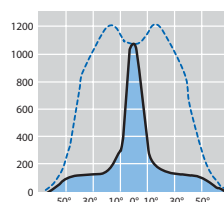
JET 5 Symmetrical



ST (SAP-T) 400W - E40



JET 5 Symmetrical



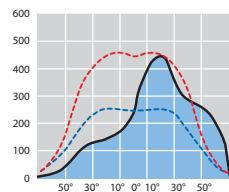
MT (JM-T) 400W - E40



JET 5 Symmetrical narrow



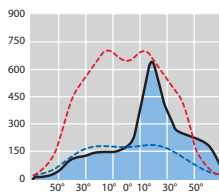
Asymmetrical



MT (JM-T) 400W E40



JET 5 Asymmetrical wide



MT (JM-T) 400W E40



JET 5 Asymmetrical narrow

## Accessories and spare parts



**60099-60101**  
Bracket Length 600 mm  
Ideal for lighting shop-windows.  
Zinc plated and steel coated.



**60202**  
Steel protection grille.  
Zinc plated and steel coated in  
black colour.



**60203**  
Steel protection louvre.  
Zinc plated and steel coated in  
black colour.



**60089**  
Top pole mounting device in die  
cast aluminium Ø 60.  
Zinc plated and steel coated in  
black colour.



**60242 AKRON 4**  
Hot deep galvanized sheet steel  
accessory for max 4 floodlights  
400W max fixing on 76 mm  
diam. pole.









**60240 AKRON 4**  
Hot deep galvanized sheet steel  
accessory for max 4 floodlights  
400W max fixing on 60 mm  
diam. pole.

CODE	DESCRIPTION	GROSS WEIGHT (kg)	PACKING (pcs.)	COLOUR	CBMS
<b>60099</b>	Bracket 600 mm	2,70	1	Black	-
<b>60101</b>	Bracket 600 mm	2,70	1	Silver	-
<b>60203</b>	Louvre	1,10	1	Black	0,0040
<b>60202</b>	Grille	0,62	1	Black	-
<b>60089</b>	Top pole device Ø 60 mm	1,30	1	Black	-
<b>60242</b>	AKRON 4 Ø 76 mm	14,00	1	Deep galvanized	0,0046
<b>60240</b>	AKRON 4 Ø 60 mm	13,50	1	Deep galvanized	0,0046
<b>08711</b>	Glass	1,10	-	-	-
<b>50530*</b>	Insulation CL I empty gear plate	0,40	1	-	0,0010

\* For extra European countries only








## Product codes

### JET 5 SYMMETRICAL - INSULATION CLI

CODE	DESCRIPTION	LAMP TYPE	GROSS WEIGHT (kg)	PACKING (pcs.)	PALLET (pcs.)	CBMS
50500	Black Body E 40 peened	-	6,84	1	52	0,0347
50553	White Body E 40 peened	-	6,84	1	52	0,0347
50548	Black Body E 40 peened	-	6,84	1	52	0,0347
50509	 <b>KOMBI</b> peened - Black	MT (JM) 400W Philips type	11,08	1	48	0,0347
52733	 <b>KOMBI</b> peened - Silver	MT (JM) 400W Philips type	11,08	1	48	0,0347
52710	 <b>KOMBI</b> peened - Black	ST (SAP-T) 400W	12,00	1	48	0,0347
52734	 <b>KOMBI</b> peened - Silver	ST (SAP-T) 400W	12,00	1	48	0,0347
50510*	 KIT	MT-ST (JM-SAP) 400W	5,23	1	-	0,0057
50515*	 KIT	ME-SE/MT-ST (JM-SAP) 250W	3,82	1	-	0,0057
50520	 KIT	QE (MBF) 250W	2,90	1	-	0,0057
50525	 KIT	ME-SE/MT-ST (JM-SAP) 150W	2,98	1	-	0,0057

\* Suitable for MH lamps Osram type, see lamps technical specifications.

### JET 5 ASYMMETRICAL - INSULATION CLI

CODE	DESCRIPTION	LAMP TYPE	GROSS WEIGHT (kg)	PACKING (pcs.)	PALLET (pcs.)	CBMS
50568	Black Body E 40 peened	-	6,84	1	52	0,0347
50633	White Body E 40 peened	-	6,84	1	52	0,0347
50567	Black Body E 40 specular	-	6,84	1	52	0,0347
50632	White Body E 40 specular	-	6,84	1	52	0,0347
50631	 <b>DROP</b> peened - Black	MT (JM) 400W Philips type	11,08	1	48	0,0347
52735	 <b>DROP</b> peened - Silver	MT (JM) 400W Philips type	11,08	1	48	0,0347
52713	 <b>DROP</b> peened - Black	ST (SAP-T) 400W	12,00	1	48	0,0347
52736	 <b>DROP</b> peened - Silver	ST (SAP-T) 400W	12,00	1	48	0,0347
50510*	 KIT	MT-ST (JM-SAP) 400W	5,23	1	-	0,0057
50515*	 KIT	MT-ST (JM-SAP) 250W	3,82	1	-	0,0057
50525	 KIT	MT-ST (JM-SAP) 150W	2,98	1	-	0,0057

\* Suitable for MH lamps Osram type, see lamps technical specifications.

 All the versions are available also in insulation Class II.



Pasarela Pozo Hondo Bridge, Venezuela

## The charm of light

The MACH range of floodlights is characterized by its original, high-tech design, which has been created for both architectural and effect lighting, for both external and internal use. The stylish 'body' shape of the new MACH floodlight range reflects everything that is best in 'Italian' design and at the same time incorporating the most advanced technology.

This range of floodlights has been created by Fael Luce to enable the lighting designer to enhance a building's architectural features. By adding light, shade, and colour, the MACH floodlight interacts with and accentuates the natural shapes of any building facade to create an amazing scenic effect and beauty that will stir the emotions.



Kolumna Castle, CSI



Night View, Mosca, CSI



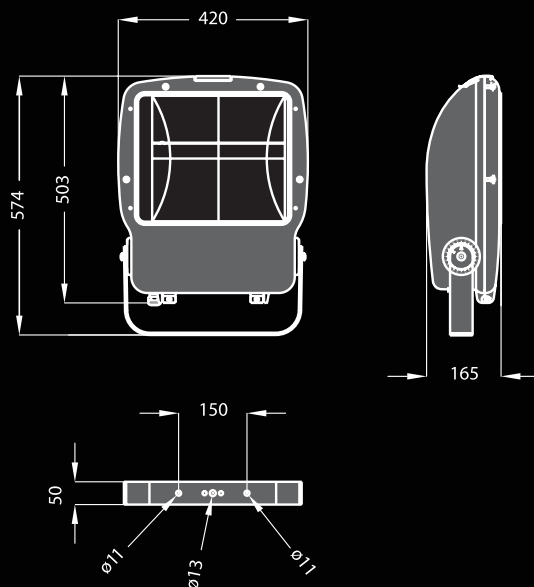
Grand Hotel Aston Nizza, Francia



Giulio Onesti Olympic Swimming Pool – Rome – Italy

San Pietroburgo Palace, CSI





## Mach 5: light as innovation

The design of this elegant projector expresses the manufacturing philosophy of the whole MACH product range: modern design, latest technology, excellent photometric performances and flexibility in their usage.

Its aesthetic values make it possible to use it in exhibition spaces, large atriums and even the most elegant halls. It can also be used for the lighting of important façades and quality sports fields.

The street version represents a new and pleasing piece of street furniture. Thanks to its wide range of reflectors and accessories, the MACH 5 projectors are also an excellent

choice for urban lighting schemes. Its technical features include a double-valve design and a double closure system that ensure a water tight and very secure closure.

The option of either stainless steel clip or screw retention offers a choice of two attractive and functional features.

Whilst the wide range of optics, symmetrical, asymmetrical and circular lighting distribution, ensures that the MACH 5 can be used in a wide range of installations.

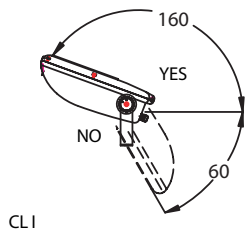
The reflector in the asymmetrical optic version uses a 'special' high reflecting aluminium that is extraordinarily efficient.



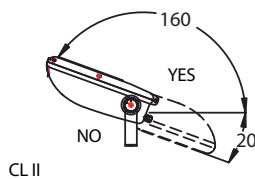
# Technical features of Mach 5 - Insulation CL I-CL II

## Aiming

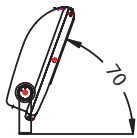
## Description



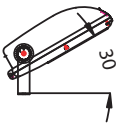
CL I



CL II



Symmetrical and Circular



Asymmetrical

### CHARACTERISTICS

- Body and glass-holding cover in die cast aluminium with primary alloy and low copper content with a high weather proof rating, varnished with polyester powders in silver colour, after phosphodegreasing, phosphochromatising and the application of a protection coating aimed at ensuring excellent resistance to corrosion. Cover hinged in the body bottom and held with stainless steel small rings.
- Lamp-holder in porcelain 16A with anti-unscrewing device. Installation by means of a strong steel fork, galvanised and varnished with polyester powders in metallised grey colour.
- Double goniometric scale for vertical mounting.
- Gaskets in anti-aging silicon rubber.
- Tempered glass suitable for high temperature, thermal shocks and crashes (6 Joule), mechanically fixed to the glass-holding ring.
- The power supply cable accesses the device through a PG 13.5 cable gland (anti-tear IP 68)
- Pressure compensation filter in teflon.
- Projector suitable for use with E40 high pressure sodium vapours and metal halide lamps (150W – 400W) and FC2 high pressure sodium vapours and metal halide (250W – 400W) for installation in outdoor and indoor environments and on inflammable surfaces.

### INSULATING CLASS I

- Opening and access to optics and control gear with a single operation, with hexagon stainless steel screws.
- Extractable electrical tool holding plate in galvanised steel.

### INSULATING CLASS II

- Opening and access to optics and control gear with a single operation, by using the high mechanical resistance stainless steel front spring.
- Insulating class II with disconnecting switch for supply line break when the cover is open.
- Wiring board with electrical unit with improved power factor ( $\cos \varphi > 0.90$ ) in special self-extinguishing thermoplastic material V0.

- The board can be easily removed to make maintenance operations easier. It can be cutaway from the supply line through non-reversible connectors with quick coupling.





All electrical components are certified with ENEC mark (230V, 50 Hz). The projector has been manufactured according to EN 60598/1 standards.

### OPTICAL SYSTEM

- The **symmetrical** version with three different reflectors:
  - Wide beam
  - Medium-wide beam
  - Narrow beam
 Wind-exposed surface = 0,17 m<sup>2</sup> (with vertical addressing 70°)
- The **asymmetrical** optics meets the requirements of the Italian standard UNI 10819 and of Italian local standards in use as far as upwards luminous flux dispersion restriction is concerned. The projector is supplied with two different optics systems:
  - Asymmetrical peened optics reflector for medium wide beam
  - Asymmetrical specular optics reflector in highly pure aluminium (99.99%) for high reflectance and performance.
 Tilt : 15% ULOR<sub>inst</sub> < 0,3 %  
 Use the special shield to obtain ULOR<sub>inst</sub> = 0  
 Wind-exposed surface = 0,13 m<sup>2</sup> (with vertical addressing 30°)
- **Circular** high intensity reflector with baffle to avoid the direct glare.  
 Wind-exposed surface = 0,17 m<sup>2</sup> (with vertical addressing 70°)

Fixture installable directly on max. 60 mm diam. pole, with aluminium coated accessories suitable for the single or double assembly, and for the single wall assembly.

### LAMPS

	ST (SAP-T) E40 150-250-400W
	MT (JM-T) E40 150-250-400W
	MD (JM) FC2 250-400W
	SD (SAP) FC2 250-400W

### COLOUR

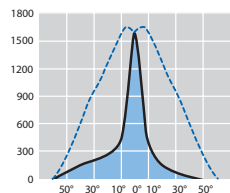
Silver



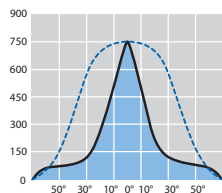
## Photometric data



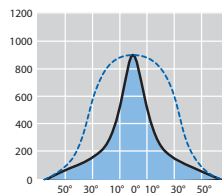
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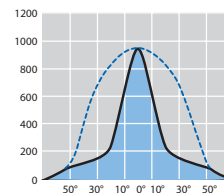
MT (JM-T) 400W E 40



MT (JM-T) 400W E 40



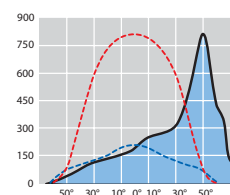
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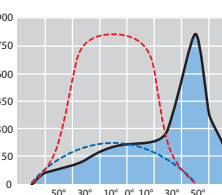
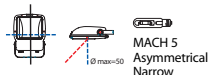
ST (SAP-T) 400W E 40



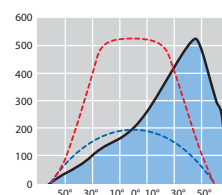
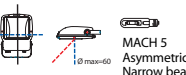
Asymmetrical



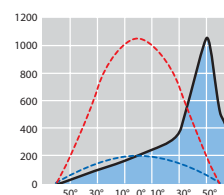
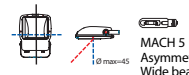
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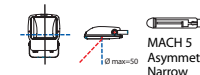
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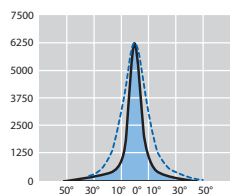
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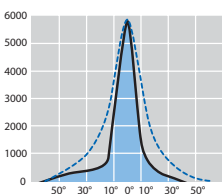
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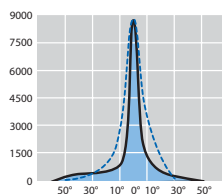
Circular



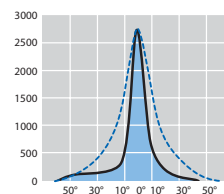
MD (JM-TS) 400W FC2



MT (JM-T) 400W E 40



MT (JM-T) 250W E 40



ST (SAP-T) 400W E 40



## Accessories and spare parts



**60231**  
Protection grille. Zinc plated and steel coated in glazed silver colour.



**60232**  
Protection louver. Zinc plated and steel coated in glazed silver colour.



**60233**  
Circular louver. Stainless steel coated in glazed silver colour.



**60234**  
Anti-glare louver. Stainless steel coated in glazed silver colour.



**60218**  
Stainless steel anti-glare louver, silver colour, for symmetrical optic.



**60239**  
Extension arm length mm 750. Zinc plated and steel coated in glazed silver colour.

CODE	DESCRIPTION	GROSS WEIGHT (kg)	PACKING (pcs.)	COLOUR	CBMS
<b>60218</b>	Stainless steel anti-glare louver for symmetrical optic	0,730	1	Silver	0,0010
<b>60231</b>	Protection grille	0,600	1	Silver	0,0024
<b>60232</b>	Protection louver	1,070	1	Silver	0,0090
<b>60233</b>	Circular louver	1,700	1	Silver	0,0109
<b>60234</b>	Anti-glare louver for asymmetrical	0,800	1	Silver	0,0133
<b>60239</b>	Extension arm length mm 750	6,50	1	Silver	0,0415
<b>60235</b>	AKRON 1	0,500	1	Silver	0,0010
<b>60237</b>	AKRON 2	0,500	1	Silver	0,0010
<b>60238</b>	AKRON 3	1,65	1	Silver	0,0082
<b>60242</b>	AKRON 4 Ø 76 mm	14,00	1	Deep galvanized	0,046
<b>60246</b>	AKRON 5 Ø 76 mm	10,00	1	Deep galvanized	0,0126
<b>60240</b>	AKRON 4 Ø 60 mm	13,50	1	Deep galvanized	0,046
<b>60244</b>	AKRON 5 Ø 60 mm	9,50	1	Deep galvanized	0,0126
<b>50530*</b>	Empty control gear for insulation CL I	-	-	-	-

\* Only for Extra European Countries

## Akron: the system for pole or wall

The Akron installation modular system has been properly studied for the mach 5 floodlights and it is available in the following versions:



**AKRON 1** codice **60235**  
Single top pole mounting support in die cast aluminium block Ø mm 60 painted in glazed silver colour.



**AKRON 2** codice **60237**  
Double top pole mounting support in die cast aluminium twin block Ø mm 60 painted in glazed silver colour.



**AKRON 3** codice **60238**  
Wall mounting single support for horizontal aiming in die cast aluminium block painted in glazed silver colour.



**AKRON 4** codice **60242**  
Hot deep galvanized sheet steel accessory for max 4 floodlights 400W max fixing on 76 mm diam. pole.






















**AKRON 5** codice **60246**  
Hot deep galvanized sheet steel accessory for max 2/4 extension arms code 60239 for 76 mm diam. pole.

**AKRON 4** codice **60240**  
Hot deep galvanized sheet steel accessory for max 4 floodlights 400W max fixing on 60 mm diam. pole.




















**AKRON 5** codice **60244**  
Hot deep galvanized sheet steel accessory for max 2/4 extension arms code 60239 for 60 mm diam. pole.

## Products codes

## MACH 5 SYMMETRICAL - INSULATION CL I

CODE	DESCRIPTION	LAMP TYPE	GROSS WEIGHT (kg)	PACKING (pcs.)	PALLET (pcs.)	CBMS
30507*	Silver body wide beam E 40	150W	9,45	1	40	0,0494
30517*	Silver body medium-wide beam E 40	150W	9,45	1	40	0,0494
30527*	Silver body narrow beam E 40	150W	9,45	1	40	0,0494
30508*	Silver body wide beam E 40	250W	9,45	1	40	0,0494
30518*	Silver body medium-wide beam E 40	250W	9,45	1	40	0,0494
30528*	Silver body narrow beam E 40	250W	9,45	1	40	0,0494
30509*	Silver body wide beam E 40	400W	9,45	1	40	0,0494
30519*	Silver body medium-wide beam E 40	400W	9,45	1	40	0,0494
30529*	Silver body narrow beam E 40	400W	9,45	1	40	0,0494
30501	 Silver body wide beam E 40	M-S (JM-SAP) 150W	12,05	1	40	0,0494
30502**	 Silver body wide beam E 40	M-S (JM-SAP) 250W	13,35	1	40	0,0494
30503**	 Silver body wide beam E 40	M-S (JM-SAP) 400W	14,55	1	40	0,0494
30504	 COSMO silver wide beam	MT (JM) 250W Philips type	12,20	1	40	0,0494
30505	 COSMO silver wide beam	MT (JM) 400W Philips type	13,25	1	40	0,0494
30511	 Silver body medium-wide beam E 40	M-S (JM-SAP) 150W	12,05	1	40	0,0494
30512**	 Silver body medium-wide beam E 40	M-S (JM-SAP) 250W	13,35	1	40	0,0494
30513**	 Silver body medium-wide beam E 40	M-S (JM-SAP) 400W	14,55	1	40	0,0494
30514	 Silver body medium-wide beam E 40	M (JM) 250W Philips type	12,20	1	40	0,0494
30515	 Silver body medium-wide beam E 40	M (JM) 400W Philips type	13,25	1	40	0,0494
30521	 Silver body narrow beam E 40	M-S (JM-SAP) 150W	12,05	1	40	0,0494
30522**	 Silver body narrow beam E 40	M-S (JM-SAP) 250W	13,35	1	40	0,0494
30523**	 Silver body narrow beam E 40	M-S (JM-SAP) 400W	14,55	1	40	0,0494
30524	 Silver body narrow beam E 40	M (JM) 250W Philips type	12,20	1	40	0,0494
30525	 Silver body narrow beam E 40	M (JM) 400W Philips type	13,25	1	40	0,0494
30531	 Silver body wide beam	MD (JM-FC2) 250W	13,35	1	40	0,0494
30532	 Silver body wide beam	SD (SAP-FC2) 250W	13,35	1	40	0,0494
30533	 Silver body wide beam	MD (JM-FC2) 400W	14,55	1	40	0,0494
30534	 Silver body wide beam	SD (SAP-FC2) 400W	14,55	1	40	0,0494

## MACH 5 SYMMETRICAL - INSULATION CL II






CODE	DESCRIPTION	LAMP TYPE	GROSS WEIGHT (kg)	PACKING (pcs.)	PALLET (pcs.)	CBMS
30701	 Silver body wide beam E 40	M-S (JM-SAP) 150W	12,05	1	40	0,0494
30702**	 Silver body wide beam E 40	M-S (JM-SAP) 250W	13,35	1	40	0,0494
30703**	 Silver body wide beam E 40	M-S (JM-SAP) 400W	14,55	1	40	0,0494
30704	 Silver body wide beam E 40	MT (JM) 250W Philips type	12,20	1	40	0,0494
30705	 Silver body wide beam E 40	MT (JM) 400W Philips type	13,25	1	40	0,0494
30711	 Silver body medium-wide beam E 40	M-S (JM-SAP) 150W	12,05	1	40	0,0494
30712**	 Silver body medium-wide beam E 40	M-S (JM-SAP) 250W	13,35	1	40	0,0494
30713**	 Silver body medium-wide beam E 40	M-S (JM-SAP) 400W	14,55	1	40	0,0494
30714	 Silver body medium-wide beam E 40	M (JM) 250W Philips type	12,20	1	40	0,0494
30715	 Silver body medium-wide beam E 40	M (JM) 400W Philips type	13,25	1	40	0,0494
30721	 Silver body narrow beam E 40	M-S (JM-SAP) 150W	12,05	1	40	0,0494
30722**	 Silver body narrow beam E 40	M-S (JM-SAP) 250W	13,35	1	40	0,0494
30723**	 Silver body narrow beam E 40	M-S (JM-SAP) 400W	14,55	1	40	0,0494
30724	 Silver body narrow beam E 40	M (JM) 250W Philips type	12,20	1	40	0,0494
30725	 Silver body narrow beam E 40	M (JM) 400W Philips type	13,25	1	40	0,0494
30731	 Silver body wide beam	MD (JM-FC2) 250W	13,35	1	40	0,0494
30732	 Silver body wide beam	SD (SAP-FC2) 250W	13,35	1	40	0,0494
30733	 Silver body wide beam	MD (JM-FC2) 400W	14,55	1	40	0,0494
30734	 Silver body wide beam	SD (SAP-FC2) 400W	14,55	1	40	0,0494

\* For extra European countries only.















\*\* Suitable for MH lamps Osram type, see lamps technical specifications.

## Products codes

### MACH 5 ASYMMETRICAL - INSULATION CL I

CODE	DESCRIPTION	LAMP TYPE	GROSS WEIGHT (kg)	PACKING (pcs.)	PALLET (pcs.)	CBMS
30607*	Silver body wide beam E 40	150W	9,45	1	40	0,0494
30627*	Silver body narrow beam E 40	150W	9,45	1	40	0,0494
30608*	Silver body wide beam E 40	250W	9,45	1	40	0,0494
30628*	Silver body narrow beam E 40	250W	9,45	1	40	0,0494
30609*	Silver body wide beam E 40	400W	9,45	1	40	0,0494
30629*	Silver body narrow beam E 40	400W	9,45	1	40	0,0494
30601	 Silver body wide beam E 40	M-S (JM-SAP) 150W	12,05	1	40	0,0494
30602**	 Silver body wide beam E 40	M-S (JM-SAP) 250W	13,35	1	40	0,0494
30603**	 Silver body wide beam E 40	M-S (JM-SAP) 400W	14,55	1	40	0,0494
30604	 <b>ASTRO</b> silver wide beam	MT (JM) 250W Philips type	12,20	1	40	0,0494
30605	 <b>ASTRO</b> silver wide beam	MT (JM) 400W Philips type	13,25	1	40	0,0494
30621	 Silver body narrow beam E 40	M-S (JM-SAP) 150W	12,05	1	40	0,0494
30622**	 Silver body narrow beam E 40	M-S (JM-SAP) 250W	13,35	1	40	0,0494
30623**	 Silver body narrow beam E 40	M-S (JM-SAP) 400W	14,55	1	40	0,0494
30624	 Silver body narrow beam E 40	M (JM) 250W Philips type	12,20	1	40	0,0494
30625	 Silver body narrow beam E 40	M (JM) 400W Philips type	13,25	1	40	0,0494
30631	 Silver body wide beam	MD (JM-FC2) 250W	13,35	1	40	0,0494
30632	 Silver body wide beam	SD (SAP-FC2) 250W	13,35	1	40	0,0494
30633	 Silver body wide beam	MD (JM-FC2) 400W	14,55	1	40	0,0494
30634	 Silver body wide beam	SD (SAP-FC2) 400W	14,55	1	40	0,0494

### MACH 5 ASYMMETRICAL - INSULATION CL II

CODE	DESCRIPTION	LAMP TYPE	GROSS WEIGHT (kg)	PACKING (pcs.)	PALLET (pcs.)	CBMS
30801	 Silver body wide beam E 40	M-S (JM-SAP) 150W	12,05	1	40	0,0494
30802**	 Silver body wide beam E 40	M-S (JM-SAP) 250W	13,35	1	40	0,0494
30803**	 Silver body wide beam E 40	M-S (JM-SAP) 400W	14,55	1	40	0,0494
30804	 Silver body wide beam E 40	MT (JM) 250 W Philips type	12,20	1	40	0,0494
30805	 Silver body wide beam E 40	MT (JM) 400 W Philips type	13,25	1	40	0,0494
30821	 Silver body narrow beam E 40	M-S (JM-SAP) 150W	12,05	1	40	0,0494
30822**	 Silver body narrow beam E 40	M-S (JM-SAP) 250W	13,35	1	40	0,0494
30823**	 Silver body narrow beam E 40	M-S (JM-SAP) 400W	14,55	1	40	0,0494
30824	 Silver body narrow beam E 40	M (JM) 250W Philips type	12,20	1	40	0,0494
30825	 Silver body narrow beam E 40	M (JM) 400W Philips type	13,25	1	40	0,0494
30831	 Silver body wide beam	MD (JM-FC2) 250W	13,35	1	40	0,0494
30832	 Silver body wide beam	SD (SAP-FC2) 250W	13,35	1	40	0,0494
30833	 Silver body wide beam	MD (JM-FC2) 400W	14,55	1	40	0,0494
30834	 Silver body wide beam	SD (SAP-FC2) 400W	14,55	1	40	0,0494

\* For extra European countries only.

\*\* Suitable for MH lamps Osram type, see lamps technical specifications.

## Products codes

## MACH 5 CIRCULAR - INSULATION CL I

CODE	DESCRIPTION	LAMP TYPE	GROSS WEIGHT (kg)	PACKING (pcs.)	PALLET (pcs.)	CBMS
<b>30681*</b>	Silver body high intensity reflector E 40	150W	9,45	1	40	0,0494
<b>30682*</b>	Silver body high intensity reflector E 40	250W	9,45	1	40	0,0494
<b>30683*</b>	Silver body high intensity reflector E 40	400W	9,45	1	40	0,0494
<b>30661</b>	<b>CR</b> Silver body high intensity reflector E 40	M-S (JM-SAP) 150W	12,05	1	40	0,0494
<b>30662**</b>	<b>CR</b> Silver body high intensity reflector E 40	M-S (JM-SAP) 250W	13,35	1	40	0,0494
<b>30663**</b>	<b>CR</b> Silver body high intensity reflector E 40	M-S (JM-SAP) 400W	14,55	1	40	0,0494
<b>30664</b>	<b>CR</b> Silver body high intensity reflector E 40	MT (JM) 250W Philips type	12,20	1	40	0,0494
<b>30665</b>	<b>CR</b> Silver body high intensity reflector E 40	MT (JM) 400W Philips type	13,25	1	40	0,0494
<b>30671</b>	<b>CRL</b> Silver body high intensity reflector	MD (JM-FC2) 250W	13,35	1	40	0,0494
<b>30672</b>	<b>CRL</b> Silver body high intensity reflector	SD (SAP-FC2) 250W	13,35	1	40	0,0494
<b>30673</b>	<b>CRL</b> Silver body high intensity reflector	MD (JM-FC2) 400W	14,55	1	40	0,0494
<b>30674</b>	<b>CRL</b> Silver body high intensity reflector	SD (SAP-FC2) 400W	14,55	1	40	0,0494

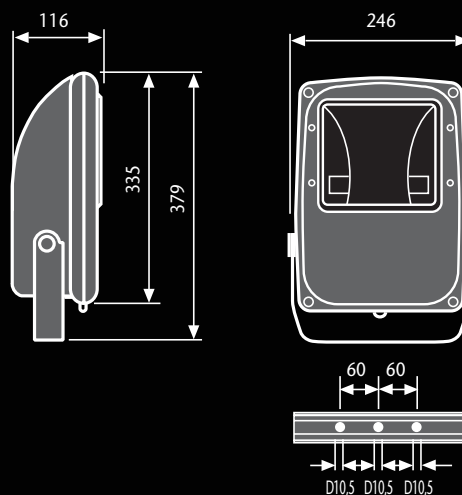
## MACH 5 CIRCULAR - INSULATION CL II

CODE	DESCRIPTION	LAMP TYPE	GROSS WEIGHT (kg)	PACKING (pcs.)	PALLET (pcs.)	CBMS
<b>30861</b>	<b>CR</b> Silver body high intensity reflector E 40	M-S (JM-SAP) 150W	12,05	1	40	0,0494
<b>30862**</b>	<b>CR</b> Silver body high intensity reflector E 40	M-S (JM-SAP) 250W	13,35	1	40	0,0494
<b>30863**</b>	<b>CR</b> Silver body high intensity reflector E 40	M-S (JM-SAP) 400W	14,55	1	40	0,0494
<b>30864</b>	<b>CR</b> Silver body high intensity reflector E 40	MT (JM) 250W Philips type	12,20	1	40	0,0494
<b>30865</b>	<b>CR</b> Silver body high intensity reflector E 40	MT (JM) 400W Philips type	13,25	1	40	0,0494
<b>30871</b>	<b>CRL</b> Silver body high intensity reflector	MD (JM-FC2) 250W	13,35	1	40	0,0494
<b>30872</b>	<b>CRL</b> Silver body high intensity reflector	SD (SAP-FC2) 250W	13,35	1	40	0,0494
<b>30873</b>	<b>CRL</b> Silver body high intensity reflector	MD (JM-FC2) 400W	14,55	1	40	0,0494
<b>30874</b>	<b>CRL</b> Silver body high intensity reflector	SD (SAP-FC2) 400W	14,55	1	40	0,0494

\* For extra European countries only.

\*\* Suitable for MH lamps Osram type, see lamps technical specifications.





## Mach 3: starring light

The Mach 3 floodlight has been designed to offer the ultimate in technical prowess, especially with regard to new, high-performing sources of light.

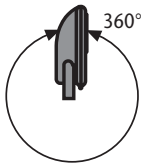
For metal halide or high pressure sodium lamps 150W power RX7s and G12 lampholder in I class; and for 70W lamps RX7s lampholder in II class.

In addition to the conventional warm or cold metal halide lamps, these floodlights are suitable to the innovative lamps with ceramic discharge tube. These luminous sources have excellent lighting characteristics as regards to constancy, colours and luminous efficiency during the entire life of the lamp.



# Technical features of Mach 3

## Aiming



## Description

### CHARACTERISTICS

- Die cast aluminium body coated with polyester powders in black colour, titanium, silver and white on request. Reflector made of highly pure aluminium sheet, polished and oxidized.
- The front glass is non-breaking type, sealed to the cover. All the gaskets are in non degenerative silicon rubber.
- Bracket made of galvanized painted steel with index for vertical orientation.
- The control gear plate, made out of galvanized steel sheet.

All the electrical components are produced according to the Italian Quality Standards for power 230V - 50Hz. All ballasts are complete with thermal protector.

The projector is manufactured according to EN 60598/1 rules.

### OPTICAL SYSTEM

- The **symmetrical** version with two different reflectors:
  - Peened reflector for medium - wide beam.
  - Specular reflector for medium - narrow beam.
- The **asymmetrical** optics improve considerably the projector's performance and in the same way reduce the glare. The asymmetrical version with two different reflectors:
  - Peened reflector for mediumwide beam.
  - Specular reflector for mediumnarrow beam.
- **Circular** high intensity reflector with baffle to avoid the direct glare. The circular optic with medium-narrow beam is completed with baffle to avoid the direct glare.

Wind exposed surface = 0,075 m<sup>2</sup>

### LAMPS



MD (JM-TS) 70-150W RX7s

SD (SAP-TS) 70-150W RX7s

MT (JM) 70-150W - G12

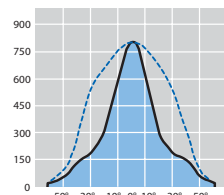
### COLOURS



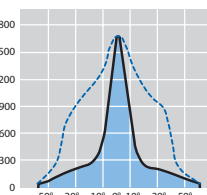
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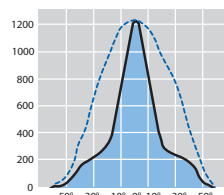
Symmetrical



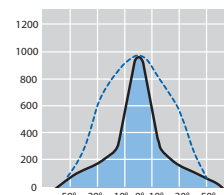
MD (JM-TS) 150W RX7s  
MACH 3 Symmetrical Wide



MD (JM-TS) 150W RX7s  
MACH 3 Symmetrical Narrow



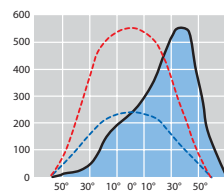
SD (SAP-TS) 70W RX7s  
MACH 3 Symmetrical Wide CL II



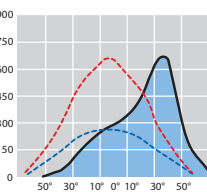
MD (JM-TS) 70W RX7s  
MACH 3 Symmetrical Wide CL II



Asymmetrical



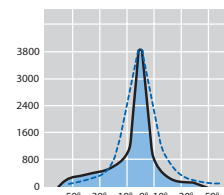
MD (JM-TS) 150W RX7s  
MACH 3 Asymmetrical Wide  
Ø max 40°



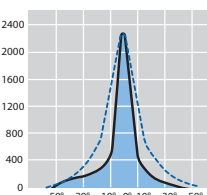
SD (SAP-TS) 150W RX7s  
MACH 3 Asymmetrical Wide  
Ø max 40°



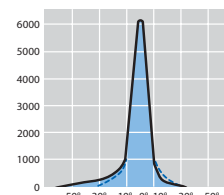
Circular



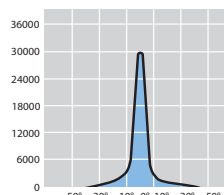
MD (JM-TS) 150W RX7s  
MACH 3 Circular



SD (SAP-TS) 150W RX7s  
MACH 3 Circular



MD (JM-TS) 70W RX7s  
MACH 3 Circular CL II



MT (JM-T) 150W G12  
MACH 3 Circular High intensity

## Accessories and spare parts



**60099 - 60101 - 60108**  
Bracket  
Ideal for lighting shop-windows.  
Zinc plated and steel coated.



**60255**  
Steel protection grille.  
Zinc plated and steel coated in  
black colour.



**60256**  
Protection louvre. Stainless steel  
coated in black colour.



**60257**  
Circular louvre. Stainless steel  
coated in black colour.



**60270-60271-60272-60273**



**60266-60267-60268-60269**  
Stainless louvre for the  
asymmetrical optic.



**60253-60254-60264-60265**  
Stainless louvre for the  
symmetrical optic.



**60280**



**60281**



**60282**

CODE	DESCRIPTION	GROSS WEIGHT (kg)	PACKING (pcs.)	COLOUR	CBMS
<b>WALL SUPPORTS</b>					
<b>60270</b>	Complete of floodlight fixing bracket			Black	-
<b>60271</b>	Complete of floodlight fixing bracket			Silver	-
<b>60272</b>	Complete of floodlight fixing bracket			Titanium	-
<b>60273</b>	Complete of floodlight fixing bracket			White	-
<b>POLE SUPPORTS</b>					
<b>60280</b>	For 1 floodlight Ø pole 60 mm.			Silver	-
<b>60281</b>	For 2 floodlight Ø pole 60 mm.			Silver	-
<b>60282</b>	For 3 floodlight Ø pole 60 mm.			Silver	-
<b>60101</b>	Bracket 600 mm.	2,70	1	Silver	-
<b>60099</b>	Bracket 600 mm.	2,70	1	Black	-
<b>60108</b>	Bracket 1.000 mm.	3,93	1	Black	-
<b>60255</b>	Grille	0,160	1	Black	-
<b>60256</b>	Louvre	0,280	1	Black	0,0013
<b>60253</b>	Anti-glare louvre for symmetrical	0,280	1	Black	0,0018
<b>60254</b>	Anti-glare louvre for symmetrical	0,280	1	Silver	0,0018
<b>60264</b>	Anti-glare louvre for symmetrical	0,280	1	Titanium	0,0018
<b>60265</b>	Anti-glare louvre for symmetrical	0,280	1	White	0,0018
<b>60266</b>	Anti-glare louvre for asymmetrical	0,250	1	Black	0,0023
<b>60267</b>	Anti-glare louvre for asymmetrical	0,250	1	Silver	0,0023
<b>60268</b>	Anti-glare louvre for asymmetrical	0,250	1	Titanium	0,0023
<b>60269</b>	Anti-glare louvre for asymmetrical	0,250	1	White	0,0023
<b>08129</b>	Glass	0,340			-
<b>05663</b>	Lamp SD (SAP-TS) 150W	-	-		-
<b>09096</b>	Ceramic discharge tube lamp RX7s MD 150W 3000°K				
<b>09098</b>	Ceramic discharge tube lamp RX7s MD 150W 4200°K				
<b>07649</b>	Ceramic discharge tube lamp G12 JM 150W 3000°K				
<b>09100</b>	Ceramic discharge tube lamp G12 JM 150W 4200°K				

## Products codes

## MACH 3 SYMMETRICAL - INSULATION CL I

CODE	DESCRIPTION	LAMP TYPE	GROSS WEIGHT (kg)	PACKING (pcs.)	PALLET (pcs.)	CBMS
50903	<b>CRL NIK</b> peened - Black	MD (JM-TS) 150W 3.000 K	5,60	1	104	0,0158
50904	<b>CRL NIK</b> peened - Silver	MD (JM-TS) 150W 3.000 K	5,60	1	104	0,0158
50905	<b>CRL NIK</b> peened - Titanium	MD (JM-TS) 150W 3.000 K	5,60	1	104	0,0158
52606	<b>CRL NIK</b> peened - White	MD (JM-TS) 150W 3.000 K	5,60	1	104	0,0158
50906	<b>CRL NIK</b> specular - Black	MD (JM-TS) 150W 3.000 K	5,60	1	104	0,0158
50907	<b>CRL NIK</b> specular - Silver	MD (JM-TS) 150W 3.000 K	5,60	1	104	0,0158
50908	<b>CRL NIK</b> specular - Titanium	MD (JM-TS) 150W 3.000 K	5,60	1	104	0,0158
52600	<b>CRL NIK</b> peened - Black	MD (JM-TS) 150W 4.200 K	5,60	1	104	0,0158
52601	<b>CRL NIK</b> peened - Silver	MD (JM-TS) 150W 4.200 K	5,60	1	104	0,0158
52602	<b>CRL NIK</b> peened - Titanium	MD (JM-TS) 150W 4.200 K	5,60	1	104	0,0158
52607	<b>CRL NIK</b> peened - White	MD (JM-TS) 150W 4.200 K	5,60	1	104	0,0158
52650	<b>CRL NIK</b> peened Black - G12	MT(JM) 150W 3000°K	5,60	1	104	0,0158
52651	<b>CRL NIK</b> peened Silver - G12	MT(JM) 150W 3000°K	5,60	1	104	0,0158
52623	<b>CR</b> Body peened - Black	MD (JM-TS) - SD (SAP-TS) 150W	5,60	1	104	0,0158
52624	<b>CR</b> Body peened - Silver	MD (JM-TS) - SD (SAP-TS) 150W	5,60	1	104	0,0158
52625	<b>CR</b> Body peened - Titanium	MD (JM-TS) - SD (SAP-TS) 150W	5,60	1	104	0,0158

## MACH 3 SYMMETRICAL - INSULATION CL II

52800	<b>CR</b> Body peened - Black	MD (JM-TS) - SD (SAP-TS) 70W	5,30	1	104	0,0158
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## MACH 3 ASYMMETRICAL - INSULATION CL I

CODE	DESCRIPTION	LAMP TYPE	GROSS WEIGHT (kg)	PACKING (pcs.)	PALLET (pcs.)	CBMS
50943	<b>CRL LEM</b> peened - Black	MD (JM-TS) 150W 3.000 K	5,60	1	104	0,0158
50944	<b>CRL LEM</b> peened - Silver	MD (JM-TS) 150W 3.000 K	5,60	1	104	0,0158
50945	<b>CRL LEM</b> peened - Titanium	MD (JM-TS) 150W 3.000 K	5,60	1	104	0,0158
52608	<b>CRL LEM</b> peened - White	MD (JM-TS) 150W 3.000 K	5,60	1	104	0,0158
50946	<b>CRL LEM</b> riflettore speculare - Black	MD (JM-TS) 150W 3.000 K	5,60	1	104	0,0158
50947	<b>CRL LEM</b> riflettore speculare - Silver	MD (JM-TS) 150W 3.000 K	5,60	1	104	0,0158
50948	<b>CRL LEM</b> riflettore speculare - Titanium	MD (JM-TS) 150W 3.000 K	5,60	1	104	0,0158
52603	<b>CRL LEM</b> peened - Black	MD (JM-TS) 150W 4.200 K	5,60	1	104	0,0158
52604	<b>CRL LEM</b> peened - Silver	MD (JM-TS) 150W 4.200 K	5,60	1	104	0,0158
52605	<b>CRL LEM</b> peened - Titanium	MD (JM-TS) 150W 4.200 K	5,60	1	104	0,0158
52609	<b>CRL LEM</b> peened - White	MD (JM-TS) 150W 4.200 K	5,60	1	104	0,0158
52654	<b>CRL LEM</b> peened Black - G12	MT(JM) 150W 3000°K	5,60	1	104	0,0158
52655	<b>CRL LEM</b> peened Silver - G12	MT(JM) 150W 3000°K	5,60	1	104	0,0158
52620	<b>CR</b> Body peened - Black	MD (JM-TS) - SD (SAP-TS) 150W	5,60	1	104	0,0158
52621	<b>CR</b> Body peened - Silver	MD (JM-TS) - SD (SAP-TS) 150W	5,60	1	104	0,0158
52622	<b>CR</b> Body peened - Titanium	MD (JM-TS) - SD (SAP-TS) 150W	5,60	1	104	0,0158

## MACH 3 ASYMMETRICAL - INSULATION CL II

52802	<b>CR</b> Body peened - Black	MD (JM-TS) - SD (SAP-TS) 70W	5,30	1	104	0,0158
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## MACH 3 CIRCULAR - INSULATION CL I

CODE	DESCRIPTION	LAMP TYPE	GROSS WEIGHT (kg)	PACKING (pcs.)	PALLET (pcs.)	CBMS
50963	<b>CRL BOB</b> high intensity reflector Black - RX7s	MD (JM-TS) 150W 3.000 K	5,60	1	104	0,0158
50964	<b>CRL BOB</b> high intensity reflector Silver - RX7s	MD (JM-TS) 150W 3.000 K	5,60	1	104	0,0158
50965	<b>CRL BOB</b> high intensity reflector Titanium - RX7s	MD (JM-TS) 150W 3.000 K	5,60	1	104	0,0158
50966	<b>CRL BOB</b> high intensity reflector Black - G12	MT (JM) 150W 3.000 K	5,60	1	104	0,0158
50967	<b>CRL BOB</b> high intensity reflector Silver - G12	MT (JM) 150W 3.000 K	5,60	1	104	0,0158
50968	<b>CRL BOB</b> high intensity reflector Titanium - G12	MT (JM) 150W 3.000 K	5,60	1	104	0,0158
50969	<b>CRL BOB</b> high intensity reflector White - G12	MT (JM) 150W 3.000 K	5,60	1	104	0,0158
52658	<b>CRL BOB</b> high intensity reflector Black - G12	MT(JM) 150W 3000°K	5,60	1	104	0,0158
52659	<b>CRL BOB</b> high intensity reflector Silver - G12	MT(JM) 150W 3000°K	5,60	1	104	0,0158
52666	<b>CRL BOB</b> high intensity reflector Black - RX7s	MD(JM-TS) 150W 3000°K	5,60	1	104	0,0158
52667	<b>CRL BOB</b> high intensity reflector Silver - RX7s	MD(JM-TS) 150W 3000°K	5,60	1	104	0,0158

## MACH 3 CIRCULAR - INSULATION CL II

52804	<b>CR</b> Body high intensity reflector - Black - RX7s	MD (JM-TS) - SD (SAP-TS) 70W	5,30	1	104	0,0158
52805	<b>CR</b> Body high intensity reflector - Black - G12	MT (JM) 70W	5,30	1	104	0,0158

# Technical features of Mach 3 Flash

## Description



RGB



White

### CHARACTERISTICS

- Body in die-cast aluminium
- Adjustable positioning
- Graduated position indicator
- Meets standard CE.
- Luminous source 36 led luxeon
- Luminous source 36 led white light
- Power: 1W each
- Declared lamp life: 100.000 hours.
- Cooling: Natural convective cooling.
- Step zoom: Manual adjustment of beam angle for spot, medium and flood position.
- Several devices offer different zoom angles.
- Adjustable beam device

The unit is designed to utilise a range of lenses and front filters to adjust the projection angles. Special filters, alongside the standard range, are available on request.

### MACH 3 FLASH RGB

The following functions are remotely controllable:

- switching on and off
- electronic dimming for each colours (red, green, blue), complete adjustment of light output from 0 to 100%.
- electronic strobe variable from 0 to 100 Hz.
- three internal colour changing crossfade programs with user definable variable rate.
- Possibility of memorizing up to 4 scenes
- Led mains supply
- Constant current power supply
- Mounting and fixing in any position
- Mains supply 90-250 V 50-60 Hz autosensing 0,5 A - 230V 1,2 A - 115V
- Available versions: Mach 3 Flash RGB silver colour

### MACH 3 FLASH WHITE

- Lighting flux adjustable with built-in manual power variator.
- Led mains supply
- Constant current power supply.
- Mounting and fixing in any position
- Mains supply 90-250 V 50-60 Hz autosensing 0,5 A - 230V 1,2 A - 115V
- Available versions: Mach 3 Flash White silver colour

## Products codes

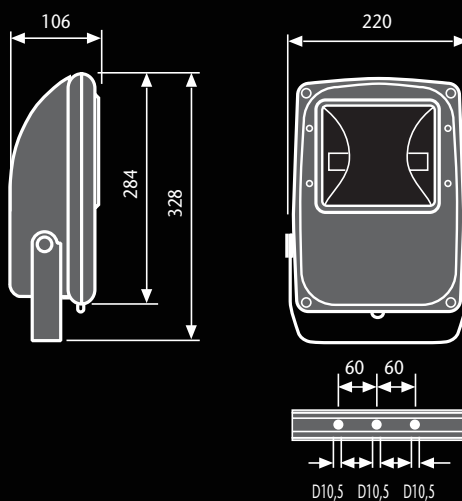
### MACH 3 FLASH RGB - INSULATION CL I

CODE	DESCRIPTION	GROSS WEIGHT (kg)	PACKING (pcs.)	CBMS
<b>50915</b>	FLASH RGB lux beam 2x70° Silver colour	4,90	1	0,0356
<b>50918</b>	Remote control FLASH RGB	0,20	1	0,003
<b>50920</b>	Visual field with lens 2x12°	0,45	1	0,003
<b>50927</b>	Visual field with lens 2x30°	0,45	1	0,003

### MACH 3 FLASH WHITE - INSULATION CL I

CODE	DESCRIPTION	GROSS WEIGHT (kg)	PACKING (pcs.)	CBMS
<b>50910</b>	WHITE lux beam 2x70° Silver colour	4,80	1	0,0356
<b>50920</b>	Visual field with lens 2x12°	0,45	1	0,003
<b>50927</b>	Visual field with lens 2x30°	0,45	1	0,003





## Mach 2: light as emotion

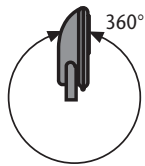
The Mach 2 floodlight stands out for its versatile, cutting edge structure. It is addressed to a whole range of uses, especially inside, thanks to its exceptional design, size and compactness.

For metal halide or high pressure sodium double ended lamps, as well for the new ceramic and metal halide G12 lampholder lamps. Power 35W et 70W.



# Technical features of Mach 2

## Aiming



## Description

### CHARACTERISTICS

- Die cast aluminium body coated with polyester powders in black colour, titanium, silver and white on request.
- Reflector made of highly pure aluminium sheet, polished and oxidized.
- The front glass is non-breaking type, sealed to the cover. All the gaskets are in non degenerative silicon rubber.
- Bracket made of galvanized painted steel with index for vertical orientation.
- The control gear plate, made out of galvanized steel sheet.

All the electrical components are produced according to the Italian Quality Standards for power 230V - 50Hz.

All ballasts are complete with thermal protector. The projector is manufactured according to En 60598/1 rules.

### OPTICAL SYSTEM

- The **symmetrical** version with two different reflectors:
  - Peened reflector for mediumwide beam.
  - Specular reflector for mediumnarrow beam.
- The **asymmetrical** optics improve considerably the projector's performance and in the same way reduce the glare. The asymmetrical version with two different reflectors:
  - Peened reflector for mediumwide beam.
  - Specular reflector for mediumnarrow beam.
- The **circular** floodlight is equipped with two different reflectors:
  - glazed with medium-narrow beam completed with baffle to avoid the direct glare
  - super bright with narrow beam at highest intensity

Wind exposed surface = 0,056 m<sup>2</sup>

### LAMPS



MD (JM-TS) 70W RX7s

SD (SAP-TS) 70W RX7s

MT (JM) 35-70W G12

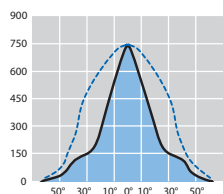
### COLOURS



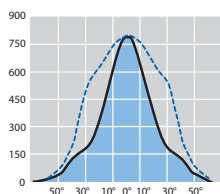
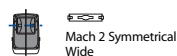
## Photometric data



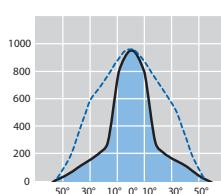
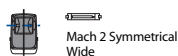
Symmetrical



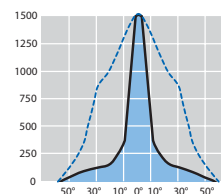
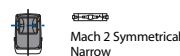
MD (JM-TS) 70W RX7s



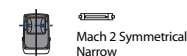
SD (SAP-TS) 70W RX7s



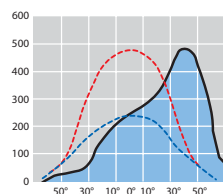
MD (JM-TS) 70W RX7s



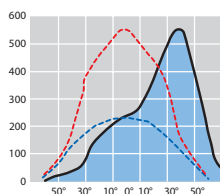
SD (SAP-TS) 70W RX7s



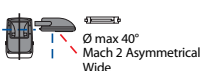
Asymmetrical



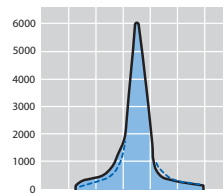
MD (JM-TS) 70W RX7s



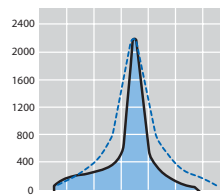
SD (SAP-TS) 70W RX7s



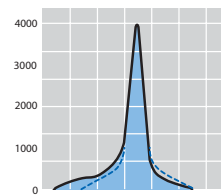
Circular



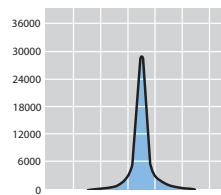
MD (JM-TS) 70W RX7s



SD (SAP-TS) 70W RX7s



MT (JM-T) 35W G12



MT (JM-T) 70W G12



## Accessories and spare parts



**60099 - 60101 - 60108**  
Bracket  
Ideal for lighting shop-windows.  
Zinc plated and steel coated.



**60250**  
Steel protection grille.  
Zinc plated and steel coated in  
black colour.



**60251**  
Protection louvre. Stainless steel  
coated in black colour.



**60252**  
Circular louvre. Stainless steel  
coated in black colour.



**60260-60261-60262-60263**



**60225-60226-60227-60228**  
Stainless steel louvre for the  
asymmetrical optic.



**60221-60222-60223-60224**  
Stainless steel louvre for the  
symmetrical optic.



**60280**



**60281**



**60282**

CODE	DESCRIPTION	GROSS WEIGHT (kg)	PACKING (pcs.)	COLOUR	CBMS
<b>WALL SUPPORTS</b>					
<b>60260</b>	Complete of floodlight fixing bracket			Black	-
<b>60261</b>	Complete of floodlight fixing bracket			Silver	-
<b>60262</b>	Complete of floodlight fixing bracket			Titanium	-
<b>60263</b>	Complete of floodlight fixing bracket			White	-
<b>POLE SUPPORTS</b>					
<b>60280</b>	For 1 floodlight Ø pole 60 mm.			Silver	-
<b>60281</b>	For 1 floodlight Ø pole 60 mm.			Silver	-
<b>60282</b>	For 1 floodlight Ø pole 60 mm.			Silver	-
<b>60101</b>	Bracket 600 mm.	2,70	1	Silver	-
<b>60099</b>	Bracket 600 mm.	2,70	1	Black	-
<b>60108</b>	Bracket 1.000 mm.	3,93	1	Black	-
<b>60250</b>	Grille	0,130	1	Black	-
<b>60251</b>	Louvre	0,250	1	Black	0,0010
<b>60252</b>	Circular louvre	0,380	1	Black	0,0009
<b>60221</b>	Anti-glare louvre for symmetrical	0,240	1	Black	0,0129
<b>60222</b>	Anti-glare louvre for symmetrical	0,240	1	Silver	0,0129
<b>60223</b>	Anti-glare louvre for symmetrical	0,240	1	Titanium	0,0129
<b>60224</b>	Anti-glare louvre for symmetrical	0,240	1	White	0,0129
<b>60225</b>	Anti-glare louvre for asymmetrical	0,240	1	Black	0,0161
<b>60226</b>	Anti-glare louvre for asymmetrical	0,240	1	Silver	0,0161
<b>60227</b>	Anti-glare louvre for asymmetrical	0,240	1	Titanium	0,0161
<b>60228</b>	Anti-glare louvre for asymmetrical	0,240	1	White	0,0161
<b>08107</b>	Glass	0,250			-
<b>04407</b>	Lamp SD (SAP-TS) 70W	-	-		-
<b>08821</b>	Ceramic discharge tube lamp G12 JM 150W 3000°K				
<b>09095</b>	Ceramic discharge tube lamp RX7s MD 70W 3000°K				
<b>09097</b>	Ceramic discharge tube lamp RX7s MD 70W 4200°K				
<b>09099</b>	Ceramic discharge tube lamp G12 JM 70W 4200°K				
<b>09345</b>	Ceramic discharge tube lamp G12 JM 35W 3000°K				

## Products codes

## MACH 2 SYMMETRICAL - INSULATION CLI

CODE	DESCRIPTION	LAMP TYPE	GROSS WEIGHT (kg)	PACKING (pcs.)	PALLET (pcs.)	CBMS
50923	<b>CRL</b> <b>MAX</b> peened - Black	MD (JM-TS) 70W 3.000 K	4,10	1	140	0,0115
50924	<b>CRL</b> <b>MAX</b> peened - Silver	MD (JM-TS) 70W 3.000 K	4,10	1	140	0,0115
50925	<b>CRL</b> <b>MAX</b> peened - Titanium	MD (JM-TS) 70W 3.000 K	4,10	1	140	0,0115
52506	<b>CRL</b> <b>MAX</b> peened - White	MD (JM-TS) 70W 3.000 K	4,10	1	140	0,0115
50933	<b>CRL</b> <b>MAX</b> specular - Black	MD (JM-TS) 70W 3.000 K	4,10	1	140	0,0115
50934	<b>CRL</b> <b>MAX</b> specular - Silver	MD (JM-TS) 70W 3.000 K	4,10	1	140	0,0115
50935	<b>CRL</b> <b>MAX</b> specular - Titanium	MD (JM-TS) 70W 3.000 K	4,10	1	140	0,0115
52500	<b>CRL</b> <b>MAX</b> peened - Black	MD (JM-TS) 70W 4.200 K	4,10	1	140	0,0115
52501	<b>CRL</b> <b>MAX</b> peened - Silver	MD (JM-TS) 70W 4.200 K	4,10	1	140	0,0115
52502	<b>CRL</b> <b>MAX</b> peened - Titanium	MD (JM-TS) 70W 4.200 K	4,10	1	140	0,0115
52507	<b>CRL</b> <b>MAX</b> peened - White	MD (JM-TS) 70W 4.200 K	4,10	1	140	0,0115
52445	<b>CRL</b> <b>MAX</b> peened Black - G12	MT(JM) 35W 3000°K	3,90	1	140	0,0115
52446	<b>CRL</b> <b>MAX</b> peened Silver - G12	MT(JM) 35W 3000°K	3,90	1	140	0,0115
52449	<b>CRL</b> <b>MAX</b> peened Black - G12	MT(JM) 70W 3000°K	3,90	1	140	0,0115
52454	<b>CRL</b> <b>MAX</b> peened Silver - G12	MT(JM) 70W 3000°K	3,90	1	140	0,0115
52521	<b>CR</b> Body peened - Black	MD (JM-TS) - SD (SAP-TS) 70W	4,03	1	140	0,0115
52522	<b>CR</b> Body peened - Silver	MD (JM-TS) - SD (SAP-TS) 70W	4,03	1	140	0,0115
52523	<b>CR</b> Body peened - Titanium	MD (JM-TS) - SD (SAP-TS) 70W	4,03	1	140	0,0115

## MACH 2 ASYMMETRICAL - INSULATION CLI

CODE	DESCRIPTION	LAMP TYPE	GROSS WEIGHT (kg)	PACKING (pcs.)	PALLET (pcs.)	CBMS
50953	<b>CRL</b> <b>ZAR</b> peened - Black	MD (JM-TS) 70W 3.000 K	4,10	1	140	0,0115
50954	<b>CRL</b> <b>ZAR</b> peened - Silver	MD (JM-TS) 70W 3.000 K	4,10	1	140	0,0115
50955	<b>CRL</b> <b>ZAR</b> peened - Titanium	MD (JM-TS) 70W 3.000 K	4,10	1	140	0,0115
52508	<b>CRL</b> <b>ZAR</b> peened - White	MD (JM-TS) 70W 3.000 K	4,10	1	140	0,0115
50981	<b>CRL</b> <b>ZAR</b> specular - Black	MD (JM-TS) 70W 3.000 K	4,10	1	140	0,0115
50982	<b>CRL</b> <b>ZAR</b> specular - Silver	MD (JM-TS) 70W 3.000 K	4,10	1	140	0,0115
50983	<b>CRL</b> <b>ZAR</b> specular - Titanium	MD (JM-TS) 70W 3.000 K	4,10	1	140	0,0115
52503	<b>CRL</b> <b>ZAR</b> peened - Black	MD (JM-TS) 70W 4.200 K	4,10	1	140	0,0115
52504	<b>CRL</b> <b>ZAR</b> peened - Silver	MD (JM-TS) 70W 4.200 K	4,10	1	140	0,0115
52505	<b>CRL</b> <b>ZAR</b> peened - Titanium	MD (JM-TS) 70W 4.200 K	4,10	1	140	0,0115
52509	<b>CRL</b> <b>ZAR</b> peened - White	MD (JM-TS) 70W 4.200 K	4,10	1	140	0,0115
52458	<b>CRL</b> <b>ZAR</b> peened Black - G12	MT(JM) 35W 3000°K	3,90	1	140	0,0115
52459	<b>CRL</b> <b>ZAR</b> peened Silver - G12	MT(JM) 35W 3000°K	3,90	1	140	0,0115
52463	<b>CRL</b> <b>ZAR</b> peened Black - G12	MT(JM) 70W 3000°K	3,90	1	140	0,0115
52464	<b>CRL</b> <b>ZAR</b> peened Silver - G12	MT(JM) 70W 3000°K	3,90	1	140	0,0115
52524	<b>CR</b> Body peened - Black	MD (JM-TS) - SD (SAP-TS) 70W	4,03	1	140	0,0115
52525	<b>CR</b> Body peened - Silver	MD (JM-TS) - SD (SAP-TS) 70W	4,03	1	140	0,0115
52526	<b>CR</b> Body peened - Titanium	MD (JM-TS) - SD (SAP-TS) 70W	4,03	1	140	0,0115

## MACH 2 CIRCULAR - INSULATION CLI

CODE	DESCRIPTION	LAMP TYPE	GROSS WEIGHT (kg)	PACKING (pcs.)	PALLET (pcs.)	CBMS
50973	<b>CRL</b> <b>LEO</b> circular - Black - RX7s	MD (JM-TS) 70W 3.000 K	4,10	1	140	0,0115
50974	<b>CRL</b> <b>LEO</b> circular - Silver - RX7s	MD (JM-TS) 70W 3.000 K	4,10	1	140	0,0115
50975	<b>CRL</b> <b>LEO</b> circular - Titanium - RX7s	MD (JM-TS) 70W 3.000 K	4,10	1	140	0,0115
50976	<b>CRL</b> <b>LEO</b> circular - Black - G12	MT (JM) 70W 3.000 K	4,10	1	140	0,0115
50977	<b>CRL</b> <b>LEO</b> circular - Silver - G12	MT (JM) 70W 3.000 K	4,10	1	140	0,0115
50978	<b>CRL</b> <b>LEO</b> circular - Titanium - G12	MT (JM) 70W 3.000 K	4,10	1	140	0,0115
50970	<b>CRL</b> <b>LEO</b> circular - White - G12	MT (JM) 70W 3.000 K	4,10	1	140	0,0115
50985	<b>CRL</b> <b>LEO</b> circular - Black - G12	MT (JM) 35W	3,90	1	140	0,0115
52491	<b>CRL</b> <b>MAX</b> high intensity refl. Black - G12	MT(JM) 35W 3000°K	3,90	1	140	0,0115
52492	<b>CRL</b> <b>MAX</b> high intensity refl. Silver - G12	MT(JM) 35W 3000°K	3,90	1	140	0,0115
52495	<b>CRL</b> <b>MAX</b> high intensity refl. Black - G12	MT(JM) 70W 3000°K	3,90	1	140	0,0115
52496	<b>CRL</b> <b>MAX</b> high intensity refl. Silver - G12	MT(JM) 70W 3000°K	3,90	1	140	0,0115
52566	<b>CRL</b> <b>MAX</b> high intensity refl. Black - RX7s	MD(JM-TS) 70W 3000°K	3,90	1	140	0,0115
52567	<b>CRL</b> <b>MAX</b> high intensity refl. Silver - RX7s	MD(JM-TS) 70W 3000°K	3,90	1	140	0,0115

# Coloured Glass Screen

Mach 2, Mach 3 and Mach 5 floodlights with circular optics can be used for accent and effect lighting of fronts of buildings and monuments, by fitting the fixtures with dichroic filters or glass elements coloured with paste, available in blue, red, green and yellow.

To guarantee improved light diffusion, a new set of circular optics have been designed with special metallization ensuring medium light diffusion, specifically for lighting the base of buildings.

The glass elements coloured with paste are tempered during the production process when powders are added and mixed to bestow the glass with the required colour.

The dichroic filter is tempered glass on which ultra-thin layers of dielectric materials are applied during a highly specific and complex production process to let certain wavelengths of light pass through and colour the filter in a precise manner.

Dichroic filters let through considerably more light than the glass elements coloured with paste. In certain, very specific applications, the dichroic filter can cause slight chromatic variations.

The paste glass elements and dichroic filters are fitted in a frame made of AISI 304 stainless steel with black polyester powder coating that can be quickly and easily attached to the body of the floodlights.

The frame for dichroic filters also comes with a screen.

Once the frame with coloured glass or filter is fitted, the appliance can light up a building's walls and create beautiful and special chromatic effects.

The table below lists the codes of the circular floodlights that can be fitted with the glasses and dichroic filters. This is in the interest of clarity and to avoid the use of inappropriate optics.

## SUITABLE CIRCULAR FLOODLIGHTS - INSULATION CL I

CODE	DESCRIPTION	LAMP TYPE	GROSS WEIGHT (kg)	PACKING (pcs.)	PALLET (pcs.)	CBMS
50974	Mach 2 LEO Silver <b>[CRL]</b> – RX7-s	MD (JM-TS) 70W 3 000 K	4,10	1	140	0,0115
50977	Mach 2 LEO Silver <b>[CRL]</b> – G12	MT (JM) 70W 3 000 K	4,10	1	140	0,0115
52575	Mach 2 LEO medium wide beam Silver <b>[CRL]</b> – RX7-s	MD (JM-TS) 70W 3 000 K	4,10	1	140	0,0115
52577	Mach 2 LEO medium wide beam Silver <b>[CRL]</b> – G12	MT (JM) 70W 3 000 K	4,10	1	140	0,0115
50964	Mach 3 BOB Silver <b>[CRL]</b> – RX7-s	MD (JM-TS) 150W 3 000 K	5,60	1	104	0,0158
50967	Mach 3 BOB Silver <b>[CRL]</b> – G12	MT (JM) 150W 3 000 K	5,60	1	104	0,0158
52677	Mach 3 BOB medium wide beam Silver <b>[CRL]</b> – RX7-s	MD (JM-TS) 150W 3 000 K	5,60	1	104	0,0158
52679	Mach 3 BOB medium wide beam Silver <b>[CRL]</b> – G12	MT (JM) 150W 3 000 K	5,60	1	104	0,0158
30662	Mach 5 circular high intensity Silver <b>[CR]</b> – E40	MT (JM) 250W Osram type	13,35	1	40	0,0494
30667	Mach 5 circular medium intensity Silver <b>[CR]</b> – E40	MT (JM) 250W Osram type	13,35	1	40	0,0494

## SCHERMI COLORATI

CODE	DESCRIPTION	LAMP TYPE	GROSS WEIGHT (kg)	PACKING (pcs.)	PALLET (pcs.)	CBMS
<b>FRAMES FOR COLOURED GLASS SCREEN MACH 2</b>						
60040	Black colour – Blue dichroic filter	MT (JM) 70W-MD (JM-TS) 70W	0.75	1	-	0.0033
60041	Black colour – Red dichroic filter	MT (JM) 70W-MD (JM-TS) 70W	0.75	1	-	0.0033
60042	Black colour – Green dichroic filter	MT (JM) 70W-MD (JM-TS) 70W	0.75	1	-	0.0033
60043	Black colour – Yellow dichroic filter	MT (JM) 70W-MD (JM-TS) 70W	0.75	1	-	0.0033
60045	Black colour – Blue tempered glass	MT (JM) 70W-MD (JM-TS) 70W	0.40	1	-	0.0029
60046	Black colour – Red tempered glass	MT (JM) 70W-MD (JM-TS) 70W	0.40	1	-	0.0029
60047	Black colour – Green tempered glass	MT (JM) 70W-MD (JM-TS) 70W	0.40	1	-	0.0029
<b>FRAMES FOR COLOURED GLASS SCREEN MACH 3</b>						
60371	Black colour – Blue dichroic filter	MT (JM) 150W-MD (JM-TS) 150W	1.00	1	-	0.0051
60372	Black colour – Red dichroic filter	MT (JM) 150W-MD (JM-TS) 150W	1.00	1	-	0.0051
60373	Black colour – Green dichroic filter	MT (JM) 150W-MD (JM-TS) 150W	1.00	1	-	0.0051
60374	Black colour – Yellow dichroic filter	MT (JM) 150W-MD (JM-TS) 150W	1.00	1	-	0.0051
60375	Black colour – Blue tempered glass	MT (JM) 150W-MD (JM-TS) 150W	0.52	1	-	0.0029
60377	Black colour – Red tempered glass	MT (JM) 150W-MD (JM-TS) 150W	0.52	1	-	0.0029
60378	Black colour – Green tempered glass	MT (JM) 150W-MD (JM-TS) 150W	0.52	1	-	0.0029
<b>FRAMES FOR COLOURED GLASS SCREEN MACH 5</b>						
60420	Black colour – Blue dichroic filter	MT (JM) 250W	3.00	1	-	0.0238
60421	Black colour – Red dichroic filter	MT (JM) 250W	3.00	1	-	0.0238
60422	Black colour – Green dichroic filter	MT (JM) 250W	3.00	1	-	0.0238
60423	Black colour – Yellow dichroic filter	MT (JM) 250W	3.00	1	-	0.0238
60425	Black colour – Blue tempered glass	MT (JM) 250W	1.30	1	-	0.0091
60426	Black colour – Red tempered glass	MT (JM) 250W	1.30	1	-	0.0091
60427	Black colour – Green tempered glass	MT (JM) 250W	1.30	1	-	0.0091

## Trasmission percentage



Mach 2



Mach 3



Mach 5



Fixture	Screen	Transmission %	Lux beam (Imax/2)
Mach 2 medium intensity circular reflector	Blue dichroic filter	3.3	2x6°
Mach 2 mediumwide beam circular reflector	Blue dichroic filter	2.0	2x13°
Mach 2 medium intensity circular reflector	Blue glass	0.7	2x6.5°
Mach 2 mediumwide beam circular reflector	Blue glass	0.7	2x16°
Mach 2 medium intensity circular reflector	Red dichroic filter	9.0	2x6.5°
Mach 2 mediumwide beam circular reflector	Red dichroic filter	9.0	2x18°
Mach 2 medium intensity circular reflector	Red glass	2.8	2x6.5°
Mach 2 mediumwide beam circular reflector	Red glass	2.8	2x17°
Mach 2 medium intensity circular reflector	Green dichroic filter	13.2	2x6°
Mach 2 mediumwide beam circular reflector	Green dichroic filter	13.2	2x13°
Mach 2 medium intensity circular reflector	Green glass	10.2	2x6.5°
Mach 2 mediumwide beam circular reflector	Green glass	10.2	2x16°
Mach 2 medium intensity circular reflector	Yellow dichroic filter	50.0	2x6.5°
Mach 2 mediumwide beam circular reflector	Yellow dichroic filter	50.0	2x15°
Mach 3 medium intensity circular reflector	Blue dichroic filter	3.3	2x6°
Mach 3 mediumwide beam circular reflector	Blue dichroic filter	2.0	2x13°
Mach 3 medium intensity circular reflector	Blue glass	0.7	2x6.5°
Mach 3 mediumwide beam circular reflector	Blue glass	0.7	2x16°
Mach 3 medium intensity circular reflector	Red dichroic filter	9.0	2x7°
Mach 3 mediumwide beam circular reflector	Red dichroic filter	9.0	2x18°
Mach 3 medium intensity circular reflector	Red glass	2.8	2x6.5°
Mach 3 mediumwide beam circular reflector	Red glass	2.8	2x18°
Mach 3 medium intensity circular reflector	Green dichroic filter	13.2	2x6°
Mach 3 mediumwide beam circular reflector	Green dichroic filter	13.2	2x13°
Mach 3 medium intensity circular reflector	Green glass	10.2	2x6.5°
Mach 3 mediumwide beam circular reflector	Green glass	10.2	2x16°
Mach 3 medium intensity circular reflector	Yellow dichroic filter	50.0	2x6.5°
Mach 3 mediumwide beam circular reflector	Yellow dichroic filter	50.0	2x15°
Mach 5 high intensity circular reflector	Blue dichroic filter	6.8	2x5°
Mach 5 medium intensity circular reflector	Blue dichroic filter	3.3	2x13°
Mach 5 high intensity circular reflector	Blue glass	0.7	2x6°
Mach 5 medium intensity circular reflector	Blue glass	0.7	2x16°
Mach 5 high intensity circular reflector	Red dichroic filter	6.1	2x5°
Mach 5 medium intensity circular reflector	Red dichroic filter	6.1	2x26°
Mach 5 high intensity circular reflector	Red glass	2.8	2x5.5°
Mach 5 medium intensity circular reflector	Red glass	0.7	2x16°
Mach 5 high intensity circular reflector	Green dichroic filter	23.6	2x4.5°
Mach 5 medium intensity circular reflector	Green dichroic filter	7.6	2x14°
Mach 5 high intensity circular reflector	Green glass	13.2	2x5°
Mach 5 medium intensity circular reflector	Green glass	7.6	2x16°
Mach 5 high intensity circular reflector	Yellow dichroic filter	50	2x5°
Mach 5 medium intensity circular reflector	Yellow dichroic filter	50	2x16°

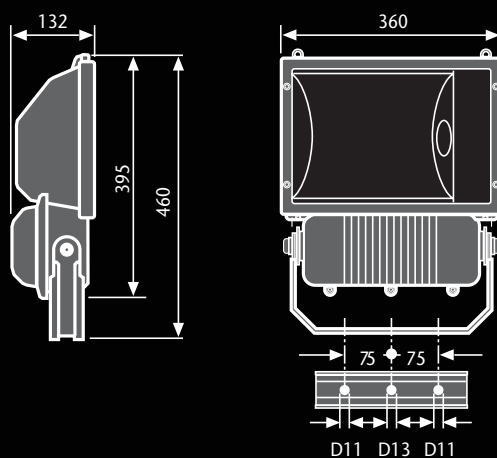
We kindly ask you to contact our Technical Office to make the lighting calculations. The photometric data are available in two types:  
a) for software LiteStar version 10, to be used directly in the program ( it is not necessary to add any reduction index due to the percentage of transmission of the coloured filters )  
b) for software Dialux, to be combined with filters foreseen in the program library having transmission index as stated in the table

IP 66

IP 67







## High versatility floodlight

The optics are kept separate from the wires to resolve all heat-related problems. A whole range of bulbs can be fitted, including the FC2 of 400W, making this one of the smallest and best performing medium-

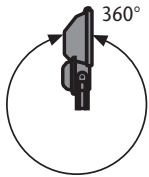
power projectors on the market. It is equipped with a complete set of symmetrical, asymmetrical and circular optics; the circular ones are particularly effective when used in conjunction with FC2 lamps.



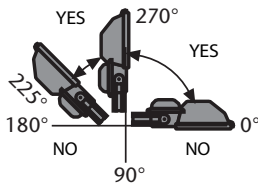
# Technical features of Mach 1

## Aiming

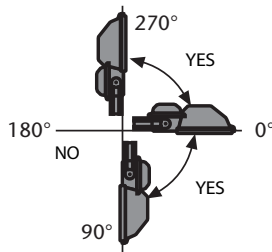
## Description



250W CL I



250W CL II



400W

### CHARACTERISTICS

- Die cast aluminium body and frame coated with polyester powders in black colour complete with thermally isolated control gear housing.
- On request white and only for E40 lampholder available also on titanium colour.
- For insulation Class II fixtures only in silver colour.
- Reflector made of highly pure aluminium sheet, polished and oxidized.
- The front glass is non-breaking type, sealed to the cover. All the gaskets are in non degenerative silicon rubber.
- Bracket made of galvanized painted steel with index for vertical orientation.
- The removable control gear plate, made out for insulation Class I of galvanized steel sheet, and for insulation Class II of injection of selfextinguish thermoplastic material, is complete with connectors which allow a quick disassembly during maintenance operations.
- Electrical housing cover made of reinforced polypropylene.
- Lampholder E 40 or FC 2, cable gland PG 13,5.
- The double ended FC2 lamp allows an exact focal position ensuring high photometric performances and providing the maximum glare control glare.





All the electrical components are produced according to the Italian Quality Standards for power 230V – 50Hz and the projector is manufactured according to En 60598/1 rules.

### OPTICAL SYSTEM

- The **symmetrical** version with two different reflectors:
    - Peened reflector for mediumwide beam.
    - Specular reflector for mediumnarrow beam.
  - The **asymmetrical** optics improve considerably the projector's performance and in the same way reduce the glare. The asymmetrical version with two different reflectors:
    - Peened reflector for medium
      - wide beam.
    - Specular reflector for medium
      - narrow beam.
- The fixture can be fitted with a coated stainless steel anti-glare louvre for moving the plane of maximum intensity by 50°, in full compliance with Italy's national and regional legislation on the restriction of light pollution.
- **Circular** high intensity reflector with baffle to avoid the direct glare.

Wind exposed surface = 0,130 m<sup>2</sup>

### LAMPS

	ST (SAP-T) E40 150-250W
	MT (JM-T) E40 150-250-400W
	MD (JM) FC2 250-400W
	SD (SAP) FC2 250-400W

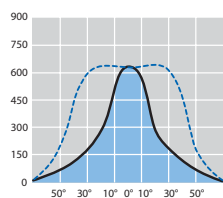
### COLOURS

Silver	Black	White	Titanium
			

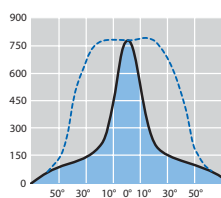
## Photometric data



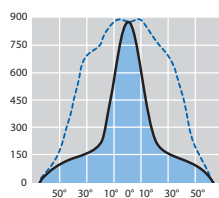
Symmetrical



MT (JM-T) 250W E40  
MACH 1 Symmetrical Wide



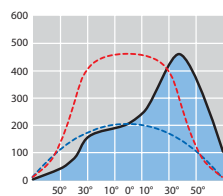
ST (SAP-T) 250W E40  
MACH 1 Symmetrical Wide



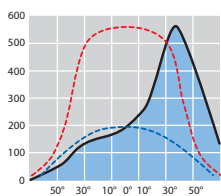
SD (SAP-TS) 400W FC 2  
MACH 1 Symmetrical Wide



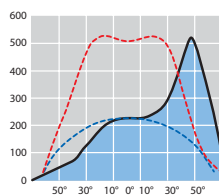
Asymmetrical



MT 250W E40  
MACH 1 Asymmetrical Wide  
Ø max 40°



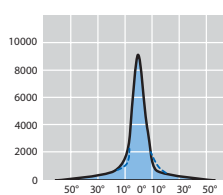
ST 250W E40  
MACH 1 Asymmetrical Wide  
Ø max 38°



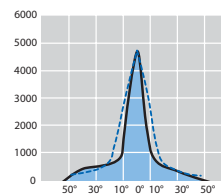
MD 400W FC2  
MACH 1 Asymmetrical Wide  
Ø max 45°



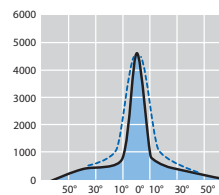
Circular



MT (JM-T) 150W E40  
MACH 1 Circular High Intensity



MT (JM-T) 250W E40  
MACH 1 Circular High Intensity



MD (JM-TS) 400W FC 2  
MACH 1 Circular High Intensity

## Accessories and spare parts



**60099 - 60101**  
Bracket Length 600 mm Ideal for lighting shop-windows.  
Zinc plated and steel coated.



**60065**  
Steel protection grille.  
Zinc plated and steel coated in black colour.



**60066**  
Steel protection louvre.  
Zinc plated and steel coated in black colour.



**60089**  
Top pole mounting device in die cast aluminium Ø 60.  
Zinc plated and steel coated in black colour.



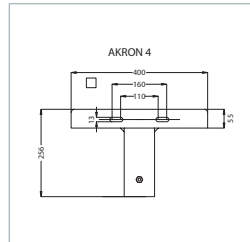
**60067 - 60068**  
Circular steel louvre.  
Zinc plated and steel coated in black colour.



**60274-60275-60276-60277**  
Stainless steel louvre for asymmetrical optic.



**60240 AKRON 4**  
Hot deep galvanized sheet steel accessory for max 4 floodlights 400W max fixing on 60 mm diam. pole.



**60242 AKRON 4**  
Hot deep galvanized sheet steel accessory for max 4 floodlights 400W max fixing on 76 mm diam. pole.

CODE	DESCRIPTION	GROSS WEIGHT (kg)	PACKING (pcs.)	COLOUR	CBMS
<b>60099</b>	Bracket 600 mm	2,70	1	Black	-
<b>60065</b>	Grille	0,40	1	Black	-
<b>60066</b>	Louvre	0,83	1	Black	0,0042
<b>60067</b>	Circular steel louvre for MACH 1 E 40	1,25	1	Black	0,0062
<b>60068</b>	Circular steel louvre for MACH 1 FC2	1,25	1	Black	0,0062
<b>60101</b>	Bracket 600 mm	2,70	1	Silver	-
<b>60242</b>	AKRON 4 Ø 76 mm	14,00	1	Deep galvanized	0,0046
<b>60240</b>	AKRON 4 Ø 60 mm	13,50	1	Deep galvanized	0,0046
<b>60274</b>	Anti-glare louvre for asymmetrical	0,500	1	Black	0,0090
<b>60275</b>	Anti-glare louvre for asymmetrical	0,500	1	Silver	0,0090
<b>60276</b>	Anti-glare louvre for asymmetrical	0,500	1	Titanium	0,0090
<b>60277</b>	Anti-glare louvre for asymmetrical	0,500	1	White	0,0090
<b>07720</b>	Glass	1,00	-	-	-
<b>60089</b>	Top pole device Ø 60 mm	1,30	1	Black	-
<b>50530*</b>	Insulation CL I empty gear plate	0,40	1	-	0,0010

\* For extra European countries only

## Products codes

## MACH 1 SYMMETRICAL - INSULATION CL I

CODE	DESCRIPTION	LAMP TYPE	GROSS WEIGHT (kg)	PACKING (pcs.)	PALLET (pcs.)	CBMS
50750	Black Body - E40 - peened	250W	5,15	1	60	0,02736
52000	White Body - E40 - peened	250W	5,15	1	60	0,02736
50751	Black Body - E40 - specular	250W	5,15	1	60	0,02736
52002	White Body - E40 - specular	250W	5,15	1	60	0,02736
50752	Black Body - E40 - peened	150W	5,15	1	60	0,02736
52004	White Body - E40 - peened	150W	5,15	1	60	0,02736
50753	Black Body - E40 - specular	150W	5,15	1	60	0,02736
52006	White Body - E40 - specular	150W	5,15	1	60	0,02736
50780	<b>CRL</b> DRACO Black - peened	MT (JM) 250W Philips type	8,05	1	56	0,02736
52040	<b>CRL</b> DRACO White - peened	MT (JM) 250W Philips type	8,05	1	56	0,02736
52041	<b>CRL</b> DRACO Titanium - peened	MT (JM) 250W Philips type	8,05	1	56	0,02736
52161	<b>CRL</b> DRACO Silver - peened	MT (JM) 250W Philips type	8,05	1	56	0,02736
52180	<b>CRL</b> DRACO Black - peened	MT (JM) 250W Osram type	8,05	1	56	0,02736
52175	<b>CRL</b> DRACO Black - peened	MT (JM) 400W Osram type	8,90	1	56	0,02736
52711	<b>CRL</b> DRACO Black - peened	ST (SAP-T) 250W	8,65	1	56	0,02736
52162	<b>CRL</b> DRACO Silver - peened	ST (SAP-T) 250W	8,65	1	56	0,02736
50758	<b>CRL</b> NEKAR Black - peened	MD (JM-FC2) 250W	8,56	1	56	0,02736
50778	<b>CRL</b> NEKAR Black - peened	MD (JM-FC2) 400W	10,00	1	56	0,02736
50760	<b>CRL</b> NEKAR Black - peened	SD (SAP-FC2) 250W	8,56	1	56	0,02736
50786	<b>CRL</b> NEKAR Black - peened	SD (SAP-FC2) 400W	10,00	1	56	0,02736
50515	<b>CR</b> KIT	MT-ST (JM-SAP) 250W	3,82	1	-	0,0057
50525	<b>CR</b> KIT	MT-ST (JM-SAP) 150W	2,98	1	-	0,0057

## MACH 1 ASYMMETRICAL - INSULATION CL I

CODE	DESCRIPTION	LAMP TYPE	GROSS WEIGHT (kg)	PACKING (pcs.)	PALLET (pcs.)	CBMS
50754	Black Body - E40 - peened	250W	5,15	1	60	0,02736
52008	White Body - E40 - peened	250W	5,15	1	60	0,02736
50769	Black Body - E40 - specular	250W	5,15	1	60	0,02736
52010	White Body - E40 - specular	250W	5,15	1	60	0,02736
50755	Black Body - E40 - peened	150W	5,15	1	60	0,02736
52012	White Body - E40 - peened	150W	5,15	1	60	0,02736
50770	Black Body - E40 - specular	150W	5,15	1	60	0,02736
52014	White Body - E40 - specular	150W	5,15	1	60	0,02736
50785	<b>CRL</b> ASTER Black - E40 - peened	MT (JM) 250W Philips type	8,05	1	56	0,02736
52044	<b>CRL</b> ASTER White - peened	MT (JM) 250W Philips type	8,05	1	56	0,02736
52045	<b>CRL</b> ASTER Titanium - peened	MT (JM) 250W Philips type	8,05	1	56	0,02736
52163	<b>CRL</b> ASTER Silver - peened	MT (JM) 250W Philips type	8,05	1	56	0,02736
52190	<b>CRL</b> ASTER Black - E40 - peened	MT (JM) 250W Osram type	8,05	1	56	0,02736
52185	<b>CRL</b> ASTER Black - E40 - peened	MT (JM) 400W Osram type	8,90	1	56	0,02736
52712	<b>CRL</b> ASTER Black - E40 - peened	ST (SAP-T) 250W	8,65	1	56	0,02736
52164	<b>CRL</b> ASTER Silver - peened	ST (SAP-T) 250W	8,65	1	56	0,02736
50762	<b>CRL</b> VEGA Black - E40 - peened	MD (JM-FC2) 250W	8,56	1	56	0,02736
50781	<b>CRL</b> VEGA Black - E40 - peened	MD (JM-FC2) 400W	10,00	1	56	0,02736
50763	<b>CRL</b> VEGA Black - E40 - peened	SD (SAP-FC2) 250W	8,56	1	56	0,02736
50788	<b>CRL</b> VEGA Black - E40 - peened	SD (SAP-FC2) 400W	10,00	1	56	0,02736
50515	<b>CR</b> KIT	MT-ST (JM-SAP) 250W	3,82	1	-	0,0057
50525	<b>CR</b> KIT	MT-ST (JM-SAP) 150W	2,98	1	-	0,0057

## MACH 1 CIRCULAR - INSULATION CL I

CODE	DESCRIPTION	LAMP TYPE	GROSS WEIGHT (kg)	PACKING (pcs.)	PALLET (pcs.)	CBMS
50771	Black Body - E40 high intensity reflector	150W	5,15	1	60	0,02736
50772	Black Body - E40 high intensity reflector	250W	5,15	1	60	0,02736
50775	<b>CRL</b> MIZAR high intensity reflector - Black	MD (JM-FC2) 250W	8,81	1	56	0,02736
50776	<b>CRL</b> MIZAR high intensity reflector - Black	SD (SAP-FC2) 250W	8,81	1	56	0,02736
50784	<b>CRL</b> MIZAR high intensity reflector - Black	MD (JM-FC2) 400W	10,20	1	56	0,02736
50791	<b>CRL</b> MIZAR high intensity reflector - Black	SD (SAP-FC2) 400W	10,20	1	56	0,02736
50515	<b>CR</b> KIT MT-ST (JM-SAP)	250W	3,82	1	-	0,0057
50525	<b>CR</b> KIT MT-ST (JM-SAP)	150W	2,98	1	-	0,0057
50593	<b>CR</b> KIT MT (JM)	250W Philips type	3,00	1	-	0,0057

All the versions are available also in insulation Class II.



## Aesthetics & rationality



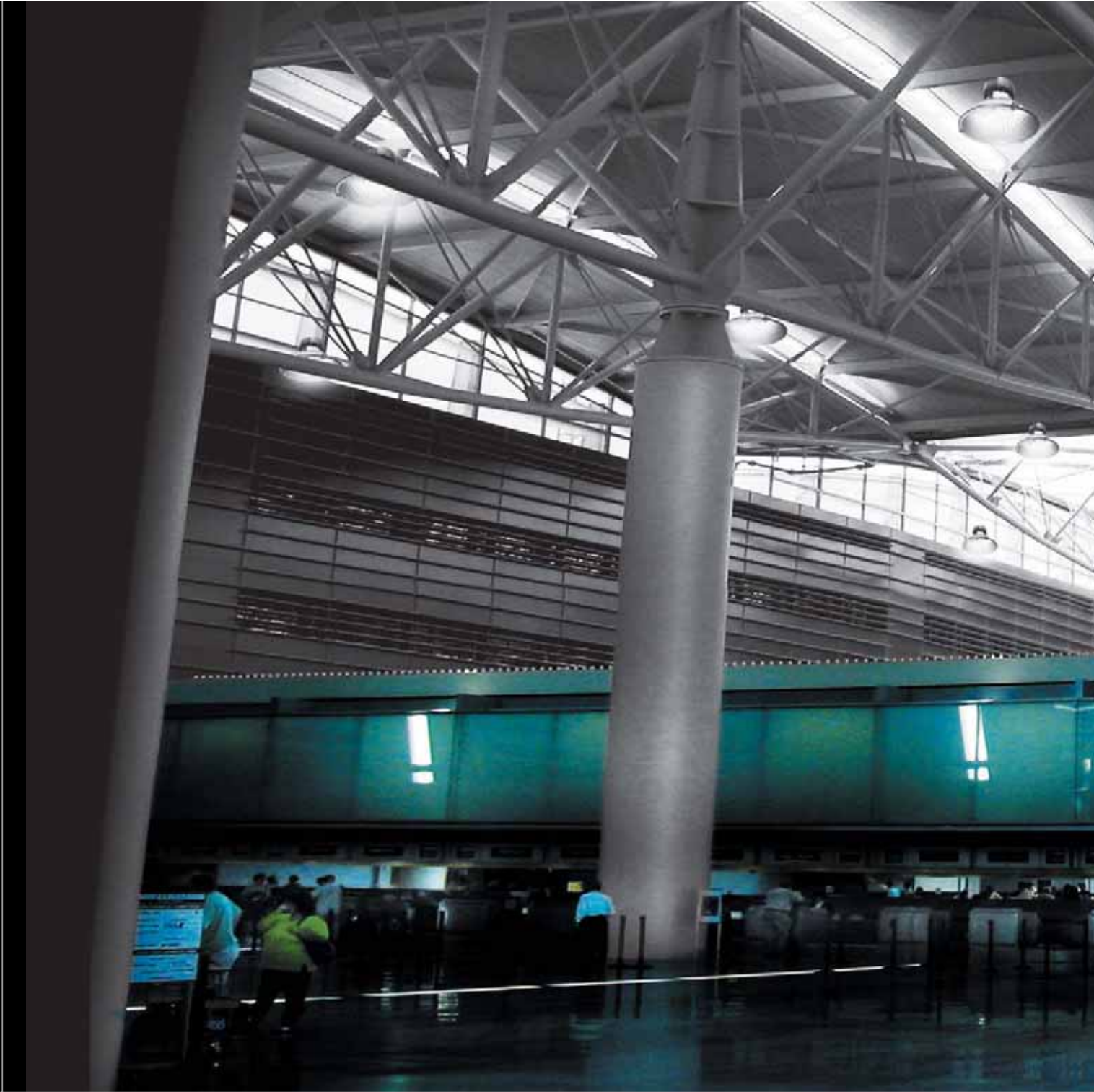
The innovative value of the Yes Show range is setting out by bright sign of design and a higher technical contents that it provides the new range of high bay luminaires to the top of the market. It's suitable for external and internal type of installations.

The R&D department continuously monitor not only industrial design or aesthetic parameters but it could extended their best attitudes to a widely range of fitting for any professional light-

ing environments. As a single industrial shell, sport courts to the shopping malls are providing excellent solutions with a right light beam.

The superb flexibility of installations in a unique body is the result by confirming historic experience of the whole Technical Staff.

The electrical compartment is made for install all components by enclosed a wider range of overall dimension aluminium reflectors in different raw materials.



Main Commercial Center – Germany



Iron and Steel Industry, Italy



Hagebaymarkt Landau Isar Commercial Centre, Germany



Fiat Sales Point, Bari, Italy

Politecnico University's Library, Milan, Italy





## A touch of flexibility

YES is suitable for use with discharge lamp up to 400 W. Body is made with a wide cooling fins in die-cast recyclable aluminium alloy and finished with powder coat paint in grey colour. Following a simple and bright solutions the Yes Show is suitable for multiply applications.

The body is made from die-cast aluminium alloy with a degree of protection IP 66. It can accommodate the latest generation of discharge lamps assuring the high value of rendering, a saving energy and maximum light efficiency. By changing the aluminium reflectors the Yes Show may have one of widest spectrum of installations.



# Technical features of Yes Show Refractor / Semi Refractor

## Description



### CHARACTERISTICS

- Lampholder E40 is made of porcelain and mounted onto a regulation device which allows the reflector to emit six different distribution patterns.
- A mechanical block assure the right position.
- Gaskets is in anti-aging weather resistant silicon rubber. The power supply enters through a PG 13,5 cable gland. The electrical components are fixed on an easy removable wired control gear plate made in zinc coated galvanized steel.
- A suspension eyebolt is located on the top of the gear housing for the vertical attachment.
- The YES Show devices have been specifically designed for easy installation and maintenance. During mounting and maintenance, no moving parts are present between the reflector and the wired part.
- For the devices with discharge lamp, upon request, we can provide the SAFE type execution with electronic switching device which can supply power to an auxiliary halogen lamp E27 type HALOLUX CERAM or HALOLUX BT (max power 150W).

The auxiliary lamp switches automatically on when the system is off.

All electrical components are certified with ENEC mark; 230V, 50Hz.

### OPTICAL SYSTEM

A new modern optic design is made up of an anodised and polished high purity aluminium reflector externally painted with powder in silver colour and a PMMA or self-extinguish polycarbonate V2 refractor. The outstanding optical performance is a unique and effective feature which helps bring light where it is most needed. The optics are available in two different versions:

- **semi-refractor**  
(thermoplastic band: height 178 mm).

- **refractor**  
(thermoplastic band: height 309 mm).

External diameter 600 mm.

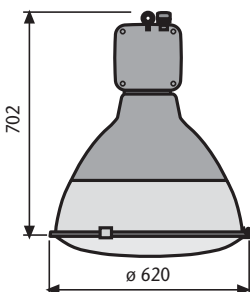
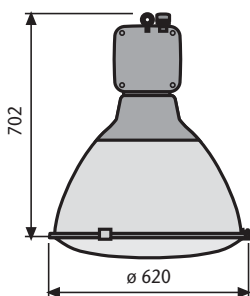
Tempered glass suitable for high temperature and thermal shock fixed in position by stainless steel hooks provided with security lock and prismatic lens made of PMMA or self-extinguishing polycarbonate V2 with internal prism to improve the control light beam distribution.

The bodies are supplied with electrical supply unit.





The refractors and protection shield, are to be ordered separately. Refractors and protection lens are packaged in a box 5 pieces/each. Up to 250W the fittings are "D" marked, in accordance with EN 60598-2-24 "Luminaires with limited surface temperatures".

Recommended mounting height:  
from 4 to 12 meters.

## Dimensions



### LAMPS

	QB (self ballasted) E40 max 500W
	ME (JM) SE (SAP) QE (MBF) E40 max 400W
	FLC GX24-q6 70W
	FLC 2G8 60 - 85 - 120W

### COLOUR

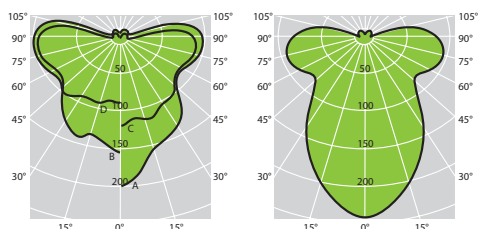
Silver



## Photometric data



Refractor



ME (JM-E) 400W - E 40

ME (JM-E) 400W - E 40



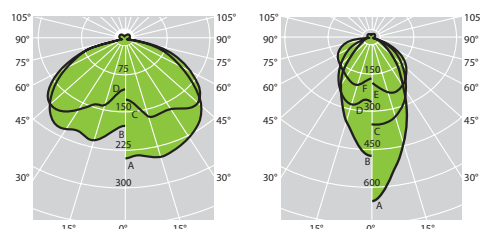
With lens



Fixed focal position with glass



Semi-refractor



ME (JM-E) 400W - E 40

ME (JM-E) 250W - E 40



With lens



With lens

# Technical features of Yes Show

## Description



### CHARACTERISTICS

- Body is made with a wide cooling fins in die-cast recyclable aluminium alloy and finished with powder coat paint in silver colour.
  - Lampholders E40, E27, G12, G22 are made of porcelain for discharge lamps and is in thermoplastic for fluorescent lamp;
  - Tempered Glass suitable for high temperature and thermal shock fixed in position by stainless steel hooks with security lock.
  - Gaskets is in anti-aging weather resistant silicon rubber.
  - The power supply enters through a PG 13,5 cable gland.
  - The electrical components are fixed on an easy removable wired control gear plate made in zinc coated galvanized steel.
  - A suspension eyebolt is located on the top of the gear housing for the vertical attachment.
  - For further information, please see the enclosed user manual.
  - The device are supplied with electrical supply unit. The YES Show devices have been specifically designed for easy installation and maintenance. During mounting and maintenance, no moving parts are between the reflector and the wired part. For device with discharge lamp, upon request, we can provide the SAFE type execution with electronic switching device which can supply power to an auxiliary halogen lamp E27 type HALOLUX CERAM or HALOLUX BT (max power 150W).
- The auxiliary lamp switches automatically on when the system is off.  
The Reflector and tempered glass, are to be ordered separately.  
Reflectors and glasses are packaged in a box 5 of pieces/each.  
All electrical components are certified with ENEC mark; 230V, 50Hz.

### YES SHOW 425

- Reflector is in high-gloss or polished anodised high purity aluminium and has been designed for efficiently control light medium beam.
- External diameter 425 mm.
- Not-adjustable body for powers from 150 to 400W or adjustable body in 6 positions for powers till to 250W.
- The fixtures for up to 250W lamps, restricted for some adjustment, are getting over a shield angle lamp such as  $\geq 15^\circ$  provides an efficiently anti glare solutions.
- Up to 250W the fittings are "D" marked, in accordance with EN 60598-2-24 "Luminaires with limited surface temperatures"
- Recommended mounting height: from 4 to 12 meters.

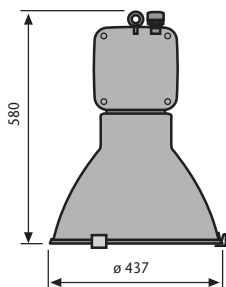
### YES SHOW TECH 425

- Reflector is in high-gloss or polished anodised high purity aluminium and has been designed for efficiently control light medium beam.
- External diameter 425 mm.
- Not-adjustable body for powers till to 400W
- The fixture for up to 250W lamps. They are provided well assembled, packed in a unique single box containing the wired body, the reflector and the glass.
- Up to 250W the fittings are "D" marked, in accordance with EN 60598-2-24 "Luminaires with limited surface temperatures"
- Recommended mounting height: from 4 to 12 meters.

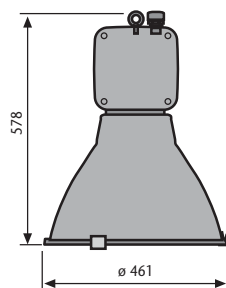
### YES SHOW 450

- Reflector is in polished anodised high purity aluminium and has been designed for an high lighting performance and is suitable for high installation position.
- External Diameter 450 mm.
- The fixtures for up to 250W lamps, restricted for some adjustment, are getting over a shield angle lamp such as  $\geq 15^\circ$  provides an efficiently anti glare solutions.
- Not-adjustable body for powers from 150 to 400W or adjustable body in 6 positions for powers till to 250W.
- Up to 250W the fittings are "D" marked, in accordance with EN 60598-2-24 "Luminaires with limited surface temperatures"
- Recommended mounting height: from 4 to 12 meters.

## Dimensions



Yes Show 425 - Yes Show Tech 425



Yes Show 450

### LAMPS

	QB (self ballasted) E40 max 500W
	ME (JM) - SE (SAP) - QE (MBF) E40 max 400W
	SE (SAP) E27 70W
	ME (JM) E27 70W
	MC (JM) E27 150W
	MT (JM) G12 70 - 150 - 250W
	MT (JM) G22 250W
	FLC GX24-q6 70W
	FLC 2G8 60 - 85 - 120W

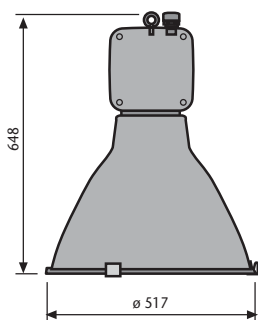
### COLOUR

Silver

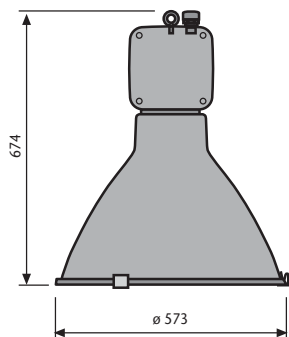


## Dimensions

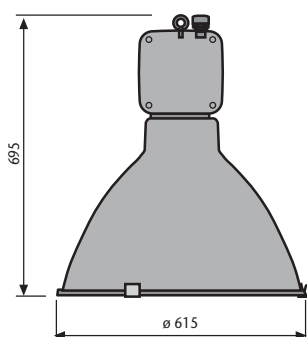
## Description



Yes Show 500



Yes Show 560



Yes Show 600

### YES SHOW 500

- Reflector is in polished anodised high purity aluminium and has been designed for an high lighting performance and is suitable for high installation position.
- External diameter 500 mm.
- Not-adjustable or adjustable body for powers till to 400W.
- The fixtures, restricted for some adjustment, are getting over a shield angle lamp such as  $\geq 15^\circ$  provides an efficiently anti glare solutions.
- Up to 250W the fittings are "D" marked, in accordance with EN 60598-2-24 "Luminaires with limited surface temperatures".
- Recommended mounting height: from 6 to 16 meters.





### YES SHOW 560

- Reflector is in polished anodised high purity aluminium and has been designed for an high lighting performance and is suitable for high installation position.
- External Diameter 560 mm.
- Not-adjustable or adjustable body in 6 positions for powers till to 400W.
- The fixtures, restricted for some adjustment, are getting over a shield angle lamp such as  $\geq 15^\circ$  provides an efficiently anti glare solutions.
- Up to 250W the fittings are "D" marked, in accordance with EN 60598-2-24 "Luminaires with limited surface temperatures". In the 400W versions, upon request, the lampholder is provided with a mechanical device wich prevents the lamp to be installed in a wrong upper position.
- Recommended mounting height: from 8 to 24 meters.

### YES SHOW 600

- Reflector is in polished anodised high purity aluminium and has been designed for an high lighting performance and is suitable for high installation position.
- External Diameter 600 mm.
- Not-adjustable or adjustable body for powers till to 400W.
- The fixtures, restricted for some adjustment, are getting over a shield angle lamp such as  $\geq 15^\circ$  provides an efficiently anti glare solutions.
- Recommended mounting height: from 8 to 24 meters.
- Up to 250W the fittings are "D" marked, in accordance with EN 60598-2-24 "Luminaires with limited surface temperatures". In the 400W versions, upon request, the lampholder is provided with a mechanical device wich prevents the lamp to be installed in a wrong upper position.
- **The YES SHOW 600 fixture fixed focus can be used with 1000W metal halide elliptical lamps with separate power supply unit. This version is intended for aircraft hangars, foundries and manufacturing industries. Operating height up to 40 metres.**

### LAMPS

	QB (self ballasted) E40 max 500W
	ME (JM) - SE (SAP) - QE (MBF) E40 max 400W
	FLC - GX24-q6 70W
	FLC - 2G8 60 - 85 - 120W

### COLOUR

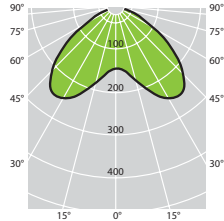
Silver



## Photometric data



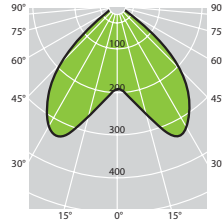
Yes Show 425



ME (JM-E) 400W - E40



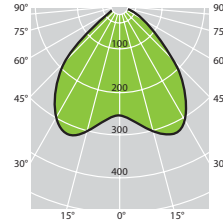
YES SHOW



ME (JM-E) 250W - E40



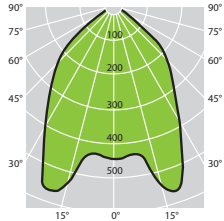
YES SHOW



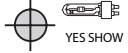
SE (SAP-E) 250W - E40



YES SHOW



MT (JM-T) 150W - G12



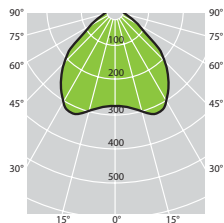
YES SHOW



Yes Show 425



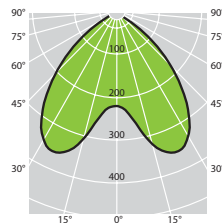
Yes Show 425



QE (MBF) 250W - E40



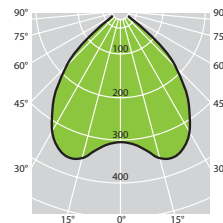
YES SHOW



SE (SAP-E) 250W - E40



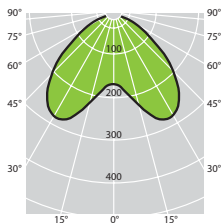
YES SHOW 425/S  
High-gloss reflector



ME (JM-E) 250W - E40



YES SHOW 425/S  
High-gloss reflector



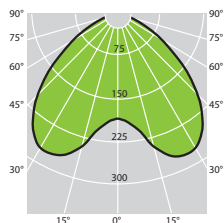
ME (JM-E) 400W - E40



YES SHOW 425/S  
High-gloss reflector



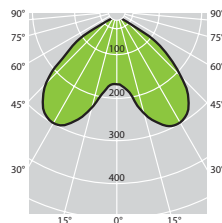
Yes Show 450



ME (JM-E) 400W - E40



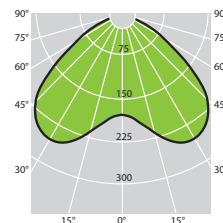
YES SHOW 450



SE (SAP-E) 400W - E40



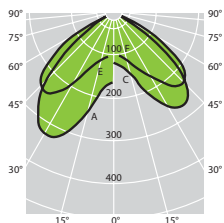
YES SHOW 450



QE (MBF) 400W - E40



YES SHOW 450



ME (JM-E) 250W - E40

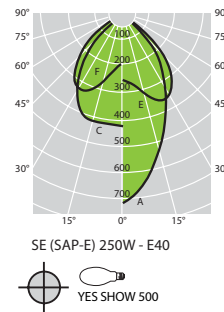
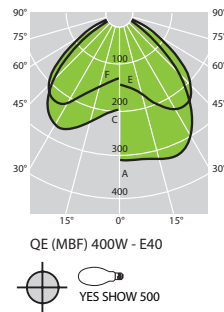
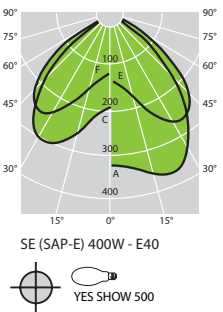
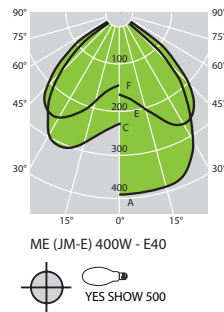


YES SHOW 450

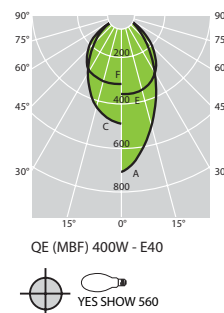
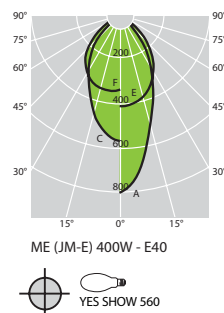
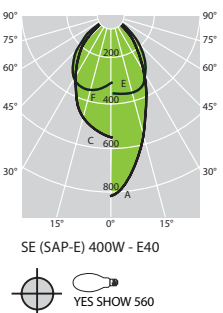
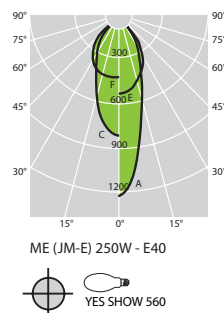
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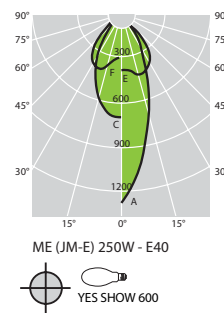
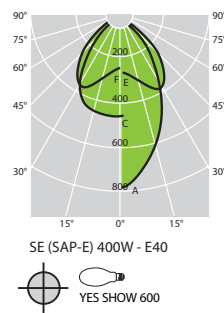
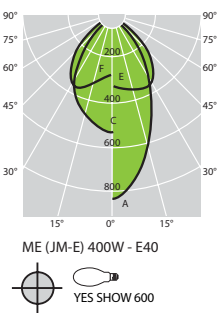
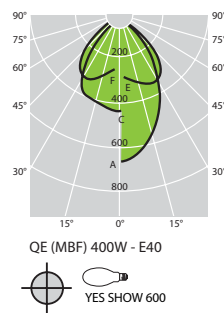
Yes Show 500



Yes Show 500



Yes Show 560



Yes Show 600

## Accessories and spare parts



**60367-60590-60595-60600-60605**  
Grille. Zinc plated and steel coated in silver colour.



**60354**  
Anti-vibrations support. Zinc plated and steel coated in black colour.






















**60357**  
Tempered glass complete with stainless steel springs and silicon gasket.

CODE	DESCRIPTION	GROSS WEIGHT (kg)	PACKING (pcs.)	COLOUR	CBMS
<b>YES SHOW 425</b>					
<b>60367*</b>	Grille	0,37	5	Silver	0,0042
<b>60354</b>	Anti-vibrations support	0,50	-	Black	-
<b>YES SHOW 425 TECH</b>					
<b>60357</b>	Glass	1,792	5	-	0,0067
<b>60367*</b>	Grille	0,37	5	Silver	0,0042
<b>60354</b>	Anti-vibrations support	0,50	-	Black	-
<b>YES SHOW 450</b>					
<b>60590*</b>	Grille	0,42	5	Silver	0,0045
<b>60354</b>	Anti-vibrations support	0,50	-	Black	-
<b>YES SHOW 500</b>					
<b>60595*</b>	Grille	0,54	5	Silver	0,0059
<b>60354</b>	Anti-vibrations support	0,50	-	Black	-
<b>YES SHOW 560</b>					
<b>60600*</b>	Grille	0,60	5	Silver	0,0062
<b>60354</b>	Anti-vibrations support	0,50	-	Black	-
<b>YES SHOW 600</b>					
<b>60605*</b>	Grille	0,64	5	Silver	0,0065
<b>60354</b>	Anti-vibrations support	0,50	-	Black	-
<b>YES SHOW Refractor/Semi-refractor 600</b>					
<b>60605*</b>	Grille	0,64	5	Silver	0,0065
<b>60354</b>	Anti-vibrations support	0,50	-	Black	-

\* Suitable for glass only

## Products codes

## YES SHOW REFRACTOR/SEMI-REFRACTOR - INSULATION CL I

CODE	DESCRIPTION	LAMP TYPE	GROSS WEIGHT (kg)	PACKING (pcs.)	CBMS
59101	 Body not adjustable E40 lampholder	QE (MBF) 250W	5,65	1	0,0166
59102	 Body not adjustable E40 lampholder	QE (MBF) 400W	6,65	1	0,0166
59103	 Body not adjustable E40 lampholder	M-S (JM-SAP) 150W	5,65	1	0,0166
59104*	 Body not adjustable E40 lampholder	M-S (JM-SAP) 250W	6,75	1	0,0166
59105***	 Body not adjustable E40 lampholder	M-S (JM-SAP) 400W	8,05	1	0,0166
59106	 Body not adjustable E40 lampholder	M (JM) 250W Philips type HPI BU PLUS	5,75	1	0,0166
59107	 Body not adjustable E40 lampholder	M (JM) 400W Philips type HPI BU PLUS	6,75	1	0,0166
59108**	 Body not adjustable E40 lampholder	M (JM) 250W Philips type HPI BU PLUS with ballast for HPS	6,75	1	0,0166
59151	 Body adjustable 6 pos. E 40 lampholder	QE (MBF) 250W	5,75	1	0,0166
59152	 Body adjustable 4 pos. E 40 lampholder	QE (MBF) 400W	6,75	1	0,0166
59153	 Body adjustable 6 pos. E 40 lampholder	M-S (JM-SAP) 150W	5,75	1	0,0166
59154*	 Body adjustable 6 pos. E 40 lampholder	M-S (JM-SAP) 250W	6,85	1	0,0166
59155***	 Body adjustable 4 pos. E 40 lampholder	M-S (JM-SAP) 400W	8,15	1	0,0166
59156	 Body adjustable 6 pos. E 40 lampholder	M (JM) 250W Philips type HPI BU PLUS	5,85	1	0,0166
59157	 Body adjustable 4 pos. E 40 lampholder	M(JM) 400W Philips type HPI BU PLUS	6,85	1	0,0166
59158**	 Body adjustable 6 pos. E 40 lampholder	M (JM) 250W Philips type HPI BU PLUS with ballast for HPS	6,85	1	0,0166
59254	 Body adjustable 6 pos. GX24-q6	FLC 70W	3,55	1	0,0166
59255	 Body adjustable 6 pos. 2G8 lampholder	FLC 60-85-120W Philips type	3,65	1	0,0166
59257	 Body adjustable 6 pos. 2G8 lampholder	FLC 120W Osram type	3,65	1	0,0166
59265	Body - not adjustable E40 lampholder	QB (self ballasted) max 500W	3,30	1	0,0166
59266	Body - adjustable 4 pos. E 40 lampholder	QB (self ballasted) 500W	3,40	1	0,0166
59267	Body - adjustable 6 pos. E 40 lampholder	QB (self ballasted) 250W	3,40	1	0,0166
60550	PMMA semi-refractor		2,28	5	0,051
60555	PMMA refractor		2,68	5	0,051
60563	PC semi-refractor		2,32	5	0,051
60567	PC refractor		2,72	5	0,051
60575	Glass		3,27	5	0,0117
60580	PMMA lens (max power which can be used: 250W)		1,70	5	0,016
60585	Polycarbonate lens		1,77	5	0,016

\* Suitable for MH lamps Osram type, see lamps technical specifications.

\*\* 250W: Luminous flux 25.500 lumen – 3800° K.

\*\*\* to be used with glass code 60575 only

## Products codes

### YES SHOW - INSULATION CL I

CODE	DESCRIPTION	LAMP TYPE	GROSS WEIGHT (kg)	PACKING (pcs.)	CBMS
59101	Body not adjustable E40 lampholder	QE (MBF) 250W	5,65	1	0,0166
59102	Body not adjustable E40 lampholder	QE (MBF) 400W	6,65	1	0,0166
59103	Body not adjustable E40 lampholder	M-S (JM-SAP) 150W	5,65	1	0,0166
59104*	Body not adjustable E40 lampholder	M-S (JM-SAP) 250W	6,75	1	0,0166
59105*	Body not adjustable E40 lampholder	M-S (JM-SAP) 400W	8,05	1	0,0166
59106	Body not adjustable E40 lampholder	M (JM) 250W Philips type HPI BU PLUS	5,75	1	0,0166
59107	Body not adjustable E40 lampholder	M (JM) 400W Philips type HPI BU PLUS	6,75	1	0,0166
59108**	Body not adjustable E40 lampholder	M (JM) 250W Philips type	6,75	1	0,0166
59109**	Body not adjustable E40 lampholder	M (JM) 400W Philips type HPI BU PLUS with ballast for HPS	8,05	1	0,0166
59151	Body adjustable 6 pos. E40 lampholder	QE (MBF) 250W	5,75	1	0,0166
59152	Body adjustable 4 pos. E40 lampholder <b>(only for YES SHOW 500-600)</b>	QE (MBF) 400W	6,75	1	0,0166
59153	Body adjustable 6 pos. E40 lampholder	M-S (JM-SAP) 150W	5,75	1	0,0166
59154*	Body adjustable 6 pos. E40 lampholder	M-S (JM-SAP) 250W	6,85	1	0,0166
59155*	Body adjustable 4 pos. E40 lampholder <b>(only for YES SHOW 500-600)</b>	M-S (JM-SAP) 400W	8,15	1	0,0166
59156	Body adjustable 6 pos. E40 lampholder	M (JM) 250W Philips type HPI BU PLUS	5,85	1	0,0166
59157	Body adjustable 4 pos. E40 lampholder <b>(only for YES SHOW 500-600)</b>	M (JM) 400W Philips type HPI BU PLUS	6,85	1	0,0166
59158**	Body adjustable 6 pos. E40 lampholder	M (JM) 250W Philips type HPI BU PLUS with ballast for HPS	6,85	1	0,0166
59159**	Body adjustable 4 pos. E40 lampholder <b>(only for YES SHOW 500-600)</b>	M (JM) 400W Philips type HPI BU PLUS with ballast for HPS	8,15	1	0,0166
59162	Body adjustable 6 pos. E40 lampholder <b>(only for YES SHOW 425-450)</b>	M (JM) 150W	5,65	1	0,0166
59163	Body adjustable 6 pos. E27 lampholder <b>(only for YES SHOW 425-450)</b>	M (JM) 150W	5,65	1	0,0166
59201	Body adjustable 6 pos. E40 lampholder <b>(only for YES SHOW 560)</b>	QE (MBF) 400W	6,75	1	0,0166
59202*	Body adjustable 6 pos. E40 lampholder <b>(only for YES SHOW 560)</b>	M-S (JM-SAP) 400W	8,15	1	0,0166
59203	Body adjustable 6 pos. E40 lampholder <b>(only for YES SHOW 560)</b>	M (JM) 400W Philips type HPI BU PLUS	6,85	1	0,0166
59204**	Body adjustable 6 pos. E40 lampholder <b>(only for YES SHOW 560)</b>	M (JM) 400W Philips type HPI BU PLUS with ballast for HPS	8,15	1	0,0166
59251	Body not adjustable 2G8 lampholder <b>(only for YES SHOW 425-450)</b>	FLC 60-85-120W Philips type	3,55	1	0,0166
59254	Body adjustable 6 pos. GX24-q6 <b>(only for YES SHOW 425-450-500)</b>	FLC 70W	3,55	1	0,0166
59255	Body adjustable 6 pos. 2G8 lampholder <b>(only for YES SHOW 500)</b>	FLC 60-85-120W Philips type	3,65	1	0,0166
59257	Body adjustable 6 pos. 2G8 lampholder <b>(only for YES SHOW 425-450-500)</b>	FLC 120W Osram type	3,65	1	0,0166
59265	Body not adjustable E40 lampholder	QB (self ballasted) max 500W	3,30	1	0,0166
59266	Body adjustable 4 pos. E40 lampholder <b>(only for YES SHOW 500-600)</b>	QB (self ballasted) 500W	3,40	1	0,0166
59267	Body adjustable 6 pos. E40 lampholder	QB (self ballasted) 250W	3,40	1	0,0166

\* Suitable for MH lamps Osram type, see lamps technical specifications.

\*\* 250W: Luminous flux 25.500 lumen – 3800° K; 400W: Luminous flux 42.500 lumen – 3800° K.

## Products codes

## YES SHOW - INSULATION CL I

CODE	DESCRIPTION	GROSS WEIGHT (kg)	PACKING (pcs.)	CBMS
<b>YES SHOW 425</b>				
60501	Polished reflector	0,95	5	0,0215
60505	High-gloss reflector	0,95	5	0,0215
60357	Glass	1,792	5	0,0067
<b>YES SHOW 450</b>				
60510	Polished reflector	0,98	5	0,0244
60560	Glass	2,02	5	0,0076
<b>YES SHOW 500</b>				
60520	Polished reflector	1,31	5	0,0344
60525	High-gloss reflector	1,31	5	0,0344
60565	Glass	2,60	5	0,0093
<b>YES SHOW 560</b>				
60530	Polished reflector	1,59	5	0,042
60570	Glass	3,09	5	0,010
<b>YES SHOW 600</b>				
60540	Polished reflector	1,73	5	0,0492
60575	Glass	3,27	5	0,0117
60580	PMMA lens up to 250W	1,70	5	0,016
60585	Polycarbonate lens up to 250W	1,77	5	0,016

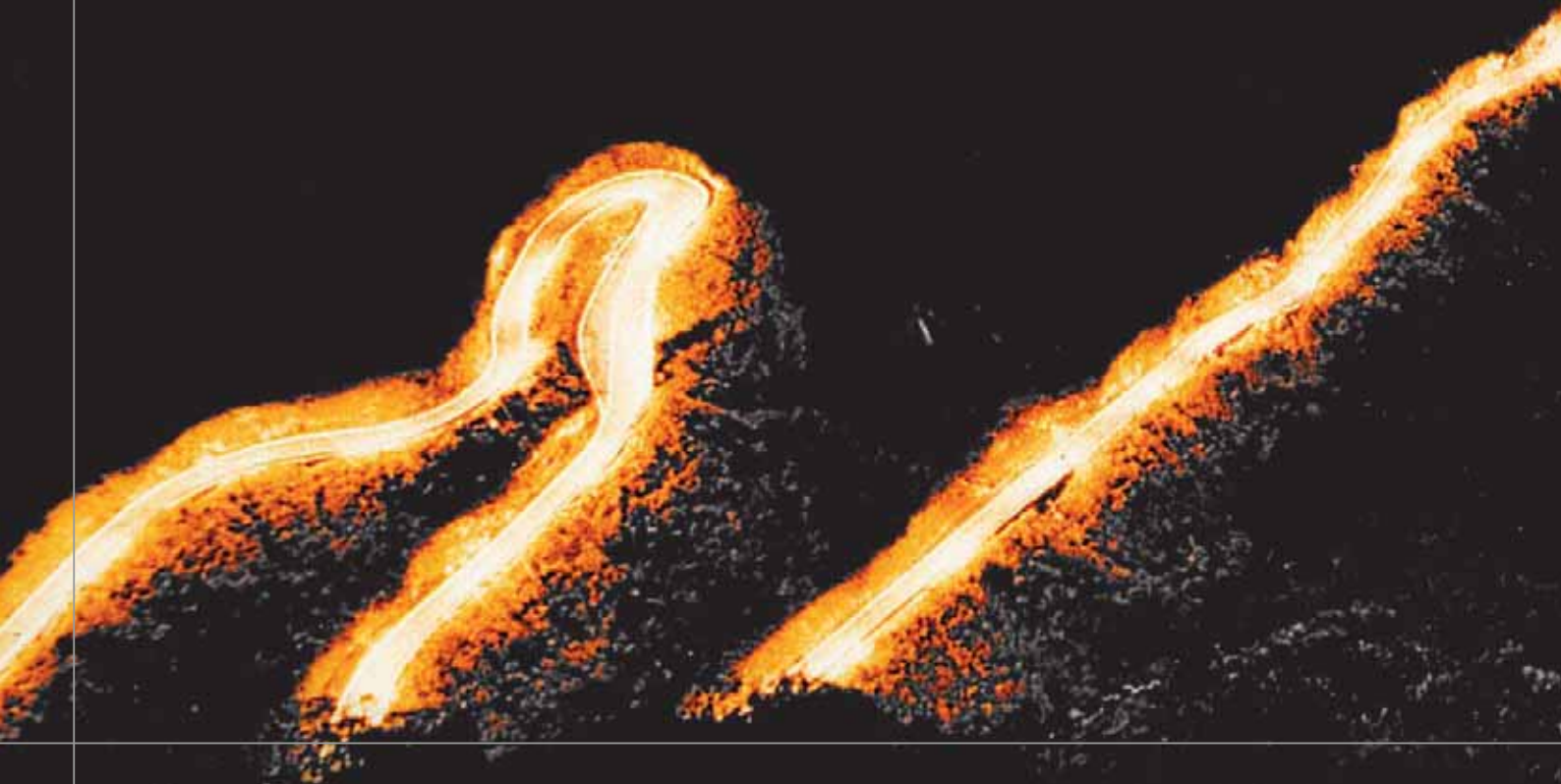
## YES SHOW TECH425 - INSULATION CL I

CODE	DESCRIPTION	GROSS WEIGHT (kg)	PACKING (pcs.)	PALLETS (pcs.)	CBMS
<b>Polished reflector</b>					
59550	<b>YES SHOW TECH</b> QB (self ballasted) max 500W	6,91	1	12	0,132
59501	<input type="checkbox"/> <b>YES SHOW TECH</b> QE (MBF) 250W	9,26	1	12	0,132
59502	<input type="checkbox"/> <b>YES SHOW TECH</b> QE (MBF) 400W	10,26	1	12	0,132
59503	<input type="checkbox"/> <b>YES SHOW TECH</b> M-S (JM-SAP) 150W	9,26	1	12	0,132
59504*	<input type="checkbox"/> <b>YES SHOW TECH</b> M-S (JM-SAP) 250W	10,36	1	12	0,132
59505*	<input type="checkbox"/> <b>YES SHOW TECH</b> M-S (JM-SAP) 400W	11,66	1	12	0,132
59506	<input type="checkbox"/> <b>YES SHOW TECH</b> M (JM) 250W Philips type HPI BU PLUS	9,50	1	12	0,132
59507	<input type="checkbox"/> <b>YES SHOW TECH</b> M (JM) 400W Philips type HPI BU PLUS	10,50	1	12	0,132
59508**	<input type="checkbox"/> <b>YES SHOW TECH</b> M (JM) 250W Philips type HPI BU PLUS with ballast for HPS	0,50	1	12	0,132
59509**	<input type="checkbox"/> <b>YES SHOW TECH</b> M (JM) 400W Philips type HPI BU PLUS with ballast for HPS	11,80	1	12	0,132
<b>High-gloss reflector</b>					
59560	<b>YES SHOW TECH/S</b> QB (self ballasted) max 500W	6,91	1	12	0,132
59531	<input type="checkbox"/> <b>YES SHOW TECH/S</b> QE (MBF) 250W	9,26	1	12	0,132
59532	<input type="checkbox"/> <b>YES SHOW TECH/S</b> QE (MBF) 400W	10,26	1	12	0,132
59533	<input type="checkbox"/> <b>YES SHOW TECH/S</b> M-S (JM-SAP) 150W	9,26	1	12	0,132
59534*	<input type="checkbox"/> <b>YES SHOW TECH/S</b> M-S (JM-SAP) 250W	10,36	1	12	0,132
59535*	<input type="checkbox"/> <b>YES SHOW TECH/S</b> M-S (JM-SAP) 400W	11,66	1	12	0,132
59536	<input type="checkbox"/> <b>YES SHOW TECH/S</b> M (JM) 250W Philips type HPI BU PLUS	9,50	1	12	0,132
59537	<input type="checkbox"/> <b>YES SHOW TECH/S</b> M (JM) 400W Philips type HPI BU PLUS	10,50	1	12	0,132
59538**	<input type="checkbox"/> <b>YES SHOW TECH/S</b> M (JM) 250W Philips type HPI BU PLUS with ballast for HPS	10,50	1	12	0,132
59539**	<input type="checkbox"/> <b>YES SHOW TECH/S</b> M(JM) 400W Philips type HPI BU PLUS with ballast for HPS	11,80	1	12	0,132

\* Suitable for MH lamps Osram type, see lamps technical specifications.

\*\* 250W: Luminous flux 25.500 lumen – 3800° K; 400W: Luminous flux 42.500 lumen – 3800° K.

# Street lighting





All our street lights are the result of advanced high level research. Their efficiency is recognized and appreciated worldwide.

The materials and components are all of high quality level to meet each and every installation requirement.



Zuoying Road, Taiwan



Colleoni center, Agrate Brianza, Italy



Italy motorway, Orvieto interchange



Motorway Fernao Dias San Paolo, Brasil



Italy motorway, Bergamo interchange

Gioiatauro port, Reggio Calabria, Italy



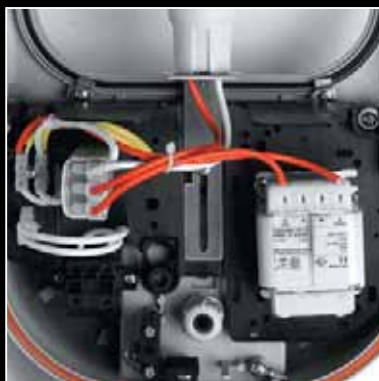
**S**  
MART

## Less power great performances

SMART is the response to increasing demand for both low energy consumption and high efficiency. It is based on many years' experience in road lighting, offering

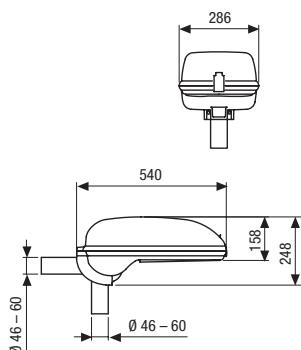
exceptional performance.

An indisputably pure design and impeccable construction: the perfect combination to ensure the best on the market.

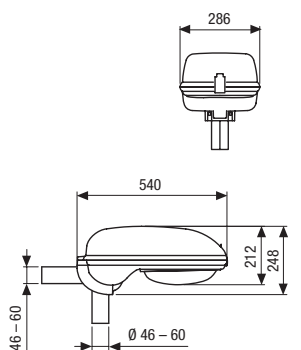


# Technical features of Smart

## Dimensions



Smart VP



Smart VB

## Description

### CHARACTERISTICS

- The housing (body and top cover) is manufactured from die-cast aluminium alloy and finish with a thermo polyester grey colour powder paint.  
On request: twin colours.
- Reflector is made of high purity (99,8%) one piece pressed electro-polished anodised aluminium.
- Post top entry installation,  $\varnothing 46 \div 60$ mm.
- Post top entry installation with accessory,  $\varnothing 72 \div 76$  mm.
- Post top tilt angles can be:  $0^\circ +5^\circ +10^\circ$
- Side entry installation,  $\varnothing 46 \div 60$ mm., the luminaire gets inclination of the arm.
- In case of side entry installation with tilt of  $10^\circ$  and  $15^\circ$ , an inclination luminaire accessory limiting the tilt at  $0^\circ$ , is supplied
- Gaskets are made of anti-age weather resistant silicon rubber  $\Sigma$
- For Class II electrical safety switch disconnects the main power supply on opening the luminaire in maintenance.
- Porcelain lampholder with horizontal and vertical mechanical focusing device.
- Adjustable reflector in order to optimise the optical performance and light distribution.
- Connection to power supply via a cable gland PG 13,5 - IP 68
- Anti vacuum device.

- Zinc coated gear tray for insulation Class I; glass reinforced nylon gear tray for insulation Class II.
- Both gear trays are completed with lamp holder and/or electrical connectors for fast replacement and easy maintenance.
- As optional the luminaire can be provided with a fuse.
- The gear and lamp compartment can be easily accessed by opening the fore stainless steel hook.

For quick and safety inspection the luminaire is supplied with anti-tipping cover device.  
Electrical components are certified with ENEC Mark. Power supply: 230V; 50Hz.  
European Standards: EN 60598/1  
Maximum mounting height: 15 mt.







### SMART VP

Output ratio: cut-off.  
Optic group with thermal toughened flat glass.  
Wind exposed surface =  $0,0870 \text{ m}^2$

### SMART VB

Output ratio: semi cut-off.  
Optic group with thermal toughened curved glass.  
Wind exposed surface =  $0,0980 \text{ m}^2$

### LAMPS

	QE (MBF) - E27 80-125W
	ST (SAP-T) - E27 50-70W - E40 100-150W
	MT (JM-T) - E27 70W - E40 100-150W
	MT (JM) - G12 70-150W
	FLC 2G8 60-85-120W
	COSMO-WHITE PGZ12 45-60-90-140W

### COLOUR

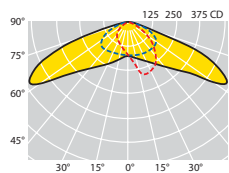
Silver



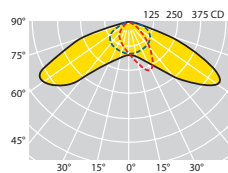
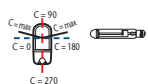
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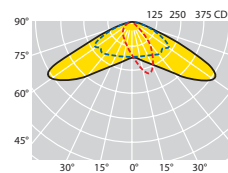
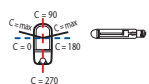
Smart VP



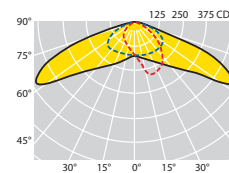
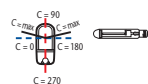
ST (SAP-T) 70W E27  
POS. B-3-A C max=25°



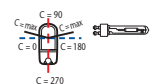
ST (SAP-T) 100W E40  
POS. B-4-A C max=25°



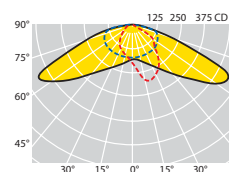
ST (SAP-T) 150W E40  
POS. X-4-A C max=20°



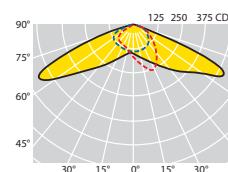
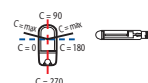
Cosmo White 140W PGZ12  
POS. C-3-A C max=25°



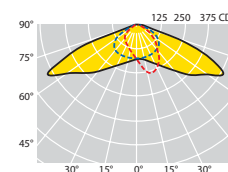
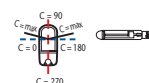
Smart VB



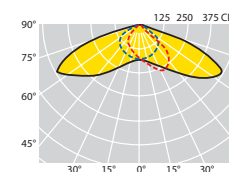
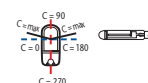
ST (SAP-T) 70W E27  
POS. B-3-A C max=25°



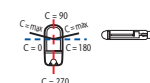
ST (SAP-T) 100W E40  
POS. A-4-A C max=25°



ST (SAP-T) 100W E40  
POS. B-4-A C max=25°



ST (SAP-T) 150W E40  
POS. A-4-A C max=30°



## Accessories and spare parts



60031



60030



60026



60063

CODE	DESCRIPTION	GROSS WEIGHT (kg)	PACKING (pcs.)	PALLETS	CBMS
12035	Glass for Smart VP	0,67	-	-	-
12036	Curved glass for Smart	0,95	-	-	-
60031	Corner bracket composite	1,90	3	Hot galvanizing	0,0021
60030	Wall bracket composite	1,05	4	Hot galvanizing	0,0016
60026	Wall bracket electro welded	1,265	6	Hot galvanizing	0,00257
60063	Corner bracket electro welded	2,60	4	Hot galvanizing	0,00835
60402	Top pole accessory mm. 76	0,09	1	-	-
02676	Osram lamp ST 100W E40	-	-	-	-
02677	Osram lamp ST 150W E40	-	-	-	-
04413	Osram lamp ST 70W E27 Super	-	-	-	-
07649	Lamp G12 150W 3000°K	-	-	-	-
08821	Lamp G12 70W 3000°K	-	-	-	-
11430	Lamp FC 2G8 120W 4000°K	-	-	-	-
12329	Venture lamp ST 150W E40	-	-	-	-
12403	Venture lamp ST 150W E40 Super	-	-	-	-
12401	Venture lamp ST 70W E27 Super	-	-	-	-
12402	Venture lamp ST 100W E40 Super	-	-	-	-
12337	Osram lamp ST 150W E40 Super	-	-	-	-
13406	Cosmo-white lamp PGZ12 45W 2720°K	-	-	-	-
13407	Cosmo-white lamp PGZ12 60W 2730°K	-	-	-	-
13408	Cosmo-white lamp PGZ12 90W 2880°K	-	-	-	-
13409	Cosmo-white lamp PGZ12 140W 2860°K	-	-	-	-
13848	Lamp FC 2G8 60W 4000°K	-	-	-	-
13849	Lamp FC 2G8 85W 4000°K	-	-	-	-

## Products codes

### SMART VP - INSULATION CLI

CODE	DESCRIPTION	LAMP TYPE	GROSS WEIGHT (kg)	PACKING (pcs.)	PALLET (pcs.)	CBMS
44000	<input type="checkbox"/> CR	S(SAP) 50W	7,44	1		0,047
44001*	<input type="checkbox"/> CR	S(SAP) 70W	7,74	1		0,047
44002	<input type="checkbox"/> CR	M-S(JM-SAP) 100W	7,89	1		0,047
44003	<input type="checkbox"/> CR	M-S(JM-SAP) 150W	8,71	1		0,047
44005	<input type="checkbox"/> CR	M(JM) 70W	7,74	1		0,047
44010	<input type="checkbox"/> CR	Q(MBF) 80W	7,29	1		0,047
44011	<input type="checkbox"/> CR	Q(MBF) 125W	7,59	1		0,047
44015	<input type="checkbox"/> CR	M(JM) 70W - G12	7,74	1		0,047
44016	<input type="checkbox"/> CR	M(JM) 150W - G12	8,61	1		0,047
44030	<input type="checkbox"/> CR	Cosmo-white PGZ12 45W	6,97	1		0,047
44031	<input type="checkbox"/> CR	Cosmo-white PGZ12 60W	6,97	1		0,047
44032	<input type="checkbox"/> CR	Cosmo-white PGZ12 90W	6,97	1		0,047
44033	<input type="checkbox"/> CR	Cosmo-white PGZ12 140W	6,97	1		0,047
44042	<input type="checkbox"/> CR	FC 60-85 Philips type	6,71	1		0,047
44043	<input type="checkbox"/> CR	FC 120 Osram type	6,74	1		0,047

\* Whit ignitor

## Products codes

## SMART VP - INSULATION CLII

CODE	DESCRIPTION	LAMP TYPE	GROSS WEIGHT (kg)	PACKING (pcs.)	PALLET (pcs.)	CBMS
44100	S(SAP) 50W	S(SAP) 50W	7,44	1		0,047
44101*	S(SAP) 70W	S(SAP) 70W	7,74	1		0,047
44102	M-S(JM-SAP) 100W	M-S(JM-SAP) 100W	7,89	1		0,047
44103	M-S(JM-SAP) 150W	M-S(JM-SAP) 150W	8,71	1		0,047
44105	M(JM) 70W	M(JM) 70W	7,74	1		0,047
44110	Q(MBF) 80W	Q(MBF) 80W	7,29	1		0,047
44111	Q(MBF) 125W	Q(MBF) 125W	7,59	1		0,047
44115	M(JM) 70W - G12	M(JM) 70W - G12	7,74	1		0,047
44116	M(JM) 150W - G12	M(JM) 150W - G12	8,61	1		0,047
44130	Cosmo-white PGZ12 45W	Cosmo-white PGZ12 45W	6,97	1		0,047
44131	Cosmo-white PGZ12 60W	Cosmo-white PGZ12 60W	6,97	1		0,047
44132	Cosmo-white PGZ12 90W	Cosmo-white PGZ12 90W	6,97	1		0,047
44133	Cosmo-white PGZ12 140W	Cosmo-white PGZ12 140W	6,97	1		0,047
44142	FC 60-85 Philips type	FC 60-85 Philips type	6,71	1		0,047
44143	FC 120 Osram type	FC 120 Osram type	6,74	1		0,047

\* Whit ignitor

## SMART VB - INSULATION CLII

CODE	DESCRIPTION	LAMP TYPE	GROSS WEIGHT (kg)	PACKING (pcs.)	PALLET (pcs.)	CBMS
44200	S(SAP) 50W	S(SAP) 50W	7,64	1		0,047
44201*	S(SAP) 70W	S(SAP) 70W	7,94	1		0,047
44202	M-S(JM-SAP) 100W	M-S(JM-SAP) 100W	8,09	1		0,047
44203	M-S(JM-SAP) 150W	M-S(JM-SAP) 150W	8,91	1		0,047
44205	M(JM) 70W	M(JM) 70W	7,94	1		0,047
44210	Q(MBF) 80W	Q(MBF) 80W	7,49	1		0,047
44211	Q(MBF) 125W	Q(MBF) 125W	7,79	1		0,047
44215	M(JM) 70W - G12	M(JM) 70W - G12	7,94	1		0,047
44216	M(JM) 150W - G12	M(JM) 150W - G12	8,81	1		0,047
44230	Cosmo-white PGZ12 45W	Cosmo-white PGZ12 45W	7,17	1		0,047
44231	Cosmo-white PGZ12 60W	Cosmo-white PGZ12 60W	7,17	1		0,047
44232	Cosmo-white PGZ12 90W	Cosmo-white PGZ12 90W	7,17	1		0,047
44233	Cosmo-white PGZ12 140W	Cosmo-white PGZ12 140W	7,17	1		0,047
44242	FC 60-85 Philips type	FC 60-85 Philips type	6,91	1		0,047
44243	FC 120 Osram type	FC 120 Osram type	6,94	1		0,047

\* Whit ignitor

## SMART VB - INSULATION CLII

CODE	DESCRIPTION	LAMP TYPE	GROSS WEIGHT (kg)	PACKING (pcs.)	PALLET (pcs.)	CBMS
44300	S(SAP) 50W	S(SAP) 50W	7,64	1		0,047
44301*	S(SAP) 70W	S(SAP) 70W	7,94	1		0,047
44302	M-S(JM-SAP) 100W	M-S(JM-SAP) 100W	8,09	1		0,047
44303	M-S(JM-SAP) 150W	M-S(JM-SAP) 150W	8,91	1		0,047
44305	M(JM) 70W	M(JM) 70W	7,94	1		0,047
44310	Q(MBF) 80W	Q(MBF) 80W	7,49	1		0,047
44311	Q(MBF) 125W	Q(MBF) 125W	7,79	1		0,047
44315	M(JM) 70W - G12	M(JM) 70W - G12	7,94	1		0,047
44316	M(JM) 150W - G12	M(JM) 150W - G12	8,81	1		0,047
44330	Cosmo-white PGZ12 45W	Cosmo-white PGZ12 45W	7,17	1		0,047
44331	Cosmo-white PGZ12 60W	Cosmo-white PGZ12 60W	7,17	1		0,047
44332	Cosmo-white PGZ12 90W	Cosmo-white PGZ12 90W	7,17	1		0,047
44333	Cosmo-white PGZ12 140W	Cosmo-white PGZ12 140W	7,17	1		0,047
44342	FC 60-85 Philips type	FC 60-85 Philips type	6,91	1		0,047
44343	FC 120 Osram type	FC 120 Osram type	6,94	1		0,047

\* Whit ignitor



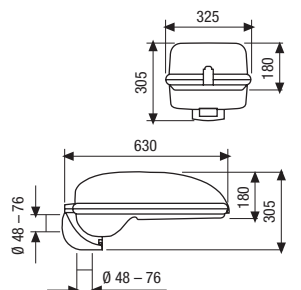
## Designed to light the world

The state-of-the-art framework is designed for the lighting of roads, motorways, residential areas and open spaces.

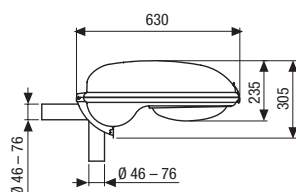
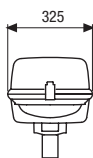


# Technical features of Itinera

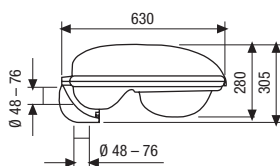
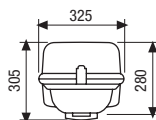
## Dimensions



Itinera VP



Itinera VB



Itinera PC

## Description

### CHARACTERISTICS

- The housing (body and top cover) is manufactured from die-cast aluminium recyclable alloy and finish with a thermo polyester silver colour powder paint.
- On request: twin colours.
- Reflector is made of high purity (99,8%) one piece pressed electro-polished anodised aluminium.
- Suitable for either post top entry and side entry max 76 mm.
- Post top tilt angle 0°; +5°; +10°; +15°. Side entry tilt angle 0°; +5°. In case of side entry installation with tilt of 10° and 15°, an inclination floodlight accessory limits the tilt at 0°, is supplied.
- Gaskets are made of anti-age weather resistant silicon rubber.
- For insulation Class II electrical safety switch disconnects the main power supply on opening the luminaire in maintenance.
- Porcelain lampholder with horizontal and vertical mechanical focusing device.
- Adjustable reflector in order to optimise the optical performance and light distribution.
- Connection to power supply via a cable gland PG 13,5 IP 68.
- High temperature silicon insulated conductors are used throughout.
- Anti vacuum device.
- Zinc coated gear tray for insulation Class I; glass reinforced nylon gear tray for insulation Class II.

- Both gear trays are completed with lamp holder and/or electrical connectors for fast replacement and easy maintenance.
- As optional the luminaire can be provided with a fuse.
- The gear and lamp compartment can be easily accessed by opening the fore stainless steel hook.

For quick and safety inspection the luminaire is supplied with anti-tipping cover device. Electrical components are certified with ENEC Mark. Power supply: 230V; 50Hz. European Standards: EN 60598/1

### ITINERA VP

- Output ratio: cut-off.
- Optic group with thermal toughened flat glass. Wind exposed surface = 0,0965 m<sup>2</sup>






### ITINERA VB

- Output ratio: semi cut-off.
- Optic group with thermal toughened curved glass. Wind exposed surface = 0,1080 m<sup>2</sup>

### ITINERA PC

- Output ratio: semi cut-off.
- The bowl is in injection moulded high quality impact and heat resistance UV stabilized polycarbonate. Wind exposed surface = 0,1165 m<sup>2</sup>

### LAMPS

	QE (MBF) - E27 80-125W - E40 250W
	SE (SAP-E) - E27 70W - E40 100-150-250W
	ST (SAP-T) - E27 70W - E40 100-150-250-400W
	MT (JM-T) - E27 70W - E40 100-150-250-400W
	ME (JM-E) - E27 70W - E40 100-150-250W

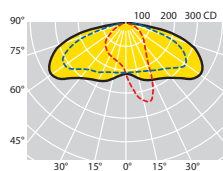
### COLOUR

Silver

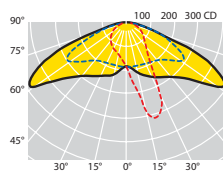
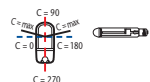




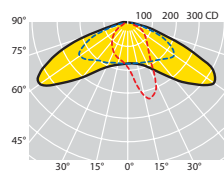
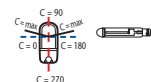
Itinera VP



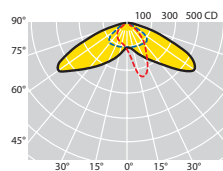
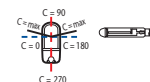
ST (SAP-T) 400W E40  
POS. FIX-3-A C max=15°



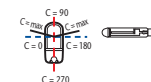
ST (SAP-T) 250W E40  
POS. A-3-A C max=20°



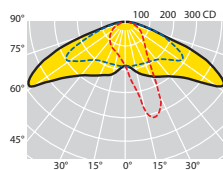
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POS. B-3-D C max=25°



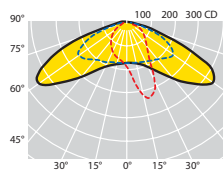
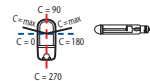
ST (SAP-T) 100W E40  
POS. B-3-D C max=20°



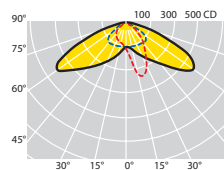
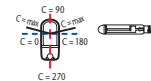
Itinera VB



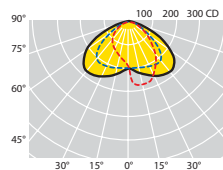
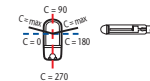
ST (SAP-T) 250W E40  
POS. A-3-A C max=20°



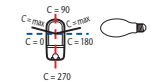
ST (SAP-T) 150W E40  
POS. B-3-D C max=25°



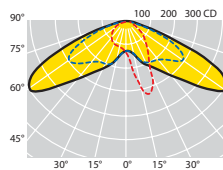
ST (SAP-T) 100W E40  
POS. B-3-D C max=20°



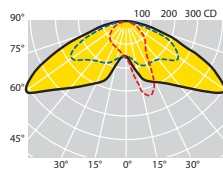
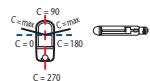
ME (JM-E) 150W E40  
POS. B-3-D C max=25°



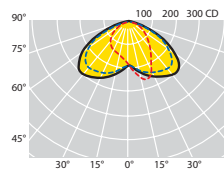
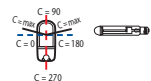
Itinera PC



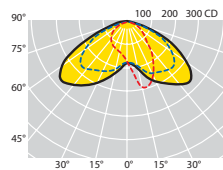
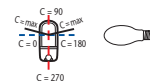
ST (SAP-T) 250W E40  
POS. A-3-A C max=20°



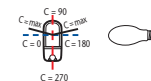
ST (SAP-T) 150W E40  
POS. B-3-D C max=25°



SE (SAP-E) 150W E40  
POS. B-3-D C max=20°



SE (SAP-E) 100W E40  
POS. D-3-D C max=20°



## Accessories and spare parts



60031



60030



60026



60063

CODE	DESCRIPTION	GROSS WEIGHT (kg)	PACKING (pcs.)	COLOUR	CBMS
09719	Glass for Itinera VP	0,77	-	-	-
10783	Curved glass for Itinera VB	1,05	-	-	-
09727	Polycarbonate bowl for Itinera PC	0,45	-	-	-
60031	Corner bracket composite	1,90	3	Hot galvanizing	0,0021
60030	Wall bracket composite	1,05	4	Hot galvanizing	0,0016
60026	Wall bracket electro welded	1,265	6	Hot galvanizing	0,00257
60063	Corner bracket electro welded	2,60	4	Hot galvanizing	0,00835
00473	Osram lamp ST 250W E40	-	-	-	-
00474	Osram lamp ST 4000W E40	-	-	-	-
02676	Osram lamp ST 100W E40	-	-	-	-
02677	Osram lamp ST 150W E40	-	-	-	-
04413	Osram lamp ST 70W E27 Super	-	-	-	-
12051	Osram lamp ST 250W E40 Super	-	-	-	-
12329	Venture lamp ST 150W E40	-	-	-	-
12330	Venture lamp ST 250W E40	-	-	-	-
12331	Venture lamp ST 400W E40	-	-	-	-
12337	Osram lamp ST 150W E40 Super	-	-	-	-
12401	Venture lamp ST 70W E27 Super	-	-	-	-
12402	Venture lamp ST 100W E40 Super	-	-	-	-
12403	Venture lamp ST 150W E40 Super	-	-	-	-
12404	Venture lamp ST 250W E40 Super	-	-	-	-
12405	Venture lamp ST 400W E40 Super	-	-	-	-

## Products codes

### ITINERA VP - INSULATION CL I











CODE	DESCRIPTION	LAMP TYPE	GROSS WEIGHT (kg)	PACKING (pcs.)	PALLET (pcs.)	CBMS
40700*		S (SAP) 70W	9,75	1	24	0,0728
40701		M-S (JM-SAP) 100W	10,00	1	24	0,0728
40702		M-S (JM-SAP) 150W	10,90	1	24	0,0728
40703**		M-S (JM-SAP) 250W	12,00	1	24	0,0728
40704**		M-S (JM-SAP) 400W	13,30	1	24	0,0728
40705		M (JM) 70W	9,75	1	24	0,0728
40706		M (JM) 250W PHI type	10,80	1	24	0,0728
40707		M (JM) 400W PHI type	12,10	1	24	0,0728
40708		QE (MBF) 80W	9,55	1	24	0,0728
40709		QE (MBF) 125W	9,80	1	24	0,0728
40710		QE (MBF) 250W	10,70	1	24	0,0728

\* With ignitor

\*\* Suitable for MH lamps, Osram type

## Products codes










## ITINERA VP - INSULATION CL II

CODE	DESCRIPTION	LAMP TYPE	GROSS WEIGHT (kg)	PACKING (pcs.)	PALLET (pcs.)	CBMS
40750*	 S (SAP) 70W	S (SAP) 70W	9,65	1	24	0,0728
40751	 M-S (JM-SAP) 100W	M-S (JM-SAP) 100W	9,90	1	24	0,0728
40752	 M-S (JM-SAP) 150W	M-S (JM-SAP) 150W	10,80	1	24	0,0728
40753**	 M-S (JM-SAP) 250W	M-S (JM-SAP) 250W	11,90	1	24	0,0728
40754**	 M-S (JM-SAP) 400W	M-S (JM-SAP) 400W	13,30	1	24	0,0728
40755	 M (JM) 70W	M (JM) 70W	9,65	1	24	0,0728
40756	 M (JM) 250W Philips type	M (JM) 250W Philips type	10,70	1	24	0,0728
40758	 QE (MBF) 80W	QE (MBF) 80W	9,45	1	24	0,0728
40759	 QE (MBF) 125W	QE (MBF) 125W	9,70	1	24	0,0728
40760	 QE (MBF) 250W	QE (MBF) 250W	10,60	1	24	0,0728

\* With ignitor

\*\* Suitable for MH lamps, Osram type










## ITINERA VB - INSULATION CL I

CODE	DESCRIPTION	LAMP TYPE	GROSS WEIGHT (kg)	PACKING (pcs.)	PALLET (pcs.)	CBMS
41800*	 S(SAP) 70W	S(SAP) 70W	10,25	1	24	0,0728
41801	 M-S(JM-SAP) 100W	M-S(JM-SAP) 100W	10,5	1	24	0,0728
41802	 M-S(JM-SAP) 150W	M-S(JM-SAP) 150W	11,4	1	24	0,0728
41803**	 M-S(JM-SAP) 250W	M-S(JM-SAP) 250W	12,5	1	24	0,0728
41805	 M(JM) 70W	M(JM) 70W	10,25	1	24	0,0728
41806	 M(JM) 250W Philips type	M(JM) 250W Philips type	11,3	1	24	0,0728
41808	 Q(MBF) 80W	Q(MBF) 80W	10,05	1	24	0,0728
41809	 Q(MBF) 125W	Q(MBF) 125W	10,3	1	24	0,0728
41810	 Q(MBF)250W	Q(MBF)250W	11,2	1	24	0,0728

\* With ignitor

\*\* Suitable for JM lamps, Osram type

## ITINERA VB - INSULATION CL II

CODE	DESCRIPTION	LAMP TYPE	GROSS WEIGHT (kg)	PACKING (pcs.)	PALLET (pcs.)	CBMS
41850*	 S(SAP) 70W	S(SAP) 70W	10,15	1	24	0,0728
41851	 M-S(JM-SAP) 100W	M-S(JM-SAP) 100W	10,4	1	24	0,0728
41852	 M-S(JM-SAP) 150W	M-S(JM-SAP) 150W	11,3	1	24	0,0728
41853**	 M-S(JM-SAP) 250W	M-S(JM-SAP) 250W	12,4	1	24	0,0728
41855	 M(JM) 70W	M(JM) 70W	10,15	1	24	0,0728
41856	 M(JM) 250W Philips type	M(JM) 250W Philips type	11,2	1	24	0,0728
41858	 Q(MBF) 80W	Q(MBF) 80W	9,95	1	24	0,0728
41859	 Q(MBF) 125W	Q(MBF) 125W	10,2	1	24	0,0728
41860	 Q(MBF)250W	Q(MBF)250W	11,1	1	24	0,0728

\* With ignitor









\*\* Suitable for JM lamps, Osram type

## ITINERA PC - INSULATION CL I

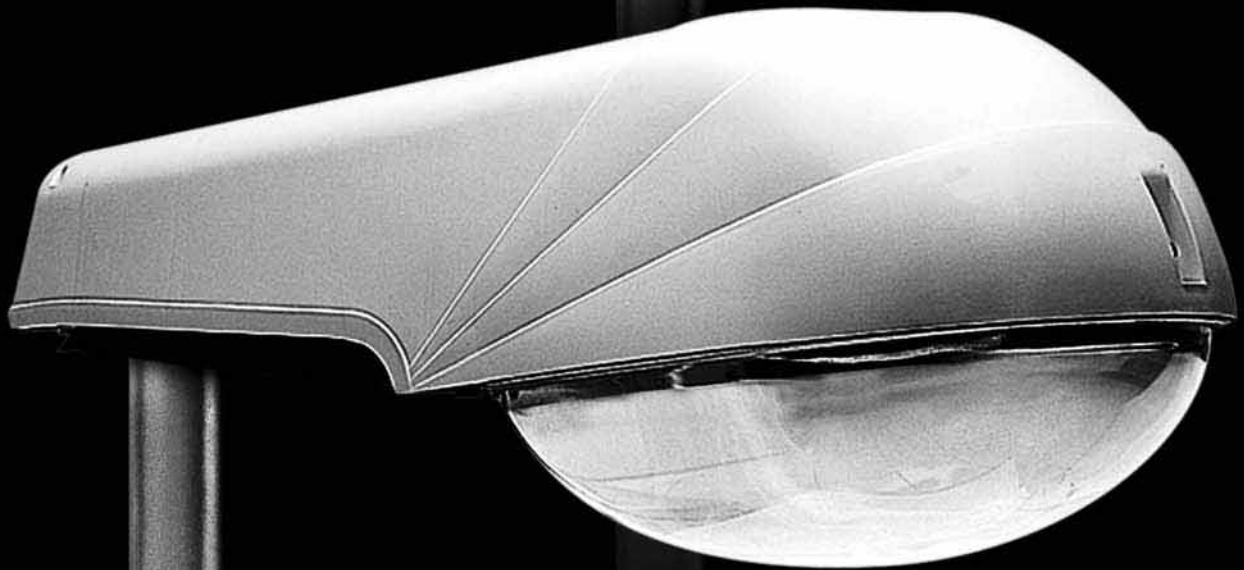
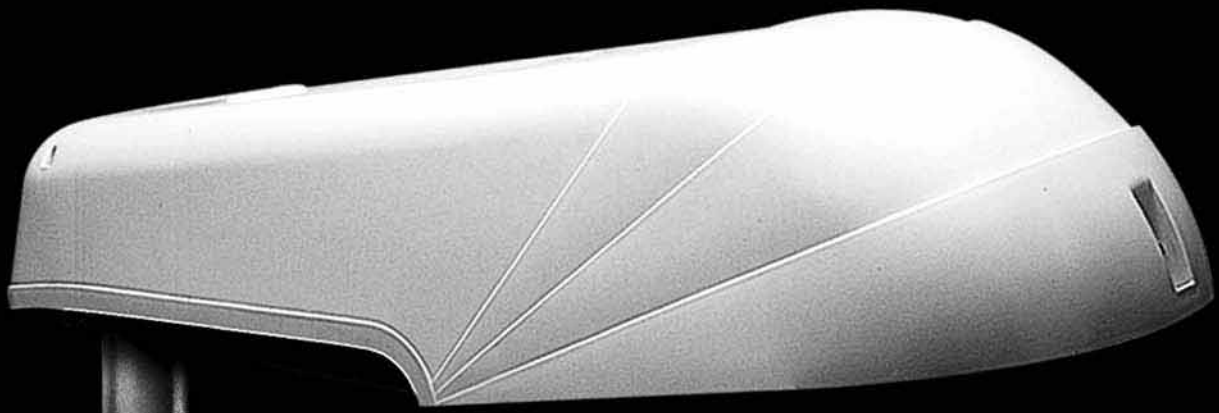
CODE	DESCRIPTION	LAMP TYPE	GROSS WEIGHT (kg)	PACKING (pcs.)	PALLET (pcs.)	CBMS
40720*	 S (SAP) 70W	S (SAP) 70W	9,43	1	24	0,0728
40721	 M-S (JM-SAP) 100W	M-S (JM-SAP) 100W	9,68	1	24	0,0728
40722	 M-S (JM-SAP) 150W	M-S (JM-SAP) 150W	10,58	1	24	0,0728
40723	 S (SAP) 250W	S (SAP) 250W	11,68	1	24	0,0728
40725	 M (JM) 70W	M (JM) 70W	9,43	1	24	0,0728
40728	 QE (MBF) 80W	QE (MBF) 80W	9,23	1	24	0,0728
40729	 QE (MBF) 125W	QE (MBF) 125W	9,48	1	24	0,0728
40730	 QE (MBF) 250W	QE (MBF) 250W	10,38	1	24	0,0728

\* With ignitor

## ITINERA PC - INSULATION CL II

CODE	DESCRIPTION	LAMP TYPE	GROSS WEIGHT (kg)	PACKING (pcs.)	PALLET (pcs.)	CBMS
40780*	 S (SAP) 70W	S (SAP) 70W	9,33	1	24	0,0728
40781	 M-S (JM-SAP) 100W	M-S (JM-SAP) 100W	9,58	1	24	0,0728
40782	 M-S (JM-SAP) 150W	M-S (JM-SAP) 150W	10,48	1	24	0,0728
40783	 S (SAP) 250W	S (SAP) 250W	11,58	1	24	0,0728
40785	 M (JM) 70W	M (JM) 70W	9,33	1	24	0,0728
40788	 QE (MBF) 80W	QE (MBF) 80W	9,13	1	24	0,0728
40789	 QE (MBF) 125W	QE (MBF) 125W	9,38	1	24	0,0728
40790	 QE (MBF) 250W	QE (MBF) 250W	10,28	1	24	0,0728

\* With ignitor





## The tradition power

The Mira street light has for a long time a best seller in the field and is the first luminaire having developed upon the concept of a perfectly watertight optical unit inside a

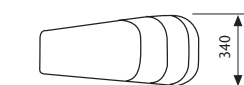
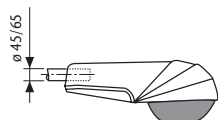
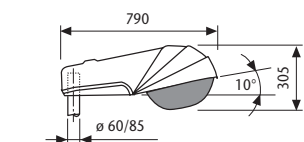
body of exceptional elegance. The optics are high performing, especially the cut-off type used in some parts of the world with extremely satisfactory results.



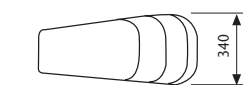
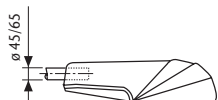
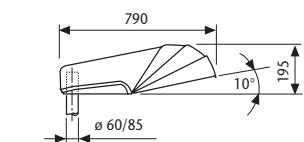
# Technical features of Mira

## Dimensions

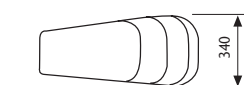
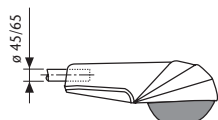
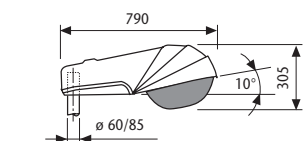
## Description



Mira VT



Mira VTP



Mira PX

### CHARACTERISTICS

- Cover made of polypropylene with mineral filler; stabilized against U.V., grey colour.
- Hinged opening without the use of tools, locked in the closed position by two steel retaining clips.
- Body in die cast aluminium coated with polyester powders in black colour.
- Reflector made of a highly pure (99.8%) aluminium pressed sheet, polished and oxidized.
- Nondegenerative rubber gasket.
- Porcelain lampholder, with focusing device.
- Extraction of the lamp from the hinder part of the reflector with a screwed plug device on which the lampholder is mounted.
- Device for line interruption on fitting's opening for maintenance purposes (only for insulation Class II).
- Bronze synered filter positioned on lampholder support.
- Prearrangement for the application of a photo cell.
- Prearrangement for mounting a mains fuse (only for insulation Class II).
- Installation on 60-85 mm dia, top entry pole and 45-65 mm dia, side.

The control gear plate, made out for insulation Class II of injection of thermoplastic material and for insulation Class I of a galvanized steel sheet, is complete with connectors which allow its quick disassembly during maintenance operations.

All the electrical components are produced according to the Italian Quality Standards for power 230V - 50 Hz and the street lighting is manufactured according to EN 60598/1 rules.

### MIRA VT

- Output ratio: semi cut-off.
- Refractor made of high transparency borosilicate glass with inner and outer differentiated prismatic surface supported by a frame made of aluminium alloy complete with non-degenerative rubber gasket and retaining screw.

Wind exposed surface = 0,158 m<sup>2</sup>

#### IP 55 OPTICAL ASSEMBLY

#### IP 23 ELECTRICAL ACCESSORIES

### MIRA VTP

- Output ratio: cut-off.
- Non removable flat tempered glass, sealed to the reflector by non degenerative gasket and mechanical beading.

Wind exposed surface = 0,115 m<sup>2</sup>

#### IP 65 OPTICAL ASSEMBLY

#### IP 23 ELECTRICAL ACCESSORIES

### MIRA PX






- Output ratio: semi cut-off.
- Clear U.V. resistant polycarbonate heat resistant non removable bowl, sealed to the reflector by nondegenerative gasket and mechanical beading.

Wind exposed surface = 0,158 m<sup>2</sup>

#### IP 65 OPTICAL ASSEMBLY

#### IP 23 ELECTRICAL ACCESSORIES

### LAMPS

	QE (MBF) - E27 80-125W - E40 250W
	SE (SAP-E) - E27 70W - E40 100-150-250W
	ST (SAP-T) - E27 70W - E40 100-150-250-400W
	MT (JM-T) - E27 70W - E40 100-150-250W
	ME (JM-E) - E27 70W - E40 100-150-250W

### COLOUR

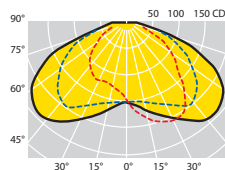
White



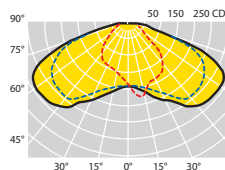
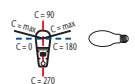
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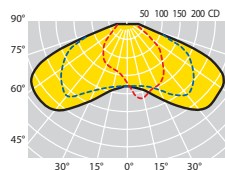
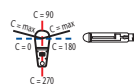
Mira VT



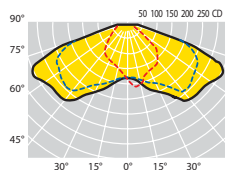
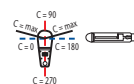
QE (MBF) 250W E40  
POS. 250W C max=5



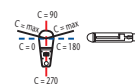
ST (SAP-T) 150W E40  
POS. A C max=15



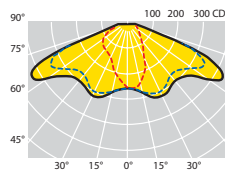
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POS. 250W C max=15



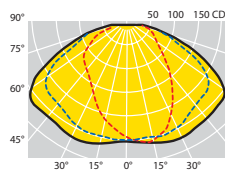
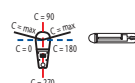
ST (SAP-T) 100W E40  
POS. A C max=10



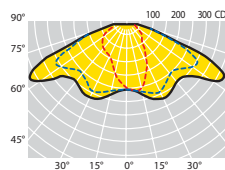
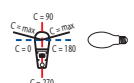
Mira VTP



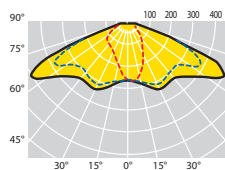
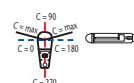
ST (SAP-T) 150W E40  
POS. A C max=10



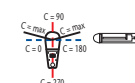
QE (MBF) 250W E40  
POS. 250W C max=25



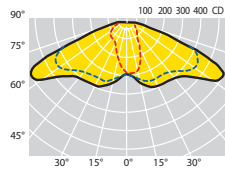
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POS. 250W C max=15



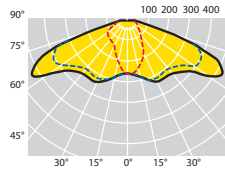
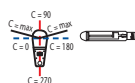
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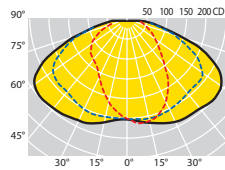
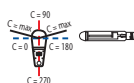
Mira PX



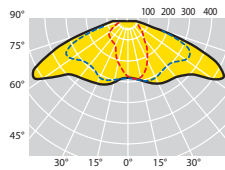
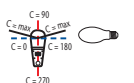
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POS. A C max=10



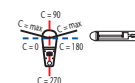
ST (SAP-T) 150W E40  
POS. A C max=10



QE (MBF) 250W E40  
POS. 250W C max=25



ST (SAP-T) 250W E40  
POS. 250W C max=15



IP 23

IP 55

IP 65



## Accessories and spare parts



60031



60030



60026



60063

CODE	DESCRIPTION	GROSS WEIGHT (kg)	PACKING (pcs.)	COLOUR	CBMS
<b>60100</b>	Top entry pole accessory for Mira install with Tilt 18° - 60 mm Max Ø	0,30	1	-	-
<b>60210</b>	Fuse	0,07	-	-	-
<b>60031</b>	Corner bracket composite	1,90	3	Hot galvanizing	0,0021
<b>60030</b>	Wall bracket composite	1,05	4	Hot galvanizing	0,0016
<b>60026</b>	Wall bracket electro welded	1,265	6	Hot galvanizing	0,00257
<b>60063</b>	Corner bracket electro welded	2,60	4	Hot galvanizing	0,00835
<b>40490*</b>	Insulation CL I empty gear plate + PL E27	1,04	1	-	0,0100
<b>40495*</b>	Insulation CL I empty gear plate + PL E40	1,11	1	-	0,0100
<b>40305*</b>	Insulation CL II empty gear plate + PL E27	0,82	1	-	0,0083
<b>40306*</b>	Insulation CL II empty gear plate + PL E40	0,97	1	-	0,0083
<b>MIRA VT</b>					
<b>04012</b>	Glass bowl	2,30	-	-	-
<b>MIRA VTP</b>					
<b>60212</b>	Optical assembly	2,10	-	-	0,0300
<b>MIRA PX</b>					
<b>60211</b>	Optical assembly	1,40	-	-	0,0450

\* For Extra European countries only

## Products codes

### MIRA VT - INSULATION CL I

CODE	DESCRIPTION	LAMP TYPE	GROSS WEIGHT (kg)	PACKING (pcs.)	PALLET (pcs.)	CBMS
<b>40400</b>	Body	-	8,40	1	18	0,0890
<b>40440*</b>	KIT	S (SAP) 70W/E	2,30	1	-	0,0100
<b>40450</b>	KIT	M-S (JM-SAP) 100W	2,71	1	-	0,0100
<b>40460</b>	KIT	M-S (JM-SAP) 150W	3,54	1	-	0,0100
<b>40470</b>	KIT	M-S (JM-SAP) 250W	4,48	1	-	0,0100
<b>40482</b>	KIT	M (JM) 250W Philips type	3,70	1	-	0,0100
<b>40410</b>	KIT	QE (MBF) 80W	2,24	1	-	0,0100
<b>40420</b>	KIT	QE (MBF) 125W	2,45	1	-	0,0100
<b>40430</b>	KIT	QE (MBF) 250W	3,55	1	-	0,0100

\* With ignitor

### MIRA VT - INSULATION CL II

CODE	DESCRIPTION	LAMP TYPE	GROSS WEIGHT (kg)	PACKING (pcs.)	PALLET (pcs.)	CBMS
<b>40300</b>	Body	-	8,60	1	18	0,0890
<b>40310*</b>	KIT	S (SAP) 70W/E	2,32	1	-	0,0083
<b>40320</b>	KIT	M-S (JM-SAP) 100W	2,50	1	-	0,0083
<b>40330</b>	KIT	M-S (JM-SAP) 150W	3,31	1	-	0,0083
<b>40340</b>	KIT	M-S (JM-SAP) 250W	4,20	1	-	0,0083
<b>40379</b>	KIT	M (JM) 250W Philips type	3,55	1	-	0,0083
<b>40350</b>	KIT	QE (MBF) 80W	1,97	1	-	0,0083
<b>40360</b>	KIT	QE (MBF) 125W	2,18	1	-	0,0083
<b>40370</b>	KIT	QE (MBF) 250W	3,40	1	-	0,0083

\* With ignitor

## Products codes

### MIRA VTP - INSULATION CL I

CODE	DESCRIPTION	LAMP TYPE	GROSS WEIGHT (kg)	PACKING (pcs.)	PALLET (pcs.)	CBMS
40402	Body	-	6,19	1	27	0,0580
40487	Body	ST (SAP-T) 400W	12,18	1	27	0,0580
40440*	KIT	S (SAP) 70W/E	2,30	1	-	0,0100
40450	KIT	M-S (JM-SAP) 100W	2,71	1	-	0,0100
40460	KIT	M-S (JM-SAP) 150W	3,54	1	-	0,0100
40470	KIT	M-S (JM-SAP) 250W	4,48	1	-	0,0100
40482	KIT	M (JM) 250W Philips type	3,70	1	-	0,0100
40410	KIT	QE (MBF) 80W	2,24	1	-	0,0100
40420	KIT	QE (MBF) 125W	2,45	1	-	0,0100
40430	KIT	QE (MBF) 250W	3,55	1	-	0,0100

\* With ignitor

### MIRA VTP - INSULATION CL II

CODE	DESCRIPTION	LAMP TYPE	GROSS WEIGHT (kg)	PACKING (pcs.)	PALLET (pcs.)	CBMS
40302	Body	-	6,68	1	27	0,0580
40377	Body	ST (SAP-T) 400W	12,18	1	27	0,0580
40310*	KIT	S (SAP) 70W/E	2,32	1	-	0,0083
40320	KIT	M-S (JM-SAP) 100W	2,50	1	-	0,0083
40330	KIT	M-S (JM-SAP) 150W	3,31	1	-	0,0083
40340	KIT	M-S (JM-SAP) 250W	4,20	1	-	0,0083
40379	KIT	M (JM) 250W Philips type	3,55	1	-	0,0083
40350	KIT	QE (MBF) 80W	1,97	1	-	0,0083
40360	KIT	QE (MBF) 125W	2,18	1	-	0,0083
40370	KIT	QE (MBF) 250W	3,40	1	-	0,0083

\* With ignitor

### MIRA PX - INSULATION CL I

CODE	DESCRIPTION	LAMP TYPE	GROSS WEIGHT (kg)	PACKING (pcs.)	PALLET (pcs.)	CBMS
40401	Body	-	6,16	1	18	0,0890
40440*	KIT	S (SAP) 70W/E	2,30	1	-	0,0100
40450	KIT	M-S (JM-SAP) 100W	2,71	1	-	0,0100
40460	KIT	M-S (JM-SAP) 150W	3,54	1	-	0,0100
40470	KIT	S (SAP) 250W	4,48	1	-	0,0100
40410	KIT	QE (MBF) 80W	2,24	1	-	0,0100
40420	KIT	QE (MBF) 125W	2,45	1	-	0,0100
40430	KIT	QE (MBF) 250W	3,55	1	-	0,0100

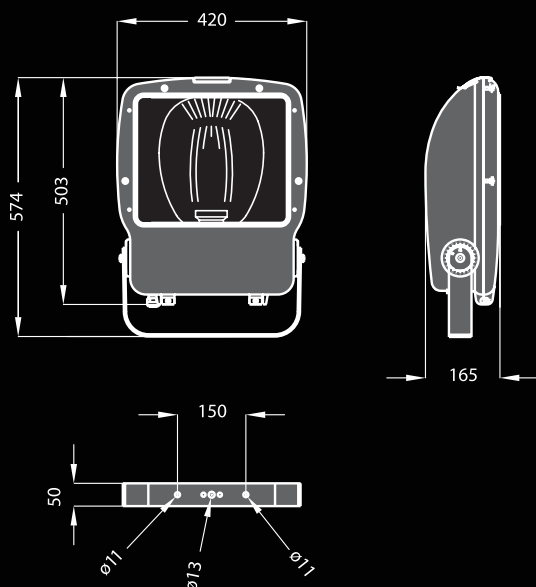
\* With ignitor

### MIRA PX - INSULATION CL II

CODE	DESCRIPTION	LAMP TYPE	GROSS WEIGHT (kg)	PACKING (pcs.)	PALLET (pcs.)	CBMS
40301	Body	-	6,36	1	18	0,0890
40310*	KIT	S (SAP) 70W/E	2,32	1	-	0,0083
40320	KIT	M-S (JM-SAP) 100W	2,50	1	-	0,0083
40330	KIT	M-S (JM-SAP) 150W	3,31	1	-	0,0083
40340	KIT	S (SAP) 250W	4,20	1	-	0,0083
40350	KIT	QE (MBF) 80W	1,97	1	-	0,0083
40360	KIT	QE (MBF) 125W	2,18	1	-	0,0083
40370	KIT	QE (MBF) 250W	3,40	1	-	0,0083

\* With ignitor





## The beauty of technology

Projector with street optics characterised by a graceful and refined design that, thanks to a series of performing optics, ensures it can

be used for street furniture for the lighting of outside business areas, public squares, urban routes, parking places and facades.



Akron 1



Akron 2



Akron 3



Akron 4



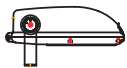
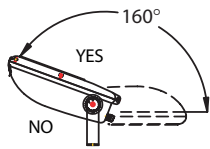
Akron 5



Arm

# Technical features of Mach 5 Way

## Aiming



## Description

### CHARACTERISTICS

- Body and glass-holding cover in die cast aluminium varnished with polyester powders in silver colour, after phosphodegreasing, phosphochromatising and the application of a protection coating aimed at ensuring excellent resistance to corrosion.
- Cover hinged in the body bottom and held with stainless steel small items. Lamp-holder in porcelain 16A with anti-unscrewing device. Installation by means of a strong steel fork, galvanised and varnished with polyester powders in metallised grey colour.
- Double goniometric scale for vertical mounting.
- Gaskets in anti-aging silicon rubber.
- Tempered glass suitable for high temperature, thermal shocks and crashes (6 Joule), mechanically fixed to the glass-holding ring.
- The power supply cable accesses the device through a PG 13.5 cable gland (anti-tear IP 68)
- Pressure compensation filter in teflon.
- Opening and access to optics and control gear with a single operation, by using the high

mechanical resistance stainless steel front spring. Extractable electrical tool holding plate in galvanised steel for insulation Class I.

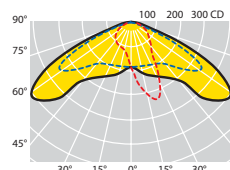
- Insulating Class II with disconnecting switch for supply line break when the cover is open.
  - Wiring board with electrical unit with improved power factor ( $\cos > 0.90$ ) in special self-extinguishing thermoplastic material V0.
  - The board can be easily removed to make maintenance operations easier. It can be cutaway from the supply line through non-reversible connectors with quick coupling.
  - The device can be directly installed on a 60 mm diameter pole, with die casting accessory suitable for single and double mounting and wall mounting for single projector.
- Wind-exposed surface = 0,09 m<sup>2</sup> with vertical addressing 0°.

All electrical components are certified with ENEC mark (230V, 50 Hz). The projector has been manufactured according to EN 60598/1 standards.

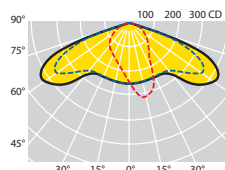
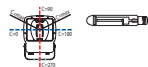
## Photometric data



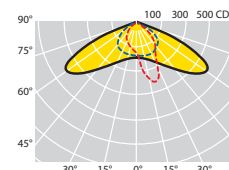
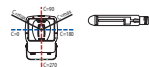
Mach 5 Way



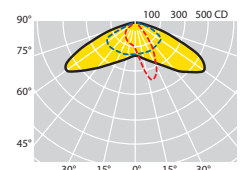
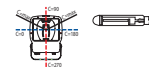
ST (SAP-T) 250W E 40  
POS. A C max=15



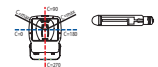
ST (SAP-T) 400W E 40  
POS. A C max=5



ST (SAP-T) 150W E 40  
POS. A C max=30



ST (SAP-T) 150W E 40  
POS. B C max=25



### LAMPS



QE (MBF) - E27 125W - E40 250W



SE (SAP-E) - E27 70W - E40 100-150-250W



ST (SAP-T) - E27 70W - E40 100-150-250-400W



MT (JM-T) - E27 70W - E40 100-150-250-400W



ME (JM-E) - E27 70W - E40 100-150-250W

### COLOUR

Silver



## Accessories and spare parts



**60239**  
Extension arm length mm 750.  
Zinc plated and steel coated in  
glazed in silver colour.

The **Akron** installation modular system has been properly studied for the Mach 5 way floodlights and it is available in the following versions:



**AKRON 1** code **60235**  
Single top pole mounting support in die cast aluminium block ø mm 60 painted in glazed silver colour.



**AKRON 2** code **60237**  
Double top pole mounting support in die cast aluminium twin block ø mm 60 painted in glazed silver colour.



**AKRON 3** code **60238**  
Wall mounting single support for horizontal aiming in die cast aluminium block painted in glazed silver colour.

CODE	DESCRIPTION	GROSS WEIGHT (kg)	PACKING (pcs.)	COLOUR	CBMS
<b>60239</b>	Extension arm length mm 750	6,50	1	Silver	0,0415
<b>60235</b>	AKRON 1	0,500	1	Silver	0,0010
<b>60237</b>	AKRON 2	0,500	1	Silver	0,0010
<b>60238</b>	AKRON 3	1,65	1	Silver	0,0082

## Products codes

### MACH 5 WAY - INSULATION CL I

CODE	DESCRIPTION	LAMP TYPE	WEIGHT (kg)	PACKING (pcs.)	PALLET (pcs.)	CBMS
<b>35001*</b>	<a href="#">CR</a>	S (SAP) 70W	11,40	1	40	0,0494
<b>35002</b>	<a href="#">CR</a>	M-S (JM-SAP) 100W	11,50	1	40	0,0494
<b>35003</b>	<a href="#">CR</a>	M-S (JM-SAP) 150W	12,05	1	40	0,0494
<b>35004**</b>	<a href="#">CR</a>	M-S (JM-SAP) 250W	13,35	1	40	0,0494
<b>35005**</b>	<a href="#">CR</a>	M-S (JM-SAP) 400W	14,45	1	40	0,0494
<b>35006</b>	<a href="#">CR</a>	M (JM) 70W	11,40	1	40	0,0494
<b>35007</b>	<a href="#">CR</a>	M (JM) 250W Philips type	12,20	1	40	0,0494
<b>35008</b>	<a href="#">CR</a>	M (JM) 400W Philips type	13,25	1	40	0,0494
<b>35010</b>	<a href="#">CR</a>	QE (MBF) 125W	11,30	1	40	0,0494
<b>35011</b>	<a href="#">CR</a>	QE (MBF) 250W	12,10	1	40	0,0494

\* With ignitor.

\*\* Suitable for JM lamps Osram type, see lamps technical specifications.

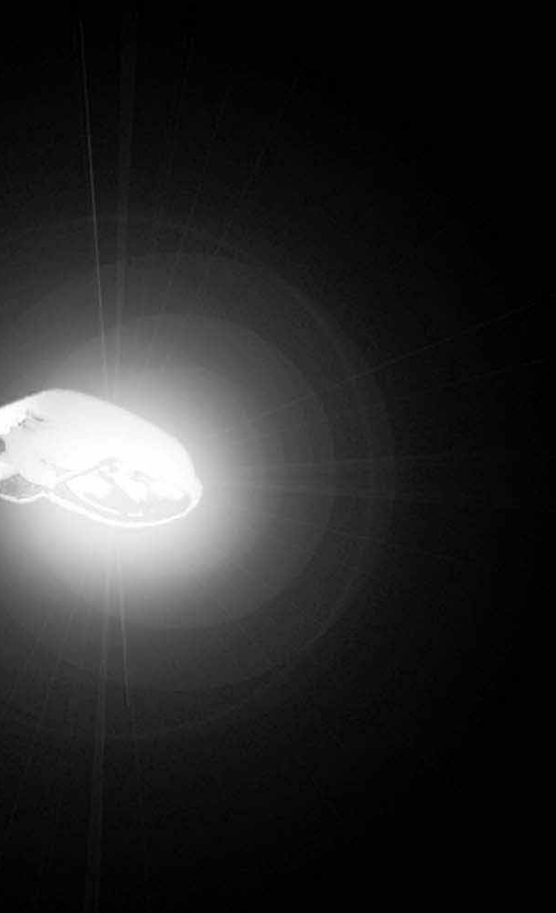
### MACH 5 WAY - INSULATION CL II

CODE	DESCRIPTION	LAMP TYPE	WEIGHT (kg)	PACKING (pcs.)	PALLET (pcs.)	CBMS
<b>35051*</b>	<a href="#">CR</a>	S (SAP) 70W	11,40	1	40	0,0494
<b>35052</b>	<a href="#">CR</a>	M-S (JM-SAP) 100W	11,50	1	40	0,0494
<b>35053</b>	<a href="#">CR</a>	M-S (JM-SAP) 150W	12,05	1	40	0,0494
<b>35054**</b>	<a href="#">CR</a>	M-S (JM-SAP) 250W	13,35	1	40	0,0494
<b>35056</b>	<a href="#">CR</a>	M (JM) 70W	11,40	1	40	0,0494
<b>35057</b>	<a href="#">CR</a>	M (JM) 250W Philips type	12,20	1	40	0,0494
<b>35060</b>	<a href="#">CR</a>	QE (MBF) 125W	11,30	1	40	0,0494
<b>35061</b>	<a href="#">CR</a>	QE (MBF) 250W	12,10	1	40	0,0494

\* With ignitor.

\*\* Suitable for JM lamps Osram type, see lamps technical specifications.





## City lighting impact

FAEL meets the many architectural requirements for the installation of lights in different contexts – in historical centres and grand squares, on motorways or ordinary streets – and has created a range of support devices for its street lights that combine

simple design with functional needs.

The new URBANA series of pole- and wall-mounted arms support the luminaires, are light and elegant, and ensure installation strictly according to regional legislation on public lighting.

# Technical features of Urbana

## Description



### URBANA DOUBLE WAVE

- 2 arms – length 1500 mm
- Pole hooking Ø 60mm
- Pole fitting with 6 Inox screws M8
- Material Fe S235 JR
- Hot zinc plated – thickness min. 55 mm
- To be used with 2 adaptors
- For Itinera or Mach 5 luminaires

### URBANA SINGLE WAVE

- 1 arm – length 1500 mm
- Pole hooking Ø 60mm
- Pole fitting with 6 Inox screws M8
- Material Fe S235 JR
- Hot zinc plated – thickness min. 55 mm
- To be used with 1 adaptor
- For Itinera or Mach 5 luminaires



### URBANA DOUBLE BEND

- 2 arms – length 1500 mm
- Pole hooking Ø 60mm
- Pole fitting with 6 Inox screws M8
- Material Fe S235 JR
- Hot zinc plated – thickness min. 55 mm
- To be used with 2 adaptors
- For Itinera or Mach 5 luminaires

### URBANA SINGLE BEND

- 1 arm – length 1500 mm
- Pole hooking Ø 60mm
- Pole fitting with 6 Inox screws M8
- Material Fe S235 JR
- Hot zinc plated – thickness min. 55 mm
- To be used with 1 adaptor
- For Itinera or Mach 5 luminaires



### URBANA WALL WAVE

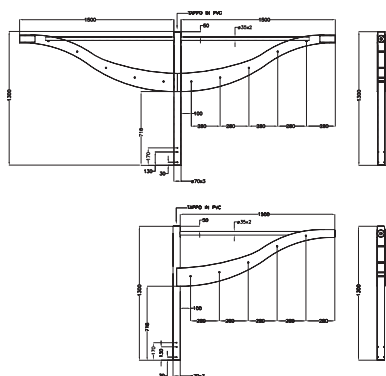
- 1 arm – length 800 mm
- Wall mounting
- Material Fe S235 JR
- Hot zinc plated – thickness min. 55 mm
- To be used with adaptor
- For Itinera or Mach 5 luminaires

### URBANA WALL BEND

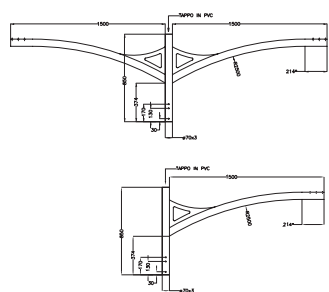
- 1 arm – length 800 mm
- Wall mounting
- Material Fe S235 JR
- Hot zinc plated – thickness min. 55 mm
- To be used with adaptor
- For Itinera or Mach 5 luminaires

Dimensions

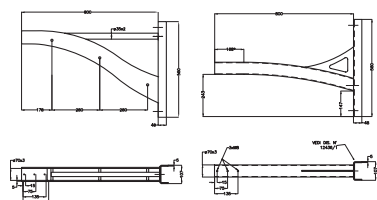
Products codes



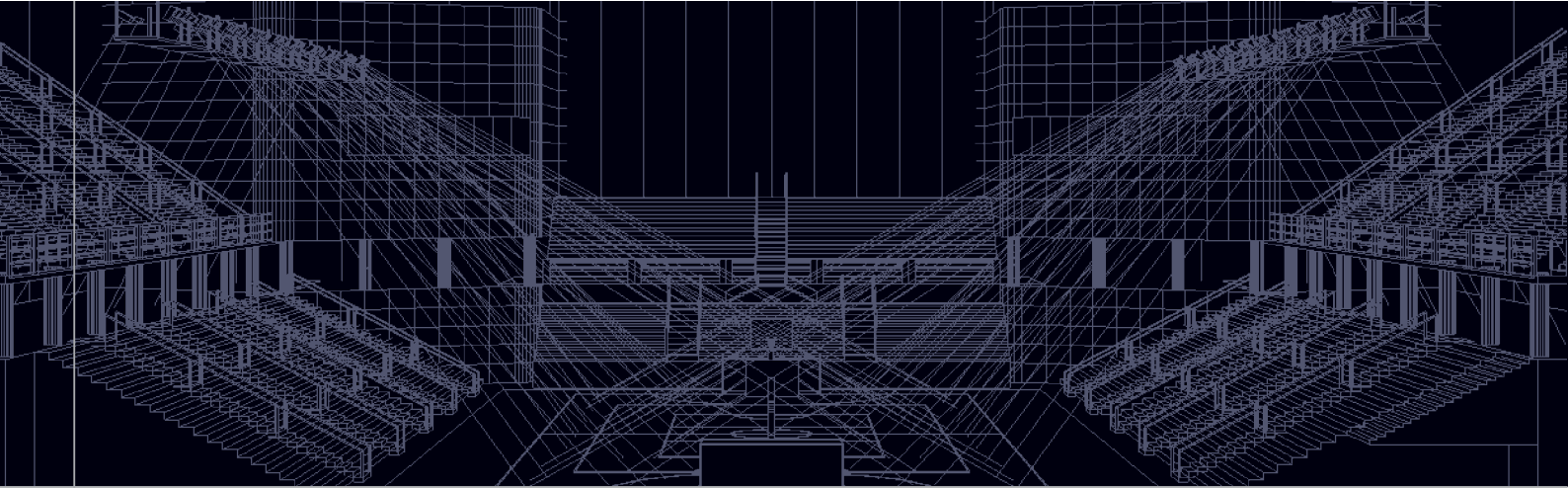
CODE	DESCRIPTION	GROSS WEIGHT (Kg)	CBMS
<b>60650</b>	Urbana single wave	27,20	0,158
<b>60652</b>	Urbana double wave	54,20	0,315
<b>60665</b>	Itinera adaptor 1 piece for single execution 2 pieces for double execution	1,10	0,001
<b>60667</b>	Mach 5 adaptor 1 piece for single execution 2 pieces for double execution	1,10	0,002



CODE	DESCRIPTION	GROSS WEIGHT (Kg)	CBMS
<b>60654</b>	Urbana single bend	13,90	0,093
<b>60656</b>	Urbana double bend	23,30	0,183
<b>60665</b>	Itinera adaptor 1 piece for single execution 2 pieces for double execution	1,10	0,001
<b>60667</b>	Mach 5 adaptor 1 piece for single execution 2 pieces for double execution	1,10	0,002



CODE	DESCRIPTION	GROSS WEIGHT (Kg)	CBMS
<b>60660</b>	Urbana wall wave	13,75	0,035
<b>60662</b>	Urbana wall bend	9,20	0,035
<b>60665</b>	Itinera adaptor 1 piece	1,10	0,001
<b>60667</b>	Mach5 adaptor 1 piece	1,10	0,002



## REGULATIONS FOR THE ELECTRICAL SAFETY

Our lighting devices comply with the following technical regulations:

### EN 60598-1 lighting devices "General prescriptions and tests"

It provides specifications for the general prescriptions for the lighting devices embodying the electrical lighting sources that are able to work with supply tension up to 1000V. The prescriptions and the relevant tests of this regulation deal with: classification, marking, mechanical and electrical building.

The projectors and the high bays comply with this regulation as well as with the technical regulation.

### EN 60598-2-5 lighting devices "Particular prescriptions for the projectors"

It provides specifications for the prescriptions of the floodlights that must be used with incandescence lamps, fluorescence tubular lamps and other discharge lamps, feeded with a supply tension not higher than 1000V.

Our floodlights comply with the en 60598-1 regulation as well as with the technical regulation.

### EN 60598-2-3 lighting devices "Particular prescriptions for street lighting devices"

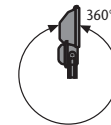
It provides specifications for the street lighting devices that must be used with incandescence lamps, fluorescence lamps and other discharge lamps, feeded with a supply tension not higher than 1000V.

### Functioning position allowed for the devices

For the correct functioning of some projectors it is necessary to take into account, when installing, their inclination as regards the horizontal axis.

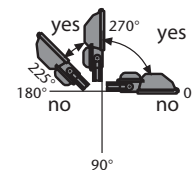
This is due to the position of the luminous source or of the power supply electrical units, inside the lighting body.

In the pages of the products contained in this catalogue there is a description of the allowed and not- allowed installation positions according to the power and to the insulation class (I° and II° Class) by means of schemes as the ones here below:



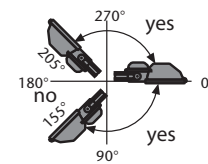
Functioning position

In this case the projector can be installed with an inclination edge from 0° to 360°. All the functioning positions are allowed.



Functioning pos.  
250W CL II

In this case the projector can be installed with an inclination edge from 0° to 225°.



Functioning pos.  
400W

In this case it is possible to install the projector with inclination edges between 205° and 155°.

## Protection classes

The reference work for this classification is IEC publication 529, but account must also be taken of Standard CEI EN 60598-1.

Specifically the test of protection against penetration of dust, solid bodies and water specified in the current Standard are not all identical to

those in IEC publication 529, because of the technical characteristics of lighting luminaires.

### PROTECTION DEGREES INDICATED BY THE FIRST CHARACTERISTIC DIGIT

FIRST CH. DIGIT	BRIEF DESCRIPTION	PROTECTION DEGREE OBJECTS THAT MUST NOT PENETRATE THE CASING
0	Not protected	No special protection
1	Protected from solid	A large surface of the human body, such as a hand, for example (but no protection bodies of over 50 mm against voluntary access).
2	Protected from solid bodies of over 12 mm	Solid bodies of diameter over 50 mm. A finger or similar objects not over 80 mm length.
3	Protected from solid bodies of over 2,5 mm	Tools, wires etc. thicker than 2,5 mm. Solid bodies of diameter over 2,5 mm.
4	Protected from solid bodies of over 1 mm	Wires, tapes etc. thicker than 1 mm. Solid bodies of diameter over 1 mm.
5	Protected against dust	Penetration of dust is not totally prevented, however dust cannot enter in amounts that would prejudice the proper functioning of the assembly.
6	Totally protected against dust	No penetration of dust.
















# Technical norms and notes

## PROTECTION DEGREES INDICATED BY THE SECOND CHARACTERISTIC DIGIT

SECOND CH. DIGIT	BRIEF DESCRIPTION	PROTECTION DEGREE OBJECTS THAT MUST NOT PENETRATE THE CASING
0	Not protected	No special protection.
1	Protected against	Drops of water (falling vertically) must not produce harmful effects
2	Protected against falling water to a maximum 15°	Drops of water (falling vertically) must not produce harmful effects when the casing is inclined at 15° to the vertical.
3	Protected against rain	Water falling as rain in a direction making an angle of no more 60° with the vertical must not produce harmful effects.
4	Protected against sprays	Water sprayed on the casing from whatever direction must not produce harmful effects.
5	Protected against water jets	Water sprayed on the casing from a nozzle from whatever direction must not produce harmful effects.
6	Protected against waves	Water from sea waves or powerful jets must not penetrate the casing in harmful quantities.
7	Water-tight against immersion	It must not be possible for water to penetrate the casing in harmful quantities on immersion in water in specified conditions of pressure and duration.
8	Water-tight against immersion	The luminaire is suitable for use permanently submerged in water in the conditions specified by the manufacturer. Note: This normally means that the luminaire is absolutely water-tight, but with some types of luminaires it may mean that there is water penetration but that this is not harmful.

## Table of light sources

### LAMP TYPES

I	Incandescent lamp		IPAR E 27		IAA E 27
H	Tungsten-halogen lamp		HS E 27		HD R7 s
Q	High pressure mercury vapour lamp		QB E 27/E 40		QE E 27/E 40
M	Metal halide lamp	 ME E 27/E 40	MT G 12		MT E 27/E 40
		 MD RX7s	 MD RX7s/Fc2		MC E 27
		 MD CAVO	 MD PGZ 12		
S	High pressure sodium lamp	 SE E 27/E 40	ST PG 12		ST E 27/E 40
			 SD RX7s		SD RX7s/Fc2
L	Low pressure sodium lamp				LS BY22d

### LIST OF ABBREVIATIONS

I (GLS)	Incandescent lamp	IPAR	PAR reflector
		IAA	pear shaped
H	Tungsten-halogen lamp	HS	single ended
		HD	double ended
Q (MBF)	High pressure mercury vap. lamp	QE	with elliptical bulb, diffuse coating
		QB	self ballasted
M (JM)	Metal halide lamp	ME	with elliptical bulb, diffuse coating
		MT	tubular clear
		MD	double ended, clear
		MC	with elliptical bulb, diffuse coating
S (SAP)	High pressure sodium lamp	SE	with elliptical bulb,
		ST	tubular clear
		SD	double ended, clear
L (SBP)	Low pressure sodium lamp	LS	single ended

In case of damage lamp, pulses are continuously given by the ignitor; it is absolutely necessary to replace immediately the lamp avoiding the out of order of the fixture due to overheating.

# Lamps technical data

## METAL HALIDE LAMPS TYPE M

TYPE	RET. POW. W	LAMP. COUR. A	LUM. FLUX IM.	COL. TEMPER. K	COLOUR INDEX RA	CAPACITOR $\mu$ F	BASE	BURN. POSITION
MT	70	1	6.500	3.000	83	12,5	E 27	any
MT	150	1,8	13.500	3.000	80	20	E 40	any
MT	250 (1)	3	20.000	5.300	90	30	E 40	any
MT	250 (2)	2,15	19.000	4.500	69	18	E 40	p20
MT	400 (3)	4,2	32.000	5.200	90	50	E 40	any
MT	400 (2)	3,25	35.000	4.300	69	25	E 40	p20
MT	1.000 (1)	9,5	80.000	6.000	93	90	E 40	p60
MT	1.000 (2)	8,2	85.000	4.300	69	70	E 40	p20
MT	2.000 (5)	8,8	200.000	4.500	60	37	E 40	p30
MT	2.000 (5)	10,3	180.000	6.000	93	60	E 40	p60
MT	2.000 (6)	8,6	210.000	3.800	69	35	E 40	p20
MT	2.000 (7)	8,8	240.000	4.000	60	37	E 40	p30
MT	35	0,5	3.300	3.000	81	6,3	G12	any
MT	70	1	5.200	3.000	80	12,5	G12	any
MT	70	1	5.500	4.200	85	12,5	G12	any
MT	150	1,8	12.000	3.000	80	20	G12	any
MT	150	1,8	12.500	4.200	85	20	G12	any
MT	45	0,5	4.300	2.720	60	-	PGZ12	any
MT	60	0,65	6.800	2.730	66	-	PGZ12	any
MT	90	0,97	10.450	2.880	66	-	PGZ12	any
MT	140	1,49	16.500	2.860	66	-	PGZ12	any
ME	75	1	5.000	3.200	65	12,5	E 27	any
ME	100	1,2	8.000	3.200	65	14	E 27	any
ME	150	1,8	12.500	3.200	65	20	E 27	any
ME	150	1,8	12.500	3.000	85	20	E 40	any
ME	250 (1)	3	19.000	5.200	90	30	E 40	any
ME	250 (2)	2,15	19.000	4.300	70	18	E 40	h15
ME	400 (3)	4,2	30.000	5.900	90	50	E 40	any
ME	400 (2)	3,25	35.000	4.300	70	25	E 40	h15
ME	400 (4)	3,25	35.000	4.300	70	25	E 40	h15
MC	70	1	5.500	3.200	65	12,5	E 27	any
MC	100	1,2	8.500	3.200	65	14	E 27	any
MC	150	1,8	13.000	3.200	65	20	E 27	any
MC	400	4,2	45.000	3.800	65	50	E 40	any
MD	70	1	5.000	3.000	80	12,5	RX7s	p45
MD	70	1	5.500	4.200	85	12,5	RX7s	p45
MD	100	1,2	8.400	3.000	80	14	RX7s	p45
MD	150	1,8	11.000	3.000	80	20	RX7s-24	p45
MD	150	1,8	11.250	4.200	85	20	RX7s-24	p45
MD	250	3	20.000	4.200	93	30	Fc2	p45
MD	400 (3)	4,2	35.000	4.200	90	50	Fc2	p45
MD	1.000 (1)	9,5	90.000	5.900	90	100	Cavo	p30
MD	1.000 (1)	9,5	90.000	4.400	80	100	Cavo	p30
MD	1.000 (2)	9,3	100.000	4.200	80	100	Cavo	p5
MD	1.000 (2)	9,3	90.000	5.600	90	100	Cavo	p5
MD	2.000 (1)	11,3	200.000	5.800	90	60	Cavo	p30
MD	2.000 (1)	10,7	225.000	4.100	80	60	Cavo	p30
MD	2.000 (2)	10,3	190.000	5.600	90	60	Cavo	p5
MD	2.000 (2)	9,6	220.000	4.200	80	60	Cavo	p5

(1) Osram lamp

(2) Philips lamp

(3) Osram lamp with 400W H.P.S. ballast

(4) Philips lamp without ignitor

(5) Osram lamp without ignitor, voltage supply 400V

(6) Philips lamp, voltage supply 400V

(7) Osram lamp with external ignitor, voltage supply 400V

# Lamps technical data

## HIGH PRESSURE SODIUM LAMPS TYPE S

TYPE	RET. POW. W	LAMP. COUR. A	LUM. FLUX IM.	COL. TEMPER. K	COLOUR INDEX RA	CAPACITOR $\mu$ F	BASE	BURN. POSITION
ST	70	1	6.500	2.000	25	12,5	E 27	any
ST	100	1,2	10.000	2.000	25	14	E 40	any
ST	150	1,8	14.500	2.000	20	20	E 40	any
ST	250	3	27.000	2.000	20	30	E 40	any
ST	400	4,4	48.000	2.000	20	50	E 40	any
ST	600	6,2	90.000	2.000	25	65	E 40	any
ST	1.000	10,3	130.000	2.000	20	100	E 40	any
ST	35	0,48	1.300	2.500	80	6	PG12	any
ST	50	0,77	2.300	2.500	80	10	PG12	any
ST	100	1,2	4.700	2.500	80	14	PG12	any
SE	50/E (1)	0,77	3.500	2.000	20	10	E 27	any
SE	50/I (2)	0,77	3.500	2.000	20	10	E 27	any
SE	70/E (1)	1	5.600	2.000	20	12,5	E 27	any
SE	70/I (2)	1	5.600	2.000	20	12,5	E 27	any
SE	100	1,2	10.000	2.000	25	14	E 40	any
SE	150	1,8	14.000	2.000	20	20	E 40	any
SE	250	3	25.000	2.000	20	30	E 40	any
SE	400	4,4	47.000	2.000	20	50	E 40	any
SD	70	1	7.000	2.000	25	12,5	RX7s	p45
SD	150	1,8	15.000	2.000	25	20	RX7s-24	p45
SD	250	3	25.500	2.000	20	30	Fc2	p45
SD	400	4,4	48.000	2.000	20	50	Fc2	p45

(1) With external ignitor

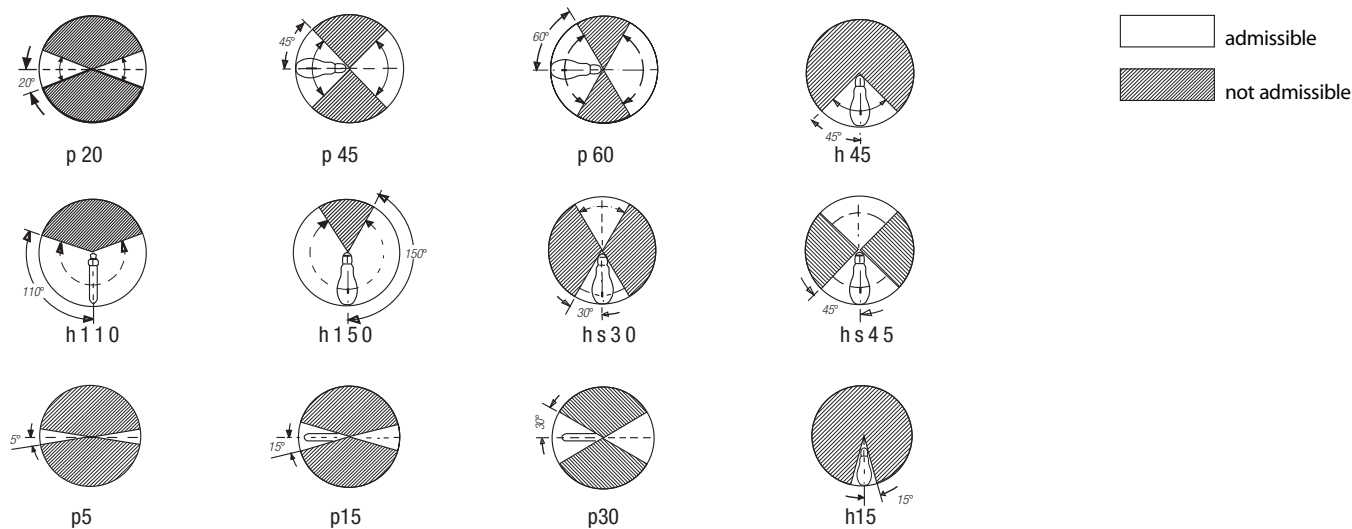
(2) Without ignitor

## LOW PRESSURE SODIUM LAMPS TYPE L

TYPE	RET. POW. W	LAMP. COUR. A	LUM. FLUX IM.	COL. TEMPER. K	COLOUR INDEX RA	CAPACITOR $\mu$ F	BASE	BURN. POSITION
LS	18	0,35	1.800	1.800	-	5	BY22d	h150
LS	55	1,4/0,6 (1)	8.000	1.800	-	20	BY22d	h110
LS	90	2,1/0,6 (1)	13.500	1.800	-	25	BY22d	p20

(1) Primary















## BURNING POSITIONS



## NOTICE

When the lamp has reached its end-life or in case of damage lamp, it is necessary the immediate replacement. Otherwise, the continuous discharges generated by the ignitor, can cause the out of order of the fixture due to overheating. To avoid these inconveniences, we suggest you to plan the lamps' scheduled changes.

# Lamps technical data

ILCOS	LAMP	WATTAGE (W)	SOCKET	OSRAM TYPE	PHILIPS TYPE	SYLVANIA TYPE
<b>Linear double ended halogen lamp</b>						
HD		150	R7s	HALOLINE 64696	150 T3Q/CL/P	230V 150W
		200		HALOLINE 64698	200 T3Q/CL/P	230V 200W
		300		HALOLINE 64701	300 T3Q/CL/P	230V 300W
		500		HALOLINE 64702	500 T3Q/CL/P	230V 500W
		750		HALOLINE 64560	750 T3Q/CL/P	230V 750W
		1000		HALOLINE 64740	1000 T3Q/CL/P	230V 1000W
		1500		HALOLINE 64760	1500 T3Q/CL/P	230V 1500W
		2000		HALOLINE 64784	-	-
<b>High pressure mercury vapour</b>						
QE		50	E27	HQL 50W	HPL-N 50	HSL-BW 50W E27
		80		HQL 80W	HPL-N 80	HSL-BW 80W E27
		125		HQL 125W	HPL-N 125	HSL-BW 125W E27
QE		250	E40	HQL 250W	HPL-N 250	HSL-BW 250W E40
		400		HQL 400W	HPL-N 400	HSL-BW 400W E40
<b>Self ballasted</b>						
QB		160	E27	HWL 160	ML 160	HSB-BW 160
QB		250	E40	HWL 250	ML 250	HSB-BW 250
		500		HWL 500	ML 500	HSB-BW 500
<b>Metal halide</b>						
MT		70	E27	HCI-TT 70/WDL	CDM-TT 70W/830	-
MT		150	E40	HCI-TT 150/WDL	CDM-TT 150W/830	-
		250		HQI-T 250W/N/SI	HPI-T 250 PLUS	HSI-THX 250W
		250		HQI-T 250W/D	-	BRITELUX HSI-TSX 250W <sup>3</sup>
		400		HQI-T 400W/N/SI	HPI-T 400 PLUS	HSI-THX 400W
		400		HQI-BT 400W/D	-	BRITELUX HSI-TSX 400W <sup>3</sup>
		1000		HQI-T 1000W/D	-	-
		1000		-	HPI-T PRO1000	HSI-T 1000W/4K
		2000		HQI-T 2000W/D/I	-	-
		2000		-	HPI-T PRO 2000/380V	HSI-T 2000W - S4K 380
		2000		HQI-T 2000W/N	-	-
2000		HQI-T 2000W/N/E/SUPER	-	-		
MT		35	G12	HCI-T 35W/...	CDM-T 35W/...	CFI-T 35W/...
		70		HCI-T 70W/...	CDM-T 70W/...	CFI-T 70W/...
		150		HCI-T 150W/...	CDM-T 150W/...	CFI-T 150W/...
ME		250	E40	HQI-E 250W/D <sup>1</sup>	-	HSI-SX 250W/CO <sup>2</sup>
		250		HQI-E 250W/N/SI	HPI 250 BU PLUS	HSI-HX 250W/CO
		400		HQI-E 400W/D <sup>1</sup>	-	HSI-SX 400W/CO <sup>2</sup>
MC		400	E27	HQI-E 400W/N/SI	HPI 400 BU PLUS	HSI-HX 400W CO
		70		HQI-E 70/...	-	HSI-MP 70W CL
		100		HQI-E 100/...	-	HSI-MP 100W CL
MD		150	RX7s	HQI-E 150/...	-	HSI-MP 150W CL
		70		HQI-TS 70W/...	MHN (W) - TD 70	HSI-TD 70W / ...
		70		HCI-TS 70W/...	CDM - TD 70W/...	CFI-TD 70W / ...
		150		HQI-TS 150W/...	MHN (W) - TD 150	HSI-TD 150W / ...
MD		150	Cavo	HCI-TS 150W/...	CDM - TD 150W/...	CFI-TD 150W / ...
		1000		HQI-TS 1000/N/DL/S	-	-
		1000		HQI-TS 1000/D/S	-	-
		1000		-	MHN-LA 1000W 230V/842	-
		1000		-	MHN-LA 1000W 230V/956	-
		2000		HQI-TS 2000/D/S	MHN-SB 2000W/956	HSI-TD 2000W / D
		2000		HQI-TS 2000/N/L	-	-
		2000		-	MHN-LA 2000W 400V/842	-
2000	-	MHN-LA 2000W 400V/956	-			
<b>High pressure sodium</b>						
ST		70	E27	NAV-T 70W SUPER	SON T PLUS 70	SHP-TS 70W CL/E
ST		100	E40	NAV-T 100W SUPER	SON T PLUS 100	SHP-TS 100W
		150		NAV-T 150W	SON T 150	SHP-T 150W
		250		NAV-T 250W	SON T 250	SHP-T 250W
		400		NAV-T 400W	SON T 400	SHP-T 400W
		600		NAV-T 600W SUPER	SON T PLUS 600	SHP-TS 600W
		1000		NAV-T 1000W	SON T 1000	SHP-T 1000W
SE	50	E27	NAV-E 50W/E/I	SON 50	SHP 50W / CO - E /I	
	70		NAV-E 70W/E/I	SON 70/70 E	SHP 70W / CO - E /I	
SE		100	E40	NAV-E 100W SUPER	SON PLUS 100	SHP 100W
		150		NAV-E 150W	SON 150	SHP 150W
		250		NAV-E 250W	SON 250	SHP 250W
		400		NAV-E 400W	SON 400	SHP 400W
SD		70	RX7s	NAV-TS 70W SUPER	-	-
		150		NAV-TS 150W SUPER	-	-
<b>Low pressure sodium</b>						
LS		18	BY22d	SOX 18	SOX 18W	SLP 18
		55		SOX 55	SOX 55W	SLP 55
		90		SOX 90	SOX 90W	SLP 90

(<sup>1</sup>) 5400 K / (<sup>2</sup>) 3700 K / (<sup>3</sup>) 4000 K

# Recommended lux levels indoor classification and prescription

The following tables are an extract of the European Norms EN 12464 "Lighting of work places". Part1: "Indoor works places".

Apart to the lighting values recommended for different kind of activities, the norm lays down the limit of troublesome glare UGR and general index

of colour output of the lamp can be utilized. The max value is 100 and it reduces to decrease of the rendering colour output quality.

TRAFFIC ZONES TYPE OF INTERIOR, TASK OR ACTIVITY	$E_m$ lx	UGR <sub>L</sub> -	R <sub>a</sub> -	REMARKS
<b>TRAFFIC ZONE</b>				
Circulations areas and corridors	100	28	40	1) Illuminance at floor level. 2) R <sub>a</sub> and UGR similar to adjacent areas. 3) 150 lx if there are vehicles on the route. 4) The lighting of exits and entrances shall provide a transition zone to avoid sudden changes in illuminance between inside and outside by day or night. 5) Care should be taken to avoid glare to drivers and pedestrians.
Stairs, escalators, travelators	150	25	40	
Loading ramps/bays	150	25	40	
<b>STORE ROOMS, COLD STORES</b>				
Store and stockrooms	100	25	60	200 lx if continuously occupied.
Dispatch packing handling areas	300	25	60	
<b>STORAGE RACK AREAS</b>				
Gangways: unmanned	20	-	40	Illuminance at floor level.
Gangways: manned	150	22	60	Illuminance at floor level.
Control station	150	22	60	
<b>AGRICULTURE</b>				
Loading and operating goods, handling equipment and machinery	200	25	80	
Building for livestock	50	-	40	
Sick animal pens	200	25	80	
Feed preparations, dairy, utensil washing	200	25	80	
<b>CEMENT, CEMENT GOODS, CONCRETE, BRICKS</b>				
Drying	50	28	20	Safety colours shall be recognisable.
Preparation of materials, work on kilns and mixes	200	28	40	
General machine work	300	25	80	For high vertical height pls see 4.6.2.
Rough forms	300	25	80	For high vertical height pls see 4.6.2.
<b>CERAMICS, TILES, GLASS, GLASSWARE</b>				
Drying	50	28	20	Safety colours shall be recognisable.
Preparation, general machine work	300	25	80	For high vertical height pls see 4.6.2.
Enamelling, rolling, pressing, shaping simple parts, glazing, glass bowling	300	25	80	For high vertical height pls see 4.6.2.
Grinding, engraving, glass polishing, shaping precision parts, manufacture of glass instruments	750	19	80	For high vertical height pls see 4.6.2.
Grinding of optical glass, crystal, hand grinding and engraving	750	16	80	
Precision work e.g. decorative grinding, hand painting	1.000	16	90	T <sub>CP</sub> ≥ 4.000 K
Manufacture of synthetic precious stones	1.500	16	90	T <sub>CP</sub> ≥ 4.000 K
<b>CHEMICAL, PLASTICS AND RUBBER INDUSTRY</b>				
Remote-operated processing installations	50	-	20	Safety colours shall be recognisable.
Processing installations with limited manual intervention	150	28	40	
Constantly manned work places in processing installations	300	25	80	
Precision measuring rooms, laboratories	500	19	80	
Pharmaceutical production	500	22	80	
Tyre production	500	22	80	
Colour inspection	1.000	16	90	T <sub>CP</sub> ≥ 4.000 K
Cutting, finishing, inspection	750	19	80	
<b>ELECTRICAL INDUSTRY</b>				
Cable and wire manufacture	300	25	80	For high vertical height pls see 4.6.2.
Winding:				
- large coils	300	25	80	For high vertical height pls see 4.6.2.
- medium coils	500	22	80	For high vertical height pls see 4.6.2.
- small coil	750	19	80	For high vertical height pls see 4.6.2.
Impregnation coils	300	25	80	For high vertical height pls see 4.6.2.
Galvanising	300	25	80	For high vertical height pls see 4.6.2.
Assembly work:				
- rough e.g. large transformers	300	25	80	For high vertical height pls see 4.6.2.
- medium e.g. switchboards	500	22	80	For high vertical height pls see 4.6.2.
- fine e.g. telephones	750	19	80	
- precision e.g. measuring	1.000	16	80	
Electronic workshops, testing, adjusting	1.500	16	80	

# Recommended lux levels indoor classification and prescription

TRAFFIC ZONES TYPE OF INTERIOR, TASK OR ACTIVITY	E <sub>m</sub> lx	UGR <sub>L</sub> -	R <sub>a</sub> -	REMARKS
<b>FOOD STUFFS AND LUXURY FOOD INDUSTRY</b>				
Work places and zones in: - breweries, malting floor - for washing, barrel filling, cleanig, sieving, peeling - coocking in preserve and chocolate factories - work places and zones in sugar factories - for drying and fermenting raw tobacco, fermentation cellar	200	25	80	
Sorting and washing of products, milling, mixing, packing	300	25	80	
Work places and critical zones in slaughter houses, butchers, dairies mills, on filtering floor in sugar refineries	500	25	80	
Cutting and sorting of fruit and vegetables	300	25	80	
Manufacture of delicatessen foods, kitchen work, manufacture of cigars and cigarettes	500	22	80	
Inspection of glasses and bottles, product control, trimming, sorting, decoration	500	22	80	
Laboratories	500	19	80	
Colour inspection	1.000	16	90	T <sub>CP</sub> ≥ 4.000 K
<b>FOUNDRIES AND METAL CASTING</b>				
Man-size underfloor tunnels, cellars, etc...	50	-	20	Safety colours shall be recognisable.
Platforms	100	25	40	
Sand preparations	200	25	80	For high vertical height pls see 4.6.2.
Dressing room	200	25	80	For high vertical height pls see 4.6.2.
Work places at cupola and mixer	200	25	80	For high vertical height pls see 4.6.2.
Casting bay	200	25	80	For high vertical height pls see 4.6.2.
Shake out areas	200	25	80	For high vertical height pls see 4.6.2.
Machine moulding	200	25	80	For high vertical height pls see 4.6.2.
Hand and core moulding	300	25	80	For high vertical height pls see 4.6.2.
Die casting	300	25	80	For high vertical height pls see 4.6.2.
Model biilding	500	22	80	For high vertical height pls see 4.6.2.
<b>METAL WORKING AND PROCESSING</b>				
Open die forging	200	25	60	
Drop forging	300	25	60	
Welding	300	25	60	
Rough and average machining: tolerance ≥ 0,1 mm	300	22	60	
Precision machining, grinding: tolerance < 0,1mm	500	19	60	
Scribing, inspections	750	19	60	
Wire anpipe drawing shops, cold forming	300	25	60	
Plate machining: thickness ≥ 5 mm	200	25	60	
Sheet metalwork: thickness < 5 mm	300	22	60	
Tool making, cutting equipment manufacture	750	19	60	
Assembly: - rough	200	25	80	For high vertical height pls see 4.6.2.
- medium	300	25	80	For high vertical height pls see 4.6.2.
- fine	500	2	80	For high vertical height pls see 4.6.2.
- precision	750	19	80	For high vertical height pls see 4.6.2.
Galvanising	300	25	80	For high vertical height pls see 4.6.2.
Surface preparation and pinting	750	25	80	
Tool, template and jig making, precision mechanics, micromechanics	1.000	19	80	
<b>ROLLING MILLS, IRON AND STEEL WORKS</b>				
Production plants without manual operation	50	-	20	Safety colours shall be recognisable.
Production plants with occasional manual operation	150	28	40	
Production plants with continuous manual operation	200	25	80	For high vertical height pls see 4.6.2.
Slab store	50	-	20	Safety colours shall be recognisable.
Furnaces	200	25	20	Safety colours shall be recognisable.
Mill train, coiler, shear line	300	25	40	
Control platforms, control panels	300	22	80	
Test, measurement and inspections	500	22	80	
Underfloor man-sized tunnels, belt sections, cellars, etc...	50	-	20	Safety colours shall be recognisable.

# Recommended lux levels indoor classification and prescription

TIPO DI INTERNO, COMPITO O ATTIVITÀ	$E_m$ lx	UGR <sub>L</sub> -	R <sub>a</sub> -	NOTE
<b>TEXTILE MANUFACTURE AND PROCESSING</b>				
Work places and zones in baths, bale opening	200	25	60	
Carding, washing, ironing, deving machine work, drawing, combing, sizing, card cutting, prespinning, jute and hemp spinning	300	22	80	
Spinning, plying, reeling, winding	500	22	80	Prevent stroboscopic effects.
Warping, weaving, braiding, knitting	500	22	80	Prevent stroboscopic effects.
Sewing, fine knitting, taking up stitches	750	22	80	
Manual design, drawing patterns	750	22	90	T <sub>CP</sub> ≥ 4.000 K
Finishing, dyeing	500	22	80	
Drying room	100	28	60	
Automatic fabric printing	500	25	80	
Burling, picking, trimming	1.000	19	80	
Colour inspection, fabric control	1.000	16	90	T <sub>CP</sub> ≥ 4.000 K
Invisible mending	1.500	19	90	T <sub>CP</sub> ≥ 4.000 K
Hat manufacturing	500	22	80	
<b>VEHICLE CONSTRUCTION</b>				
Body work and assembly	500	22	80	
Painting, spraying chamber, polishing chamber	750	22	80	
Painting, touch-up, inspection	1.000	19	90	T <sub>CP</sub> ≥ 4.000 K
Upholstery manufacture (manned)	1.000	19	80	
Final inspection	1.000	19	80	
<b>WOOD WORKING AND PROCESSING</b>				
Automatic processing e.g. drying, plywood manufacturing	50	28	40	
Steam pits	150	28	40	
Saw frame	300	25	60	Prevent stroboscopic effects.
Work at joiner's bench, gluing, assembly	300	25	80	
Polishing, painting, fancy joinery	750	22	80	Prevent stroboscopic effects.
Work on wood working machine e.g. turning, fluting, dressing, rebating, grooving, cutting, saeing, sinking	500	19	80	
Selection of veneer woods	750	22	90	T <sub>CP</sub> ≥ 4.000 K
Marquetry, inlay work	750	22	90	T <sub>CP</sub> ≥ 4.000 K
Quality control, inspection	1.000	19	90	T <sub>CP</sub> ≥ 4.000 K
<b>RETAIL PREMISES</b>				
Sales area	300	22	80	Both illuminance and UGR requirements are determined by the type of shop.
Till area	500	19	80	
Wrapper table	500	19	80	
<b>TRADE FAIRS, EXHIBITION HALLS</b>				
General lighting	300	22	80	
<b>PUBLIC CAR PARK (INDOOR)</b>				
In/out ramps (during the day)	300	25	20	1) Illuminance at floor level. 2) Safety colours shall be recognisable.
In/out ramps (at night)	75	25	20	1) Illuminance at floor level. 2) Safety colours shall be recognisable.
Traffic lanes	75	25	20	1) Illuminance at floor level. 2) Safety colours shall be recognisable.
Parkink areas	75	-	20	1) Illuminance at floor level. 2) Safety colours shall be recognisable. 3) A high vertical illuminance increases recognition of peoples faces and therefore the feeling of safety.
Ticket offices	300	19	80	1) Avoid reflections in the windows. 2) Prevent glare from outside.

# Recommended lux levels indoor classification and prescription

TRAFFIC ZONES TYPE OF INTERIOR, TASK OR ACTIVITY	$E_m$ lx	UGRL -	$R_a$ -	REMARKS
<b>AIRPORTS</b>				
Arrival and departures halls, baggage claim areas	200	22	80	For high vertical height pls see 4.6.2.
Connecting areas, escalators, travolators	150	22	80	
Information desks, check-in desks	500	19	80	For work places with monitor pls see 4.11. norm.
Customs and passport control desks	500	19	80	Vertical illuminance is important.
Waiting areas	200	22	80	
Luggage store rooms	200	25	80	
Security check areas	300	19	80	For work places with monitor pls see 4.11. norm.
Air traffic control tower	500	16	80	1) Lighting should be dimmable. 2) Glare from daylight shall be avoided pls see 4.11. 3) Dazzling day-light to be avoided. 4) Avoid reflections in windows, especially at night.
Testing and repair hangars	500	22	80	For high vertical height pls see 4.6.2.
Engine test areas	500	22	80	For high vertical height pls see 4.6.2.
Measuring areas in hangars	500	22	80	For high vertical height pls see 4.6.2.
<b>RAILWAY INSTALLATIONS</b>				
Covered platforms and passenger subways (underpasses)	50	28	40	
Ticket halls and concourse	200	28	40	
Ticket and luggage offices and counters	300	19	80	
Waiting rooms	200	22	80	

## Contents

**TABLE B - REFLECTANCE FACTORS OF SURFACES COLOURS AND MATERIALS FOR WHITE LIGHT**

COLOUR	REFLECTANCE FACTOR %	MATERIALS	REFLECTANCE FACTOR %
Black	3 - 7	Dark wood	10 - 25
Dark blue	5 - 15	Dark bricks	15 - 25
Dark brown	10 - 20	Granite	15 - 25
Dark red	10 - 20	Pale bricks	30 - 40
Dark green	10 - 20	Clear wood	30 - 50
Pale brown	30 - 40	Opaque aluminium	55 - 60
Pale red	30 - 50	Burnished steel	55 - 65
Pale blue	40 - 55	White marble	60 - 70
Pink	45 - 55	Anodised bright	-
Pale green	45 - 65	Alluminium	80 - 85
Cream, pale light	50 - 75	Mirror, silver-plated glass	80 - 90

### DEPRECIATION FACTORS DUE TO THE DUSTY OF LUMINAIRES, LAMPS AGEING

Luminaires with **semidirect** lighting emission (more than 15% upward) without louvre or cross baffle.

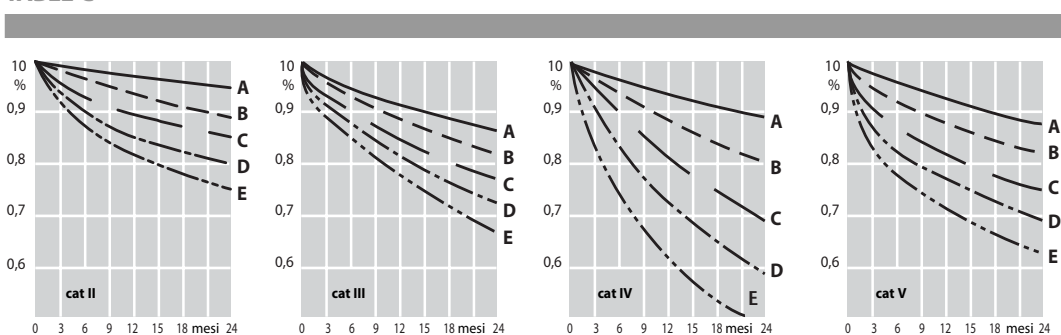
Luminaires with **semidirect** lighting emission (less than 15% upward) without louvre or cross baffle.

Luminaire with **direct** lighting emission without louvre or cross baffle.

Luminaires with **semidirect** or **direct** lighting emission with diffuser (acrylic, polycarbonate, glass).

Fluorescent **lamps** ageing relative to the operating hours.

**TABLE C**



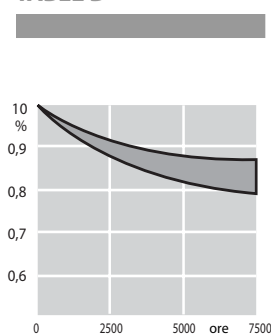
A = very clean, B = clean, C = semi-dirty, D = dirty, E = very dirty

In order to always maintain efficient the lighting systems, it's necessary to plan maintenance operations on the luminaires, referring to the graphs of C table.

A careful cleaning of protection glasses and of the optics, lamp replacement on life limit, are necessary. D table is only indicative: for more detailed information

concerning the reduction of the luminous flux according to the working hours and the average life, please refer to the technical documentation of lamp manufacturers.

**TABLE D**



# Corrosive agents

CHEMICAL COMPOUND	METHACRYLATE	POLYCARBONATE	POLYAMIDE	ALUMINIUM	STAINLESS STEEL
Acetone	▲	●	●	●	●
Acetic acid ≤10%	●	●	▲	●	●
Acetic acid ≤ 30%	●	●	▲	●	▲
Arsenic acid ≤ 20%	●	●	▲	▲	●
Bromic acid	▲	▲	▲	▲	●
Citric acid ≤ 20%	●	●	●	●	●
Hydrochloric acid ≤ 20%	●	●	▲	▲	▲
Chromic acid	●	●	●	●	●
Formic acid ≤ 30%	●	●	●	▲	●
Nitric acid ≤ 20%	●	●	▲	▲	▲
Sulphuric acid ≤ 30%	●	●	▲	▲	▲
Sulphuric acid ≤ 50%	●	●	▲	▲	▲
Hydrogen Dioxide ≤ 40%	▲	●	▲	●	●
Ethyl alcohol	▲	●	●	●	●
Isopropyl alcohol	●	▲	●	●	●
Aniline	▲	▲	●	●	●
Ammonia ≤ 25%	●	▲	●	●	●
Gosoline	●	●	●	●	●
Premium grade fuel	●	▲	▲	●	●
Benzol	▲	▲	●	●	●
Alcoholic drinks	●	●	●	●	●
Bromine	▲	●	●	●	●
White lime	●	●	▲	▲	●
Diesel fuel	●	▲	●	●	●
Ketone	▲	▲	●	●	●
Marine climate	●	●	●	●	●
Chlorine (vapours)	▲	●	▲	●	●
Chloroform	▲	▲	●	●	●
Liquid Chlorine (vapours)	▲	▲	●	●	▲
Calcium chloride	●	●	●	●	●
Ferric chloride	●	●	●	●	●
Methyl chloride	▲	▲	▲	●	●
Hexane	●	●	●	●	●
Ether	▲	▲	●	●	●
Ethyl ether	●	▲	●	●	●
Phenols	▲	▲	▲	●	●
Glycerol	●	●	●	●	●
Hydrocarbons	●	▲	●	●	●
Methanol	▲	▲	●	●	●
Mineral oils	●	▲	●	●	●
Silicon oil	●	●	●	●	●
Diesel oil	●	●	●	●	●
Oil and food fats	●	●	●	●	●
Carbon monoxide	●	●	●	●	●
Ozone	●	●	▲	●	●
Potassium permanganate	●	●	●	●	●
PVC with plasticizers	▲	▲	▲	●	●
Caustic soda ≤ 2%	●	▲	▲	▲	●
Caustic soda ≤ 10%	●	▲	▲	▲	●
Watery zinc sulphate	●	●	●	●	●
Aluminium sulphate	●	●	●	●	●
Copper sulphate	●	●	●	●	●
Carbon tetrachloride	▲	▲	●	●	●
Toluene	▲	●	●	●	●
Trichloroethylene	▲	▲	●	●	●
Xylene	▲	▲	●	●	●

SYMBOLS LEGEND	
▲	Non resistant
●	Partially resistant
●	Resistant

The chemical products shown in the table are only a small part of the ones could be present during installations; the concentrations shown are purely as an indication. By choosing the lighting fittings, it's necessary to check the compatibility between material components and installation environment, tak-

ing into consideration that alterations in compatibility between material and chemical product can rise depending upon concentration, humidity and temperature. **Maintenance.** For the efficiency of the lighting fixtures, it's essential to plan regular maintenance opera-

tions. All internal parts, optics, housing and grills must be cleaned regularly. Clean with soap water or a much diluted solution of common detergents. Avoid all solvent type products.

# Notions of lighting technology

Light is a physical phenomenon, a form of energy in electromagnetic waves. Electromagnetic radiation is characterized by two physical quantities: wavelength, represented by the Greek letter  $\lambda$ , and frequency. Radiation perceptible to the human visual organ is limited to a very restricted range: from 380 nm

(ultraviolet limit) to 780 nm (infrared limit) and human beings perceive colours according to the wavelength of the light.

The human eye responds differently according to the wavelengths of the radiation and it has been shown that in daylight (photopic vision) its great-

est at wavelength 555 nm (yellow-green). A visibility factor has thus been determined for each wavelength. The curve applicable in photopic condition is shown in figure 3.

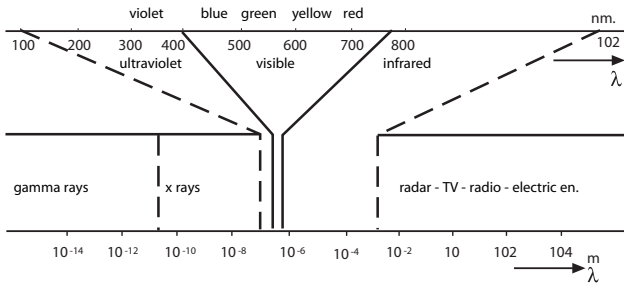


Fig. 1 - Electromagnetic spectrum

COLOUR TONALITIES	WAVELENGTHS (NM)	FREQUENCIES (HZX 1012)
Violet	< 425	> 705
Indigo	425÷486	705÷617
Blue	486÷493	617÷608
Blue-green	493÷510	608÷588
Green	510÷552	588÷543
Green-yellow	552÷573	543÷523
Yellow	573÷587	523÷511
Orange	587÷645	511÷465
Red	> 645	< 465

Fig. 2 - Wavelengths and frequencies for the main colour tonalities

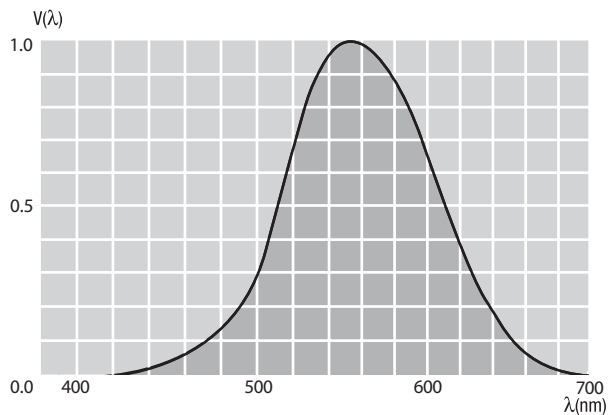


Fig. 3

## PHOTOMETRIC QUANTITIES

### Luminous flux

The luminous flux generated by a given light source is defined as the quantity of light energy by it in unit times.

The luminous flux expresses the power in terms of light emission, confirming the energy nature of light.

$$\Phi = Km \int_{380 \text{ nm}} \Phi \lambda V(\lambda) d\lambda$$

### Luminous intensity

In studying light beams produced by sources, it is of particular importance to determine what part of the flux is propagated in a given direction.

The luminous intensity corresponds to the quantity of luminous flux per unit of solid angle in some given direction. The unit of measurement is the candle (cd).

$$I = \frac{d\Phi}{d\Omega}$$

### Illuminance

Illuminance, represented by the letter E, is the ratio between the luminous flux reaching a certain

surface and the area of the surface. The unit of measurement is the Lux (lx).

$$E = \frac{d\Phi}{dA_R}$$

### Luminance

Is the luminous intensity in a given direction per  $m^2$  of apparent surface of a light source or of an illuminated surface.

indicated by the letter L and the corresponding unit of measurement is the candle per  $m^2$  ( $cd/m^2$ ) also denominated nit. (nt).

$$L = \frac{dI}{dA \cos \vartheta}$$

In photometry the quantity used is the luminance,

# Representation and method of calculation

## PHOTOMETRIC CURVES

To display the light distribution of a light source, a laboratory measurement is made of the photometric solid, which can be defined as the whole of the measurement of luminous intensity in every direction.

Sectioning the photometric solid on one or more planes, one obtains the photometric curves, the

values of which in candles are generally based on 1.000 lm.

In the technical documentation of a lighting appliance, the photometric curves are generally supplied for two vertical planes at right angle of each other, passing through the optical centre of the luminaire.

For indoor luminaires and for street lighting, the C- $\gamma$  measurement system is used, and the photometric curves are represented in polar coordinates.

For floodlights the B- $\beta$  measurement system is used and the photometric curves are represented by means of a cartesian diagram.

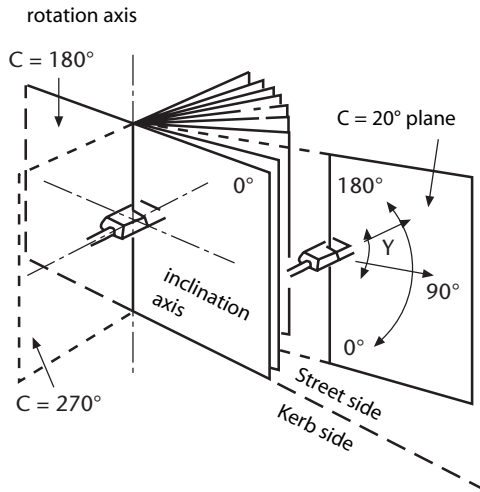


Fig. 4 - Measurement system C- $\gamma$

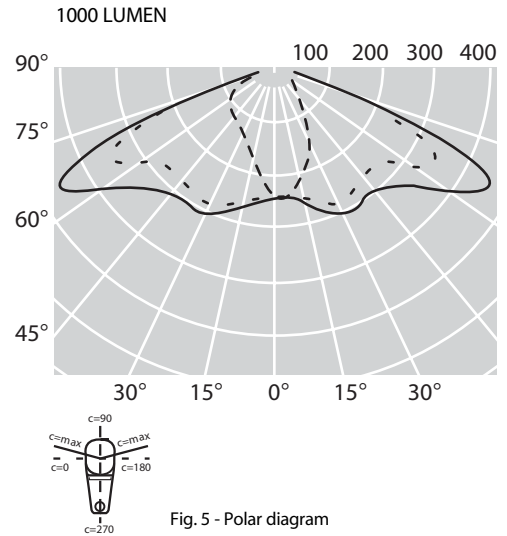


Fig. 5 - Polar diagram

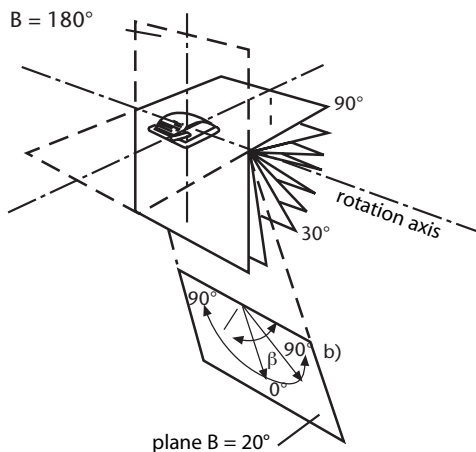


Fig. 6 - Measurement system B- $\beta$

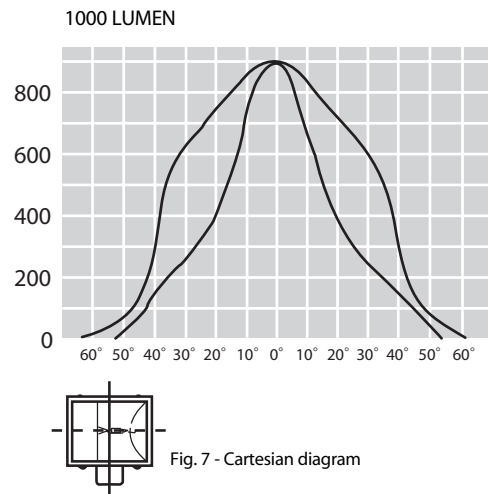


Fig. 7 - Cartesian diagram

## ISOLUX DIAGRAM

These are generally used to rapidly determine the illuminance of a road and connect the points on a plane with the same illuminance.

The values shown on the curves refer to an luminaire installed at a height of m. 1 for each klumen (1.000 lm).

The width of the road and the poles spacing are put according to the installation height of the fittings (H).

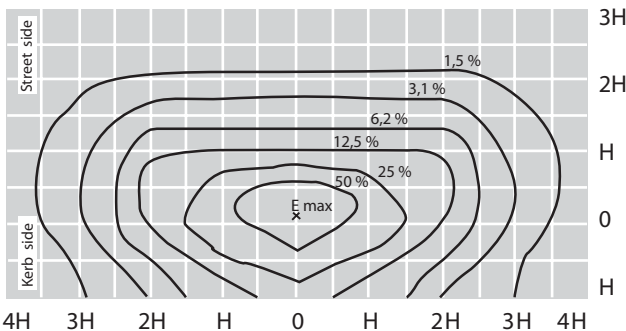


Fig. 8 - Isolux diagram

# Representation and method of calculation

## FROM INTENSITY TO ILLUMINANCE POINT BY POINT METHOD

It is possible to determine the horizontal illuminance of a point on a plane by relating the value in candles of the photometric curve in the direction of the point with the following equation:

$$E_A = \frac{I_A \times Klum \times \cos^3 \alpha}{h^2}$$

$E_A$  = illuminance in Lux at a given point.  
 $I_A$  = intensity in candles at the point in 1.000 lm.

$\cos^3 \alpha$  = cube of the cosine of the angle between the vertical of the luminaire and the point in question.  
 $h^2$  = square of the distance between the light source and the plane that includes the point for which the illuminance is calculated.

## Notions of lighting technology

### FROM ILLUMINANCE TO LUMINANCE

Knowing the illuminance of a given surface with the characteristics of a perfectly uniform diffuse reflector

according to Lambert's law, it is possible to calculate the luminance by the following equation:

$$L = \frac{\rho E}{\pi}$$

In reality it is only rarely that one encounters surfaces with uniform diffusion.

In all other cases the uniform reflection coefficient  $r$  is replaced by the luminance factor  $b$  and hence:

$$L = \frac{\beta E}{\pi}$$

### RECOMMENDATION FOR ROAD LIGHTING

Statistical data shown how good lighting is essential for providing users security is guaranteed on such roads.

The parameters that must be considered for a right lighting public road project are as follows:

- Widely luminance level providing driver to recognize in advance quickly any obstacles on the carriageway. Average acceptable value are between 0,5 and 2,0 cd/m<sup>2</sup>.
- A good uniformity of luminance allows to the driver point out the contrasts with the objects along side the carriageways.

- Reduction of the lighting dazzling by light sources that they may caused a diminution acuity and visual field.

For evaluate the dazzling value in a project, the norms described and determinate the dazzle value as fatiguing glare index threshold increment (TI).

According to the norms, the right limits are mentioned in the following table 1b.

These standards are considered in the following tables 1a and 1b that define respectively the criteria conditions of traffic and each class lighting categories.

Both tables are an extract of the Italian Norm UNI 11248 "Lighting street. Lighting category selection" and of the rule UNI EN 13201-2.

Lighting street 2 part: Performance requirements.

**TABLE 1A  
CLASSIFICATION OF THE ROAD TRAFFIC TYPES**

Class	Type of road and territorial position	Speed limit	Lighting categories
A <sub>1</sub>	Extrurban motorways	130-150	ME1
A <sub>1</sub>	Urban motorways	130	ME1
A <sub>2</sub>	Main road to motorways	70-90	ME3a
A <sub>2</sub>	Main road to urban motorways	50	ME3a
B	Main highways	110	ME3a
B	Main road to extrurban highways	70-90	ME4a
C	Secondary highways (type C1 and C2)	70-90	ME3a
C	Secondary highways	50	ME4b
C	Secondary highways with particular limit	70-90	ME3a
D	Urban thoroughways	70-50	ME3a
E	Inter-neighbourhood urban streets	50	ME3c
E	Neighbourhood urban streets	50	ME3c
F	Extrurban local streets (type F1 and F2)	70-90	ME3a
F	Local extrurban streets	50	ME4b
F	Local extrurban streets	30	S3
F	Local urban streets (type F1 and F2)	50	ME4b
F	Local urban streets: historical centre, islands, zone 30	30	CE4
F	Urban local streets: other situation	30	CE5/S3
F	Local urban streets: pedestrian areas	5	CE5/S3
F	Local urban streets: historical centre (pedestrian, other users)	5	CE5/S3
F	Local interzonal streets	50/30	CE5/S3
	Bike lane	not declared	S3
	Particular destination streets	30	S3

**TABLE 1B  
LIGHTING PRESCRIPTIONS**

Lighting category Index	Value of the traffic roadway surface in condition of dry street		min. value of fatiguing glare index Tj3	Adjoining areas lighting SR min
	L in cd/m <sup>2</sup> min	U <sub>0</sub> min		
ME1	2,0	0,4	0,7	10
ME2	1,5	0,4	0,7	10
ME3a	1,0	0,4	0,7	15
ME3b	1,0	0,4	0,6	15
ME3c	1,0	0,4	0,5	15
ME4a	0,75	0,4	0,6	15
ME4b	0,75	0,4	0,5	15
ME5	0,5	0,35	0,4	15
ME6	0,3	0,35	0,4	15

1)  $U_0 = L_{\min}/L_{\text{med}}$  ratio between min and average luminance across

the entire roadway  
2)  $U_1 = L_{\min}/L_{\max}$  ratio between min and max luminance across the centre line of each lane

3) Tj = fatiguing glare index

Table 1a shows the classification of each roadways of which the prescription of the table 1b can be obtained, are valid to the maximum hourly traffic flows estimated for the relevant roadway class. If the hourly traffic routes rates are less than the value expectation, e.g. at night, safety conditions

created for all road users allow it, it is possible during the operation to reduce the minimum value of maintained average luminance, shown in Table 1b, according to the following criteria:

- traffic rate 50% lower than the maximum value: lighting category index reduced by 1.

- traffic rate 25% lower than the maximum value: lighting category index reduced by 2, the A1 street road for which are not allowed reductions. In case you use lamps with chromatic colour index Ra equal or major of 60, it is possible to reduce the lighting category index by 1.

## RECOMMENDATIONS TO REDUCE LIGHT POLLUTION

The standards norm UNI 10819 prescribes the requirement for external lighting installations, to limit the upwards waste light beams from artificial light sources and any limitation night-time glow of the sky.

The standards applies only to newly completed installations. It does not apply to installations underpasses, galleries, and advertising panels completed by own lighting installations.

Besides, it does not apply to areas of the landscape subject to the specific local regulations. The norm is given more other information according the distance between astronomical observations, the ratio upper hemisphere flux as well as on the reflected flux emitted by lighting sources.

## LIGHTING INSTALLATION ARE CLASSIFIED AS FOLLOWS

Type A: Installations where safety is a priority, for example the illumination of public parks.

Type B: Installations for sport facilities, shopping and recreational centres and privet parks.

Type C: Installations for Monumental and environmental interest.

Type D: Advertising installation.

Type E: Temporary ornamental installations (Christmas lights).

The installations type A can be provided a settlement time following the prescription are suitable for. The temporary type E installations means are functionally switching on not more than yearly 45 days.

## LIGHTING ZONES ARE CLASSIFIED AS FOLLOWS

Zone 1: high protection area with limited illumination (Astronomical observer of international relevance). Radius from observation centre  $R = 5\text{km}$ .

Zone 2: protected area around zone 1 or around national observatories. Radius observation centre  $R=5/10/15\text{ km}$  depending the importance of the centre.

Zone 3: national territory not classified in zones 1 and 2.

The types of fixtures intended for each system are defined by the Urban Lighting Plan of Municipality which it establishes the maximum  $R_n$  value for each of the value in the whole municipality territory as set down in table or in the municipality regulations are not exceeded. In case of ULP of Municipality are never been intended, the value  $R_n$  are as follows.

### MAXIMUM VALUES OF $R_n$ IN %

Type of installations	$R_n$ max %		
	Zone 1	Zone 2	Zone 3
A,B,C,D	1	5	10
E	Not permitted	permitted at ordinary timetable	permitted

(Average ratio of upward emission)

## LIGHTING ZONES ARE CLASSIFIED AS FOLLOWS

Some Italian regions have passed Laws in which the percentage values permitted for the luminous flux emitted upwards towards the sky are in some cases seriously much prohibited than UNI 10819.

Due the fact the Italian Norms are still involving on the theme of light pollution, you consider the Technical Staff at your disposal.

### MAXIMUM VALUES OF $R_n$ IN %

Type of installations	$R_n$ max %		
	Zone 1	Zone 2	Zone 3
A Urban motorways	1	3	3
A, Non urban motorways, B, C, D	1	9	23

(in absence of ULP of Municipality)

# Lighting engineering software

## Fael - Lite

Fael-Lite is an application which has been developed for determining illumination and luminance values in internal, external and street contexts. It is a 32-bit programme which runs on the WINDOWS 95 and 98 platform and can operate in 2D or 3D environments of all shapes and sizes including circular areas and locations.

The extremely attractive format alongside the implementation of the standard WINDOWS 95 menu system makes this application a very useful tool for planners, installers, and end-users.

The programme is capable of determining horizontal and vertical illuminations, vertical illuminations in the direction of the camera, semi-cylindricals, luminance, and glare indexes, all in line with the most recent UNI (Italian Standards Institute) and CEI recommendations.

For internal environments, the application can determine and automatically position lamps

according to the level of illumination desired and with consideration for reflections between walls, the floor and the ceiling to the seventh level.

The results can be previewed in a graphical format as isolux curves and threedimensional isolux.

Functionality is provided for the management of tower racks for external projectors by means of which it is possible to duplicate the equipment according to axes of symmetry which can be determined.

The programme interfaces with the external catalogue from which it is possible to obtain technical information on the lamps such as: design features, photographs, descriptions, information, photometric curves.

At the printing stage, it is possible to choose a different language from that used during the planning stage.



# Lighting project assistance

## ROAD - ROAD SPECIFICATIONS

Number of carriageways	1
Number of lanes per carriageway	2
Lane width	3.50 m.
R. table reflection properties	C2

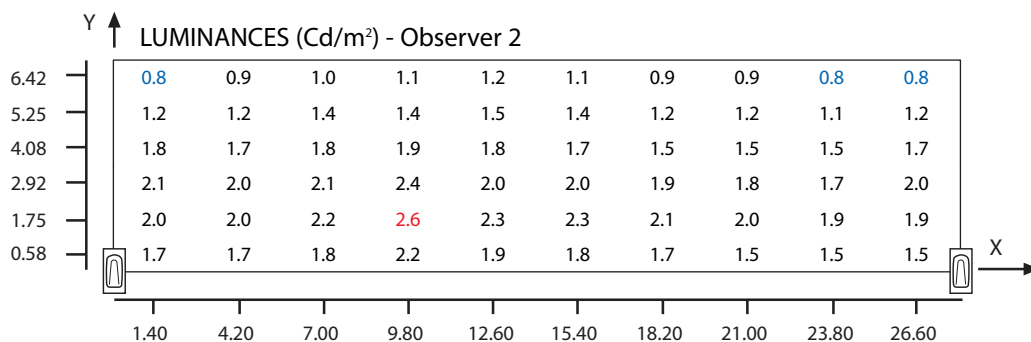
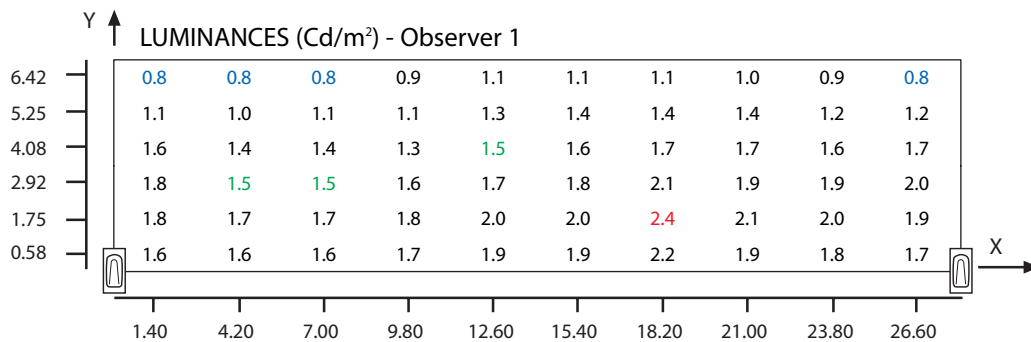
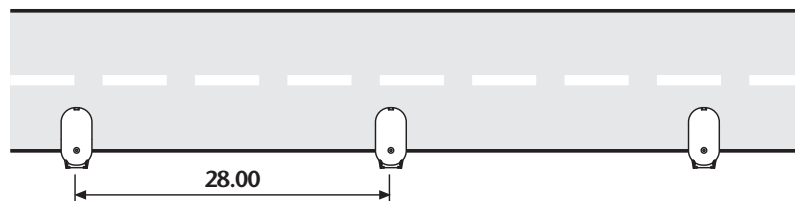
## LIGHTING INSTALLATION

The installation has 1 row of luminaires

Luminaire	SMART VP ST (SAP) 150W
Tilting angle	0 degree
Luminous flux of the lamp	17,0 Klumen
Overall maintenance factor ( $\leq 1$ )	0.80
Suspension height	8,00 m.
Luminaire spacing	28,00 m

## ROW POSITION (C-0 PLANE) RELATIVE TO LEFTHAND EDGE OF CARRIAGEWAY

Row	Row (m.)
1	0.00 Forward/Back



# Lighting installation

LUMINANCE - OBSERVER 1					
Average luminance			(Lmed)	1.50	Cd/m <sup>2</sup>
Lowest luminance value			(Lmin)	0.80	Cd/m <sup>2</sup>
Highest luminance value			(Lmax)	2.40	Cd/m <sup>2</sup>
Overall uniformity (Uo)			(Lmin/Lmed)	0.51	
Observer position coordinates for overall longitudinal uniformity					
Observation point	X=	Y=	Min.	Max	Unif. long. (UL)
	(m)	(m)	Cd/m <sup>2</sup>	Cd/m <sup>2</sup>	(Lmin/Lmax)
	-60.00	1.75	1.70	2.40	0.71
Glare parameters					
Veiling Luminance			(LV)	0.20	Cd/m <sup>2</sup>
Threshold increment			(TI)	7.87	%
LUMINANCE - OBSERVER 2					
Glare parameters					
			(Lmed)	1.60	Cd/m <sup>2</sup>
Lowest luminance value			(Lmin)	0.80	Cd/m <sup>2</sup>
Highest luminance value			(Lmax)	2.60	Cd/m <sup>2</sup>
Overall uniformity (Uo)			(Lmin/Lmed)	0.50	
Observer position coordinates for overall longitudinal uniformity					
Observation point	X=	Y=	Min.	Max	Unif. long. (UL)
	(m)	(m)	Cd/m <sup>2</sup>	Cd/m <sup>2</sup>	(Lmin/Lmax)
	88.00	5.25	1.20	1.50	0.76
Glare parameters					
Veiling Luminance			(LV)	0.18	Cd/m <sup>2</sup>
Threshold increment			(TI)	6.66	%
Surround ratio	0.54		Average ratio Rn	0.00%	

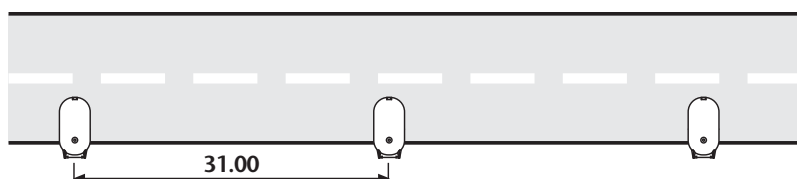
The **SMART VP** road lighting with toughened flat glass, has been designed providing to reduce lighting dazzling and guarantees a better visual field for everybody. The standards allow to arrange the fixtures with a luminaires spacing three times the height of the poles.

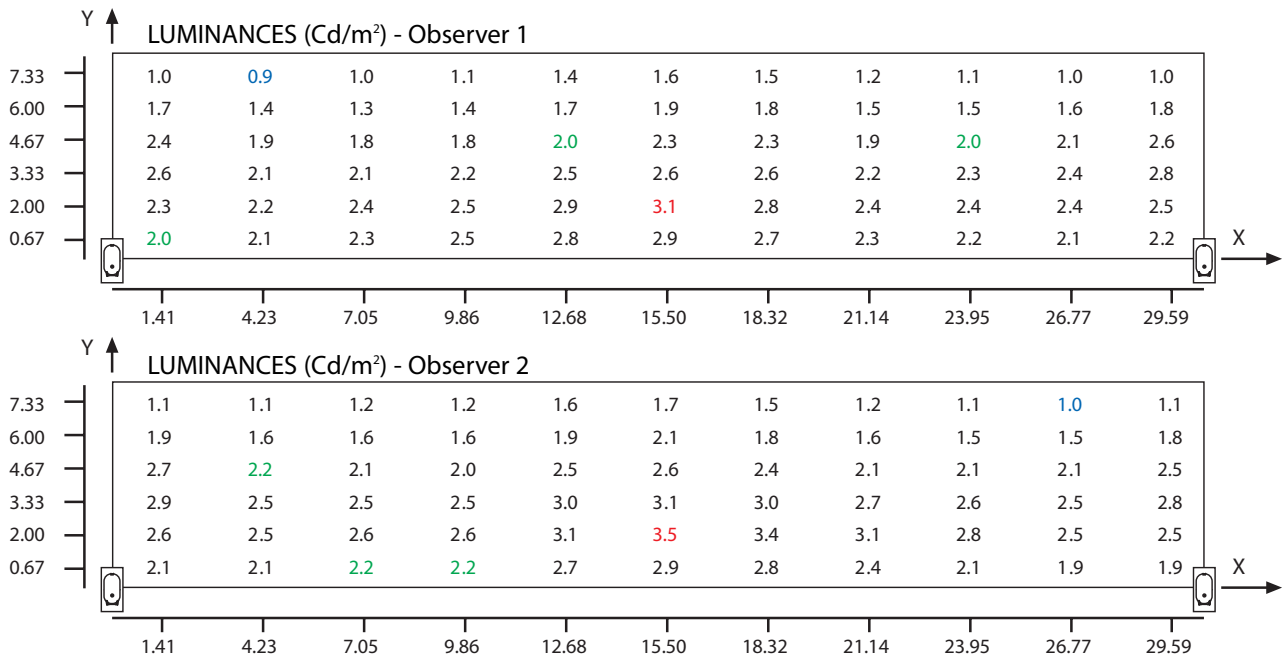
In accordance with European Norm EN 13201 the lighting project is improved. The distribution of the luminance over the carriageway is calculated in the observers' direction placed in the middle of each lane road. The parameters calculated and the average luminance value are in conformity to the norm

EN 13201 as per lighting categories index ME2. The percentage of light flux wastes in the upper hemisphere (Rn) is null; the installation is conform to the Italian Norm UNI 10819 and Regional Italian Laws in matter the lighting pollution.

## Example of lighting calculation - road

ROAD SPECIFICATIONS		
Number of carriageways		1
Number of lanes per carriageway		2
Lane width		4.00 m.
Roads table reflection properties		C2
LIGHTING INSTALLATIONS		
The installation has 1 row of luminaires		
Luminaire		ITINERA VP ST (SAP) 250W
Tilting angle		0 degree
Luminous flux of the lamp		27.0 Klumen
Overall maintenance factor (<= 1)		0.80
Suspension height		9.00 m.
Luminaire spacing		31.00 m.
ROW POSITION (C-0 PLANE) RELATIVE TO LEFTHAND EDGE OF CARRIAGEWAY		
Row		Position (m.)
1		0.00 Forward/Back





## Lighting installation

LUMINANCE - OBSERVER 1					
Glare parameters	(Lmed)	2.00	Cd/m²		
Lowest luminance value	(Lmin)	0.90	Cd/m²		
Highest luminance value	(Lmax)	3.10	Cd/m²		
Overall uniformity (Uo)	(Lmin/Lmed)	0.47			
Observer position coordinates for overall longitudinal uniformity					
Observation point	X=	Y=	Min.	Max	Unif. long. (UL)
	(m)	(m)	Cd/m²	Cd/m²	(Lmin/Lmax)
	-60.00	2.00	2.20	3.10	0.71
Glare parameters					
Veiling Luminance	(LV)	0.19	Cd/m²		
Threshold increment	(TI)	5.90	%		
LUMINANCE - OBSERVER 2					
Glare parameters	(Lmed)	2.20	Cd/m²		
Lowest luminance value	(Lmin)	1.00	Cd/m²		
Highest luminance value	(Lmax)	3.50	Cd/m²		
Overall uniformity (Uo)	(Lmin/Lmed)	0.46			
Observer position coordinates for overall longitudinal uniformity					
Observation point	X=	Y=	Min.	Max	Unif. long. (UL)
	(m)	(m)	Cd/m²	Cd/m²	(Lmin/Lmax)
	91.00	6.00	1.50	2.10	0.71
Glare parameters					
Veiling Luminance	(LV)	0.17	Cd/m²		
Threshold increment	(TI)	4.86	%		
Surround ratio	0.515	Average ratio Rn	0.00%		

The **ITINERA** road lighting with toughened flat glass, has been designed providing to reduce lighting dazzling and guarantees a better visual field for everybody. The standards allow to arrange the fixtures with a luminaries spacing three times the height of the poles.

In accordance with European Norm EN 13201 the lighting project is improved.

The distribution of the luminance over the carriageway is calculated in the observers' direction placed in the middle of each lane road. The parameters calculated and the average luminance

value are in conformity to the norm EN 13201 as per lighting categories index ME1.

The percentage of light flux wastes in the upper hemisphere (Rn) is null; the installation is conform to the Italian Norm UNI 10819 and Regional Italian Laws in matter the lighting pollution.

# Lighting project assistance

## ROAD - ROAD SPECIFICATIONS

Number of carriageways	2
Number of lanes per carriageway	2
Lane width	5.00 m.
Roads table reflection properties	C2

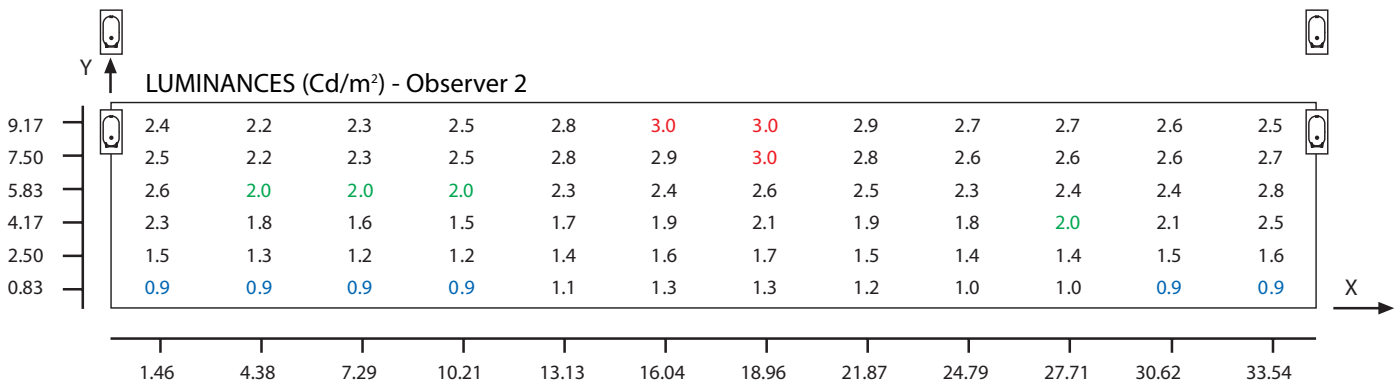
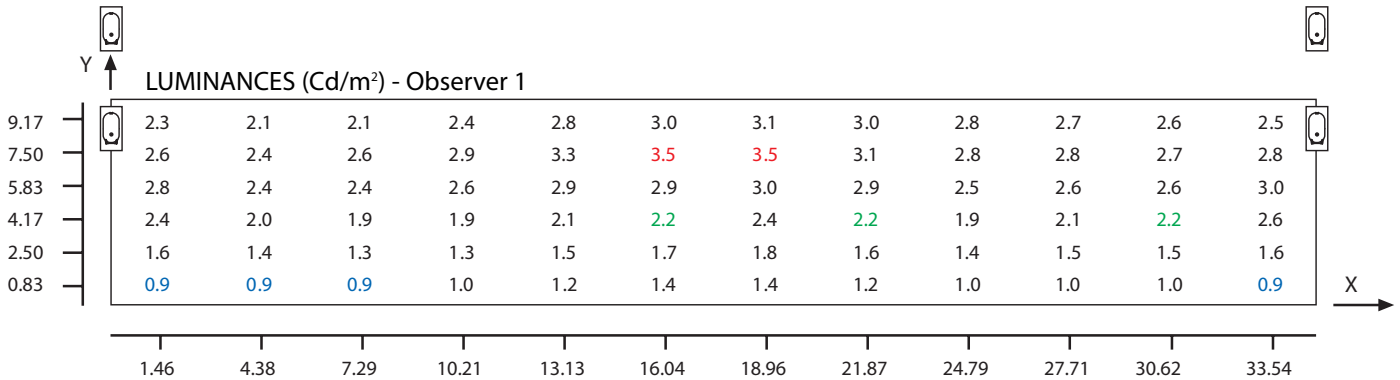
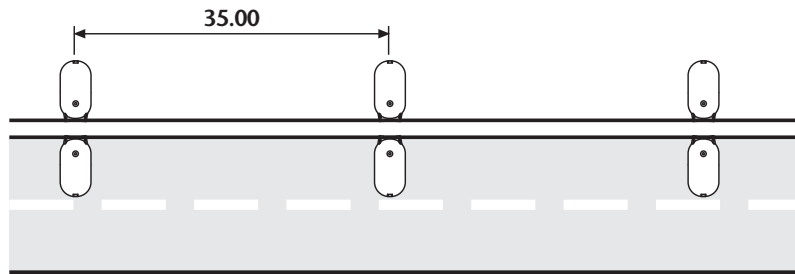
## LIGHTING INSTALLATIONS

The installation has 2 rows of luminaires on the central reservation

Luminaire	ITINERA VP ST (SAP-T) 250W
Tilting angle	0 degree
Luminous flux of the lamp	27,0 Klumen
Overall maintenance factor (<=1)	0.80
Suspension height	10,00 m.
Luminaire spacing	35,00 m.
Arm lenght	1,50 m.

## ROW POSITION (C-0 PLANE) RELATIVE TO LEFTHAND EDGE OF CARRIAGEWAY

Row	Position (m.)	Forward/Back
1	8.50	Forward/Back
2	12.50	



# Lighting installation

LUMINANCE - OBSERVER 1					
Glare parameters			(Lmed)	2.20	Cd/m <sup>2</sup>
Lowest luminance value			(Lmin)	0.90	Cd/m <sup>2</sup>
Highest luminance value			(Lmax)	3.50	Cd/m <sup>2</sup>
Overall uniformity (Uo)			(Lmin/Lmed)	0.42	
Observer position coordinates for overall longitudinal uniformity					
Observation point	X=	Y=	Min.	Max	Unif. long. (UL)
	(m)	(m)	Cd/m <sup>2</sup>	Cd/m <sup>2</sup>	(Lmin/Lmax)
	-60.00	2.50	1.30	1.80	0.72
Glare parameters					
Veiling Luminance			(LV)	0.17	Cd/m <sup>2</sup>
Threshold increment			(TI)	4.98	%
LUMINANCE - OBSERVER 2					
Glare parameters			(Lmed)	2.00	Cd/m <sup>2</sup>
Lowest luminance value			(Lmin)	0.90	Cd/m <sup>2</sup>
Highest luminance value			(Lmax)	3.00	Cd/m <sup>2</sup>
Overall uniformity (Uo)			(Lmin/Lmed)	0.43	
Observer position coordinates for overall longitudinal uniformity					
Observation point	X=	Y=	Min.	Max	Unif. long. (UL)
	(m)	(m)	Cd/m <sup>2</sup>	Cd/m <sup>2</sup>	(Lmin/Lmax)
	-60.00	7.50	2.20	3.00	0.73
Glare parameters					
Veiling Luminance			(LV)	0.20	Cd/m <sup>2</sup>
Threshold increment			(TI)	6.40	%
Surround ratio	0.50		Average ratio Rn	0.00%	

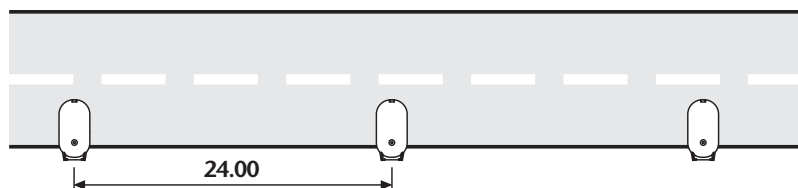
The **ITINERA** road lighting with toughened flat glass, has been designed providing to reduce lighting dazzling and guarantees a better visual field for everybody. The standards allow to arrange the fixtures with a luminaries spacing three times the height of the poles.

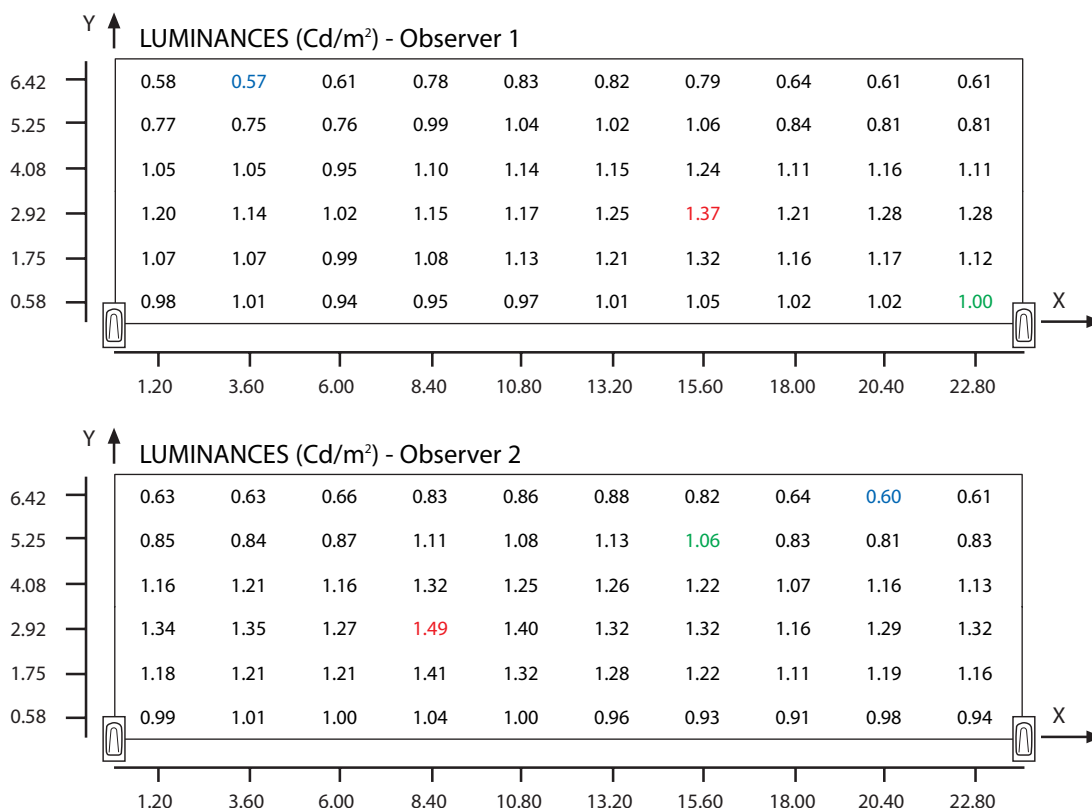
In accordance with European Norm EN 13201 the lighting project is improved. The distribution of the luminance over the carriageway is calculated in the observers' direction placed in the middle of each lane road. The parameters calculated and the average lumi-

nance value are in conformity to the norm EN 13201 as per lighting categories index ME1. The percentage of light flux wastes in the upper hemisphere (Rn) is null; the installation is conform to the Italian Norm UNI 10819 and Regional Italian Laws in matter the lighting pollution.

## Example of lighting calculation - road

ROAD SPECIFICATIONS		
Number of carriageways		1
Number of lanes per carriageway		2
Lane width		3.50 m
Roads table reflection properties		C2
LIGHTING INSTALLATIONS		
The installation has 1 row of luminaires		
Luminaire		SMART VP ST (SAP-T) 100W
Tilting angle		0 degree
Luminous flux of the lamp		10.0 Klumen
Overall maintenance factor (<=1)		0.80
Suspension height		8.00 m.
Luminaire spacing		24.00 m.
ROW POSITION (C-0 PLANE) RELATIVE TO LEFTHAND EDGE OF CARRIAGEWAY		
Row	Position (m.)	
1	0.00	Forward/Back





# Lighting installation

LUMINANCE - OBSERVER 1				
Glare parameters		(Lmed)	1.00	Cd/m <sup>2</sup>
Lowest luminance value		(Lmin)	0.60	Cd/m <sup>2</sup>
Highest luminance value		(Lmax)	1.40	Cd/m <sup>2</sup>
Overall uniformity (Uo)		(Lmin/Lmed)	0.60	
Observer position coordinates for overall longitudinal uniformity				
Observation point	X=	Y=	Min.	Max
	(m)	(m)	Cd/m <sup>2</sup>	Cd/m <sup>2</sup>
	-60.00	1.75	1.00	1.30
Unif. long. (UL)				(Lmin/Lmax)
				0.77
Glare parameters				
Veiling Luminance		(LV)	0.12	Cd/m <sup>2</sup>
Threshold increment		(TI)	4.72	%
LUMINANCE - OBSERVER 2				
Glare parameters		(Lmed)	1.10	Cd/m <sup>2</sup>
Lowest luminance value		(Lmin)	0.60	Cd/m <sup>2</sup>
Highest luminance value		(Lmax)	1.50	Cd/m <sup>2</sup>
Overall uniformity (Uo)		(Lmin/Lmed)	0.55	
Observer position coordinates for overall longitudinal uniformity				
Observation point	X=	Y=	Min.	Max
	(m)	(m)	Cd/m <sup>2</sup>	Cd/m <sup>2</sup>
	84.00	5.25	0.80	1.10
Unif. long. (UL)				(Lmin/Lmax)
				0.73
Glare parameters				
Veiling Luminance		(LV)	0.12	Cd/m <sup>2</sup>
Threshold increment		(TI)	6.41	%
Surround ratio	0.575	Average ratio Rn	0.21%	

The Smart VP road lighting with toughened flat glass, has been designed providing to reduce lighting dazzling and guarantees a better visual field for everybody. The standards allow to arrange the fixtures with a luminaries spacing three times the height of the

poles. In accordance with European Norm EN 13201 the lighting project is improved. The distribution of the luminance over the carriageway is calculated in the observers' direction placed in the middle of each lane road. The parameters calculated and the average lumi-

nance value are in conformity to the norm EN 13201 as per lighting categories index ME3a. The percentage of light flux wastes in the upper hemisphere (Rn) is null; the installation is conform to the Italian Norm UNI 10819 and Regional Italian Laws in matter of lighting pollution.

# Merida Metropolitan Olympic Stadium, Venezuela

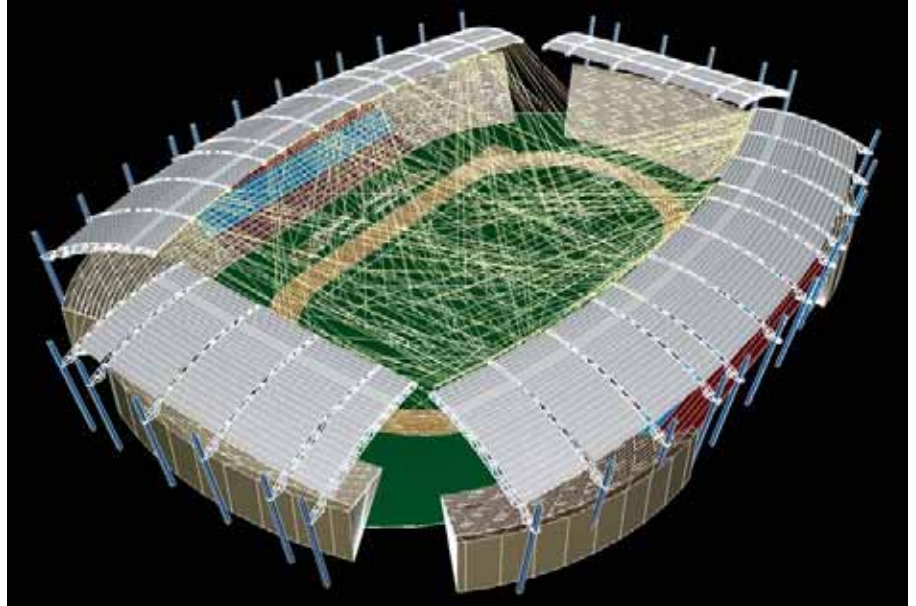
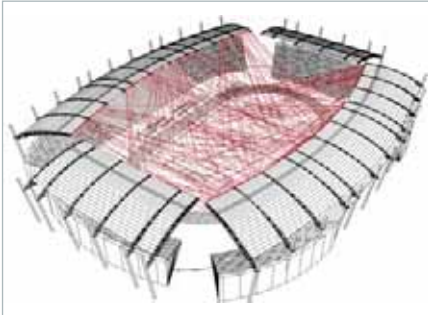
Homologation FIFA – CONMEBOL  
 Field dimensions : 110x70 m.  
 Spectators : 43000  
 N° 288 floodlights type : LIGHTMASTER 2000  
 Circular optic with beam : C2-C3-C4-C5  
 Installation height : 37 m.

**Illuminance horizontal average :**  
 Football field : 1750 Lux  
 Uniformity U1 : 0.81  
 Uniformity U2 : 0.88

Athletic race track : 1300 Lux  
 Uniformity U1 : 0.67  
 Uniformity U2 : 0.81

**Illuminance vertical average "Main TV Camera":**  
 Football field : 1600 Lux  
 Uniformity U1 : 0.62  
 Uniformity U2 : 0.79

Athletic race track : 1040 Lux  
 Uniformity U1 : 0.62  
 Uniformity U2 : 0.78



# Stadio "Josè Antonio Anzoàtegui" di Puerto La Cruz, Venezuela

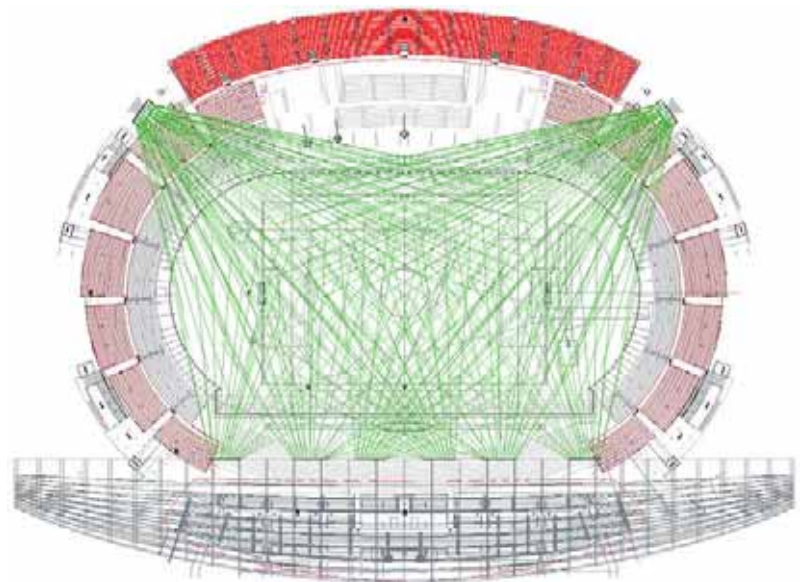
Homologation FIFA – CONMEBOL  
 Field dimensions : 105x68 m.  
 Spectators : 38000  
 N° 296 floodlights type : LIGHTMASTER 2000  
 Circular optic with beam : C1-C2-C3-C4-C5  
 Installation height : da 36 m. a 45 m.

**Illuminance horizontal average :**  
 Football field : 1753 Lux  
 Uniformity U1 : 0.77  
 Uniformity U2 : 0.84

Athletic race track : 1313 Lux  
 Uniformity U1 : 0.66  
 Uniformity U2 : 0.82

**Illuminance vertical average "Main TV Camera":**  
 Football field : 1624 Lux  
 Uniformity U1 : 0.60  
 Uniformity U2 : 0.74

Athletic race track : 1104 Lux  
 Uniformity U1 : 0.54  
 Uniformity U2 : 0.71



# Stadio Polideportivo Pueblo Nuevo di San Cristobal, Venezuela

Homologation FIFA – CONMEBOL  
 Field dimensions : 105x68 m.  
 Spectators : 42500  
 N° 288 floodlights type : LIGHTMASTER 2000  
 Circular optic with beam : C1-C2-C3-C4-C5  
 Installation height : da 38 m. a 50 m.

## Illuminance horizontal average :

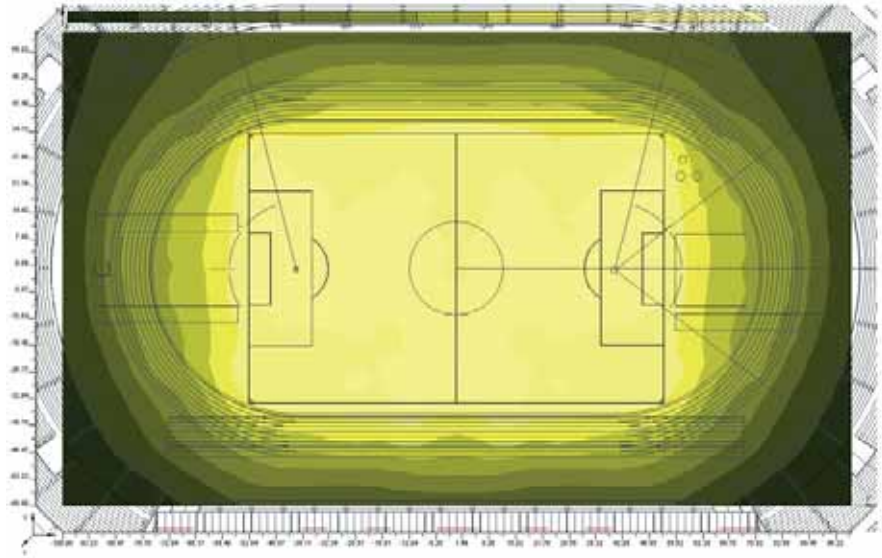
Football field : 1790 Lux  
 Uniformity U1 : 0.79  
 Uniformity U2 : 0.87

Athletic race track : 1260 Lux  
 Uniformity U1 : 0.60  
 Uniformity U2 : 0.72

## Illuminance vertical average "Main TV Camera":

Football field : 1738 Lux  
 Uniformity U1 : 0.62  
 Uniformity U2 : 0.72

Athletic race track : 1080 Lux  
 Uniformity U1 : 0.51  
 Uniformity U2 : 0.70



# BGZ Velodrome Arena "Pruszkow", Polonia

Homologation UCI - Union Cycliste Internationale  
 Total race length : 250 m.  
 Spectators : 3000  
 N° 201 floodlights type : LIGHTMASTER 1000  
 Circular optic with beam : C2-C3-C4-C5  
 N° 42 floodlights type : MACH 5 Asymmetric 400  
 Installation height : da 9 m. a 28 m.

## Illuminance horizontal average :

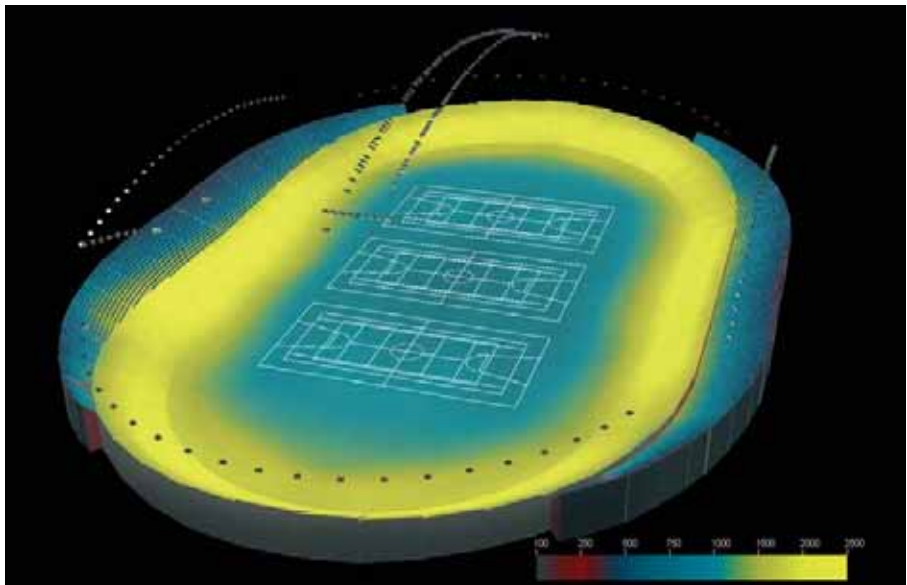
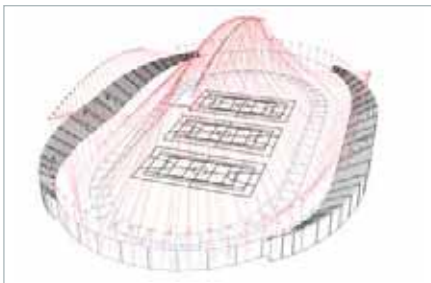
Race : 3100 Lux  
 Uniformity U1 : 0.85  
 Uniformity U2 : 0.91

Fotofinish : 4000 Lux

## Illuminance vertical average "Main TV Camera":

Race : 1900 Lux  
 Uniformity U1 : 0.83  
 Uniformity U2 : 0.90

Fotofinish : 2200 Lux

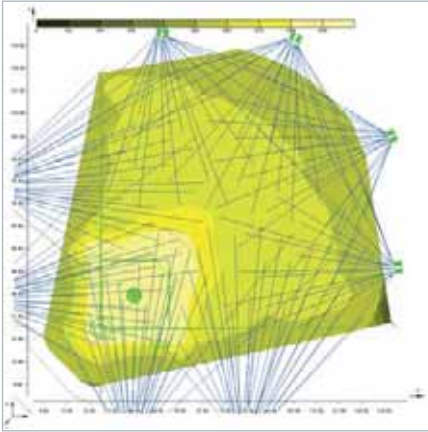


# Baseball stadium "Guatamare" - Porlamar - Venezuela

Homologation LVBP  
Field dimensions : 145x145 m.  
Spectators : 12000  
N° 198 floodlights type : LIGHTMASTER 2000  
Circular optic with beam : C2-C3-C4-C5-C6  
Installation type : 8 highmast of 35 m.

**Illuminance horizontal average :**  
Infield : 1580 Lux  
Outfield : 1140 Lux

**Illuminance vertical average "Main TV Camera":**  
Infield : 2020 Lux  
Outfield : 830 Lux

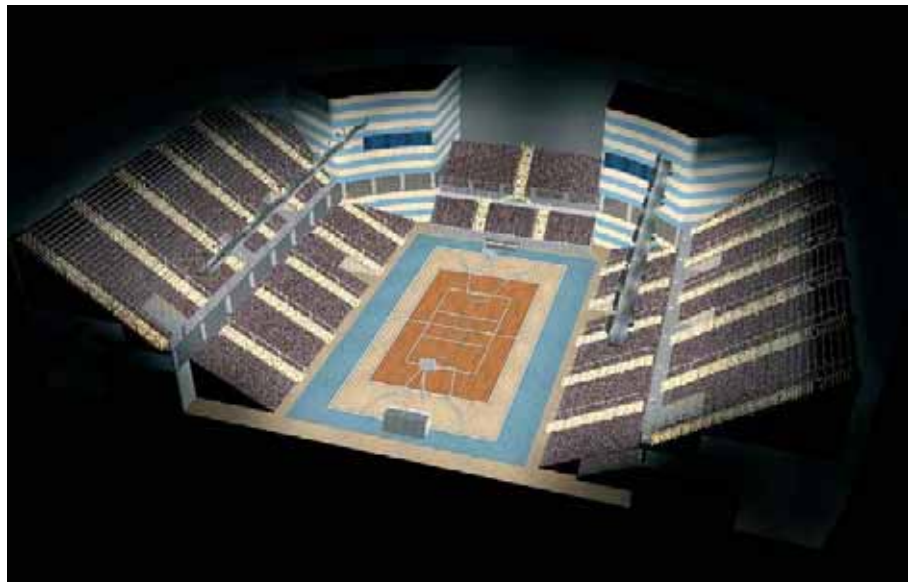
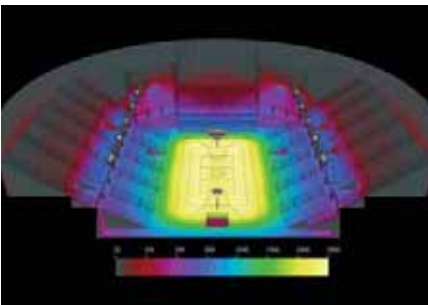
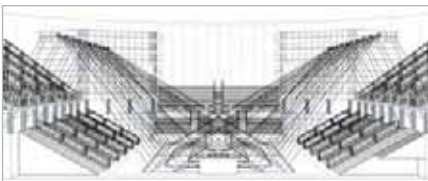


## Indoor Arena

Homologation FIBA  
Field dimensions : 46x28 m.  
Spectators : 6000  
N° 92 floodlights type : LIGHTMASTER 1000  
N° 22 floodlights type : OKAY1500  
Symmetrical and circular optics with beam : C3-C4-C5  
Installation height : 18 m.

**Illuminance horizontal average :**  
Play area : 2360 Lux  
Uniformity U1 : 0.91  
Uniformity U2 : 0.95

**Illuminance vertical average "Main TV Camera":**  
Play area : 1617 Lux  
Uniformity U1 : 0.79  
Uniformity U2 : 0.87



# C.O.N.I. Swimming pool Sporting hall "Giulio Onesti" Rome

Homologation CONI

Pool dimensions : 50x20 m.

Spectators : 500

N° 42 floodlights type : MACH 5 400W

Optic : Asymmetrical

Altezza Installazione : da 4 a 6 m.

**Illuminance horizontal average :**

Pool : 550 Lux

Uniformity U1 : 0.63

Uniformity U2 : 0.83

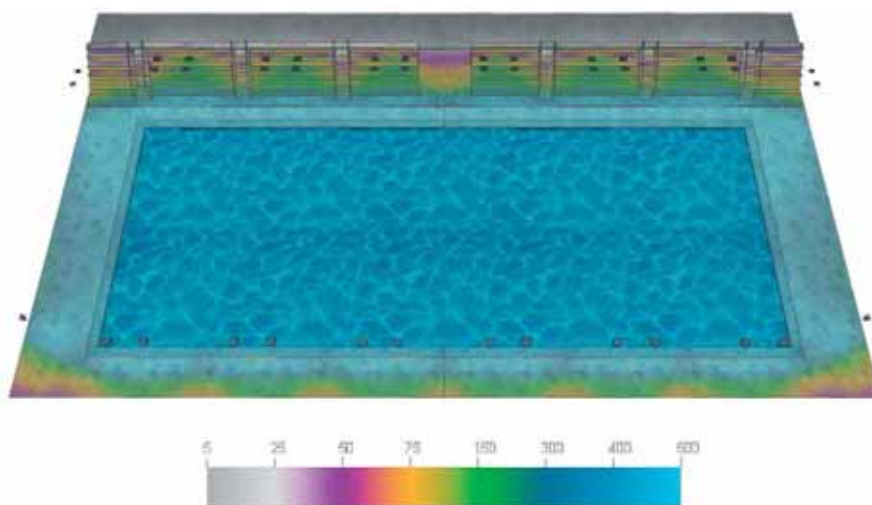
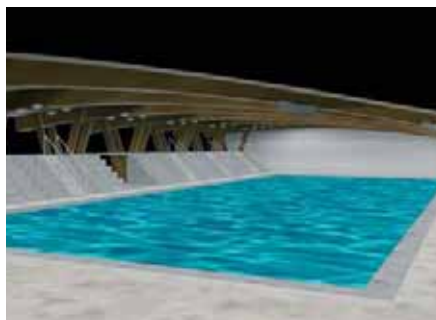
**Illuminance vertical average**

**"Head office Observers" :**

Pool : 515 Lux

Uniformity U1 : 0.40

Uniformity U2 : 0.55



# International Airport

APRON Area dimensions : 450x250 m.

PARKING Area dimensions : 450x350 m.

N° 58 floodlights type : LIGHTMASTER 1000

N° 162 floodlights type : ITINERA VP 150

Installation heights : 10 m. - 22 m. - 30 m.

**Illuminance horizontal average :**

Apron Terminal Area : 40 Lux

Apron Total Area : 25 Lux

Parking Area : 20 Lux

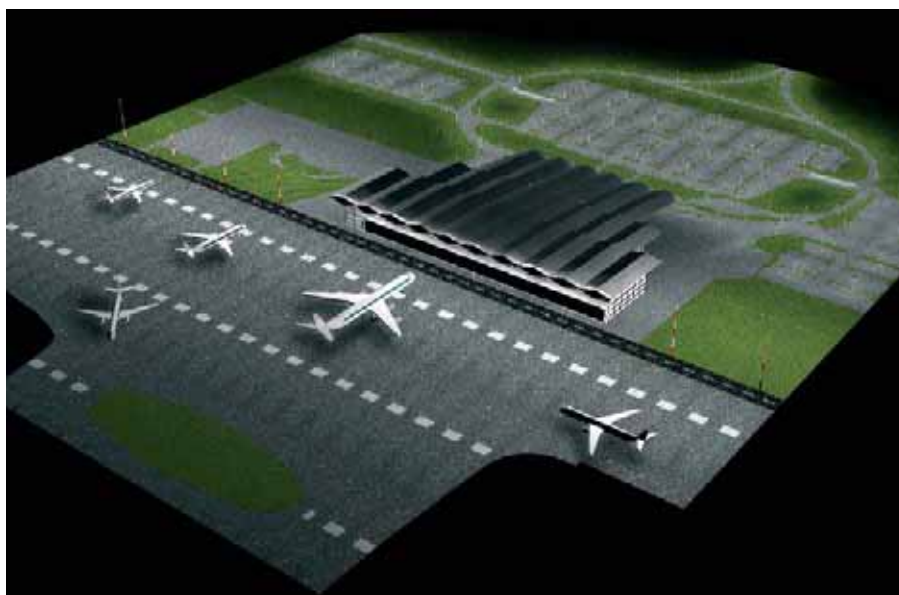
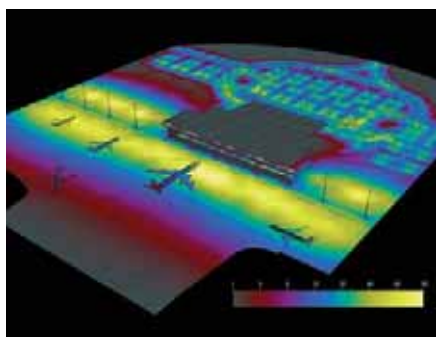
**Illuminance vertical average :**

Apron Terminal Area : 59 Lux "EV +Y"

Apron Total Area : 30 Lux "EV +Y"

Apron Terminal Area : 25 Lux "EV +/- X"

Apron Total Area : 15 Lux "EV +/- X"






# Pages code




CODE	PAGES	CODE	PAGES	CODE	PAGES	CODE	PAGES	CODE	PAGES
00472	38	30531	79	40306	140	44111	129	50762	103
00473	134	30532	79	40310	140-141	44115	129	50763	103
00474	134	30533	79	40320	140-141	44116	129	50769	103
00475	38	30534	79	40330	140-141	44130	129	50770	103
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02677	128-134	30603	80	40360	140-141	44133	129	50775	103
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08129	86	30672	81	40706	134	44311	129	50920	89
08711	68	30673	81	40707	134	44315	129	50923	95
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
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52506	95	59507	119	60272	86	70011	30	70777	39
52507	95	59508	119	60273	86	70012	30	70781	40
52508	95	59509	119	60274	102	70014	30	70782	40
52509	95	59531	119	60275	102	70015	30	70783	40
52521	95	59532	119	60276	102	70017	30	70784	40
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52567	95	59539	119	60287	30	70041	31	70821	41
52575	96	59550	119	60288	30	70044	31	70822	41
52577	96	59560	119	60289	30	70045	31	70825	41
52600	87	60026	134-140	60290	38	70047	31	70826	41
52601	87	60030	134-140	60291	38	70048	31	70827	41
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52607	87	60040	96	60293	38	70062	31	70831	41
52608	87	60041	96	60294	38	70063	31	70832	41
52603	87	60042	96	60303	43	70064	31	70833	41
52604	87	60043	96	60304	43	70065	31	70834	41
52605	87	60045	96	60306	43	70067	31	70835	41
52606	87	60046	96	60309	43	70068	31	70836	41
52609	87	60047	96	60323	43	70069	31	70837	41
52620	87	60050	52-58	60324	43	70070	31	70838	41
52621	87	60051	52	60339	58-64	70071	31	70839	41
52622	87	60060	52	60349	58-64	70072	31	75001	25
52623	87	60063	134-140	60354	116	70073	31	75002	25
52624	87	60065	102	60357	116-119	70081	31	75003	25
52625	87	60066	102	60367	116	70082	31	75004	25
52650	87	60067	102	60371	96	70083	31	75005	25
52651	87	60068	102	60372	96	70084	31	75006	25
52654	87	60085	64	60373	96	70085	31	75051	25
52655	87	60089	64-68-102	60374	96	70087	31	75052	25
52658	87	60092	52-58	60375	96	70088	31	75053	25
52659	87	60093	58	60377	96	70089	31	75054	25
52666	87	60099	64-68-86-94-102	60378	96	70090	31	75055	25
52667	87	60100	140	60382	43	70091	31	75056	25
52677	96	60101	64-68-86-94-102	60395	43	70092	31	75201	24
52679	96	60108	86-94	60402	128	70093	31	75202	24
52710	69	60137	38	60404	43	70201	31	75203	24
52711	103	60147	42-43	60406	43	70202	31	75204	24
52712	103	60202	68	60409	43	70204	31	75205	24
52713	69	60203	68	60410	24	70207	31	75206	24
52733	69	60210	140	60412	24	70211	31	75251	24
52734	69	60211	140	60414	24	70212	31	75252	24
52735	69	60212	140	60420	96	70214	31	75253	24
52736	69	60214	42	60421	96	70217	31	75254	24
52800	87	60218	78	60422	96	70501	39	75255	24
52802	87	60221	94	60423	96	70502	39	75256	24
52804	87	60222	94	60425	96	70507	39	75451	25
52805	87	60223	94	60426	96	70508	39	75452	25
59101	117-118	60224	94	60427	96	70511	39	75453	25
59102	117-118	60225	94	60447	42-43	70512	39	75454	25
59103	117-118	60226	94	60501	119	70517	39	75455	25
59104	117-118	60227	94	60505	119	70518	39	75456	25
59105	117-118	60228	94	60510	119	70531	39	75651	25
59106	117-118	60231	78	60520	119	70537	39	75652	25
59107	117-118	60232	78	60525	119	70541	39	75653	25
59108	117-118	60233	78	60530	119	70547	39	75654	25
59109	118	60234	78	60540	119	70561	40	75655	25
59151	117-118	60235	78	60550	117	70562	40	75656	25
59152	117-118	60237	78	60555	117	70563	40	75801	25
59153	117-118	60238	78	60560	119	70564	40	75802	25
59154	117-118	60239	78	60563	117	70565	40	75803	25
59155	117-118	60240	64-68-78-102	60565	119	70572	40	75805	25
59156	117-118	60242	64-68-78-102	60567	117	70573	40	75806	25
59157	117-118	60244	78	60570	119	70574	40	75807	25
59158	117-118	60246	78	60575	117-119	70575	40	75810	25
59159	118	60247	24	60580	117-119	70581	40	75811	25
59162	118	60250	94	60585	117-119	70582	40	75812	25
59163	118	60251	94	60590	116	70583	40	75813	25
59201	118	60252	94	60595	116	70584	40	75820	25
59202	118	60253	86	60600	116	70585	40	75821	25
59203	118	60254	86	60605	116	70592	40	75822	25
59204	118	60255	86	60650	149	70593	40	75823	25
59251	118	60256	86	60652	149	70594	40	75831	25
59254	117-118	60260	94	60654	149	70595	40	75832	25
59255	117-118	60261	94	60656	149	70701	39	75833	25
59257	117-118	60262	94	60660	149	70707	39	75840	25
59265	117-118	60263	94	60662	149	70711	39	75841	25
59266	117-118	60264	86	60665	149	70717	39	75842	25
59267	117-118	60265	86	60667	149	70750	39	75843	25
59501	119	60266	86	70001	30	70751	39		
59502	119	60267	86	70002	30	70757	39		
59503	119	60268	86	70004	30	70758	39		

## SYMBOL

-  Wired power corrected
-  Wired power corrected with lamp
-  Suited direct mounting on normally flammable surfaces

-  Mark for devices with limited temperature complying with the technical regulation EN 60598-2-24
-  Classe II
-  Inside protection fuse

 Internal thermal protection – if required by the building characteristics of the lamp, which must be installed in the device, inside the reactor of the electrical circuit there is a thermal protection. In case of malfunctioning of the lamp (rectification) the protection opens the circuit avoiding dangerous heating and keeping the safety of the device.

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