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illuminazione
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DELSANA
LED LIGHTING SYSTEMS

The Forum LED range
lights for industrial, infrastructure and sports applications

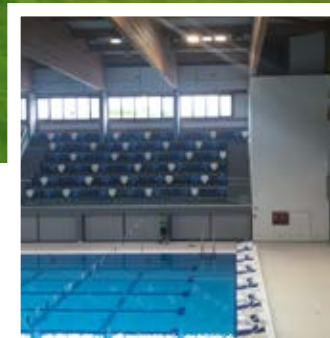
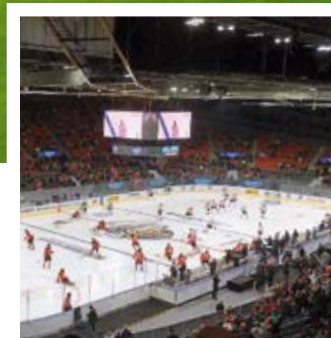
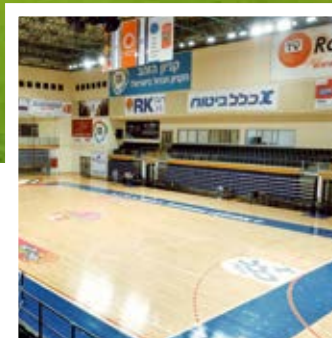
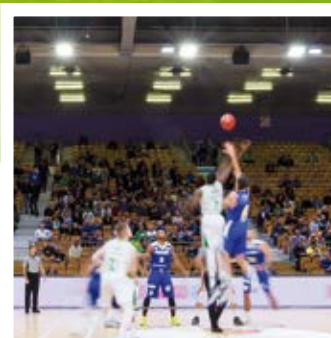
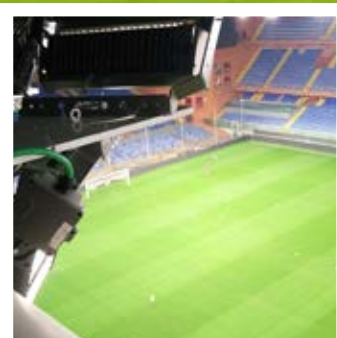
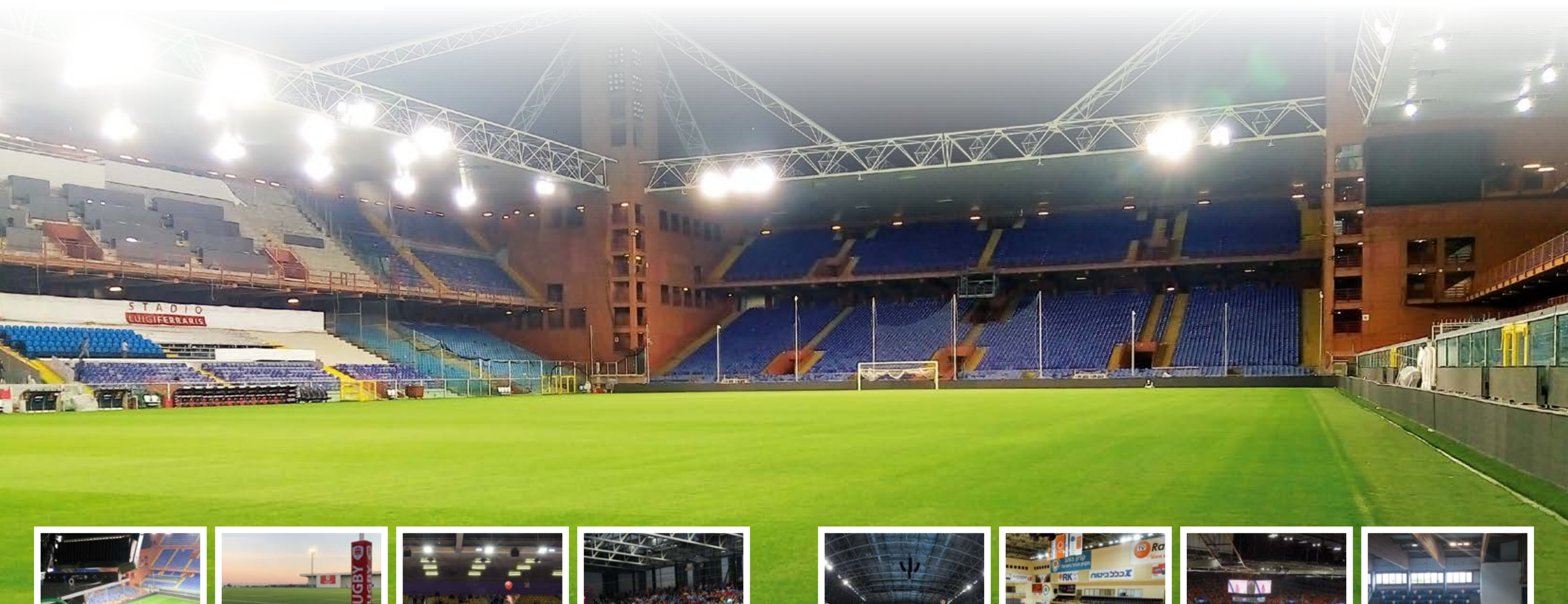
M A D E I N I T A L Y

Forum LED: Light up the show!!!

Forum LED is the most innovative spotlight made by Disano for large areas and sporting facilities, currently installed in thousand of facilities of any dimension all over the world and for large events, from the Olympic Games to the 2018 Russia FIFA World Cup.

One of the secrets of its success is the possibility to ensure the best results in any type of indoor and outdoor arena, with a very wide range of products to choose the solution that best responds to any technical requirement and esthetical need.

In the LED version, Forum was designed as a modular system (with one, two or three modules), where LEDs can work in the best way possible and lighting designers can choose from many different optics and power wattages to ensure the best solution in terms of energy efficiency and light output.



Forum LED: TOP range floodlight with all the quality of made in Italy design

Sponsors have
greater visibility and
enhance the promo-
tion of their brand

The media tell us about
every single moment of
the action, live and with
extreme precision

TV broadcasters
comply with the
standards for HD
televised events

The fans on the stands
can't lose sight
of the athletes,
coaches... and referees!

Athletes on the field
benefit from greater
visual comfort

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One of a kind!!!

Forum LED:
maximum performance,
very high visual comfort
and extreme flexibility

Forum LED is a modern floodlight equipped with all the solutions to guarantee very high performance levels, excellent light control, easy installation and long lamp life. The extreme versatility of its optical design guarantees the adjustment to different application needs, ensuring high performance in any setting compared to any other floodlight featuring more traditional technology.



Key features

- Easy and safe to install, Forum LED is equipped with special devices for perfect pointing and positioning stability.
- The careful selection of the materials and electronic components ensures full safety during operation, guaranteeing total resistance to impacts and accidental collisions, thermal shocks and weather agents.

- The shape of the body allows obtaining diverse combinations of power, lumen and luminous beams; in fact, it is available in versions with single, double or triple modules, with asymmetric light distribution, narrow beam angles ranging from 8° to 17°, or symmetric beams.

- Precision optics that allow broad design flexibility guaranteeing high levels of light quality, eliminating flicker during TV broadcasting.



Performance and advantages

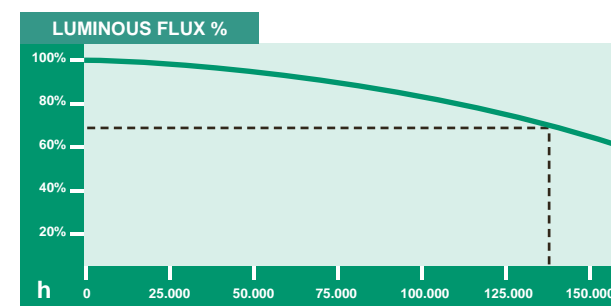
- Latest generation LED sources with excellent colour rendering and light output.
- The remarkable performance of these floodlights facilitates their use in large areas as well as in stadiums or indoor and outdoor arenas, providing unprecedented performance in any setting
- The extensive study of the optical system and the incorporation of the LED source into the floodlight guarantee precision and high performance: intrusive and glaring light in the surrounding areas is minimised for the benefit of visual wellbeing for players and viewers alike

145.000h
L70B20

LED Life expectancy

LEDs, unlike traditional sources, will not turn off suddenly when their working life ends, but will slowly fade their initial luminous flux until they turn off completely. In fact, LEDs do not break (except for manufacturing damages) but decay gradually and constantly. The decrease of LED flux is defined by the working life and is represented by the "L" mark (for example L70 which means that the flux is kept up to 70%). The "B" followed by a number ranging between 10 and 50 indicates the quality of the fixture and defines the LED percentage that doesn't keep the declared characteristics.

EXAMPLE: LED declared L70B20 = 145000 hrs
This means that when the LED reaches 145000 hours of operation, 80% (B20) of the LED will have a luminous flux corresponding to 70% of the initial flux (L70).



FORUM LED life expectancy:

power factor: $\geq 0,92$. Luminous flux maintenance:

80 %	HE 90.000 h (L80B10)	-
90 %	HE 50.000 h (L90B10)	-
70 %	190.000 h (L70B20)	700mA
70 %	160.000 h (L70B20)	1050mA
70 %	145.000 h (L70B20)	1200mA
70 %	135.000 h (L70B20)	1300mA
80 %	120.000 h (L80B10)	700mA
80 %	100.000 h (L80B10)	1050mA
80 %	90.000 h (L80B10)	1200mA
80 %	85.000 h (L80B10)	1300mA

suspension

70 %	120.000 h (L70B20)	700mA
70 %	100.000 h (L70B20)	1050mA
70 %	70.000 h (L70B20)	1200mA
80 %	100.000 h (L80B10)	700mA
80 %	80.000 h (L80B10)	1050mA
80 %	50.000 h (L80B10)	1200mA



ENEC is a European Mark that demonstrates that Forum LED fixture is compliant with applicable European safety standards and was manufactured by a company that applies a Quality System according to ISO 9000.

Registered Design
DM/100271

The International Bureau of the World Intellectual Property Organization (WIPO) certified the design of the FORUM range to the International Registry of Industrial Designs.



Luminous stability

Safety and quality

Quality light without glare for high-resolution TV



Light with no glare

Lighting must meet the needs of international events in terms of efficiency and high-definition TV broadcasting, which require high levels of luminance, light uniformity, excellent colour rendering and greater attention the visual comfort of spectators and athletes with a light without glare.

At Disano's photometric laboratory, tests on lamps and luminaires are compliant with IES LM-79-08 and UNI-EN 13032-4 standards.

TLCI (Television Lighting Consistency Index)

In addition to the CRI index, the high colour rendering version of Forum LED is ranked in terms of TLCI index in order to comply with HD television standards owing to its growing use in the television broadcasting environment.

TLCI levels greater than 90 indicate a light source suited for television use that will limit post-production time and labour costs.

TLCI LEVELS

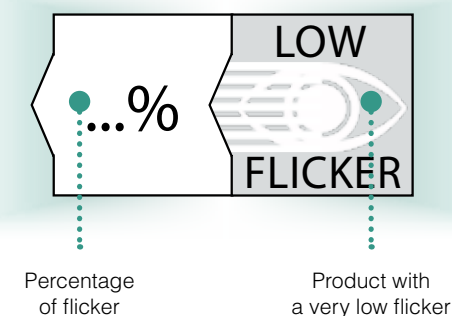
85-100	Errors are so small that a colourist would not consider correcting them
75-85	A colourist would probably want to correct the colour performance, but could easily get an acceptable result
50-75	A colourist would certainly want to correct the errors, and could probably achieve an acceptable result, but it would take significant time to get there
25-50	The colour rendering is poor, and a good colourist would be needed to improve it, but the results would not be to broadcast standard
0-25	The colour rendering is bad, and a colourist would struggle for a long time to improve it, and even then, the results may not be acceptable for broadcast

Flicker and video coverage

It is important to consider that light oscillations provoke effects during video broadcasting, where images appear crossed by numerous black lines, making watching impossible. In addition to this, high current oscillations have a negative effect on LEDs, on the driver life and on the efficiency of the entire lighting system.

The very advanced LED sources, even with colour temperatures of min. **5700K** and **CRI 90**, are ideal to enable perfect high definition TV coverage

The Low Flicker pictogram (LF)



Flicker is a common issue with LED lamps. It can occur at frequencies below 60 Hz and depends on several factors, such as the ripple emitted by drivers. The notion of flicker-free is very different from that of ripple-free. Ripple is most commonly used by driver manufacturers. Furthermore, **"flicker-free" does not mean "without" but rather "very low"**.



Quality LED drivers come with a sophisticated multistage circuit to power LED with an ideal current source (one line), without overloads (Figure 1).

By "ripple" we mean the dimension of the output waveform of a LED driver.

Despite the oscillation occurs at frequencies that cannot be perceived by naked eye, evidence shows that the human brain can perceive light oscillations up to 200 Hz (in LED drivers with ripple, this frequency is 100 Hz). Possible problems include headaches, eye strain, distorted vision and, in some cases, even epileptic seizures.

Figure 2 shows the greatest impact on LED life at high temperatures: the LED appears to be overpowered in zone "A" and underpowered in zone "B".

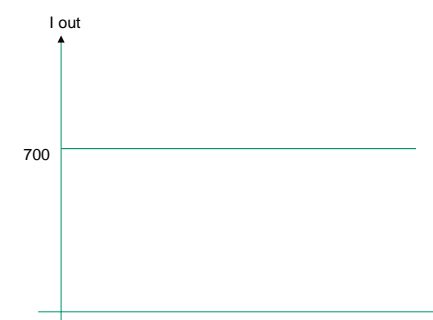


Figure 1. LED powered with ideal current

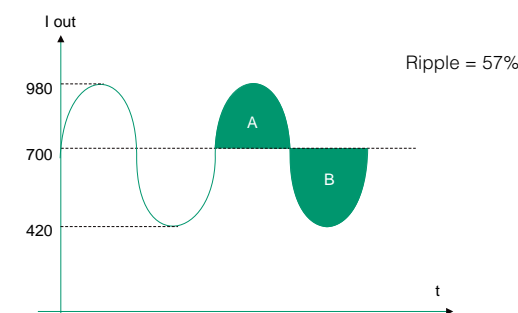


Figure 2. A: LED overpowered, B: LED underpowered

Figure 2: in the absence of a suitable heat sink, the excess temperature of area "A" is not balanced by zone "B", with the result that the LED junction temperature will be higher than the temperature of a RIPPLE-FREE product.

Guidelines for TV broadcasts with LED lighting systems

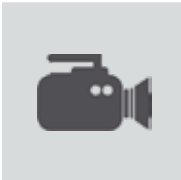
During a broadcast it is not uncommon to perceive an annoying flicker especially during slow motion. This flicker is distracting and should be eliminated where possible. The circumstances that produce the flicker vary upon the frequency modulation, voltage and camera frame rate.

The table below provides a general rule of flicker factor values produced by various lighting systems. A flicker factor of less than 5% will generally not cause problems for slow motion replays at up to 150 frames per second. A lighting system with a flicker factor of less than 5% will eliminate the perceived flicker at most frame rates per second used within the sports television industry.

The acceptable level of flicker factor (FF) is indicated in the Illuminance Category Tables.

Flicker Factor Reference Table	
Type of Illuminance System	Valore FF (guide only)
Daylight	0 %
LED Luminaires % of flicker depends upon the type of LED power supply	<3 %
Discharge lamps with high frequency ballasts	<4 %
Discharge lamps with 3-phase magnetic ballasts for uniform light	8-20 %
Discharge lamps with single-phase magnetic ballasts	30-50 %

Tips on choosing the best lighting sources and amount of lux required



A modern stadium is a concentration of emotions and technology

Light stability is a fundamental requirement for good quality TV resolution. Modern stadiums are a concentration of emotions and technology. Sport facilities are now multi-purpose structures, designed to host different types of events and built according to new environmentally friendly criteria, attracting an ever larger audience.

Below are the “Recommended values for indoor and outdoor sports lighting” (refer to **Standard UNI EN 12193** for further details):

SPACES / SYSTEMS	Level (a)	OUTDOOR (B)			INDOOR (B)			Note
		Average luminance (lux)	Average luminance (lux)	Specific luminance (lux)	Average luminance (lux)	Average luminance (lux)	Specific luminance (lux)	
ATHLETICS	3	500	0,7	1000 (1)	500	0,7	1000 (1)	(1) fotofinish
	2	200	0,5		300	0,6		
	1	100	0,5		200	0,5		
SWIMMING (POOLS)	3	500	0,7		500	0,7		(1) infield
	2	300	0,7		300	0,7		
	1	200	0,5		200	0,5		
BASEBALL	3	750 (1)	0,7(1)		750(1)	0,7(1)		(1) infield
	2	500 (1)	0,5(1)					
	1	300 (1)	0,5(1)					
FOOTBALL	3	500	0,7					(1) fotofinish
	2	200	0,6					
	1	75	0,5					
FOOTBALL FIVE	3	500	0,7		750	0,7		(1) tee (2) hole
	2	200	0,7		500	0,7		
	1	100	0,5		200	0,5		
CYCLING	3	500	0,7	1000 (1)	750	0,7	1000 (1)	(1) fotofinish vert. plane
	2	300	0,7		500	0,7		
	1	100	0,5		200	0,5		
GOLF	3-2	100 (1)	0,8	100 (2)				(1) target (2) platform
	3				500	0,7		
	2				300	0,6		
GYMNASTICS	3				200	0,5		(1) on the ring
	2				500	0,7		
	1				300	0,7		
HOCKEY (FIELD AND INDOOR)	3	500	0,7		750	0,7		(1) fotofinish
	2	200	0,7		500	0,7		
	2	200	0,7		300	0,7		
ROLLER SKATING	3	500	0,7		750	0,7		(1) fotofinish
	2	200	0,5		500	0,6		
	1	100	0,5		300	0,5		
BASKETBALL VOLLEYBALL HANDBALL WRESTLING WEIGHTLIFTING JUDO	3	500	0,7		750	0,7		(1) target (2) platform
	2	200	0,6		500	0,7		
	1	100	0,5		200	0,5		
BOXING	3				2000 (1)	0,8		(1) on the ring
	2				1000 (1)	0,8		
	1				500 (1)	0,5		
RUGBY	3	500	0,7					(1) fotofinish
	2	200	0,6					
	1	75	0,5					
EQUESTRIAN SPORTS	3	500	0,7		500	0,7		(1) fotofinish
	2	300	0,6		200	0,5		
	1	200	0,5		100	0,5		
MOTORSPORTS	3	200	0,6	1000 (1)	200	0,6	1000 (1)	(1) fotofinish
	2	200	0,6		200	0,6		
	1	80	0,5		80	0,5		
ICE RINKS	3	750	0,7		750	0,7		(1) fotofinish
	2	500	0,7		500	0,7		
	1	200	0,5		300	0,7		
SQUASH	3				750	0,7		(1) fotofinish
	2				500	0,7		
	1				300	0,7		
TENNIS	3	500	0,7		750	0,7		(1) fotofinish
	2	300	0,7		500	0,7		
	1	200	0,6		300	0,5		
SHOOTING	3-2-1	200	0,5	500 (1) 300 (2)	200	0,5	500 (1) 300 (2)	(1) target (2) platform

N.B.: Level: (a) 1. Non professional level - 2. Local professional level - 3. National and international professional level
(b) All luminance values, except otherwise stated, refer to the horizontal plane that matches the surfaces where the activity takes place (water surface for swimming activities).

Overview of illuminance levels for UEFA competitions

Type of match	UEFA illuminance level
• UEFA EURO • UEFA Champions League final • UEFA Europa League final	Elite level A
• UEFA Champions League: group stage to semi-finals • UEFA Super Cup final	Level A
• UEFA Women's EURO • UEFA European Under-21 Championship: Final tournament • UEFA Champions League: Play-offs • UEFA Europa League: group stage to semi-finals • UEFA European Football Championship: qualifying matches	Level B
• UEFA Champions League: third qualifying round • UEFA Europa League: third qualifying round and play-offs • UEFA Champions League: second qualifying round • UEFA European Under-21 Championship: qualifying matches	Level C
• UEFA Champions League: first and second qualifying rounds • UEFA Europa League: First and second qualifying rounds • Youth and Women's Competitions: Qualifying rounds, group-stage and knock-out rounds (excluding final(s))	Level D
• Non-broadcast matches	> 350 lux

UEFA illuminance requirements: Elite level A

Eh ave (average horizontal illuminance)		> 2,000 lux	
Uniformity U1h	Uniformity U2h	> 0.50	> 0.70
Ev ave-0° (vertical illuminance on 0° reference plane)		average > 1,500 lux minimum > 1,000 lux	
Uniformity U1v-0°	Uniformity U2v-0°	> 0.40	> 0.50
Ev ave-90° (vertical illuminance on 90° reference plane)		average > 1,500 lux minimum > 1,000 lux	
Uniformity U1v-90°	Uniformity U2v-90°	> 0.40	> 0.50
Ev ave-180° (vertical illuminance on 180° reference plane)		average > 1,500 lux minimum > 1,000 lux	
Uniformity U1v-180°	Uniformity U2v-180°	> 0.40	> 0.50
Ev ave-270° (vertical illuminance on 270° reference plane)		average > 1,500 lux minimum > 1,000 lux	
Uniformity U1v-270°	Uniformity U2v-270°	> 0.40	> 0.50
Match continuity mode (MCM)		Eh ave > 1,000 lux Ev4 ave > 600 lux	
Flicker factor (FF)		average < 5% - maximum < 5%	
Minimum adjacent uniformity ratio (MAUR)		> 0.60	
Colour temperature (Tk)		5,000–6,200K	
Colour rendering		≥ 80 Ra	
Maintenance factor (MF)		0.85	
Power supply		Elite level A	


UEFA illuminance requirements : Level B

Eh ave (average horizontal illuminance)		> 1,400 lux	
Uniformity U1h	Uniformity U2h	> 0.50	> 0.70
Ev ave-0° (vertical illuminance on 0° reference plane)		average > 1,000 lux minimum > 600 lux	
Uniformity U1v-0°	Uniformity U2v-0°	> 0.40	> 0.50
Ev ave-90° (vertical illuminance on 90° reference plane)		average > 1,000 lux minimum > 600 lux	
Uniformity U1v-90°	Uniformity U2v-90°	> 0.40	> 0.50
Ev ave-180° (vertical illuminance on 180° reference plane)		average > 1,000 lux minimum > 600 lux	
Uniformity U1v-180°	Uniformity U2v-180°	> 0.40	> 0.50
Ev ave-270° (vertical illuminance on 270° reference plane)		average > 1,000 lux minimum > 600 lux	
Uniformity U1v-270°	Uniformity U2v-270°	> 0.40	> 0.50
Match continuity mode (MCM)		Eh ave > 600 lux Ev4 ave > 300 lux	
Flicker factor (FF)		average < 12% maximum < 15%	
Minimum adjacent uniformity ratio (MAUR)		> 0.60	
Colour temperature (Tk)		5,000–6,200K	
Colour rendering		≥ 80 Ra	
Maintenance factor (MF)		0.80	
Power supply		Level B	

Technical features

Mounting instructions - accessories



Housing/Frame	in die-cast aluminium with integrated cooling fins
Structure 2/3 LED modules	2/3 LED modules version in die-cast aluminium with bracket for spotlight mounting
Optics	made of V0 polycarbonate, metallized high yield
Front glass	extra-clear, tempered glass, 4 mm thick, resistant to thermal shock and impacts. Upon request: polycarbonate version.
Coating	the standard powder coating consists of a first metal surface pre-treatment stage and of single layer of UV-stabilised, corrosion and salt resistant polyester powder coating
 On request	Coating compliant with UNI EN ISO 9227 Corrosion tests in artificial atmospheres for aggressive environments
Standard Supply	complete with galvanised and coated bracket. Single LED module version, equipped with IP66 airtight connector for mains connection. Electronic safety device to protect the LED module and the related ballast compliant with EN 61547. With dedicated electronic device to protect the LED module
Upon request	the fixture can be equipped with several light dimmers: - 1-10V (dimmmable from 20% to 100%), DALI or DMX/RDM dimmable driver - power line carrier (PLC) remote control (inserted inside the pole) - wireless control system (inserted inside the pole)



Optics are in high performance metallized V0 polycarbonate. The metallized finish reduces glare while increasing visual comfort.

The extra clear 4 mm thick tempered glass is resistant to thermal shocks and impacts in order to ensure adequate optics protection and easy cleaning of the spotlight, guaranteeing high performance.



Suspension version: is equipped as standard with the fixing bracket to allow a perfect mounting as a suspended fixture. (*chains and/or supporting rods are to be ordered separately*).



The heat dissipation system was designed and manufactured to allow LED operation at adequate temperatures and guarantee excellent performance/efficiency and long life.

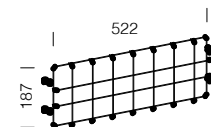
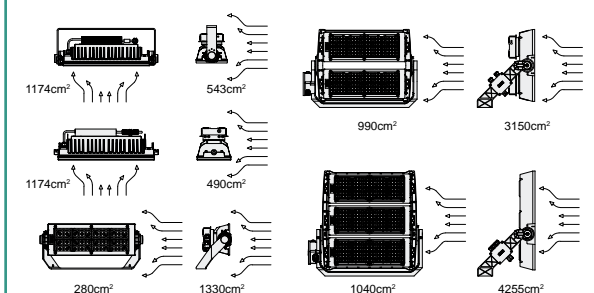


1/2 LED modules wiring: 220-240V 50/60Hz power supply; with IP66 driver applied to the fixture.

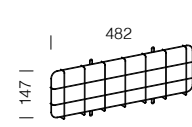
3 LED modules wiring: separate driver; 400V power supply for retrofitting exiting systems is available upon request. **Upon request** the 3 modules version can be equipped with a driver featuring protection level **IP66** (ON/OFF - DALI - DMX/RDM) based on the type of installation.

Junction box for terminals in die-cast aluminium on the support bracket (for version with 2/3 LED modules).

Surface exposed to wind



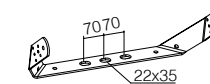
acc. 25 protection guard	
black	997930-00
Plastic-coated steel rod. For protection against impact. For Forum art. 2180-2181-2182-2183-2184-2185-HE.	



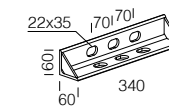
acc. 26 protection guard	
black	997931-00
Plastic-coated steel rod. For protection against impact. For art. 2186-2187.	

1 module

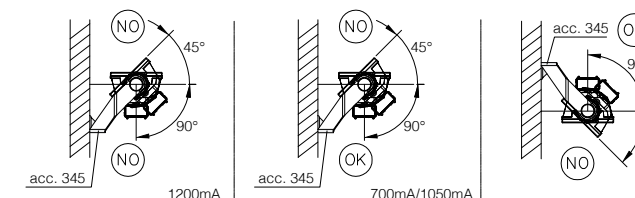
STANDARD BRACKET



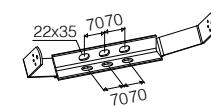
To install Forum 1 LED module to the wall, use acc. 345 and fasten the screws directly to the bracket supplied with the lamp.



acc. 345 wall bracket	
graphite	995772-00
To be used to install Forum 1 LED module directly onto wall surfaces.	



BRACKET UPON REQUEST



Upon request: Forum 1 LED module with a galvanized and coated bracket with right angle base plate to install the projector on both sides of acc. 60 (not supplied with the product) for mast-top mounting.



Example installation with special bracket option for Forum 1 LED module.



2 modules

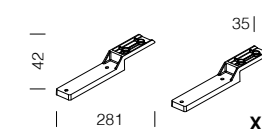
Structure 2/3 LED modules : allows pointing the individual module at an angle of +/- 20° to its horizontal axis.

3 modules

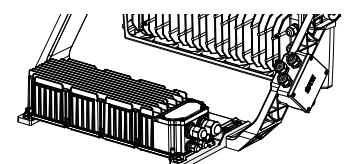


Luminaire bracket in die-cast aluminium made to move 60 mm along the horizontal axis to give greater light pointing freedom.

Use the support brackets acc. 198 to screw the Type 2 and Type 3 driver directly to the bracket supplied with 3-module Forum.



acc. 198 driver support brackets	
graphite	995789-00
In steel. To be used for installing the Type 2 and Type 3 driver directly on the bracket in 3-module versions.	



Other accessories



Upon request: stand for spotlights' pointer system. Available with set for floodlight aiming.

acc. 482 1 module conveyor	
graphite	995788-00
In aluminium. To be used for conveying the light beam in a single direction.	

acc. 482 2 modules conveyor	
graphite	995785-00
In aluminium. To be used for conveying the light beam in a single direction.	

acc. 482 3 modules conveyor	
graphite	995786-00
In aluminium. To be used for conveying the light beam in a single direction.	

Safe and ... SMART !!!

Driver for Forum 3 modules

State-of-the-art technology
to make Forum LED
safer ... and SMART !!!

1 module	W tot	kV
700 mA	203	4/6
1050 mA	305	4/6
1200 mA	350	6/6



1 module HE	W tot	kV
-	368	6/10

1 module	W tot	kV
700 mA	256	4/6
1050 mA	397	10/10
1200 mA	457	6/6

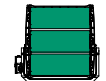


2 modules	W tot	kV
-	736	6/10

2 modules HE	W	kV
700 mA	475	6/6
1050 mA	735	6/6
1200 mA	846	6/6



3 modules	W	kV
700 mA	690	6/10 ÷ 10/10
1200 mA	1223	6/10 ÷ 10/10
1300 mA	1333	6/10 ÷ 10/10



For further information and/or for special versions, please
contact our customer service.

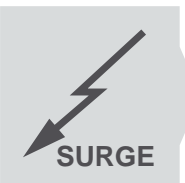


Safety guaranteed

Forum LED was designed with a number of solutions to maximise safety and increase system usage:

Temperature control device

Our products are equipped with an automatic temperature control device. In the event of an unexpected temperature rise caused by anomalous weather conditions, the system will reduce the drive current, guaranteeing proper operation.



Surge protector

Every year, lighting managers are called to face the numerous damages caused by lightning and overcurrents. To protect lighting installations from surge, i.e. the rapid increase in voltage between parts of opposite polarities and/or the ground, Disano has

equipped its luminaires with an EN 61547 compliant surge protector, capable of protecting the LED module and their related driver from voltage spikes.

Switching processes/changing the load on the power line

It operates in two modes:

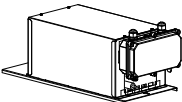
- differential mode: surge between power conductors, between the phase conductor to the neutral conductor. Substantially, between phase (L) and neutral (N) no substantial surges are present because voltage peaks are suppressed by other equipment connected to the power line; as a consequence a lower surge protector is sufficient.
- common mode: surge between power conductors, L/N, to the ground or the body of the luminaire if it is classified in class II (i.e. it is installed on a metal pole). Overvoltage in the common mode are generated by lightning strikes and may reach very high levels.

On request, Forum 3 can be equipped with a driver with a protection class of IP66 depending on the type of installation.

IP66 DRIVER characteristics (for Forum 3 modules)			
DRIVER IP66 versions	TYPE 1 - IP66 (ON-OFF)	TYPE 2 - IP66 (DALI)	TYPE 3 - IP66 (DMX/RDM)
Input power	220-240VAC	220-400VAC	220-400VAC
Power frequency	50/60Hz	50/60Hz	50/60Hz
Power factor	0,94 (full load)	0,98 (full load)	0,98 (full load)
Efficiency	92% (full load)	96% (full load)	96% (full load)
Total harmonic distortion	20%	6% (220-240V) - 12% (400V)	6% (220-240V) - 12% (400V)
Operating ambient temperature	-40°C ÷ +45°C	-40°C ÷ +45°C	-40°C ÷ +45°C
IP protection class	IP66	IP66	IP66
Enclosure mechanical resistance	IK08	IK08	IK08
Output power	700÷1400mA _{DC}	700÷1400mA _{DC}	700÷1400mA _{DC}
Dimming protocol	–	DALI 2	DMX/RDM
Dimming level	–	0,4 ÷ 100%	0,4 ÷ 100%
Flicker up to 1000Hz	5%	1%	1%
LED temperature control module	Present	Present	Present
Surge protection level	6/10kV	10/10kV	10/10kV
Enclosure material	Coated steel	Die-cast aluminium with surface coating	Die-cast aluminium with surface coating
Life expectancy	50.000h @ Tamb Max	50.000h @ Tamb Max	50.000h @ Tamb Max
Certifications	CE	CE+ENEC	CE+ENEC

TYPE 1 - ON/OFF

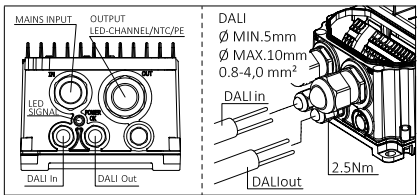
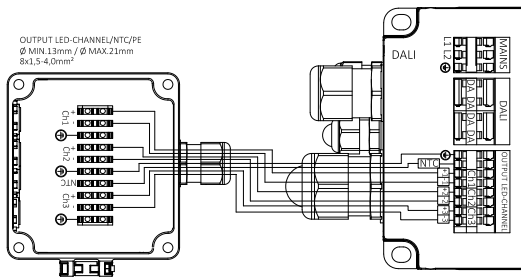
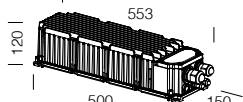
Type 1 - Driver IP66 - ON/OFF	
-	220-240VAC-50/60Hz
* 1200mA	cod. 99767300001042
1300mA	cod. 99767300011042



(*for versions art. 3194 - 3195 Forum - asymmetric - "AS").

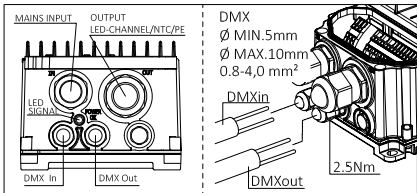
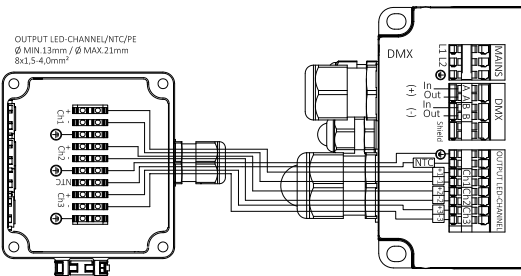
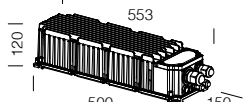
TYPE 2 - DALI

Type 2 - Driver IP66 - DALI	
6.10 Kg	220-400VAC-50/60Hz
1200mA	cod. 99767300411041
1300mA	cod. 99767308411041



TYPE 3 - DMX/RDM

Type 3 - Driver IP66 DMX/RDM	
6.10 Kg	220-400VAC-50/60Hz
1200mA	cod. 99767300001041
1300mA	cod. 99767300301041



The Forum LED range is perfect for the lighting of large areas, multi-purpose facilities for sports and shows

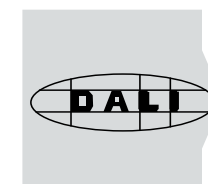
Luminous flux regulation

The fixture can be equipped with several light dimmers:

- 1-10V (dimmable from 20% to 100%) or dimmable driver

1-10V: a 1-10 voltage rate is applied to the driver to produce variable light levels, which are proportionate to the light emitted by a LED lamp (upon request).

- power line carrier (PLC) remote control (inserted inside the pole)
- wireless control system (inserted inside the pole)



All versions of Forum LED are or can be equipped with DALI dimmable drivers. DALI protocol enables the dimming control of light, thanks to the vast range of control accessories and the full interoperability granted by the DALI logo present on the products.

DALI protocol is recommended for functional dimming (energy saving, scene setting, remote control) and has a scalable architecture. Wireless dimming can be achieved with a DALI driver in order to add this function in traditional installations that have been converted to LED, without the need to install additional wiring

Lighting project with DALI dimming system.

Luminous flux regulation



Forum LED can be equipped with DMX compatible drivers. DMX protocol is needed for dynamic light thanks to its immediate reaction time and virtually unlimited number of addresses. DMX can also be used in functional dimming using simple lighting controls in high-end sport installations. DMX allows all range of scenic effects, as well as the monitoring of each luminaire and ease of configuration thanks to the self-addressing DMX-RDM functions.

Management software

The software readily enables full control of the luminous design. This new software combines absolute control with user-friendliness, providing an overview of the colour changes, duration of fading and intervals in a visible and simple way. The scenographies can be downloaded from the central system to the local units and stored in an IP65 rated box (USB compatible) which can be installed externally to provide independent control of all the functions without requiring a computer. First of all it is necessary to configure single floodlights in the management software, which will identify the floodlights based on the address they have been assigned. The system enables all the characteristics of the light to be controlled (dimming, etc...). Furthermore, the system enables single scenes to be defined, and to programme the timing interval between one scene and the next and various effects such as fading.

Controller DMX



In combination with the management software, the **MA onPC command wing** is a portable 2,048 parameter control solution that can be used in nearly any location.

- Real-time control for 2,048 parameters in combination with management software (up to 65,536 parameters as backup in the MA system)
- Expandable up to 4,096 parameter
- 2 A/B faders (100mm)
- 1 Level-Wheel
- Individually backlit and dimmable silent (clickless) keys
- Integrated universal power supply
- Light, handy & rock solid
- Ergonomic design
- Just connect via USB to any PC running software



The **dot2 core** is a compact lighting console designed for small to medium sized productions with up to 4,096 control channels. Intuitive operation is the core of the dot2 philosophy and with a comprehensive set of connectivity hardware on all console models, the dot2 range is suitable for most theatre, touring, corporate, television and education lighting environments.

- full programming section
- master playback section
- 6 fader playbacks
- 12 individual playback buttons
- Two built-in touch screens and support for one external touch screen ensure the dot2 core has the flexible hardware required for almost any kind of show.



The **grandMA3 light** console is the top of its range. It provides the perfect combination of power and physical size. The grandMA3 light console is suitable for the most demanding productions, making it probably the most versatile lighting console available.

- Real-time control for up to 250,000 parameters per session in connection with grandMA3 processing units
- 6 DMX outputs, 1 DMX input
- 2 internal foldable monitor multi-touch screens
- 2 internal letterbox multi-touch screens
- 2 internal multi-touch command screens, 2 external multi-touch screens can be connected
- 41 rotary RGB backlit encoders
- 5 backlit dual encoders
- 15 backlit motorized 60mm faders
- 60 separate playbacks
- 16 assignable x-keys
- integrated keyboard drawer
- built-in uninterruptible power supply (UPS)
- 3 etherCON connectors, 6 USB connectors
- 2 backlit motorized A/B faders 100mm
- Individually backlit and dimmable silent (clickless) keys



Applications

- *Stadiums, arenas and sports facilities*

Proper lighting helps both the stadium audience and the viewers at home who are watching the event from TV to follow the show perfectly; stadiums, arenas and sports facilities turn into the ideal stage for any event.

- *Multi-purpose facilities*

Different lighting effects and setups can have a great visual impact for spectators at concerts or live shows... making it a guaranteed success.



SYSTEM ARCHITECTURE & COMPONENTS



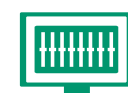
FORUM: available with one, two, three LED modules, with symmetric, asymmetric and narrow light beam. The cutting-edge LED sources, with 5700K and CRI 90 colour rendering, are ideal for ensuring perfect TV images, even in HD resolution.



DRIVER DXM/RDM: to power the spotlights, in addition to controlling the light point (ON/OFF, luminous flux dimming, etc.).



DXM/RDM CONTROLLER: to control the DMX interface (save light scenes and internal timers, ON/OFF/dimming/animation control).



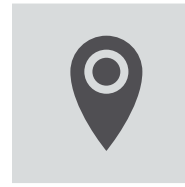
SOFTWARE: the console displayed on the monitor, allows the full control of the different spotlights, easily handling the desired light effects



Version with 1 module

Ideal for... energy savings

Uniform, efficient and
safe lighting for any
design requirement



Applications

A truly complete range of products offering the best performance to meet all outdoor lighting needs for:

- Stadiums or indoor and outdoor multi-sport facilities (tennis court, basketball court, swimming pool, velodrome, hockey rink, volleyball court, etc...).
- Buildings and façades
- Industrial zones, harbour areas, train stations and loading/unloading bays
- Public or private infrastructure, airports, metro stations, car parks and transit zones



Indoor/outdoor sports facilities

Small or large indoor/outdoor sports centres require an extremely versatile illumination, capable of meeting many different standards and regulations.

In general, on tennis courts, football fields, swimming pools and multi-purpose buildings for sports, lights must be installed correctly to illuminate the entire game area without disturbing athletes or create excessive light dispersion.



Buildings and façades

In the lighting of buildings and façades, attention is placed on functional aspects, as well as on architectonic and aesthetic elements. First of all, it is important to ensure the perfect lighting of road signs and entrance areas in order to guide visitors easily and safely. Moreover, there is the need to enhance the building's architecture, highlighting those elements that make the building recognisable.

Outdoor areas

The lighting of outdoor areas, such as loading/unloading bays, is a very delicate and difficult element in a lighting design project. The perfect visibility of outdoor areas must be guaranteed at any time of the day and under any weather condition. People must be able to quickly and safely orient themselves. Therefore in outdoor areas, lights should be sufficiently bright and above all without glare.

The light emitted by the modular optical design makes Forum LED particularly suited for this type of area. Furthermore, thanks to different photometric distributions, it can adjust with great flexibility to any design requirement, because every outdoor area has different needs.



Industrial areas

The working conditions in industrial manufacturing areas require highly resistant lighting fixtures. The accumulation of dust or the presence of humidity may vary depending on different industrial sectors and types of plant.

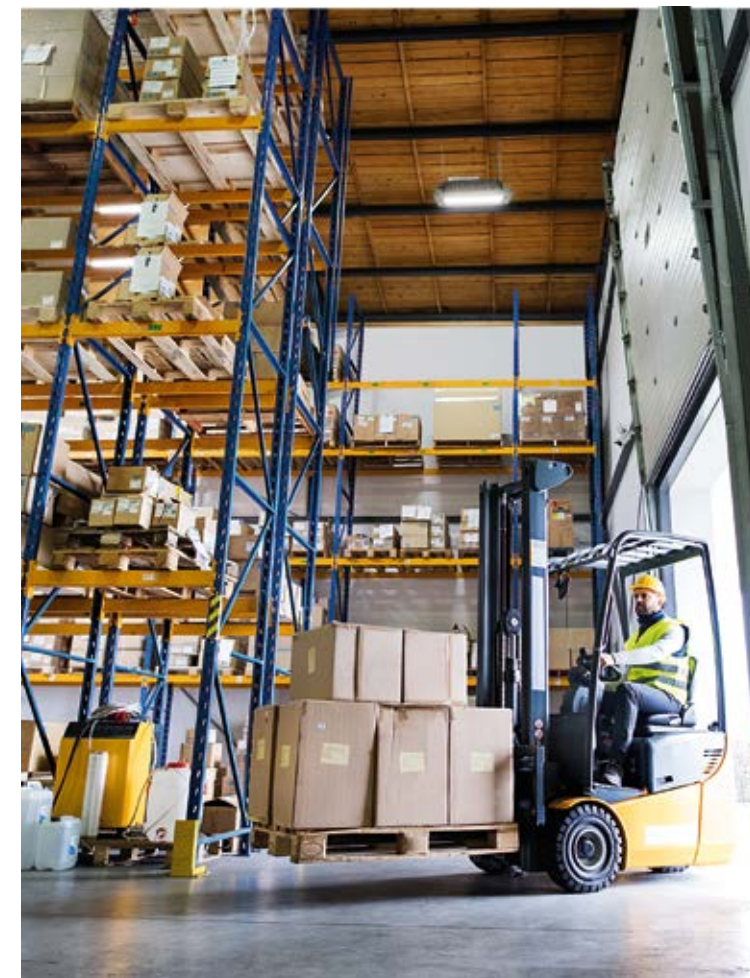
Visibility is even more important because it can affect productivity and safety. This is why Forum LED is studied to guarantee continuous operation with high lighting performance. Thanks to the high degree of protection, the entire range of Forum products can resist effectively to both weather conditions and mechanical shocks and vibration, without affecting the quality of the light or the lamp's life



Indoor industrial

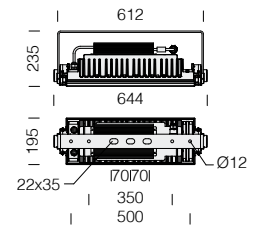
Lighting has an impact on three fundamental factors in a workplace: safety, health and productivity. These characteristics help minimize errors and provide workers with a feeling of wellbeing.

Latest generation LEDs ensure high-quality lighting with a colour temperature of 4000K and excellent colour rendering (CRI 80). In the new suspended version, Forum presents all the characteristics typical of this product with the addition of optics to allow indoor installation and anti-glare features (UGR<22/25).



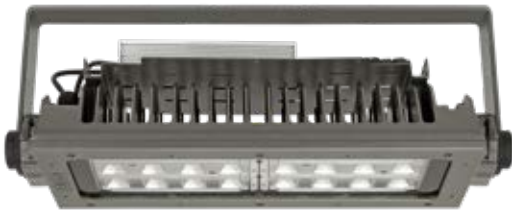


IP66IK08 Registered Design DM/100271



LED: power factor ≥0,92.
Luminous flux maintenance:

L70B20	L80B10
120.000h 700mA	100.000h 700mA
100.000h 1050mA	80.000h 1050mA
70.000h 1200mA	50.000h 1200mA



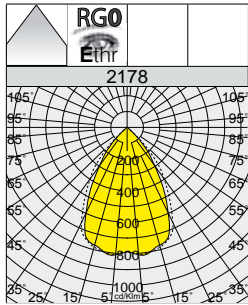
203W=8%
305W=8%
350W=8%
LOW FLICKER

CRI 80

4000K

203W=4/6kV
305W=4/6kV
350W=6/6kV
SURGE

AMBIENT TEMPERATURE
700mA= -20°C÷+50°C
1050mA= -20°C÷+45°C
1200mA= -20°C÷+40°C



* 700mA version = URG<22

2178 Forum - WITH BRACKET UGR<25					
		CLD CELL		LUMEN OUTPUT (tq= 25 °C)	
wattage (700mA)	colour	weight	code	W tot	K - ølm 700mA - CRI
LED *	graphite	11.50	412900-00	203	4000K - 21852lm - CRI 80
wattage (1050mA)	colour	weight	code	W tot	K - ølm 1050mA - CRI
LED	graphite	11.50	412901-00	305	4000K - 30196lm - CRI 80
wattage (1200mA)	colour	weight	code	W tot	K - ølm 1200mA - CRI
LED	graphite	14.00	412902-00	350	4000K - 33536lm - CRI 80

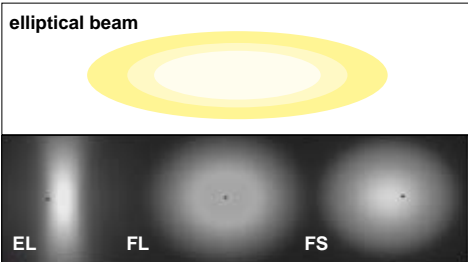
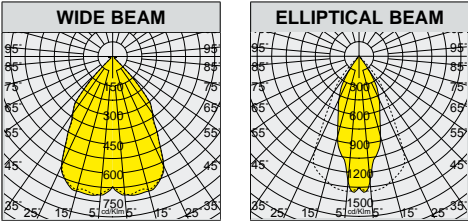
Wiring: 220-240V 50/60Hz power supply; with external IP66 driver applied to the fixture.



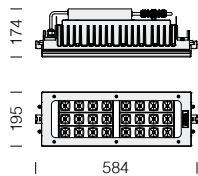
On request: ideal version for spaces with a high concentration of particular volatile chemicals around the luminaires.



On request: other photometric distributions.



IP66IK08 Registered Design DM/100271



LED: power factor ≥0,92.
Luminous flux maintenance:

L70B20	L80B10
120.000h 700mA	100.000h 700mA
100.000h 1050mA	80.000h 1050mA
70.000h 1200mA	50.000h 1200mA



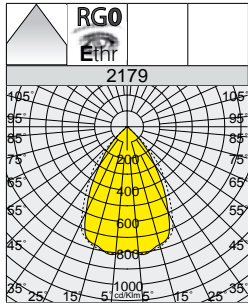
203W=8%
305W=8%
350W=8%
LOW FLICKER

CRI 80

4000K

203W=4/6kV
305W=4/6kV
350W=6/6kV
SURGE

AMBIENT TEMPERATURE
700mA= -20°C÷+50°C
1050mA= -20°C÷+45°C
1200mA= -20°C÷+40°C



* 700mA version = URG<22

2179 Forum - UGR<25					
		CLD CELL		LUMEN OUTPUT (tq= 25 °C)	
wattage (700mA)	colour	weight	code	W tot	K - ølm 700mA - CRI
LED *	graphite	9.50	412910-00	203	4000K - 21852lm - CRI 80
wattage (1050mA)	colour	weight	code	W tot	K - ølm 1050mA - CRI
LED	graphite	9.50	412911-00	305	4000K - 30196lm - CRI 80
wattage (1200mA)	colour	weight	code	W tot	K - ølm 1200mA - CRI
LED	graphite	15.00	412912-00	350	4000K - 33536lm - CRI 80

Wiring: 220-240V 50/60Hz power supply; with external IP66 driver applied to the fixture; designed to be suspended with chain (to be ordered separately).

The UGR (unified glare rating) is an international unified measure developed by the CIE (Commission Internationale de l'Eclairage) to assess the direct glare generated by a lighting system. The European standard regulating the lighting of indoor work places (UNI-EN 12464-1) recommends a specific UGR value for different applications ranging between 10 and 30; the lower the UGR value, the lower the glare. The exact value of this index differs by project type because it depends on the position of the luminaires, room characteristics (dimensions, reflections) and on the point of observation of viewers.

Classification of UGR values by applications	
UGR ≤ 16	Very demanding applications (technical drawings)
UGR ≤ 19	Offices and schools (reading, business meetings, computer work)
UGR ≤ 22	Industrial applications, craftsmen
UGR ≤ 25	Transit areas
UGR > 28	High glare

Below are some examples of industrial environments requiring the installation of fixtures with UGR<22 in compliance with standard UNI-EN 12464-1:

- General areas inside buildings – storage areas
- Industrial and manufacturing activities
- Chemical and pharmaceutical industry
- Mechanical, electronic and electro-technical industry
- Paper mills

Infrastructure
Train stations, airports and large transit areas are regarded as “landmarks”, i.e. well defined signs of a city's ambition and desire for renovation. This is why the design of major infrastructure is being entrusted to world-famed architects. Lighting should meet functional requirements and also enhance the challenging solutions chosen by the designers.

Lighting becomes an integral part of these public works, turning into structural elements giving them extraordinary visibility during the evenings. This new approach also applies to small train stations and roads, where proper lighting can increase safety, efficiency and energy savings and improve aesthetics.



Energy saving: the comparison shows how Forum HE can save more energy compared to conventional discharge lamps and meet applicable standards. We recommend using LED technology to save energy in environments where lights stay on for a long time.

Fixture	Kelvin - CRI	Dimensions (m)	H	LUX	Qty	P tot W	Energy saving
Forum HE	4000K - CRI 70	92,2x66,7	25	≥40	16	5888	43%
SAP 600W	2000K - CRI 20	92,2x66,7	25	≥40	16	10256	
Forum HE	4000K - CRI 70	92,2x66,7	25	≥40	16	5888	66%
SAP 1000W	2000K - CRI 20	92,2x66,7	25	≥40	16	16800	

LOW FLICKER

368W=5%

CRI 70

4000K

368W=6/10kV

SURGE



IP66IK08 Registered Design DM/100271

LED: power factor ≥0,92.
Luminous flux maintenance:

L80B10	L90B10
90.000h	50.000h

IP66IK08 Registered Design DM/100271

LED: power factor ≥0,92.
Luminous flux maintenance:

L80B10	L90B10
90.000h	50.000h



LOW FLICKER

368W=5%

CRI 70

4000K

368W=6/10kV

SURGE

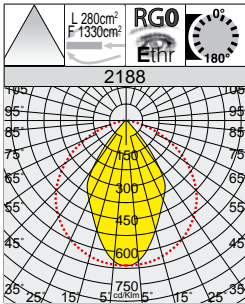
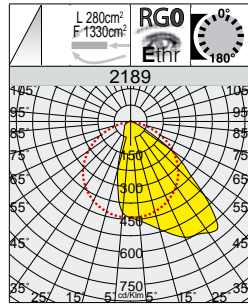
2189 Forum HE - 1 LED MODULE - asymmetric - high efficiency					
		CLD CELL		LUMEN OUTPUT (tq= 25 °C)	
wattage	colour	weight	code	W tot	K - ølm - CRI
LED	graphite	15.00	412695-00	368	4000K - 50842lm - CRI 70

The ideal version for large spaces (squares, stations, airports, etc.)

Optics: in aluminium coated with very high purity (99.99%) silver using physical vapour deposition (PVD).

On request: available with LED CRI 70 - 3000K version with subcode -39.

Wiring (1 LED module) : 220-240V 50/60Hz power supply; with IP66 driver applied to the fixture.



2188 Forum HE - 1 LED MODULE - symmetric - high efficiency					
		CLD CELL		LUMEN OUTPUT (tq= 25 °C)	
wattage	colour	weight	code	W tot	K - ølm - CRI
LED	graphite	15.00	412690-00	368	4000K - 51427lm - CRI 70

Optics: in aluminium coated with very high purity (99.99%) silver using physical vapour deposition (PVD).

On request: available with LED CRI 70 - 3000K version with subcode -39.

Wiring (1 LED module) : 220-240V 50/60Hz power supply; with IP66 driver applied to the fixture.

IP66IK08 Registered Design DM/100271

LED: power factor ≥0,92.
Luminous flux maintenance:

L80B10	L90B10
90.000h	50.000h



LOW FLICKER

368W=5%

CRI 70

4000K

368W=6/10kV

SURGE

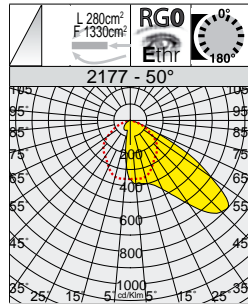
2177 Forum HE - 1 MODULO - 50° asymmetric - high efficiency					
		CLD CELL		LUMEN OUTPUT (tq= 25 °C)	
wattage	colour	weight	code	W tot	K - ølm - CRI
LED	graphite	15.00	412698-00	368	4000K - 57680lm - CRI 70

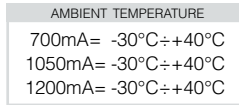
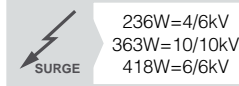
The ideal version for large spaces (squares, stations, airports, etc.)

Optics: in aluminium coated with very high purity (99.99%) silver using physical vapour deposition (PVD).

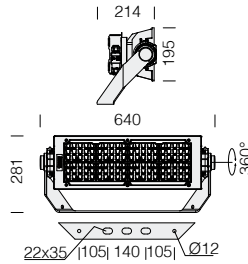
On request: available with LED CRI 70 - 3000K version with subcode -39.

Wiring (1 LED module) : 220-240V 50/60Hz power supply; with IP66 driver applied to the fixture.





IP66IK08 Registered Design
DM/100271



LED: power factor ≥0,92.
Luminous flux maintenance:

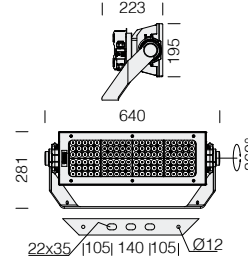
L70B20		L80B10	
190.000h	700mA	120.000h	700mA
160.000h	1050mA	100.000h	1050mA
145.000h	1200mA	90.000h	1200mA

2184 Forum - 1 LED MODULE - asymmetric 60° - "AS"					
		CLD CELL			LED (tj= 85 °C)
wattage (700mA)	colour	weight	code	W	K - ølm 700mA - CRI
LED	graphite	15.00	412653-00	236	4000K - 37755lm - CRI 70
wattage (1050mA)					K - ølm 1050mA - CRI
LED	graphite	15.00	412654-00	363	4000K - 52480lm - CRI 70
wattage (1200mA)					K - ølm 1200mA - CRI
LED	graphite	15.00	412655-00	418	4000K - 58200lm - CRI 70

On request: available with LED CRI 80 / CRI 90 - 4000K and LED CRI 70 / CRI 80 / CRI 90 - 5700K version.

Wiring (1 LED module) : 220-240V 50/60Hz power supply; with IP66 driver applied to the fixture.

IP66IK08 Registered Design
DM/100271



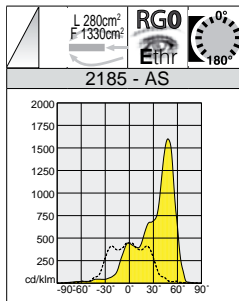
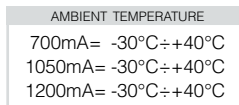
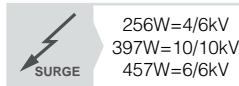
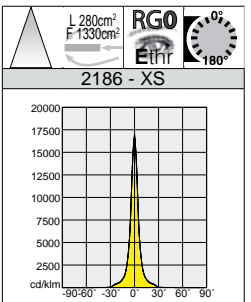
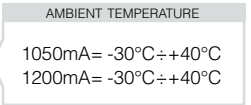
LED: power factor ≥0,92.
Luminous flux maintenance:

L70B20		L80B10	
160.000h	1050mA	100.000h	1050mA
145.000h	1200mA	90.000h	1200mA

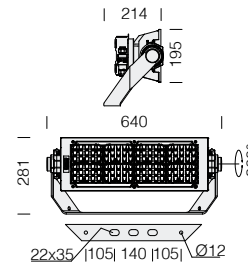
2186 Forum - 1 LED MODULE - narrow beam - "XS"					
		CLD CELL			LUMEN OUTPUT (tq= 25 °C)
wattage (1050mA)		weight	code	W tot	K - ølm 1050mA - CRI
LED	graphite	15.00	412661-00	397	4000K - 40427lm - CRI 70
wattage (1200mA)					K - ølm 1200mA - CRI
LED	graphite	15.00	412662-00	457	4000K - 44679lm - CRI 70

On request: available with LED CRI 80 / CRI 90 - 4000K and LED CRI 70 / CRI 80 / CRI 90 - 5700K version.

Wiring (1 LED module) : 220-240V 50/60Hz power supply; with IP66 driver applied to the fixture.



IP66IK08 Registered Design
DM/100271



LED: power factor ≥0,92.
Luminous flux maintenance:

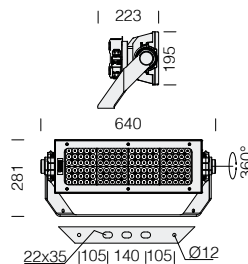
L70B20		L80B10	
190.000h	700mA	120.000h	700mA
160.000h	1050mA	100.000h	1050mA
145.000h	1200mA	90.000h	1200mA

2185 Forum - 1 LED MODULE - asymmetric - "AS"					
		CLD CELL			LUMEN OUTPUT (tq= 25 °C)
wattage (700mA)	colour	weight	code	W tot	K - ølm 700mA - CRI
LED	graphite	15.00	412650-00	256	4000K - 29804lm - CRI 70
wattage (1050mA)					K - ølm 1050mA - CRI
LED	graphite	15.00	412651-00	397	4000K - 39606lm - CRI 70
wattage (1200mA)					K - ølm 1200mA - CRI
LED	graphite	15.00	412652-00	457	4000K - 43545lm - CRI 70

On request: available with LED CRI 80 / CRI 90 - 4000K and LED CRI 70 / CRI 80 / CRI 90 - 5700K version.

Wiring (1 LED module) : 220-240V 50/60Hz power supply; with IP66 driver applied to the fixture.

IP66IK08 Registered Design
DM/100271



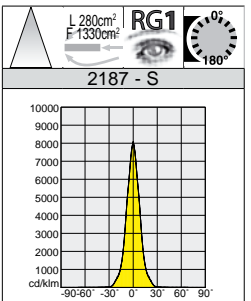
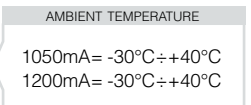
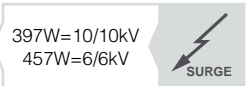
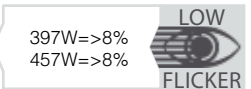
LED: power factor ≥0,92.
Luminous flux maintenance:

L70B20		L80B10	
160.000h	1050mA	100.000h	1050mA
145.000h	1200mA	90.000h	1200mA

2187 Forum - 1 LED MODULE - narrow beam - "S"					
		CLD CELL			LUMEN OUTPUT (tq= 25 °C)
wattage (1050mA)		weight	code	W tot	K - ølm 1050mA - CRI
LED	graphite	15.00	412671-00	397	4000K - 37087lm - CRI 70
wattage (1200mA)					K - ølm 1200mA - CRI
LED	graphite	15.00	412672-00	457	4000K - 40987lm - CRI 70

On request: available with LED CRI 80 / CRI 90 - 4000K and LED CRI 70 / CRI 80 / CRI 90 - 5700K version.

Wiring (1 LED module) : 220-240V 50/60Hz power supply; with IP66 driver applied to the fixture.



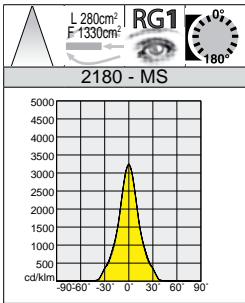
LOW FLICKER
256W=>8%
397W=>8%
457W=>8%

CRI 70

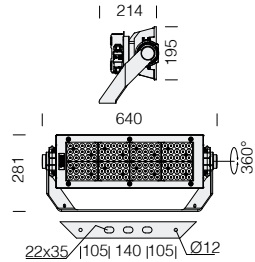
4000K

SURGE
256W=4/6kV
397W=10/10kV
457W=6/6kV

AMBIENT TEMPERATURE
700mA= -30°C÷+40°C
1050mA= -30°C÷+40°C
1200mA= -30°C÷+40°C



IP66IK08 Registered Design DM/100271



LED: power factor ≥0,92.
Luminous flux maintenance:

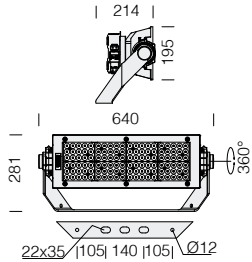
L70B20	L80B10
190.000h 700mA	120.000h 700mA
160.000h 1050mA	100.000h 1050mA
145.000h 1200mA	90.000h 1200mA

2180 Forum - 1 LED MODULE - symmetric - “MS”					
		CLD CELL		W tot	LUMEN OUTPUT (tq= 25 °C)
wattage (700mA)	colour	weight	code		
LED	graphite	15.00	412600-00	256	K - ølm 700mA - CRI
					4000K - 32462lm - CRI 70
wattage (1050mA)					K - ølm 1050mA - CRI
LED	graphite	15.00	412601-00	397	4000K - 43391lm - CRI 70
wattage (1200mA)					K - ølm 1200mA - CRI
LED	graphite	15.00	412602-00	457	4000K - 47954lm - CRI 70

On request: available with LED CRI 80 / CRI 90 - 4000K and LED CRI 70 / CRI 80 / CRI 90 - 5700K version.

Wiring (1 LED module) : 220-240V 50/60Hz power supply; with IP66 driver applied to the fixture.

IP66IK08 Registered Design DM/100271



LED: power factor ≥0,92.
Luminous flux maintenance:

L70B20	L80B10
190.000h 700mA	120.000h 700mA
160.000h 1050mA	100.000h 1050mA
145.000h 1200mA	90.000h 1200mA



2182 Forum - 1 LED MODULE - symmetric - “W”					
		CLD CELL		W tot	LUMEN OUTPUT (tq= 25 °C)
wattage (700mA)	colour	weight	code		
LED	graphite	15.00	412620-00	256	K - ølm 700mA - CRI
					4000K - 30882lm - CRI 70
wattage (1050mA)					K - ølm 1050mA - CRI
LED	graphite	15.00	412621-00	397	4000K - 41279lm - CRI 70
wattage (1200mA)					K - ølm 1200mA - CRI
LED	graphite	15.00	412622-00	457	4000K - 45620lm - CRI 70

On request: available with LED CRI 80 / CRI 90 - 4000K and LED CRI 70 / CRI 80 / CRI 90 - 5700K version.

Wiring (1 LED module) : 220-240V 50/60Hz power supply; with IP66 driver applied to the fixture.

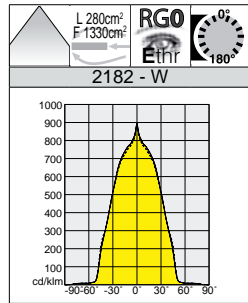
LOW FLICKER
256W=>8%
397W=>8%
457W=>8%

CRI 70

4000K

SURGE
256W=4/6kV
397W=10/10kV
457W=6/6kV

AMBIENT TEMPERATURE
700mA= -30°C÷+40°C
1050mA= -30°C÷+40°C
1200mA= -30°C÷+40°C



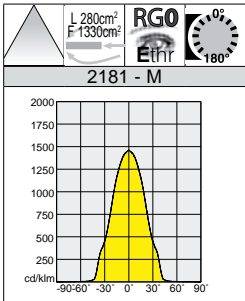
LOW FLICKER
256W=>8%
397W=>8%
457W=>8%

CRI 70

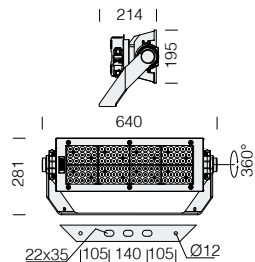
4000K

SURGE
256W=4/6kV
397W=10/10kV
457W=6/6kV

AMBIENT TEMPERATURE
700mA= -30°C÷+40°C
1050mA= -30°C÷+40°C
1200mA= -30°C÷+40°C



IP66IK08 Registered Design DM/100271



LED: power factor ≥0,92.
Luminous flux maintenance:

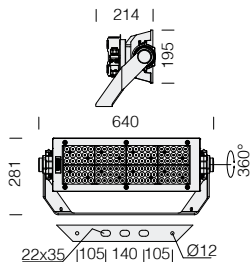
L70B20	L80B10
190.000h 700mA	120.000h 700mA
160.000h 1050mA	100.000h 1050mA
145.000h 1200mA	90.000h 1200mA

2181 Forum - 1 LED MODULE - symmetric - “M”					
		CLD CELL		W tot	LUMEN OUTPUT (tq= 25 °C)
wattage (700mA)	colour	weight	code		
LED	graphite	15.00	412610-00	256	K - ølm 700mA - CRI
					4000K - 27715lm - CRI 70
wattage (1050mA)					K - ølm 1050mA - CRI
LED	graphite	15.00	412611-00	397	4000K - 37047lm - CRI 70
wattage (1200mA)					K - ølm 1200mA - CRI
LED	graphite	15.00	412612-00	457	4000K - 40943lm - CRI 70

On request: available with LED CRI 80 / CRI 90 - 4000K and LED CRI 70 / CRI 80 / CRI 90 - 5700K version.

Wiring (1 LED module) : 220-240V 50/60Hz power supply; with IP66 driver applied to the fixture.

IP66IK08 Registered Design DM/100271



LED: power factor ≥0,92.
Luminous flux maintenance:

L70B20	L80B10
190.000h 700mA	120.000h 700mA
160.000h 1050mA	100.000h 1050mA
145.000h 1200mA	90.000h 1200mA



2183 Forum - 1 LED MODULE - symmetric - “XW”					
		CLD CELL		W tot	LUMEN OUTPUT (tq= 25 °C)
wattage (700mA)	colour	weight	code		
LED	graphite	15.00	412630-00	256	K - ølm 700mA - CRI
					4000K - 32350lm - CRI 70
wattage (1050mA)					K - ølm 1050mA - CRI
LED	graphite	15.00	412631-00	397	4000K - 43242lm - CRI 70
wattage (1200mA)					K - ølm 1200mA - CRI
LED	graphite	15.00	412632-00	457	4000K - 47789lm - CRI 70

On request: available with LED CRI 80 / CRI 90 - 4000K and LED CRI 70 / CRI 80 / CRI 90 - 5700K version.

Wiring (1 LED module) : 220-240V 50/60Hz power supply; with IP66 driver applied to the fixture.

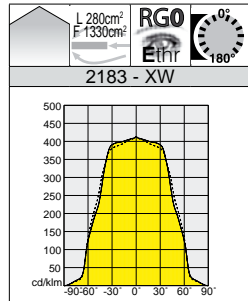
LOW FLICKER
256W=>8%
397W=>8%
457W=>8%

CRI 70

4000K

SURGE
256W=4/6kV
397W=10/10kV
457W=6/6kV

AMBIENT TEMPERATURE
700mA= -30°C÷+40°C
1050mA= -30°C÷+40°C
1200mA= -30°C÷+40°C



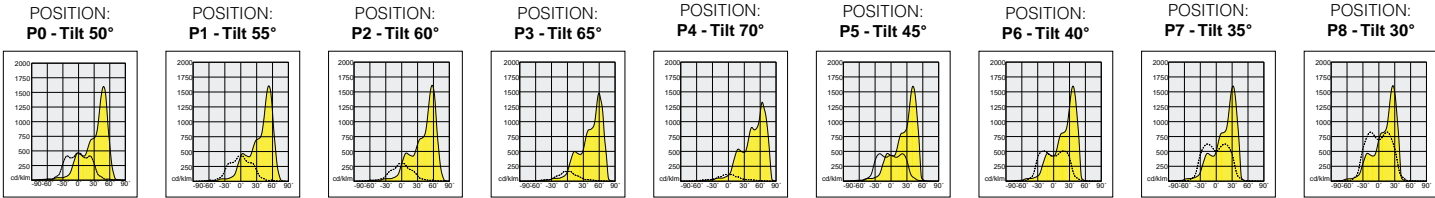
Sport facilities

The rules of sports lighting are dictated by ever more demanding high-definition TV broadcasting requirements. Major football stadiums require a very high level of evenly distributed lighting that should be achieved according to new sustainable criteria in order to minimise consumption and reduce lighting pollution. The floodlights of the Forum LED range guarantee maximum efficiency, reliability and energy savings for any sport centre, including school gyms, tennis courts, sport arenas, swimming pools, golf courses, ski slopes and Olympic venues.



Flexibility - Technological progress and optical design evolution have led to the creation of asymmetric spotlights for the lighting of sport facilities, stadiums, infrastructure and all those venues where lighting control is very important to prevent glare and to guarantee high lighting performance. The optical system comprising modules that can be adjusted into 8 positions (with a 5° tilt angle) provides different asymmetric angles for the best lighting solutions without tilting the spotlight.

Structure 2 LED modules : in die-cast aluminium with bracket for spotlight mounting. It also allows pointing the individual module at an angle of +/- 20° to its horizontal axis.



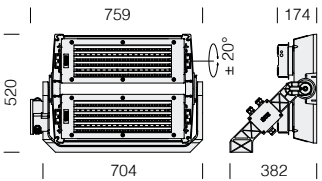
Infrastructure

Train stations, airports and large transit areas are regarded as "landmarks", i.e. well defined signs of a city's ambition and desire for renovation. This is why the design of major infrastructure is being entrusted to world-famed architects. Lighting should meet functional requirements and also enhance the challenging solutions chosen by the designers.

Lighting becomes an integral part of these public works, turning into structural elements giving them extraordinary visibility during the evenings. This new approach also applies to small train stations and roads, where proper lighting can increase safety, efficiency and energy savings and improve aesthetics.



IP66IK08 Registered Design DM/100271



LED: power factor ≥0.92.
Luminous flux maintenance:

L80B10	L90B10
90.000h	50.000h



736W=5%



4000K

736W=6/10KV



2199 Forum HE - 2 LED MODULES - asymmetric - high efficiency

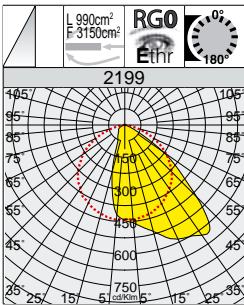
		CLD CELL		LUMEN OUTPUT (tq= 25 °C)	
wattage	colour	weight	code	W tot	K - ølm - CRI
LED	graphite	27.00	412696-00	736	4000K - 105088lm - CRI 70

The ideal version for large spaces (squares, stations, airports, etc.)

Optics: in aluminium coated with very high purity (99.99%) silver using physical vapour deposition (PVD).

On request: available with LED CRI 70 - 3000K version with subcode -39.

Wiring (2 LED module) : 220-240V 50/60Hz power supply; with IP66 driver applied to the fixture.



736W=5%



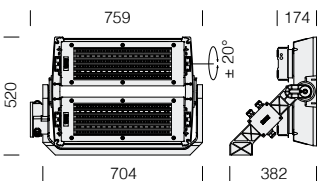
4000K



736W=6/10KV



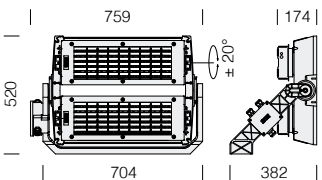
IP66IK08 Registered Design DM/100271



LED: power factor ≥0.92.
Luminous flux maintenance:

L80B10	L90B10
90.000h	50.000h

IP66IK08 Registered Design DM/100271



LED: power factor ≥0.92.
Luminous flux maintenance:

L80B10	L90B10
90.000h	50.000h



736W=5%



4000K

736W=6/10KV



2198 Forum HE - 2 LED MODULES - symmetric - high efficiency

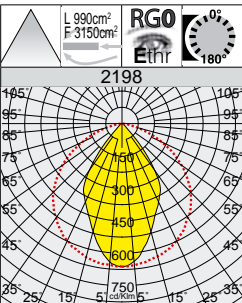
		CLD CELL		LUMEN OUTPUT (tq= 25 °C)	
wattage	colour	weight	code	W tot	K - ølm - CRI
LED	graphite	27.00	412691-00	736	4000K - 110732lm - CRI 70

The ideal version for large spaces (squares, stations, airports, etc.)

Optics: in aluminium coated with very high purity (99.99%) silver using physical vapour deposition (PVD).

On request: available with LED CRI 70 - 3000K version with subcode -39.

Wiring (2 LED module) : 220-240V 50/60Hz power supply; with IP66 driver applied to the fixture.



2200 Forum HE - 2 LED MODULES - 50° asymmetric - high efficiency

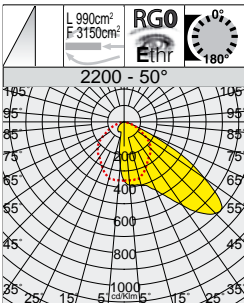
		CLD CELL		LUMEN OUTPUT (tq= 25 °C)	
wattage	colour	weight	code	W tot	K - ølm - CRI
LED	graphite	27.00	412697-00	736	4000K - 115344lm - CRI 70

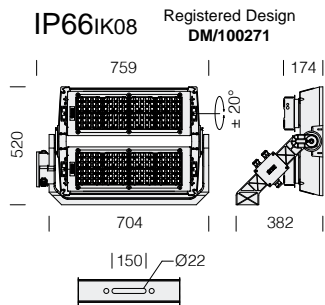
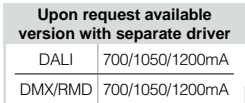
The ideal version for large spaces (squares, stations, airports, etc.)

Optics: in aluminium coated with very high purity (99.99%) silver using physical vapour deposition (PVD).

On request: available with LED CRI 70 - 3000K version with subcode -39.

Wiring (2 LED module) : 220-240V 50/60Hz power supply; with IP66 driver applied to the fixture.



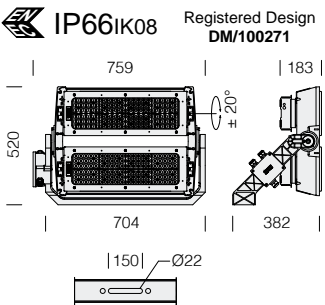


LED: power factor ≥ 0.92 .
Luminous flux maintenance:

L70B20	L80B10
190.000h 700mA	120.000h 700mA
160.000h 1050mA	100.000h 1050mA
145.000h 1200mA	90.000h 1200mA

2194 Forum - 2 LED MODULES - asymmetric 60° - "AS"					
wattage (700mA)	colour	CLD CELL		W	LED (t _j = 85 °C)
		weight	code		K - ølm 700mA - CRI
LED	graphite	27.00	412766-00	475	4000K - 72650lm - CRI 70
			412766-60		4000K - 69100lm - CRI 80
			412766-0035		5700K - 72650lm - CRI 70
LED	graphite	27.00	412766-0034	735	5700K - 65375lm - CRI 90
					K - ølm 1050mA - CRI
					4000K - 102000lm - CRI 70
LED	graphite	27.00	412767-00	735	4000K - 96865lm - CRI 80
			412767-60		5700K - 102000lm - CRI 70
			412767-0035		5700K - 91655lm - CRI 90
LED	graphite	27.00	412767-0034	846	K - ølm 1200mA - CRI
					4000K - 113300lm - CRI 70

Wiring (2 LED module) : 220-240V 50/60Hz power supply; with IP66 driver applied to the fixture.

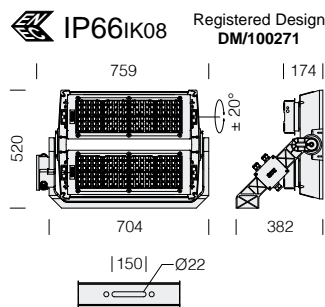
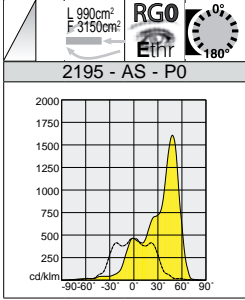
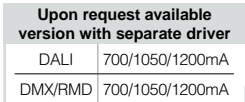
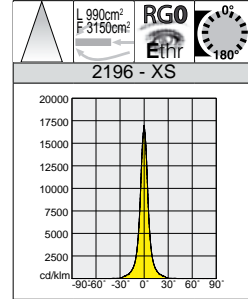
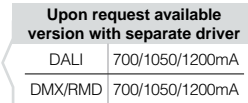


LED: power factor ≥ 0.92 .
Luminous flux maintenance:

L70B20	L80B10
190.000h 700mA	120.000h 700mA
160.000h 1050mA	100.000h 1050mA
145.000h 1200mA	90.000h 1200mA

2196 Forum - 2 LED MODULES - narrow beam - "XS"					
wattage (700mA)	colour	CLD CELL		W	LED (t _j = 85 °C)
		weight	code		K - ølm 700mA - CRI
LED	graphite	27.00	412770-00	475	4000K - 72650lm - CRI 70
			412770-60		4000K - 69100lm - CRI 80
			412770-0035		5700K - 72650lm - CRI 70
LED	graphite	27.00	412770-0034	735	5700K - 65375lm - CRI 90
					K - ølm 1050mA - CRI
					4000K - 102000lm - CRI 70
LED	graphite	27.00	412771-00	735	4000K - 96865lm - CRI 80
			412771-60		5700K - 102000lm - CRI 70
			412771-0035		5700K - 91655lm - CRI 90
LED	graphite	27.00	412771-0034	846	K - ølm 1200mA - CRI
					4000K - 113300lm - CRI 70

Wiring (2 LED module) : 220-240V 50/60Hz power supply; with IP66 driver applied to the fixture.

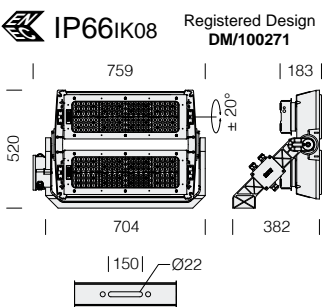


LED: power factor ≥ 0.92 .
Luminous flux maintenance:

L70B20	L80B10
190.000h 700mA	120.000h 700mA
160.000h 1050mA	100.000h 1050mA
145.000h 1200mA	90.000h 1200mA

2195 Forum - 2 LED MODULES - asymmetric - "AS"					
wattage (700mA)	colour	CLD CELL		W	LED (t _j = 85 °C)
		weight	code		K - ølm 700mA - CRI
LED	graphite	27.00	412760-00	475	4000K - 72650lm - CRI 70
			412760-60		4000K - 69100lm - CRI 80
			412760-0035		5700K - 72650lm - CRI 70
LED	graphite	27.00	412760-0034	735	5700K - 65375lm - CRI 90
					K - ølm 1050mA - CRI
					4000K - 102000lm - CRI 70
LED	graphite	27.00	412763-00	735	4000K - 96865lm - CRI 80
			412763-60		5700K - 102000lm - CRI 70
			412763-0035		5700K - 91655lm - CRI 90
LED	graphite	27.00	412763-0034	846	K - ølm 1200mA - CRI
					4000K - 113300lm - CRI 70

Wiring (2 LED module) : 220-240V 50/60Hz power supply; with IP66 driver applied to the fixture.

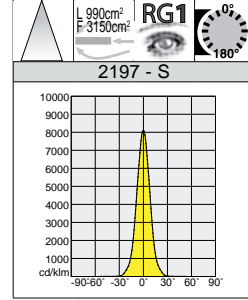
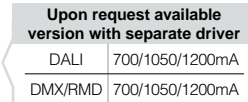
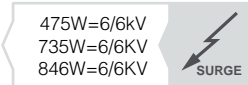
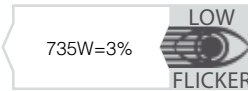


LED: power factor ≥ 0.92 .
Luminous flux maintenance:

L70B20	L80B10
190.000h 700mA	120.000h 700mA
160.000h 1050mA	100.000h 1050mA
145.000h 1200mA	90.000h 1200mA

2197 Forum - 2 LED MODULES - narrow beam - "S"					
wattage (700mA)	colour	CLD CELL		W	LED (t _j = 85 °C)
		weight	code		K - ølm 700mA - CRI
LED	graphite	27.00	412780-00	475	4000K - 72650lm - CRI 70
			412780-60		4000K - 69100lm - CRI 80
			412780-0035		5700K - 72650lm - CRI 70
LED	graphite	27.00	412780-0034	735	5700K - 65375lm - CRI 90
					K - ølm 1050mA - CRI
					4000K - 102000lm - CRI 70
LED	graphite	27.00	412781-00	735	4000K - 96865lm - CRI 80
			412781-60		5700K - 102000lm - CRI 70
			412781-0035		5700K - 91655lm - CRI 90
LED	graphite	27.00	412781-0034	846	K - ølm 1200mA - CRI
					4000K - 113300lm - CRI 70

Wiring (2 LED module) : 220-240V 50/60Hz power supply; with IP66 driver applied to the fixture.



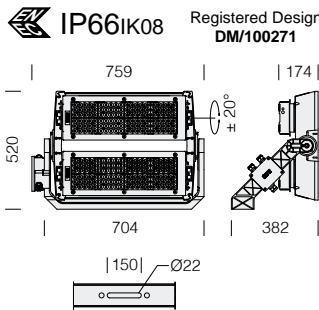
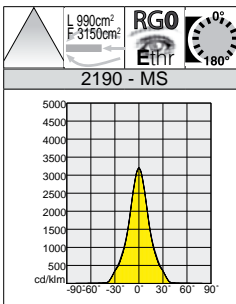
LOW
FLICKER
735W=3%

CRI
70/80/90

4000K
5700K

475W=6/6kV
735W=6/6KV
846W=6/6KV
SURGE

Upon request available
version with separate driver
DALI 700/1050/1200mA
DMX/RMD 700/1050/1200mA

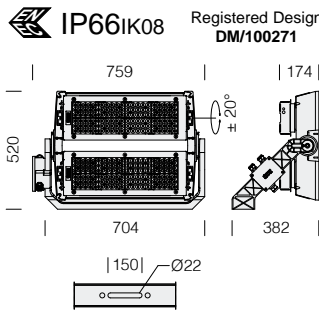


LED: power factor ≥0.92.
Luminous flux maintenance:

L70B20	L80B10
190.000h 700mA	120.000h 700mA
160.000h 1050mA	100.000h 1050mA
145.000h 1200mA	90.000h 1200mA

2190 Forum - 2 LED MODULES - symmetric - “MS”					
		CLD CELL			LED (tj= 85 °C)
wattage (700mA)	colour	weight	code	W	K - ølm 700mA - CRI
LED	graphite	27.00	412891-00	475	4000K - 72650lm - CRI 70
			412891-60		4000K - 69100lm - CRI 80
			412891-0035		5700K - 72650lm - CRI 70
LED	graphite	27.00	412891-0034		5700K - 65375lm - CRI 90
wattage (1050mA)					K - ølm 1050mA - CRI
LED	graphite	27.00	412890-00	735	4000K - 102000lm - CRI 70
			412890-60		4000K - 96865lm - CRI 80
			412890-0035		5700K - 102000lm - CRI 70
LED	graphite	27.00	412890-0034		5700K - 91655lm - CRI 90
wattage (1200mA)					K - ølm 1200mA - CRI
LED	graphite	27.00	412892-00	846	4000K - 113300lm - CRI 70

Wiring (2 LED module) : 220-240V 50/60Hz power supply; with IP66 driver applied to the fixture.



LED: power factor ≥0.92.
Luminous flux maintenance:

L70B20	L80B10
190.000h 700mA	120.000h 700mA
160.000h 1050mA	100.000h 1050mA
145.000h 1200mA	90.000h 1200mA

2192 Forum - 2 LED MODULES - symmetric - "W"					
		CLD CELL			LED (tj= 85 °C)
wattage (700mA)	colour	weight	code	W	K - ølm 700mA - CRI
LED	graphite	27.00	412790-00	475	4000K - 72650lm - CRI 70
			412790-60		4000K - 69100lm - CRI 80
			412790-0035		5700K - 72650lm - CRI 70
LED	graphite	27.00	412790-0034		5700K - 65375lm - CRI 90
wattage (1050mA)					K - ølm 1050mA - CRI
LED	graphite	27.00	412791-00	735	4000K - 102000lm - CRI 70
			412791-60		4000K - 96865lm - CRI 80
			412791-0035		5700K - 102000lm - CRI 70
LED	graphite	27.00	412791-0034		5700K - 91655lm - CRI 90
wattage (1200mA)					K - ølm 1200mA - CRI
LED	graphite	27.00	412792-00	846	4000K - 113300lm - CRI 70

Wiring (2 LED module) : 220-240V 50/60Hz power supply; with IP66 driver applied to the fixture.

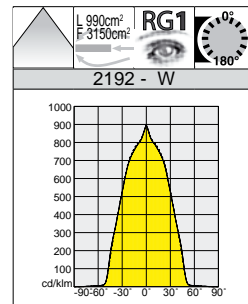
735W=3%
LOW
FLICKER

CRI
70/80/90

4000K
5700K

475W=6/6kV
735W=6/6KV
846W=6/6KV
SURGE

Upon request available
version with separate driver
DALI 700/1050/1200mA
DMX/RMD 700/1050/1200mA



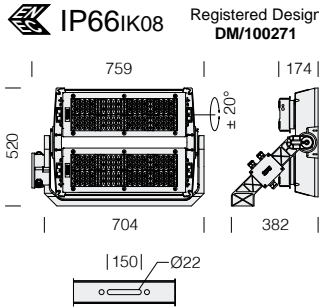
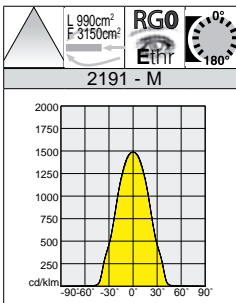
LOW
FLICKER
735W=3%

CRI
70/80/90

4000K
5700K

475W=6/6kV
735W=6/6KV
846W=6/6KV
SURGE

Upon request available
version with separate driver
DALI 700/1050/1200mA
DMX/RMD 700/1050/1200mA

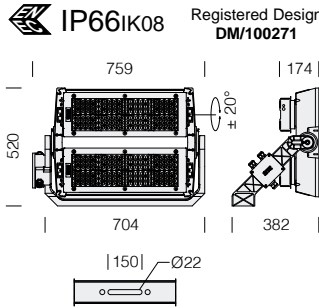


LED: power factor ≥0.92.
Luminous flux maintenance:

L70B20	L80B10
190.000h 700mA	120.000h 700mA
160.000h 1050mA	100.000h 1050mA
145.000h 1200mA	90.000h 1200mA

2191 Forum - 2 LED MODULES - symmetric - "M"					
		CLD CELL			LED (tj= 85 °C)
wattage (700mA)	colour	weight	code	W	K - ølm 700mA - CRI
LED	graphite	27.00	412750-00	475	4000K - 72650lm - CRI 70
			412750-60		4000K - 69100lm - CRI 80
			412750-0035		5700K - 72650lm - CRI 70
LED	graphite	27.00	412750-0034		5700K - 65375lm - CRI 90
wattage (1050mA)					K - ølm 1050mA - CRI
LED	graphite	27.00	412751-00	735	4000K - 102000lm - CRI 70
			412751-60		4000K - 96865lm - CRI 80
			412751-0035		5700K - 102000lm - CRI 70
LED	graphite	27.00	412751-0034		5700K - 91655lm - CRI 90
wattage (1200mA)					K - ølm 1200mA - CRI
LED	graphite	27.00	412753-00	846	4000K - 113300lm - CRI 70

Wiring (2 LED module) : 220-240V 50/60Hz power supply; with IP66 driver applied to the fixture.



LED: power factor ≥0.92.
Luminous flux maintenance:

L70B20	L80B10
190.000h 700mA	120.000h 700mA
160.000h 1050mA	100.000h 1050mA
145.000h 1200mA	90.000h 1200mA

2193 Forum - 2 LED MODULES - symmetric - “XW”					
		CLD CELL			LED (tj= 85 °C)
wattage (700mA)	colour	weight	code	W	K - ølm 700mA - CRI
LED	graphite	27.00	412681-00	475	4000K - 72650lm - CRI 70
			412681-60		4000K - 69100lm - CRI 80
			412681-0035		5700K - 72650lm - CRI 70
LED	graphite	27.00	412681-0034		5700K - 65375lm - CRI 90
wattage (1050mA)					K - ølm 1050mA - CRI
LED	graphite	27.00	412680-00	735	4000K - 102000lm - CRI 70
			412680-60		4000K - 96865lm - CRI 80
			412680-0035		5700K - 102000lm - CRI 70
LED	graphite	27.00	412680-0034		5700K - 91655lm - CRI 90
wattage (1200mA)					K - ølm 1200mA - CRI
LED	graphite	27.00	412682-00	846	4000K - 113300lm - CRI 70

Wiring (2 LED module) : 220-240V 50/60Hz power supply; with IP66 driver applied to the fixture.

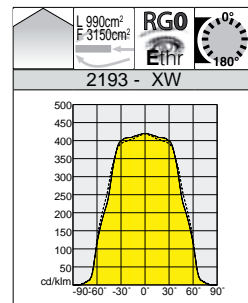
735W=3%
LOW
FLICKER

CRI
70/80/90

4000K
5700K

475W=6/6kV
735W=6/6KV
846W=6/6KV
SURGE

Upon request available
version with separate driver
DALI 700/1050/1200mA
DMX/RMD 700/1050/1200mA



Version with 3 modules

High design flexibility and combination of optics



Lighting is ever more important in any setting. A lighting solution designed according to the most advanced standards reduces running costs and improves visibility, therefore increasing safety. In this special case, the extreme versatility of the optics mounted in Forum LED guarantees the fixture's suitability to all application needs, ensuring higher performance in any circumstance compared to projectors featuring traditional technology.

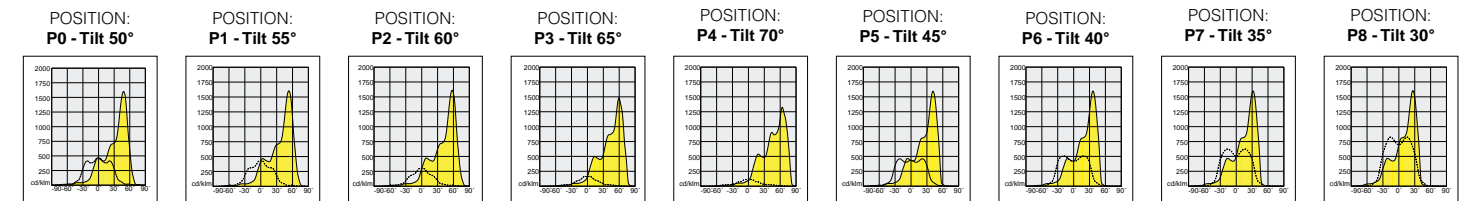
The modularity of the optical system, the solutions used for the electronic circuit design and the optical control of operating temperatures, make the Forum LED product a highly professional, flexible and reliable lighting fixture, capable of guaranteeing huge application advantages in several situations.

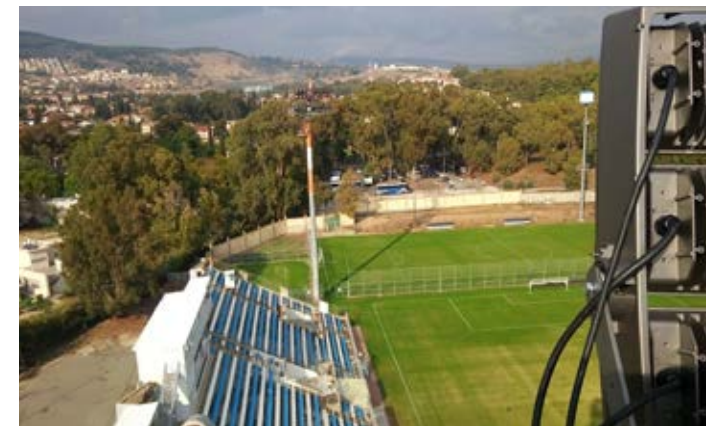


Designed to fit your needs!!!

Flexibility - Technological progress and optical design evolution have led to the creation of asymmetric spotlights for the lighting of sport facilities, stadiums, infrastructure and all those venues where lighting control is very important to prevent glare and to guarantee high lighting performance. The optical system comprising modules that can be adjusted into 8 positions (with a 5° tilt angle) provides different asymmetric angles for the best lighting solutions without tilting the spotlight.

Structure 3 LED modules : in die-cast aluminium with bracket for spotlight mounting. It also allows pointing the individual module at an angle of +/- 20° to its horizontal axis.





Asymmetric beam

Narrow beam

LOW
FLICKER 1÷5%
see page 15

CRI
70/90

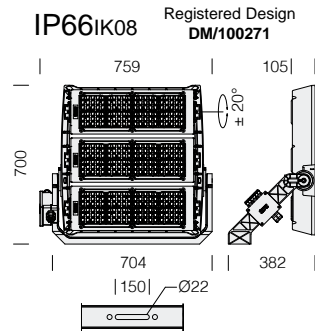
4000K
5700K

6/10kV÷10/10KV
SURGE see page 15

Upon request Forum 3 modules
can be equipped with a IP66 driver

ON/OFF	700/1200mA
DALI	700/1200mA
DMX/RMD	700/1200mA

new



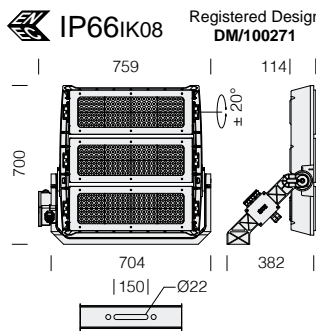
LED: power factor ≥0,92.
Luminous flux maintenance:

L70B20	L80B10
190.000h 700mA	120.000h 700mA
145.000h 1200mA	90.000h 1200mA

3194 Forum - 3 LED MODULES - asymmetric 60° - "AS"					
		CLD S+L			LED (tj= 85 °C)
wattage (700mA)	colour	weight	code	W	K - ølm 700mA - CRI
LED	graphite	27.00	412822-00	690	4000K - 117830lm - CRI 70
			412822-0034		5700K - 98190lm - CRI 90
wattage (1200mA)					K - ølm 1200mA - CRI
LED	graphite	27.00	412823-00	1223	4000K - 189280lm - CRI 70
			412823-0034		5700K - 157730m - CRI 90

On request: available LED CRI 80 - 4000K (700/1200mA) version.

Wiring (3 LED module): separate driver; 400V power supply for retrofitting exiting systems is available upon request.



LED: power factor ≥0,92.
Luminous flux maintenance:

L70B20	L80B10
190.000h 700mA	120.000h 700mA
145.000h 1200mA	90.000h 1200mA
135.000h 1300mA	85.000h 1300mA

3196 Forum - 3 LED MODULES - narrow beam - "XS"					
		CLD S+L			LED (tj= 85 °C)
wattage (700mA)	colour	weight	code	W	K - ølm 700mA - CRI
LED	graphite	27.00	412801-00	690	4000K - 117830lm - CRI 70
			412801-0034		5700K - 98190lm - CRI 90
wattage (1200mA)					K - ølm 1200mA - CRI
LED	graphite	27.00	412800-00	1223	4000K - 189280lm - CRI 70
			412800-0034		5700K - 157730m - CRI 90
wattage (1300mA)					K - ølm 1300mA - CRI
LED	graphite	27.00	412802-00	1333	4000K - 202470lm - CRI 70
			412802-0034		5700K - 168720lm - CRI 90

On request: available LED CRI 80 - 4000K (700/1200/1300mA) version.

Wiring (3 LED module): separate driver; 400V power supply for retrofitting exiting systems is available upon request.

LOW
FLICKER 1÷5%
see page 15

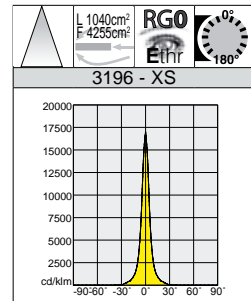
CRI
70/90

4000K
5700K

6/10kV÷10/10KV
SURGE see page 15

Upon request Forum 3 modules
can be equipped with a IP66 driver

ON/OFF	700/12001300mA
DALI	700/12001300mA
DMX/RMD	700/12001300mA



LOW
FLICKER 1÷5%
see page 15

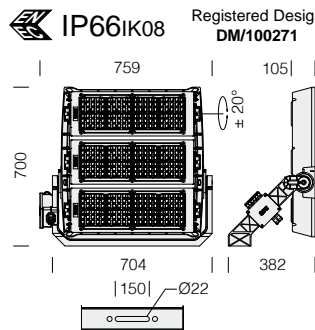
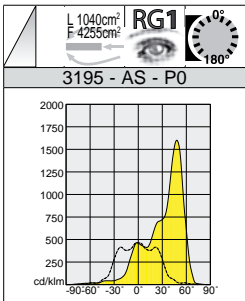
CRI
70/90

4000K
5700K

6/10kV÷10/10KV
SURGE see page 15

Upon request Forum 3 modules
can be equipped with a IP66 driver

ON/OFF	700/1200mA
DALI	700/1200mA
DMX/RMD	700/1200mA



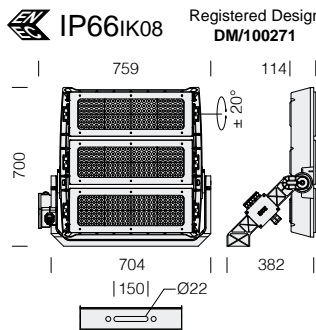
LED: power factor ≥0,92.
Luminous flux maintenance:

L70B20	L80B10
190.000h 700mA	120.000h 700mA
145.000h 1200mA	90.000h 1200mA

3195 Forum - 3 LED MODULES - asymmetric - “AS”					
		CLD S+L			LED (tj= 85 °C)
wattage (700mA)	colour	weight	code	W	K - ølm 700mA - CRI
LED	graphite	27.00	412821-00	690	4000K - 117830lm - CRI 70
			412821-0034		5700K - 98190lm - CRI 90
wattage (1200mA)					K - ølm 1200mA - CRI
LED	graphite	27.00	412820-00	1223	4000K - 189280lm - CRI 70
			412820-0034		5700K - 157730m - CRI 90

On request: available LED CRI 80 - 4000K (700/1200mA) version.

Wiring (3 LED module): separate driver; 400V power supply for retrofitting exiting systems is available upon request.



LED: power factor ≥0,92.
Luminous flux maintenance:

L70B20	L80B10
190.000h 700mA	120.000h 700mA
145.000h 1200mA	90.000h 1200mA
135.000h 1300mA	85.000h 1300mA

3198 Forum - 3 LED MODULES - narrow beam - “S”					
		CLD S+L			LED (tj= 85 °C)
wattage (700mA)	colour	weight	code	W	K - ølm 700mA - CRI
LED	graphite	27.00	412811-00	690	4000K - 117830lm - CRI 70
			412811-0034		5700K - 98190lm - CRI 90
wattage (1200mA)					K - ølm 1200mA - CRI
LED	graphite	27.00	412810-00	1223	4000K - 189280lm - CRI 70
			412810-0034		5700K - 157730m - CRI 90
wattage (1300mA)					K - ølm 1300mA - CRI
LED	graphite	27.00	412812-00	1333	4000K - 202470lm - CRI 70
			412812-0034		5700K - 168720lm - CRI 90

On request: available LED CRI 80 - 4000K (700/1200/1300mA) version.

Wiring (3 LED module): separate driver; 400V power supply for retrofitting exiting systems is available upon request.

LOW
FLICKER 1÷5%
see page 15

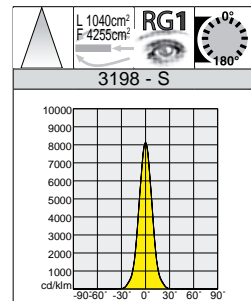
CRI
70/90

4000K
5700K

6/10kV÷10/10KV
SURGE see page 15

Upon request Forum 3 modules
can be equipped with a IP66 driver

ON/OFF	700/12001300mA
DALI	700/12001300mA
DMX/RMD	700/12001300mA



Symmetric beam

Symmetric beam

LOW
FLICKER 1÷5%
see page 15

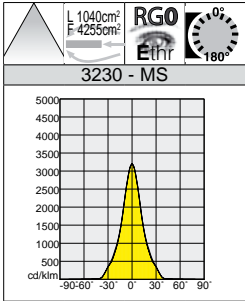
CRI
70/90

4000K
5700K

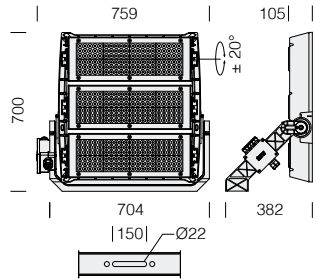
6/10kV÷10/10KV
SURGE see page 15

Upon request Forum 3 modules
can be equipped with a IP66 driver

ON/OFF	700/12001300mA
DALI	700/12001300mA
DMX/RMD	700/12001300mA



IP66IK08 Registered Design DM/100271



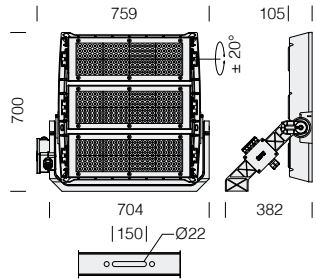
LED: power factor ≥0.92. Luminous flux maintenance:	
L70B20	L80B10
190.000h 700mA	120.000h 700mA
145.000h 1200mA	90.000h 1200mA
135.000h 1300mA	85.000h 1300mA

3230 Forum - 3 LED MODULES - symmetric - "MS"					
wattage (700mA)	colour	CLD S+L		W	LED (tj= 85 °C)
		weight	code		K - ølm 700mA - CRI
LED	graphite	27.00	412841-00	690	4000K - 117830lm - CRI 70
			412841-0034		5700K - 98190lm - CRI 90
wattage (1200mA)					K - ølm 1200mA - CRI
					4000K - 189280lm - CRI 70
LED	graphite	27.00	412840-00	1223	5700K - 157730m - CRI 90
			412840-0034		
wattage (1300mA)					K - ølm 1300mA - CRI
					4000K - 202470lm - CRI 70
LED	graphite	27.00	412842-00	1333	5700K - 168720lm - CRI 90
			412842-0034		

On request: available LED CRI 80 - 4000K (700/1200mA) version.

Wiring (3 LED module): separate driver; 400V power supply for retrofitting exiting systems is available upon request.

IP66IK08 Registered Design DM/100271



LED: power factor ≥0.92. Luminous flux maintenance:	
L70B20	L80B10
190.000h 700mA	120.000h 700mA
145.000h 1200mA	90.000h 1200mA
135.000h 1300mA	85.000h 1300mA

3192 Forum - 3 LED MODULES - symmetric - "W"					
wattage (700mA)	colour	CLD S+L		W	LED (tj= 85 °C)
		weight	code		K - ølm 700mA - CRI
LED	graphite	27.00	412831-00	690	4000K - 117830lm - CRI 70
			412831-0034		5700K - 98190lm - CRI 90
wattage (1200mA)					K - ølm 1200mA - CRI
					4000K - 189280lm - CRI 70
LED	graphite	27.00	412830-00	1223	5700K - 157730m - CRI 90
			412830-0034		
wattage (1300mA)					K - ølm 1300mA - CRI
					4000K - 202470lm - CRI 70
LED	graphite	27.00	412832-00	1333	5700K - 168720lm - CRI 90
			412832-0034		

On request: available LED CRI 80 - 4000K (700/1200/1300mA) version.

Wiring (3 LED module): separate driver; 400V power supply for retrofitting exiting systems is available upon request.

LOW
FLICKER 1÷5%
see page 15

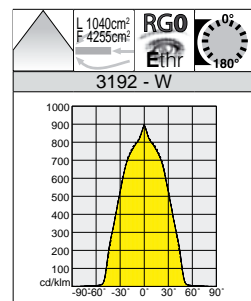
CRI
70/90

4000K
5700K

6/10kV÷10/10KV
SURGE see page 15

Upon request Forum 3 modules
can be equipped with a IP66 driver

ON/OFF	700/12001300mA
DALI	700/12001300mA
DMX/RMD	700/12001300mA



LOW
FLICKER 1÷5%
see page 15

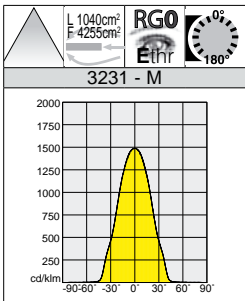
CRI
70/90

4000K
5700K

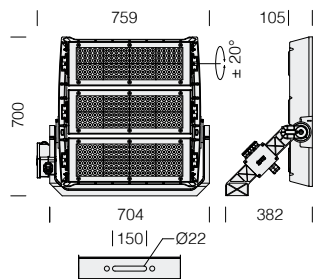
6/10kV÷10/10KV
SURGE see page 15

Upon request Forum 3 modules
can be equipped with a IP66 driver

ON/OFF	700/12001300mA
DALI	700/12001300mA
DMX/RMD	700/12001300mA



IP66IK08 Registered Design DM/100271



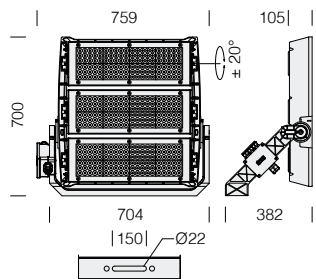
LED: power factor ≥0.92. Luminous flux maintenance:	
L70B20	L80B10
190.000h 700mA	120.000h 700mA
145.000h 1200mA	90.000h 1200mA
135.000h 1300mA	85.000h 1300mA

3231 Forum - 3 LED MODULES - symmetric - "M"					
wattage (700mA)	colour	CLD S+L		W	LED (tj= 85 °C)
		weight	code		K - ølm 700mA - CRI
LED	graphite	27.00	412871-00	690	4000K - 117830lm - CRI 70
			412871-0034		5700K - 98190lm - CRI 90
wattage (1200mA)					K - ølm 1200mA - CRI
					4000K - 189280lm - CRI 70
LED	graphite	27.00	412870-00	1223	5700K - 157730m - CRI 90
			412870-0034		
wattage (1300mA)					K - ølm 1300mA - CRI
					4000K - 202470lm - CRI 70
LED	graphite	27.00	412872-00	1333	5700K - 168720lm - CRI 90
			412872-0034		

On request: available LED CRI 80 - 4000K (700/1200mA) version.

Wiring (3 LED module): separate driver; 400V power supply for retrofitting exiting systems is available upon request.

IP66IK08 Registered Design DM/100271



LED: power factor ≥0.92. Luminous flux maintenance:	
L70B20	L80B10
190.000h 700mA	120.000h 700mA
145.000h 1200mA	90.000h 1200mA
135.000h 1300mA	85.000h 1300mA

3232 Forum - 3 LED MODULES - symmetric - "XW"					
wattage (700mA)	colour	CLD S+L		W	LED (tj= 85 °C)
		weight	code		K - ølm 700mA - CRI
LED	graphite	27.00	412881-00	690	4000K - 117830lm - CRI 70
			412881-0034		5700K - 98190lm - CRI 90
wattage (1200mA)					K - ølm 1200mA - CRI
					4000K - 189280lm - CRI 70
LED	graphite	27.00	412880-00	1223	5700K - 157730m - CRI 90
			412880-0034		
wattage (1300mA)					K - ølm 1300mA - CRI
					4000K - 202470lm - CRI 70
LED	graphite	27.00	412882-00	1333	5700K - 168720lm - CRI 90
			412882-0034		

On request: available LED CRI 80 - 4000K (700/1200/1300mA) version.

Wiring (3 LED module): separate driver; 400V power supply for retrofitting exiting systems is available upon request.

LOW
FLICKER 1÷5%
see page 15

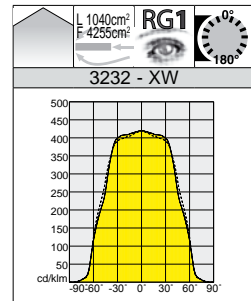
CRI
70/90

4000K
5700K

6/10kV÷10/10KV
SURGE see page 15

Upon request Forum 3 modules
can be equipped with a IP66 driver

ON/OFF	700/12001300mA
DALI	700/12001300mA
DMX/RMD	700/12001300mA

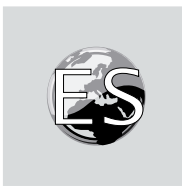


Examples of projects

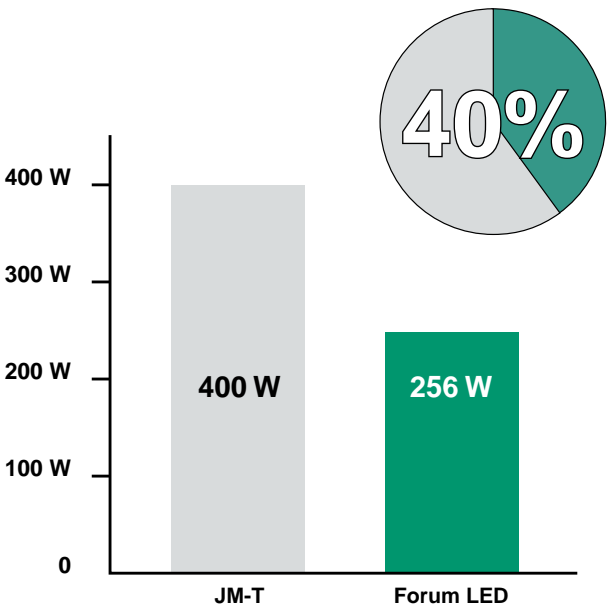
With the FORUM LED range...
reduced energy consumption
and greater lighting efficiency

All the floodlights of the Forum LED range were designed for applications that require great power outputs, thanks to the adoption of advanced technology that allows the fixture to adjust to every design need. The high power LEDs in the optical units are optimised to guarantee maximum energy savings as well as visual comfort.

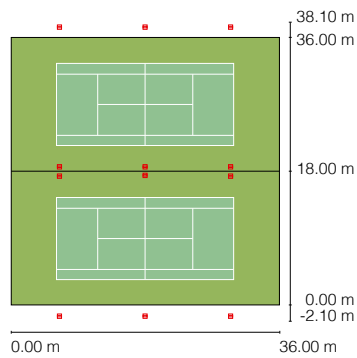
The example compares Forum 1 LED module with a traditional discharge lamp: with a similar luminous flux, you have savings of about **40%** in terms of energy efficiency.



Energy saving
Consuming less energy without giving up the benefits of technological progress is the great challenge for our planet's future. Improving energy efficiency means just this: reduce energy consumption without reducing lighting quality.



Examples of projects



Existing system with conventional floodlights:

Fixtures:

Quantity	Product	Φ (fixture) [lm]	Φ [lm]	P [W]
12	Conventional 1000W discharge lamp - symmetric beam	64982	90000	1006.0
		Tot.: 779787	Tot.:1080000	Tot.:12078.0

Luminance:

Type	E _m [lx]	E _{min} [lx]	E _{max} [lx]	E _{min} / E _m	E _{min} / E _{max}	E _{h m} / E _m	H [m]	camera
horizontal	256	113	443	0.44	0.25	-	0.00	-

E_{h m} / E_m = Ratio between central, horizontal and vertical luminance, H = measuring height

Existing system with LED floodlights:

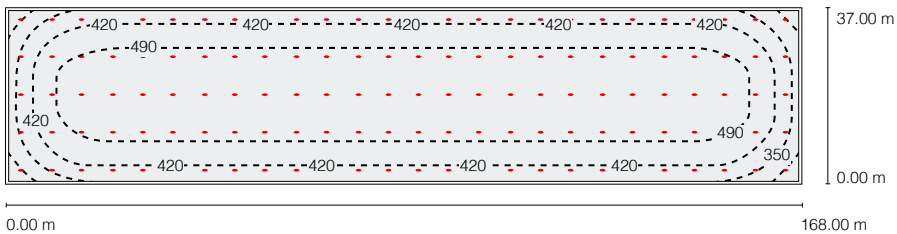
Fixtures:

Quantity	Product	Φ [lm]	P [W]
12	art. 2181 - Forum LED - symmetric "M" - 120 LED - 1200 mA	40943	457.0
		Tot.:491316	Tot.:5484.0

Luminance:

Type	E _m [lx]	E _{min} [lx]	E _{max} [lx]	E _{min} / E _m	E _{min} / E _{max}	E _{h m} / E _m	H [m]	camera
horizontal	302	182	580	0.6	0.31	-	0.00	-

E_{h m} / E_m = Ratio between central, horizontal and vertical luminance, H = measuring height



Room dimensions:

Length: 168.00 m - Width: 37.00 m - Height: 25.00 m - Installation height: 24.00 m
Refractive index: floor 20% - ceiling 30% - wall 30%

Surface	ρ [%]	E _{av} [lx]	E _{min} [lx]	E _{max} [lx]	u0
Work top	-	473	249	559	0.527
Floor	20	464	232	549	0.500
Ceiling	30	79	56	89	0.712
Walls (4)	30	230	41	515	-

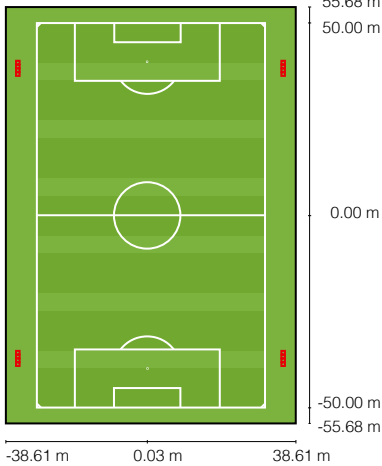
Work top:

Height: 0.750 m - Perimeter area: 0.500 m
Luminance rate: walls/work top: 0.477 - ceiling/ work top: 0.166

Fixtures:

Quantity	Product	Φ [lm]	P [W]
105	art. 2188 - Forum LED - symmetric "HE" - 350 mA	51427	368.0
		Tot.: 5399835	Tot.: 38640.0

Specific connected load: 6.25 W/m² = 1.32 W/m²/100 lx (area: 6216.00 m2)



Existing system with conventional floodlights:

Fixtures:

Quantity	Product	Φ (fixture) [lm]	Φ [lm]	P [W]
8	Conventional 2000W discharge lamps LA - asymmetric 64° - "P1"	180435	230000	2040.0
8	Conventional 2000W discharge lamps LA - asymmetric 57° - "P3"	178053	230000	2040.0
		Tot.: 2867905	Tot.: 3680000	Tot.: 32640.0

Luminance:

Type	E _m [lx]	E _{min} [lx]	E _{max} [lx]	E _{min} / E _m	E _{min} / E _{max}	E _{h m} / E _m	H [m]	camera
horizontal	234	164	355	0.70	0.46	-	0.00	-

E_{h m} / E_m = Ratio between central, horizontal and vertical luminance, H = measuring height

Existing system with LED floodlights:

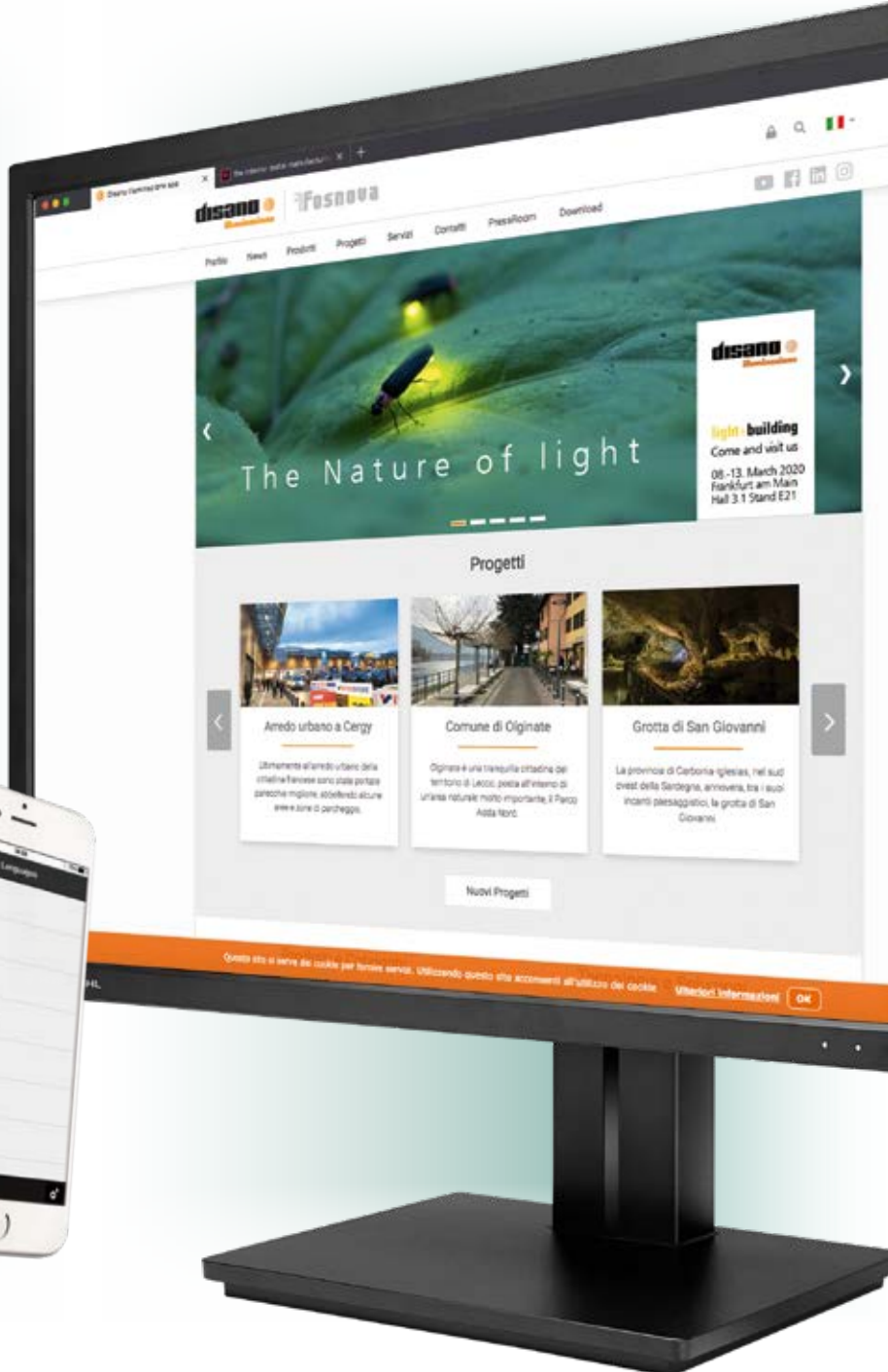
Fixtures

Quantity	Product	Φ [lm]	P [W]
8	art. 3195 - Forum LED - asymmetric 50° "P0" - 360 LED - 1200 mA	169950	1223.0
8	art. 3195 - Forum LED - asymmetric 60° "P2" - 360 LED - 1200 mA	169950	1223.0
		Tot.: 2719200	Tot.: 19568.0

Luminance:

Type	E _m [lx]	E _{min} [lx]	E _{max} [lx]	E _{min} / E _m	E _{min} / E _{max}	E _{h m} / E _m	H [m]	camera
horizontal	212	162	440	0.76	0.37	-	0.00	-

E_{h m} / E_m = Ratio between central, horizontal and vertical luminance, H = measuring height



DELSANA LED LIGHTING SYSTEMS

IHR DISANO KOOPERATIONSPARTNER FÜR DEUTSCHLAND

Wir bieten Ihnen:

BERATUNG

PLANUNG

VERKAUF

SERVICE

KONTAKTIEREN SIE UNS!

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M A D E I N I T A L Y