

Abacus[®]
Leaders in Lighting

THE COMPLETE PRODUCT RANGE FROM THE LEADERS IN EXTERIOR LIGHTING

EXTERIOR LIGHTING

LIGHTING THE WORLD BEYOND EXPECTATION



At Abacus we've succeeded in developing and supplying superior products for our customers in the high performance exterior lighting sector. Customers who demand energy efficient, attractive areas in which their own customers can feel comfortable and secure.

Many of our products incorporate patented high performance reflectors, recognised as delivering specified lighting levels which minimise energy outlay and project costs while providing uniformities second to none.

For over 60 years Abacus has focused its business on meeting its customers' needs, providing a design service of which we are justly proud. ISO certified for quality and environmental management, we offer an unrivalled, complete package of manufacture, supply, installation and maintenance.

Find out more about our lighting products and services online.

www.abacuslighting.com



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Installation & maintenance

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Our standards Use these icons to understand some of our key lighting features.



Low light pollution
This logo indicates a luminaire with ULOR of less than 2%.



ULOR
Upward Light Output Ratio. The ULOR value shows the proportion of upward light produced from the luminaire.



IP rating
This indicates the level of ingress against moisture or dust. The first digit shows you the dust protection, and the second the moisture protection.



IK rating
An international numeric classification for the degrees of protection provided by enclosures for electrical equipment against external mechanical impacts.

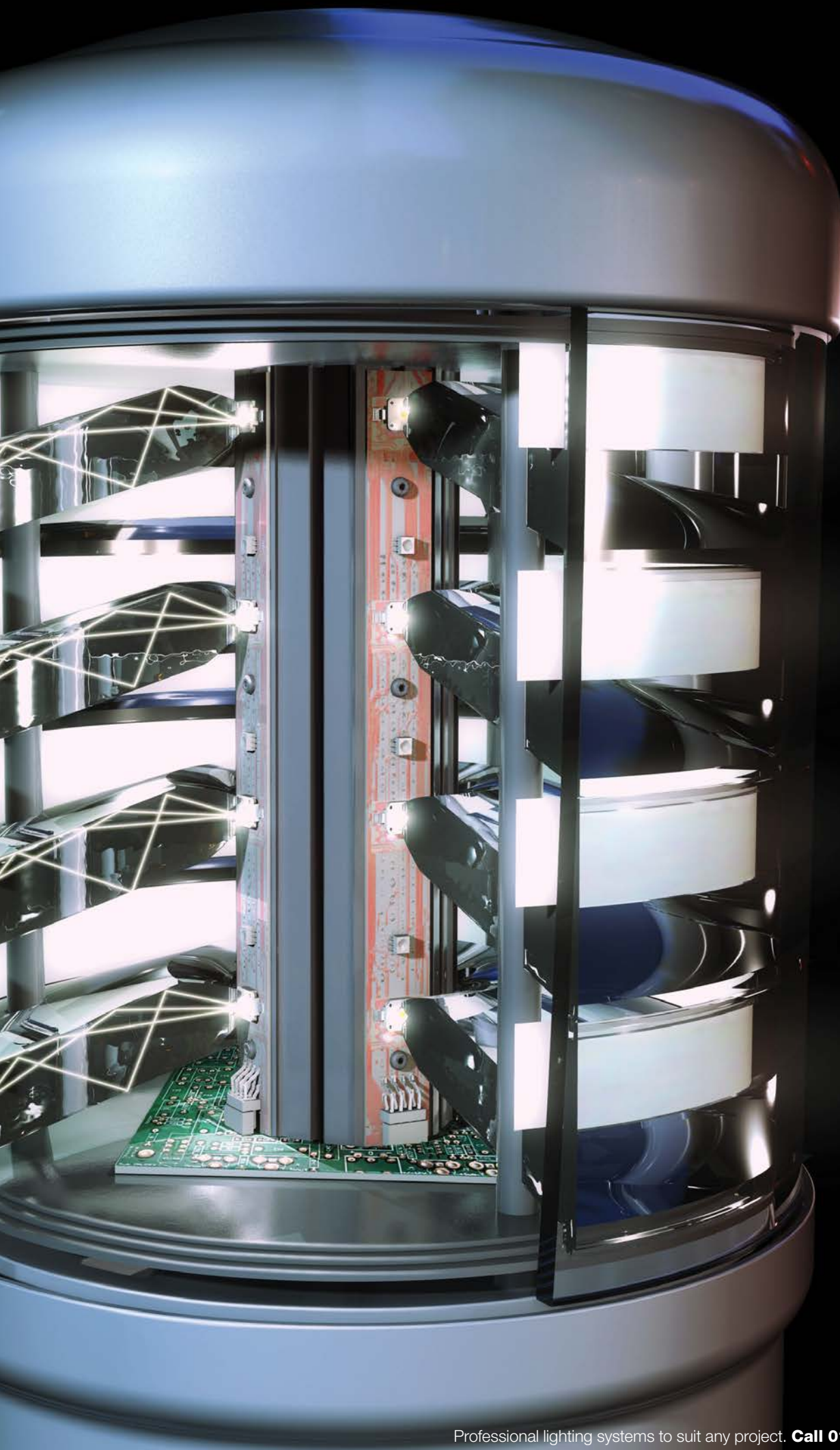
CAR PARK & AMENITY LIGHTING





LED QUARTZ BOLLARD

Bringing you the next generation
in LED lighting technology...



LED QUARTZ BOLLARD AL9000



High performance, energy-saving technologies and flawless design: security lighting the Abacus way.

Energy-efficient

In recent years LEDs have advanced significantly to become one of the most efficient, attractive and versatile forms of lighting around. For a start, LEDs use far less electricity than standard sources, producing a better quality of crisp, white light. And where a traditional bollard would emit only 28% of the light it produces, the AL9001 Quartz has a superior 90% efficiency - credentials that make it one of the most energy-efficient security lighting systems of its kind.

Performance

Combine instantaneous, bright white light with our patented louvre-based design and the result is simply exceptional: crisp, focused light in a variety of energy-efficient beam patterns, with virtually no light escaping upwards. The bollard itself is tough and robust, made from hardwearing steel tubing protected by a durable, polyester-based coating. Anti-vandal screws give even greater protection against shocks or vibrations. The LED louvres are behind a 5mm thick polycarbonate cylinder, preventing any direct vandalism. And perhaps most importantly, LEDs don't lose performance over time in the same way as conventional HID lamps. So much so, in fact, that they last at least four times longer.

Economical and safe

Fitted with LED technology, our Quartz Bollard can reduce wattage by a sizeable 60% - 80%, meaning you'll not only save money on energy

bills - there's less cabling needed to install them too. No UV and less heat produced makes them safe for pedestrian areas. Not to mention the fact that their longer lifespan puts them miles ahead of the competition in terms of maintenance and replacement costs.

Visual effects

Whether you're installing bollards to give clear, visual instructions, enhance mood, highlight architectural features or even support your branding, our unique red, green and blue colour effects will create drama - without interfering in any way with the more functional white light being given off. For added visual impact, we can even print your logo, advertising or directional arrows on the top louvre ring, as shown in the picture to the right.

Features

- Sturdy IP66 die-cast aluminium head unit with clear polycarbonate outer cylinder (UV stabilised)
- Tough bollard shaft made from heavy duty steel CHS tubing
- Black or silver textured polyester coating on bollard shaft and head-unit castings
- Louvred light controller, with LED light pumped into and through the acrylic louvres, producing a controlled light output
- Operational equipment housed in the bollard itself, using IP67 driver on a fully removable tray, with facility to loop in and loop out electric cabling
- Emergency version available





Specification

All LED Quartz bollards, regardless of main colour, louvre rings and beam type, have the same product code – **AL9000**.

Individual requirements need to be specified when ordering – please see below for details. For emergency version, please enquire.

Beam patterns

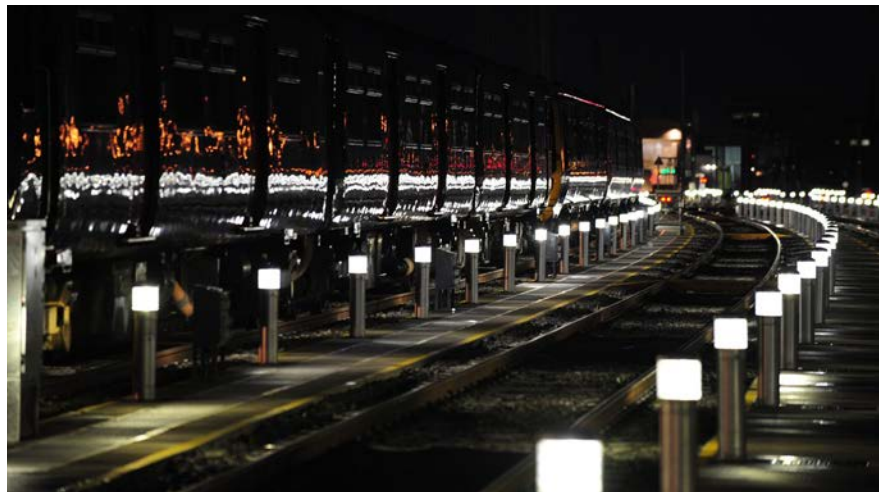
Asymmetric

Symmetric

Axial

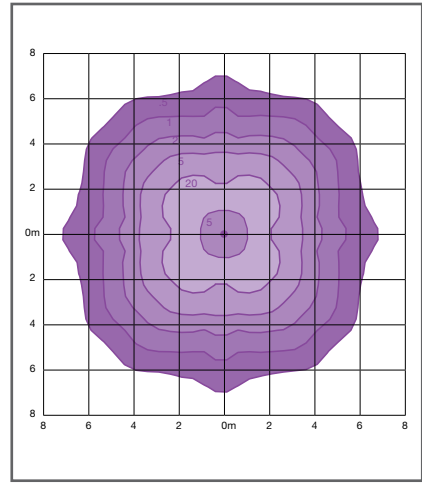
Bollard colours

- RAL9005 Black
- Fusion Silver 25

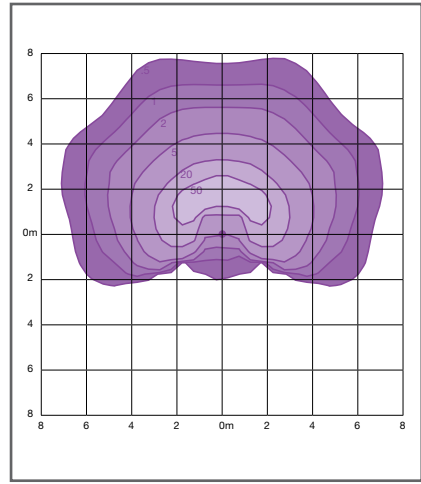


	Total Wattage (W)	Number of LEDs	Individual LED Wattage (W)	Distribution	Lumen Output (lm)	Colour Temp. (K)
AL9001	30	16	1.6	Symmetric	1976	4000
AL9002	30	16	1.6	Asymmetric	1976	4000
AL9003	30	16	1.6	Axial	1976	4000

Beam patterns



Symmetric Distribution
AL9001



Asymmetric Distribution
AL9002



For mounting details see page 20

FIRST CHOICE FOR RETAIL

THE NEXT STEP

Following Abacus's success with our specially designed Orion series, the Orion LED is the next step for effective and efficient car park lighting.

Using a similar design, the Orion LED produces a square distribution which reduces the number of lighting points needed, whilst the total energy consumption is also reduced with more energy efficient LEDs.

Influenced by the Orion family, the slender design subtly blends into the skyline with its white canopy and carefully placed LED modules which result in less than 1% upward light output ratio.

How can we help you today?



ORION LED AL4500



Benefits

- Asymmetrical beam distribution ideal for boundary mounting location to reduce overspill and wasted light
- Symmetrical beam distribution ideal for wide column spacings whilst maintaining light uniformity

Technical Features

- IP66 rated
- Available in symmetrical and asymmetrical beam distributions
- Acrylic bowl and white polyester powder coated acrylic top canopy as standard
- 3mm thick aluminium LED mounting plate
- Die-cast aluminium top cap heat sink
- Die-cast aluminium spigot
- LEDs are covered by lenses with an outer bowl on the main fitting
- L70 Hrs >60000
- L80 Hrs >60000
- Running current 1000mA
- Less than 1% upward light output ratio

- Colour rendering 77 (Ra)
- Colour temperature 4000K as standard
- Weight: 18.2kg
- Windage: 0.178m²

Applications

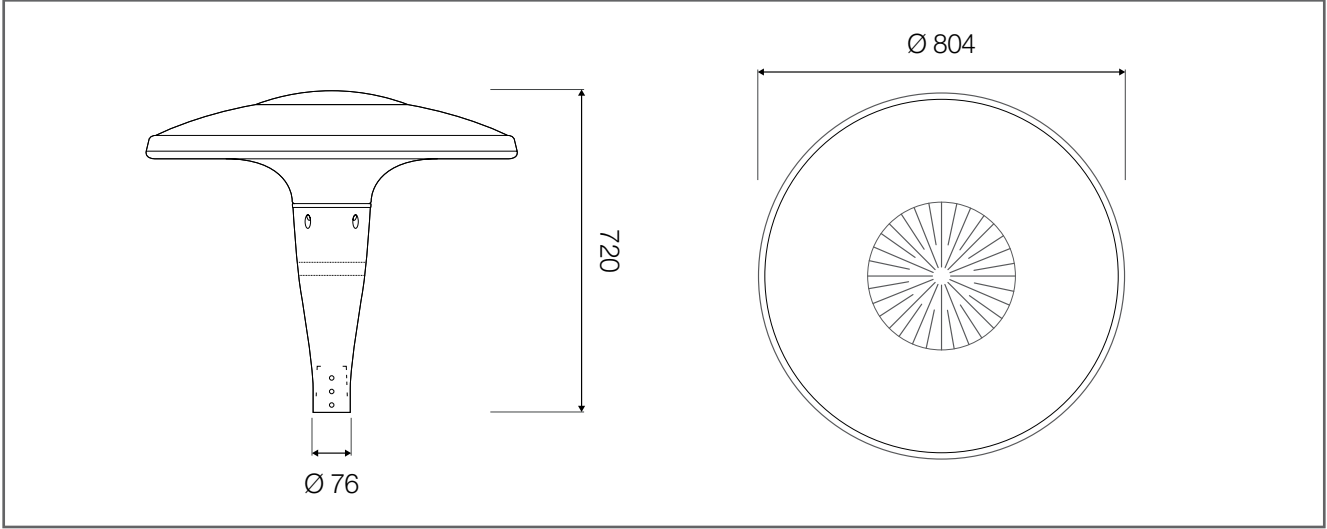
- Amenity
- Car park

Colour

- White canopy



Key features



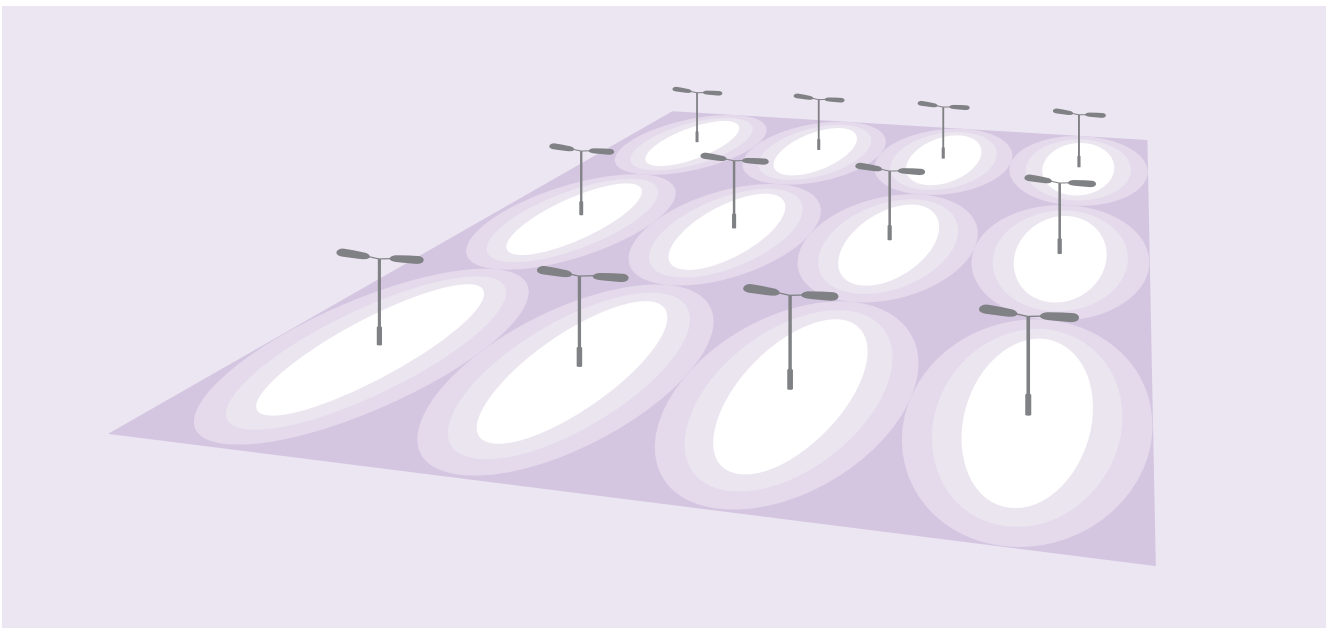
All dimensions are in mm.

	Wattage (W)	Distribution	No. of LED Modules	Lumen Output (lm)	Power Factor	Luminous Efficacy (lm / W)	Running Current (mA)	No. of Drivers
AL4501	302	Symmetric	8	32036	0.994	106	1000	2
AL4502	231.6	Asymmetric	6	24795	0.989	107	1000	2
AL4503	153.8	Symmetric	4	16946	0.994	110	1000	1
AL4504	117	Asymmetric	3	12723	0.990	109	1000	1

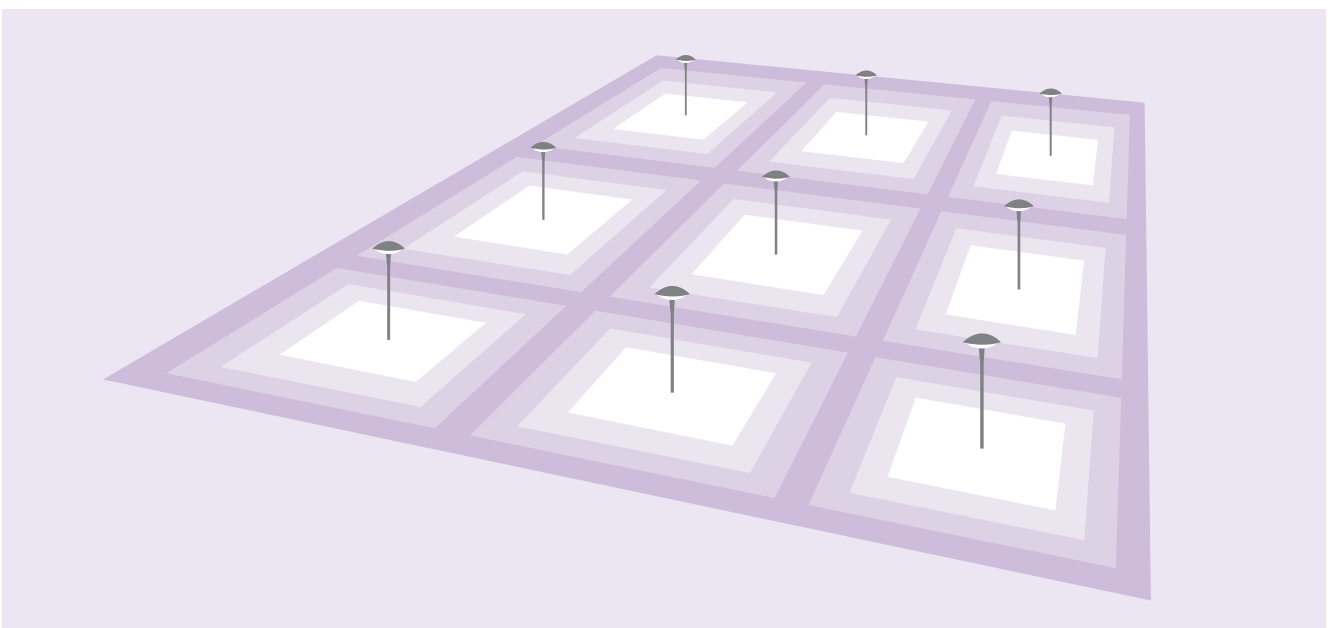
Orion LED distribution

Fitting	No. of Columns	No. of Luminaires	Mounting Height (m)	Average Lux Level (Lux)	Uniformity	Total Energy Consumption (W)	Power Density
Road Lantern	12	24	8	25.47	0.33	6.000	0.600W/m ² /25 Lux
Orion LED	9	9	8	25.19	0.26	2.682	0.268W/m ² /25 Lux

Using back-to-back road lanterns mounted at 8m to achieve 25 Lux average, total energy consumption is 6000 Watts



Using Orion LED mounted at 8m achieving 25 Lux average, total energy consumption drops to 2682 Watts



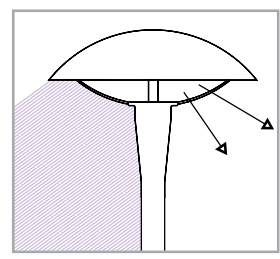


OPTIMUM REFLECTOR STORY

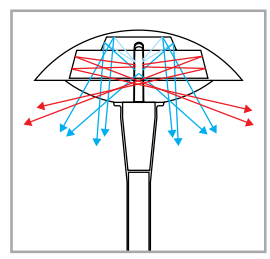
Optimum Reflector System

This unique and patented reflector system was developed to provide high optical performance within a low profile body. The twin step reflector balances the light output between the areas below the lantern and the furthest areas away. Its unmatched uniformity and performance delivers economies on power, column and associated infrastructure costs.

The energy effectiveness of the Optimum Reflector System in comparison with standard reflector systems is clearly shown when the power density per unit illuminance level of an installation is measured. In examples below, we compare different systems based on a 100m x 100m area illuminated to 25 Lux from either 6m, 8m or 12m with a minimum uniformity of 0.25 Emin/Eave.

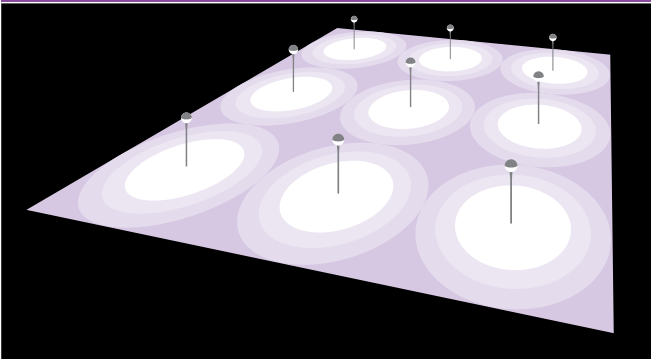


Shade
Asymmetric version, with internal 120° shield to restrict overspill

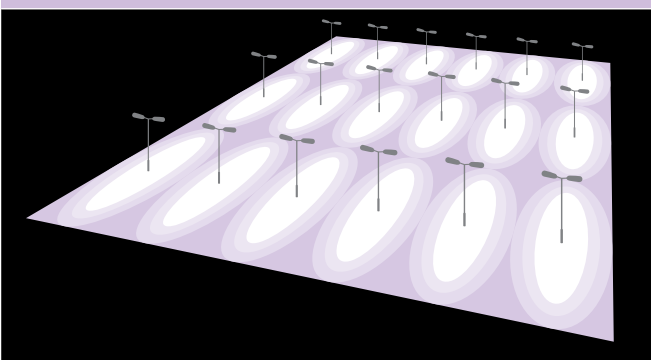


Optimum Reflector System
- Upper Reflector Tier for diffused reflection
- Lower Reflector Tier for main beam

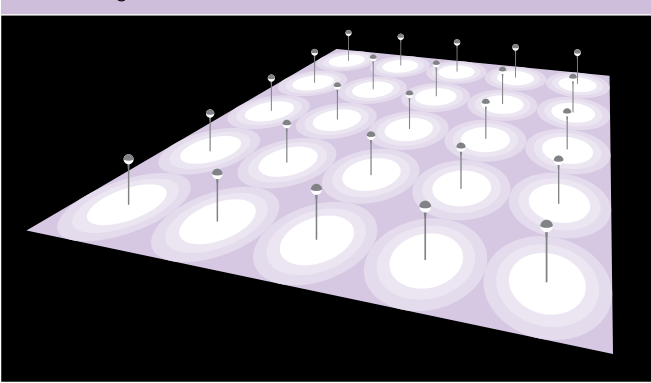
CONVENTIONAL REFLECTOR SYSTEMS



9 x Lanterns at 12m: 1 x 400W SON-T
Energy Consumption: 3.87kW Power Density: 0.36W/m²/25 Lux
Cable lengths: 390m Columns/Foundation: 9

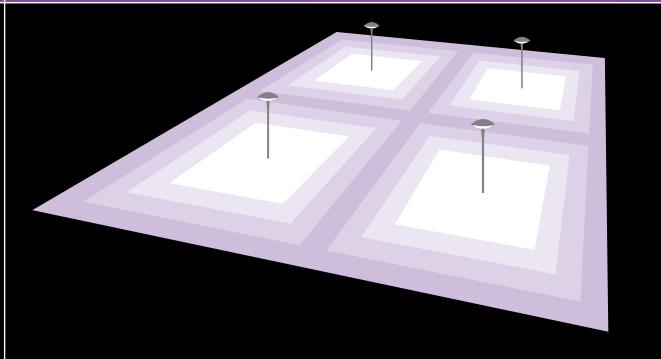


18 x Twin Road Lanterns at 8m: 2 x 150W SON-T
Energy Consumption: 5.4kW Power Density: 0.50W/m²/25 Lux
Cable lengths: 550m Columns/Foundation: 18

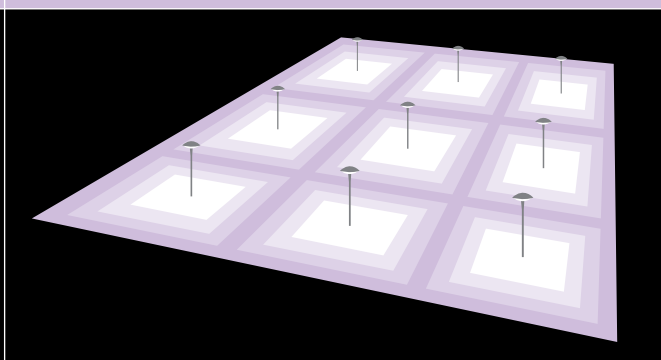


25 x Standard Reflectors at 6m: 250W SON-T
Energy Consumption: 6.9kW Power Density: 0.84W/m²/25 Lux
Cable lengths: 700m Columns/Foundation: 25

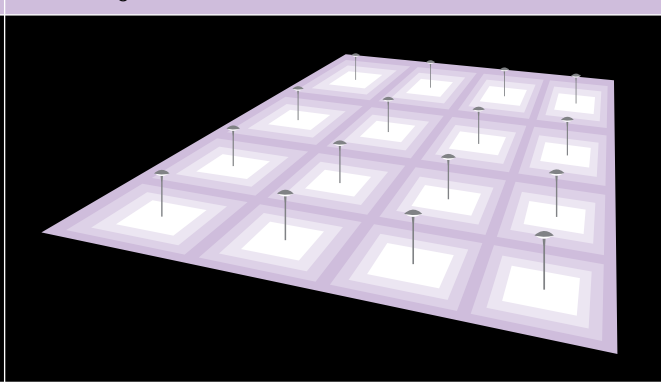
OPTIMUM REFLECTOR SYSTEM



4 x Orion at 12m: 2 x 400W SON-T
Energy Consumption: 3.44kW Power Density: 0.33W/m²/25 Lux
Cable lengths: 260m Columns/Foundation: 4



9 x Orion 2 at 8m: 400W SON-T
Energy Consumption: 3.87kW Power Density: 0.36W/m²/25 Lux
Cable lengths: 410m Columns/Foundation: 9



16 x Orion 3 at 6m: 250W SON-T
Energy Consumption: 4.14kW Power Density: 0.38W/m²/25 Lux
Cable lengths: 620m Columns/Foundation: 16

For comparison purposes the lighting levels are calculated on initial levels. Cables are assumed to lead to a central point on one side.
Optimum Reflector System Patent No. 1151226

ORIS LED AL3710

IP66

IK08

Benefits

- High performance amenity and road lighting with performance LED module
- Short install and maintenance time via tool-free opening hook
- Maintenance safety risks are reduced as power can be automatically switched off when the fitting is opened (available upon request)

Technical Features

- Weight: 13 - 14kg
- Windage: 0.06m²
- CRI: 80
- Colour temperature: 4000K as standard. Other temperatures available upon request
- Controls: Presence detector or Dali
- Rated life: 50000 hours at 700mA
- Classes I and II available
- Mounting:
Spigot side entry ø60mm
Spigot post top ø60mm or ø76mm

- Six light distribution options available
- IP66 rated with IP68 vent
- IK08 as standard, option for IK10 available
- Incorporated driver
- Thermal regulation by an integrated heat sink
- Surge protector or over/under voltage protection (optional)
- Luminaire made of injected cast aluminium

- Tempered glass
- ULOR 0% (ULOR: Upward Light Output Ratio)
- Extra slim profile fitting with curved design

Applications

- Amenity

Colours

-  Grey



Distribution options

The Oris LED is available in six light distribution options as seen in the following table.

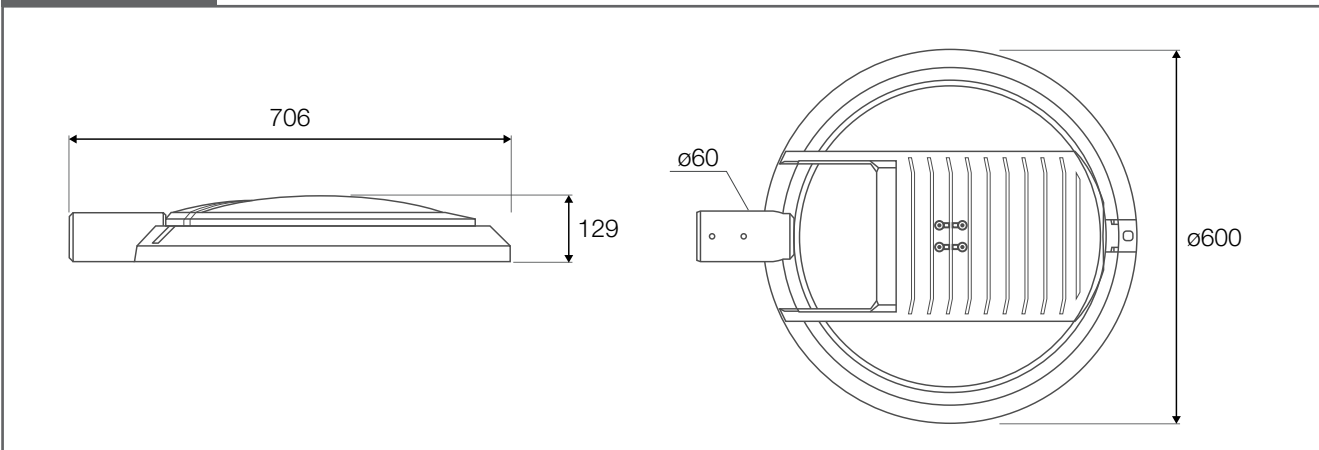
Please enquire when quoting / ordering.

Light Distribution	Option	Description	Code
Asymmetrical	ASY01	Main & secondary roads, high visual comfort & almost zero glare (very low TI)	A
	ASY02	Normal to wide roads with adjacent channels (paths), wide spacing between light points	B
	ASY03	Narrow lanes, area to be lit targeted	C
Circular	CIR01	Atmospheric lighting of squares, car parks, town centres, pedestrian areas, parks & gardens	D
Symmetrical	SYM01	Atmospheric lighting of squares, car parks, town centres, pedestrian areas, etc. Axial installations (on median strips, on catenary systems, between pavement and bicycle path)	E
PC01	PC01	Completes lighting on protected crossings	F



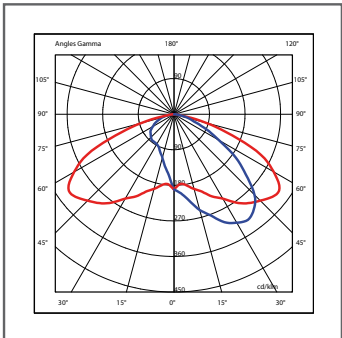
	Wattage (W)	No. of LEDs	Lumen Output (lm)	Running Current (mA)	Luminous Efficacy	Windage (m ²)	Weight (kg)
AL3712	48.2	45	5185	350	115	0.06	13
	70	45	6999	500	101	0.06	13
	99.4	45	9273	700	89	0.06	13
	151.3	45	12416	1050	73	0.06	13
AL3713	64.2	60	6913	350	114	0.06	13
	93.3	60	9332	500	99.7	0.06	13
	132.5	60	12363	700	89.4	0.06	13
	201.7	60	16555	1050	71.6	0.06	14
AL3714	96.3	90	10370	350	117.2	0.06	13
	140	90	13998	500	100.3	0.06	13
	198.8	90	18545	700	90.6	0.06	14
	302.5	90	24833	1050	82.1	0.06	14

Dimensions

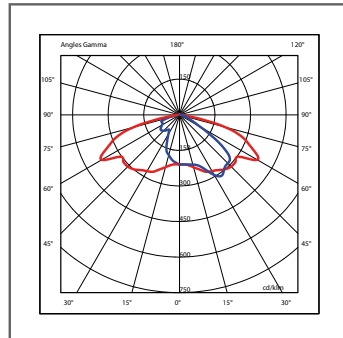


All dimensions are in mm.

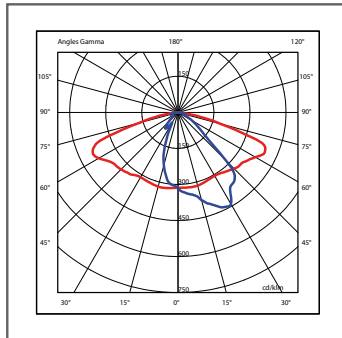
Key features



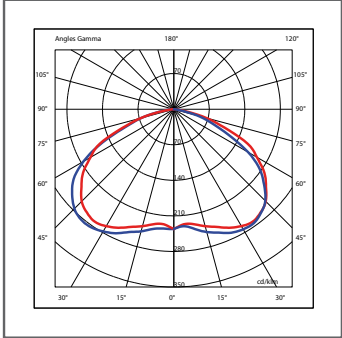
ASY01 (Asymmetrical)



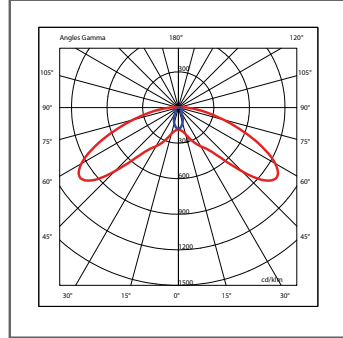
ASY02 (Asymmetrical)



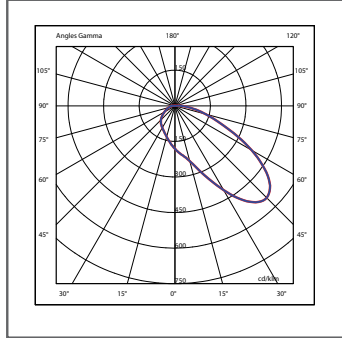
ASY03 (Asymmetrical)



CIR01 (Circular)



SYM01 (Symmetrical)



PC01 (Pedestrian)

U-LUM AL60300

IP66

IK09

The modern futuristic design of the U-LUM luminaire compliments the aesthetics of the city and integrates well in the urban environment. U-LUM LED light makes urban areas more appealing and inviting for people, while also saving energy, reducing your environmental impact and making these areas safe for children, pedestrians and cyclists.

Benefits

- Low maintenance
- Long lifetime
- Energy saving
- Smart driver
- Dimming options available

Technical Features

- Control: DALI or 1-10V
- Efficacy up to 113 lm/W
- CRI >80
- Colour temperature 4,000K (other upon request)
- Overload protection

Applications

- Road
- Architectural
- Amenity

Colours

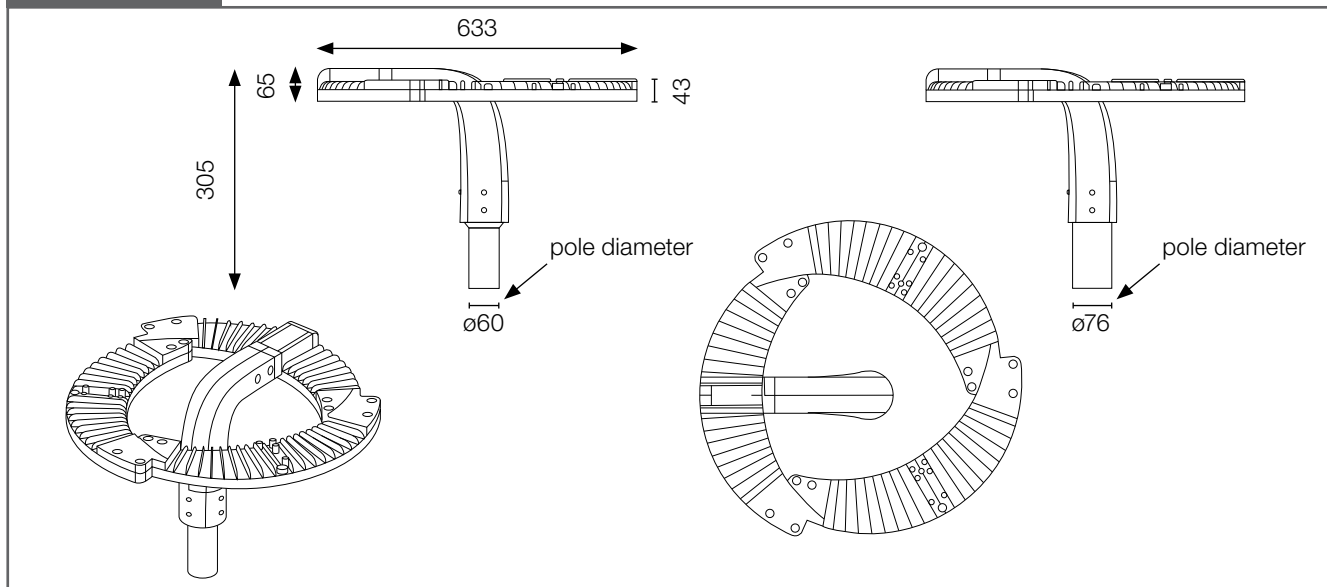
- Silver Matt



In association with
LUMENIA



Dimensions



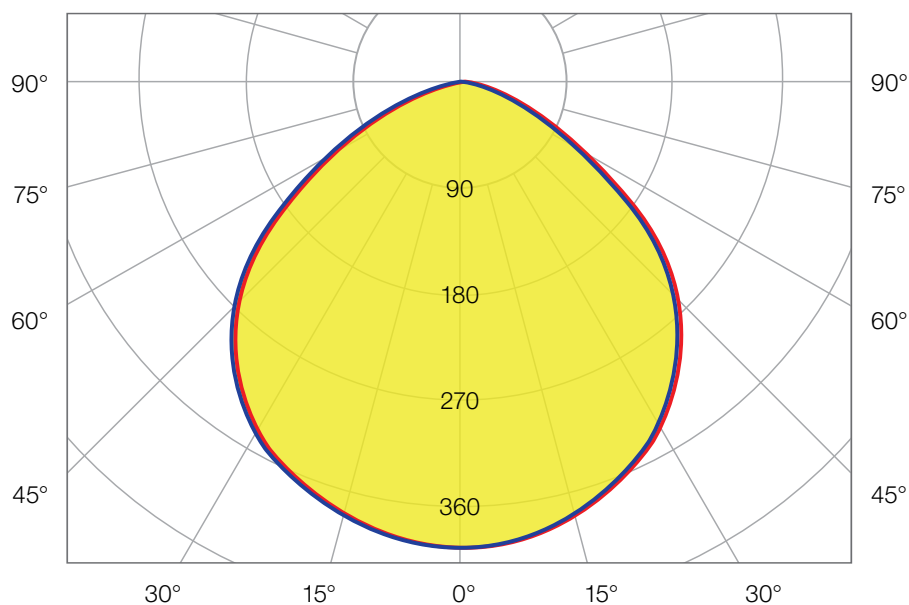
All dimensions are in mm.

	Wattage (W)	No. of LEDs	Luminous flux (lm)	Efficacy (lm/W)	Forward current (mA)	Luminaires per fuse	Appliance class	Additional options
AL60301	10	135	Up to 1130	Up to 113	20	< 50 pcs	Class I / Class II	PLC, RF, Bluetooth
AL60302	25	135	Up to 2830	Up to 113	30	< 21 pcs	Class I / Class II	PLC, RF, Bluetooth
AL60303	40	135	Up to 4520	Up to 113	50	< 21 pcs	Class I / Class II	PLC, RF, Bluetooth



U-LUM	
System efficacy (lm/W)	Up to 113
Supply voltage (VAC)	120-277
LED	135
Power (W)	10 - 40
Luminous flux (lm)	1,250 - 5,000
Power factor	> 0.97
EPA rating	0.248m ²
Advisable installation height	Up to 6m
Weight (kg)	9
Lifetime L80B10	> 65,000 h
CCT	4,000K; other upon request
CRI	> 80
Ingress protection	IP66
Mechanical strength	IK09
Surge protection options	10 kV / 10 kA
Operating temperature	-40°C to +55°C
Electrical / Appliance class	Class I, Class II
Dimming levels	0 - 100%
Remote control options	Optional RF, PLC or Bluetooth
Colour	RAL 9011
Housing material	Aluminium
Mounting	Pole 60 mm, 76 mm (possible adapter use for other dimensions)
Warranty	5 years on electronics, 10 years on mechanical parts, upon request
Certificates	IEC 60598-1:2014 (8 edition); IEC 60598-2-3:2002 + A1:2011; EN 60598-1:2015; EN 60598-2-3:2003 + A1:2011; IEC/EN 62031:2008 + A1+A2; IEC/TR 62778:2014; CE, ENEC

Photometry



PATHSEEKER 2 AL3150



Benefits

- Optional photocell available
- Tamper-resistant cover screws available
- Simple to fix using external stainless steel brackets and two lower points, all external to gasket line to preserve IP rating
- Complies with M.O.D. JSP482 Chapter 8 Document 4 'Category C' areas

- Impact-resistant, flame retardant prismatic polycarbonate cover
- Supplied complete with lamp
- Emergency pack: contact Abacus sales for price and availability

Access

Internal access secured by screws in front panel areas

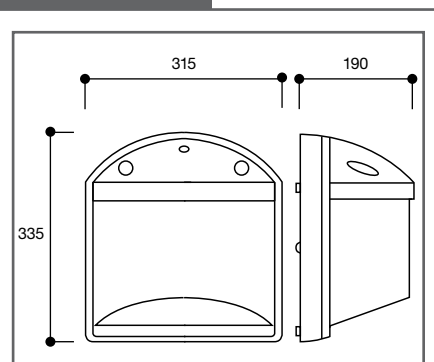


Features

- Strong pressure die-cast LM24 aluminium body prevents distortion when fixing and preserves IP rating
- Textured black full polyester powder finish
- Spacings up to eight times mounting height

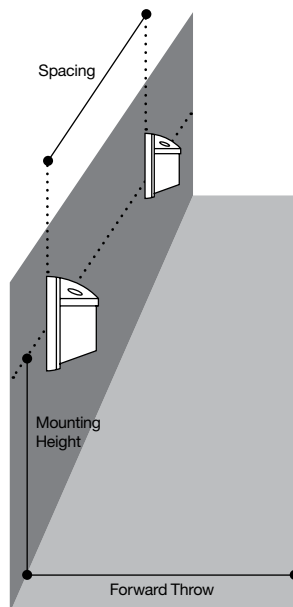
	Wattage (W)	Light Source	Description	Weight (kg)
AL3151	26	LED	Lamp and Integral Control Gear	4.3

Key features



Mounting

Wall plate mounted
Mounting height: 3 – 5m



Photometric performance*

3M mounting height 5M forward throw

Spacing	Initial illuminance	Uniformity (min:av)
12m	37 Lux av.	0.35
15m	30 Lux av.	0.30
18m	25 Lux av.	0.23
21m	22 Lux av.	0.20
24m	19 Lux av.	0.15

4M mounting height 6M forward throw

Spacing	Initial illuminance	Uniformity (min:av)
12m	28 Lux av.	0.42
15m	22 Lux av.	0.40
18m	18 Lux av.	0.30
21m	15 Lux av.	0.23
24m	13 Lux av.	0.18

Accessories

AL3150PC Photocell option

* Performance based on conventional versions

All dimensions are in mm.



CAR PARK & AMENITY LIGHTING

CARICO AL22500

IP65



Benefits

- Internal drivers and electrics protected from the elements by the durable rated IP65 body

Features

- Power: LumaFit LED 33W (System wattage 36.6W)
- 115° optics
- Colour temperature 5000K as standard
- CRI: 85
- Array lumens: 4438lm
- Delivered lumens: 3114lm
- LumaFit LEDs on aluminium boards
- Dimmable driver

- Voltage 120 - 277V, 50/60Hz
- Die-cast aluminium back housing, finished in black powdercoating over a chromate conversion coat
- Cast-in template for ease of mounting over electrical boxing
- Colour matched hinged polycarbonate front housing with clear polycarbonate ribbed lens area
- 20mm coin plus with O-rings for conduit and photocell
- 5 year warranty
- Rated life: 50000 hours
- Operating temperature -40°C ~ + 40°C

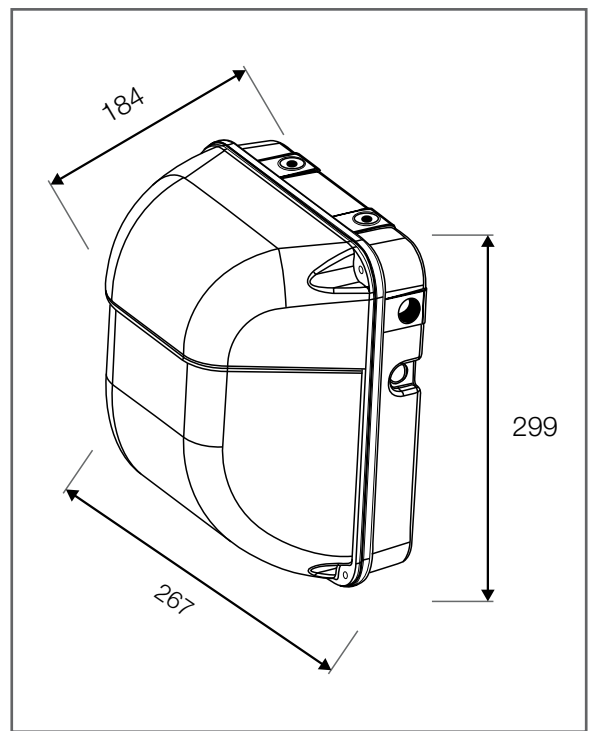
- Direct mount of a 100mm recessed outlet box or using 20mm surface conduit
- Emergency version available

Colours

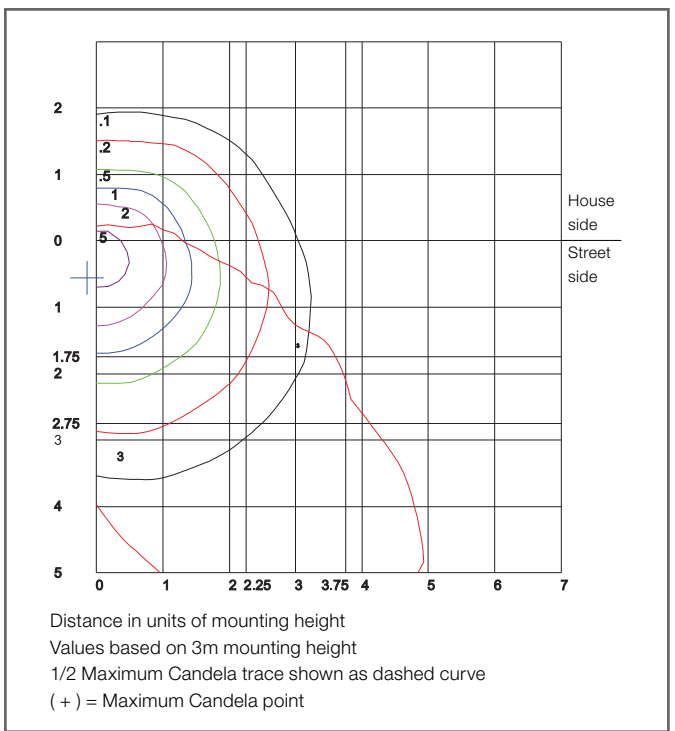
- Black

	Wattage (W)	Array Lumens (lm)	Delivered Lumens (lm)	Optic	CRI	Colour Temp. (K)	Colour
AL22501	36.6	4438	3114	115°	85	5000	Black

Key features



Dimensions



Polar diagram

All dimensions are in mm.

VETTA AL22000

IP66

IK06

IK10

Technical Features

- Graphite full polyester powder finish
- Silver option available
- Strong die-cast LM2 aluminium body
- High efficiency prismatic polycarbonate or borosilicate glass front refractor (Glass cover IK06)
- Wide distribution (18W LED) or area distribution (32W LED) options
- Highly specular, multi-faceted injection moulded vacuum metallised reflector
- Excellent distribution with less than 2% upward light
- Optional photocell control
- Conventionally switched and Smart External versions available
- Colour temperature: 4000K standard, 5000K optional

Applications

- Architectural
- Amenity

Colours

- Black
- Silver (Optional)



Area distribution

Wide distribution

	Wattage (W)	Colour Temp. (K) *	Distribution	Ra	Rated Life (h)	Driver Efficiency	Power Factor	LL/CW	IK Rating	Weight (kg)
AL22003	8	4000 / 5000	Wide	80	67000 L80/B10	>85	>0.95	120.0	IK10	3.8
AL22004	20, 34, 42	4000 / 5000	Area	70+	100000 L90/B10	>85	>0.95	127.6	IK10	3.9

For emergency version, please enquire when quoting / ordering. Additional 0.4kg to weights listed.

* Please confirm colour temperature when quoting / ordering

Smart External version is dimmable

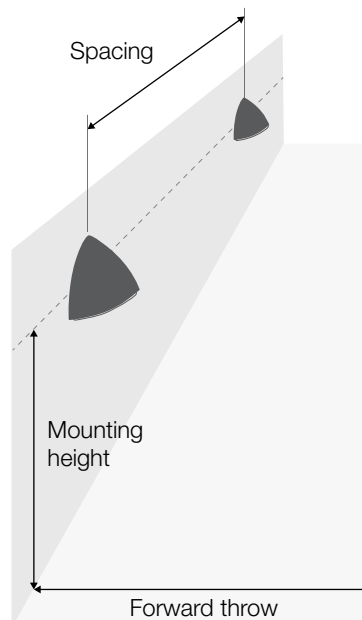
Photocell (standard versions only) and tamper resistant screws (To fasten tamper resistant screws, order special screwdriver)



Photometric performance

8W LED with polycarbonate cover

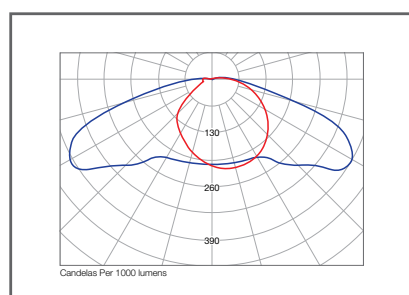
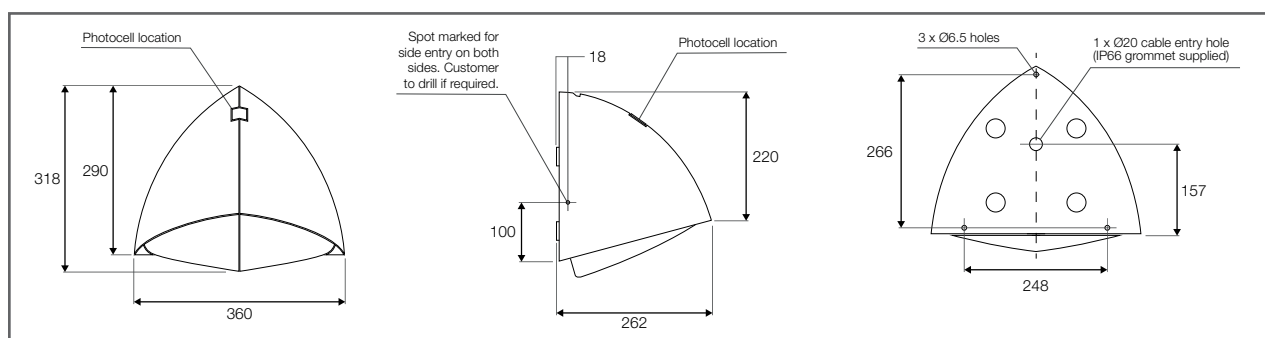
Spacing	Average illuminance (lux)	Uniformity (min:av)
3m mounting height - 3m forward throw		
10m ctrs	22	0.48
15m ctrs	15	0.47
20m ctrs	11	0.22
4m mounting height - 4m forward throw		
10m ctrs	17	0.48
15m ctrs	11	0.45
20m ctrs	8	0.47
5m mounting height - 5m forward throw		
10m ctrs	13	0.42
15m ctrs	9	0.48
20m ctrs	7	0.45



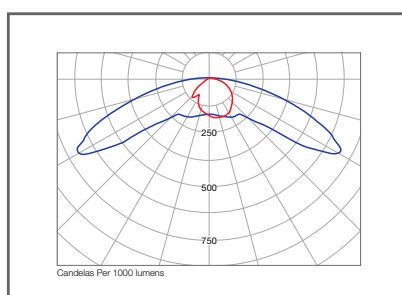
e.g At 3m mounting height and 10m centres: 22 lux average horizontal illuminance at ground level

Figures are based on initial lumens

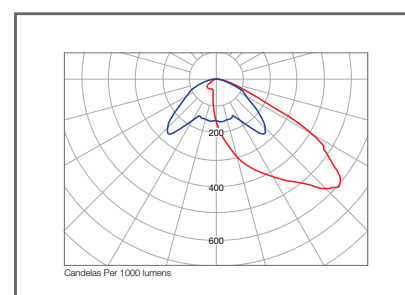
Key features



Glass cover
(Wide distribution)
Luminaire lumen output
8W = 1175lm



Polycarbonate cover
(Wide distribution)
Luminaire lumen output
8W = 1320lm



Polycarbonate cover
(Area distribution)
Luminaire lumen output
20W = 2840lm
34W = 4850lm
42W = 5635lm

All dimensions are in mm.

REVATI AL60601

IP66

A compact full cutoff wall mounted luminaire available in two Wattages. With a specially designed wide forward throw optical distribution, it replaces an HID lighting system of up to 150W MH or HPS.

Typical applications include; rail, ports, warehouses, retail and amenity

Mounting heights between 3 - 8 metres can be used based on light level and uniformity requirements.



Technical Features

- Die cast aluminium housing with full cutoff front frame, integral heat sink and driver compartment.
- Twist-lock photocell / smart controls adaptable.
- Nickel-plated stainless steel hardware.
- Black (RAL 9005) powdercoat finish over a chromate conversion coating.
- Clear one-piece molded Type IV polycarbonate lens.
- Includes Easy-Hang wall mounting bracket with built-in level. Optional trim plate is available for use in retrofit applications to cover wall surface blemishes.
- Electronic driver, 120-277V, 50/60Hz; Power factor >0.90.
- Standard internal surge protection is 2kV for 25W, 6kV for 37W. 0-10V dimming as standard.
- CE: Listed for wet locations.
- IP66 sealed LED compartment.
- 5-year warranty.
- Designed to operate in -40°C to +50°C environment.
- CRI: 80
- CCT: 4,000K (standard) & 5,000K
- L90 (25°C ambient): >100,000 hours

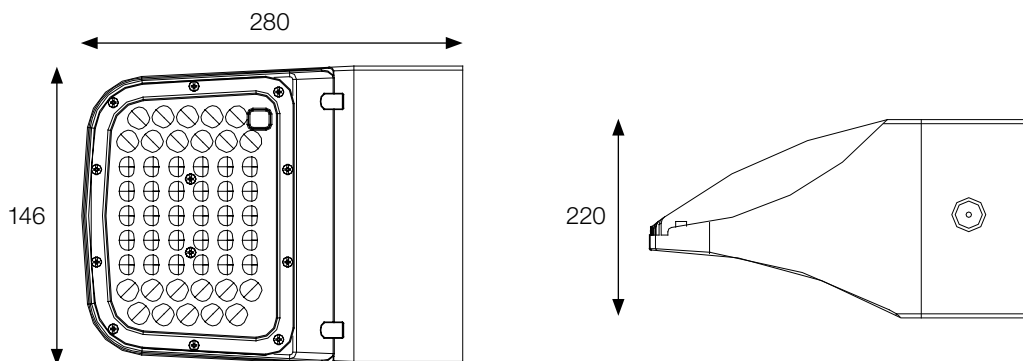
Applications

- Amenity
- Retail
- Rail
- Ports
- Warehouse

Colours

- Black

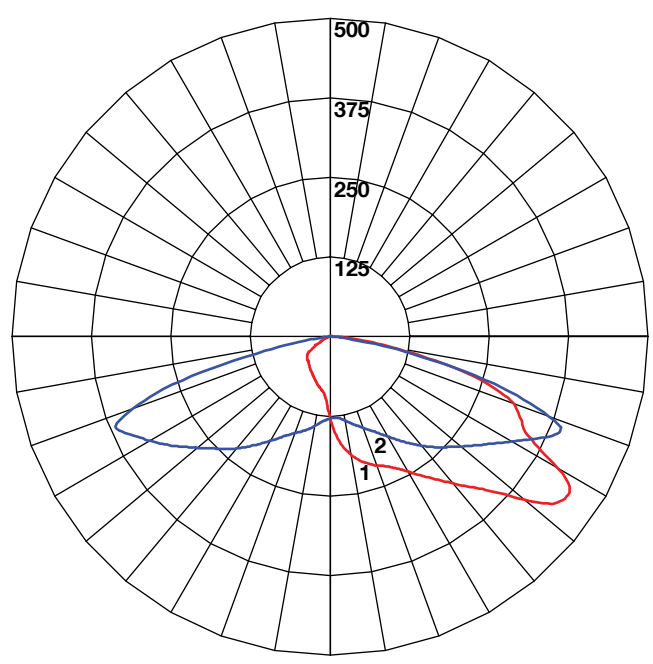
Dimensions



All dimensions are in mm.



Photometry



AL60601

Maximum cd/klm = 498.714 Located at horizontal angle = 30, vertical angle = 59.5
 #1 - Vertical plane through horizontal angles (0 - 180)
 #2 - Vertical plane through horizontal angles (90 - 270)

	Wattage (W)	Driver current (mA)	Optics	4,000 CCT 80 CRI		5,000 CCT 80 CRI	
				Lumen output	Llm/cW	Lumen output	Llm/cW
AL60601	28	525	Type IV	3,147	112	3,420	122
	42			4,454	106	4,599	110

Accessories



Aluminium trim plate, black powdercoat finish. Shown mounted



Bronze polycarbonate housing for installing sensors, includes sensor bracket and gasket



Internal microwave sensor with dimming, 120-277VAC, 50/60Hz



Twist-lock 120-277VAC Photocell

ABACUS - LEADERS IN ARCHITECTURAL LIGHTING

ARCHITECTURAL LIGHTING



LIGO AL11200 ROUND



Benefits

- Luminaire housing has a high resistance to UV and is treated with highly antioxidant water-repellent lubricating solution to lengthen lifespan
- Strong luminaire body can withstand a maximum static pressure load 2500kg for use in high traffic areas
- Stainless steel finish ideal for architectural use
- High efficiency thermoplastic with high vacuum deposit for heightened luminaire care
- Design allows for ease of maintenance
- Powder coated die-cast aluminium EN AB 44100 body with AISI 316L stainless steel trim
- Protective undercoating phosphochromate treatment
- Sealed to IP67
- Techno polymer Rough in Housing 017 / 018 / 019
- Soda-lime tempered glass 12mm
- Silicon sealing gasket
- Supplied with pre-wired cable 0.5m long HO7RN8-F with brass cable gland M20 ø7 / 13mm
- Wire through connection available on request
- Drainage area 300mm
- Maximum static pressure load 2500kg

Technical Features

- In ground recessed uplighter
- Non-integral driver

Applications

- Architectural
- In ground / surface recessed

Beam Types

- 14°
- 29°
- 62°

Colours

-  Stainless Steel

	Wattage (W)	Power Supply	No. of LEDs	Beam	Colour Temp. (K) **	Touch Temp. (°C)	Lumen Output (lm)	Fixture Colour	Rough Inground Casting Box	LED Driver
AL11201	18	Max 500mA 50/60HZ	1	14°	3000	<70	1957	Stainless	017	Non-integral *
AL11202	18	Max 500mA 50/60HZ	1	29°	3000	<70	1957	Stainless	018	Non-integral *
AL11203	18	Max 500mA 50/60HZ	1	62°	3000	<70	1957	Stainless	019	Non-integral *

** Other colour temperatures available on request

Key features

<p>Dimensions</p>	<p>AL11201 Luminaire: 18W 3000K Lamp: 1 LED Power: Max 500mA 50/60HZ</p>	<p>AL11202 Luminaire: 18W 3000K Lamp: 1 LED Power: Max 500mA 50/60HZ</p>	<p>AL11203 Luminaire: 18W 3000K Lamp: 1 LED Power: Max 500mA 50/60HZ</p>
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All dimensions are in mm.

* Please enquire regarding drivers when requesting quotation and ordering.



PESCARA AL21700

IP65



Technical Features

- Power: LED 50.5W (59W total power)
- Weight: 23.8kg
- Available in 2700K, 3000K, 4000K and 5000K colour temperatures
- Luminous flux (light source flux): 5808lm, 6060lm, 6648lm, 6754lm
- Available in two distribution options: Asymmetric and Batwing
- IP65 rated
- Protection Class I (IEC - EN60593)
- CE, ENEC, RoHS certified
- ADC3 die-cast aluminium alloy light output ring and light source frame
- Marine grade fiberglass top canopy with internal steel frame reinforcement
- Water vapour resistant silicone gasket

- Anti-corrosion pre-treatment then finished in an AKZO-NOBEL UV resistant polyester powder coat
- PMMA internal LED optical lens behind 4mm tempered glass 1090 anodized 1.2mm 99.85% purity aluminium reflector
- Input Voltage: AC220-240V
- Ambient temperature tested -40°C ~ +50°C
- Withstand wind speed 45m/s
- Service life ≥35000 hours
- For best results, use on columns up to 6m

Applications

- Amenity
- Architectural

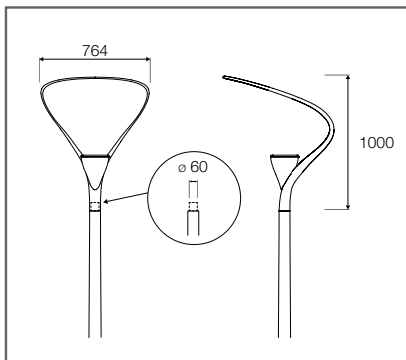
Colours

- Anthracite
- Light grey
- Black

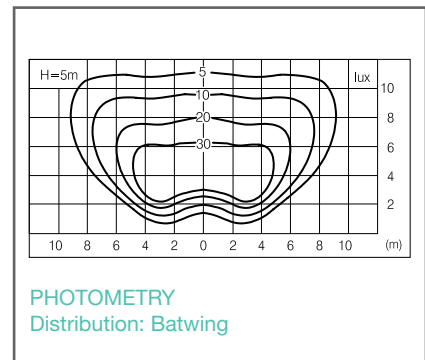
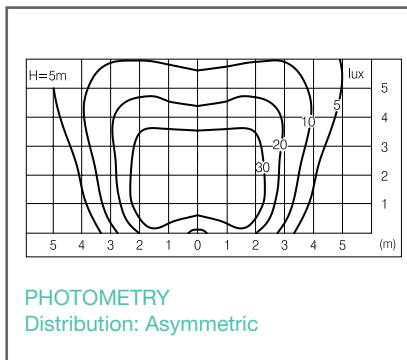
	Wattage (W)	Colour Temp. (K) *	Lumen Output (lm)	Distribution	Weight (kg)
AL21701	59	2700	5808	Asymmetric	23.8
	59	3000	6060	Asymmetric	23.8
	59	4000	6648	Asymmetric	23.8
	59	5600	6754	Asymmetric	23.8
AL21702	59	2700	5808	Batwing	23.8
	59	3000	6060	Batwing	23.8
	59	4000	6648	Batwing	23.8
	59	5600	6754	Batwing	23.8

* Please confirm colour temperature when quoting / ordering

Key features



Dimensions



All dimensions are in mm.

LENA AL22200

IP65

Benefits

- Internal drivers and electrics protected from the elements by the durable rated IP65 body
- Blends into surroundings with two clean finishing options

Features

- Power: 16.9W
- Colour temperature 5000K as standard
- CRI: 83
- Array lumens: 2089lm
- Delivered lumens: 1384lm
- IP65 rated
- Rated life: 50000 hours
- 5 year warranty

- CE marked
- Electronic dimmable 1:10V (10%-100%)
- Inventronics IP65 driver 18W
- PCB board 15W
- Efficacy lumens per circuit watt: 122 L/CW at LED array, 81 L/CW
- Clear polycarbonate outer lens
- Medium beam spread
- Aluminium cone reflector
- Bollard available in stainless steel or black aluminium painted finished
- Cap available as dome or flat top
- Set into concrete and fixed with 8" anchor bolts
- Optional 2.5kV surge protection

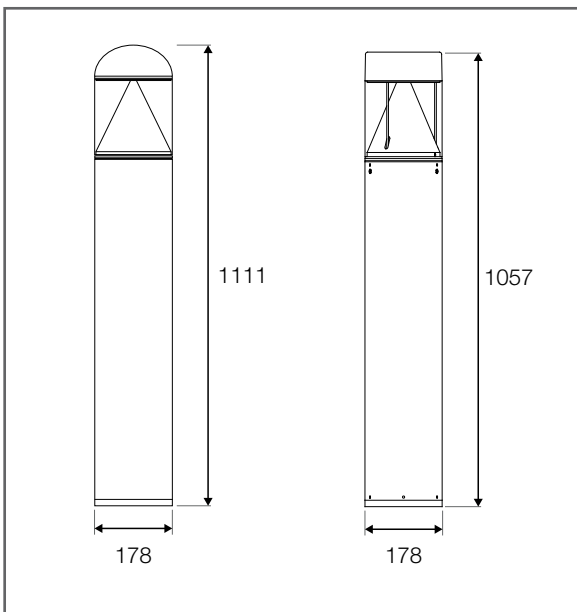
Colours

- Black
- Stainless steel

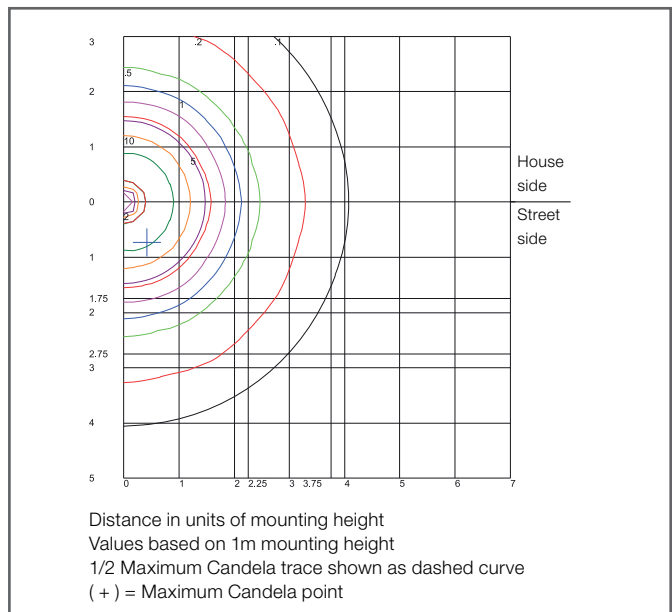


	Wattage (W)	Colour Temp. (K)	Lumen Output (lm)	CRI	Dome / Flat Top	Colour
AL22200 / SS	16.9	5000	1348	83	Dome top	Stainless steel
AL22200 / BLK	16.9	5000	1348	83	Dome top	Black
AL22201 / BLK	16.9	5000	1348	83	Flat top	Black

Key features



Dimensions (L - Lena, dome top. R - Lena, flat top.)



Polar diagram

All dimensions are in mm.



RADA AL22300

IP65

Benefits

- Ease of maintenance and upgrade via internal driver tray
- Internal drivers and electrics protected from the elements by the durable rated IP65 body

Features

- Power: 26W
- Colour temperature 4100K as standard
- CRI: 80+
- Delivered lumens: 2282lm
- IP65 rated
- Rated life: 50000 hours
- 5 year warranty

- Electronic driver 120-277V, 50/60Hz dimmable driver
- Internal driver tray
- Reflective white polycarbonate cone reflector
- Clear polycarbonate lens
- LED: 4 Chip-on-board
- Extruded aluminium housing, finished in a black powdercoat over a chromate conversion coating
- Flush mounting base and flat top
- Vandal-resistant screws
- Mounting kit with 200mm anchor bolts

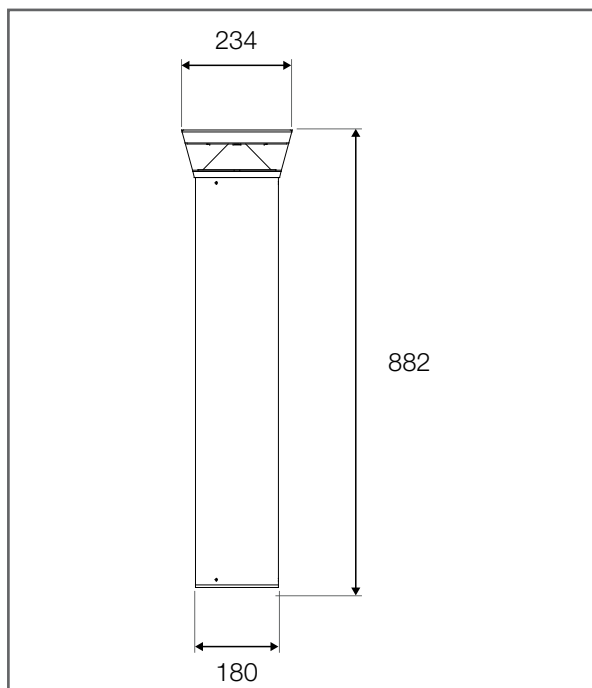
Colour

- Black

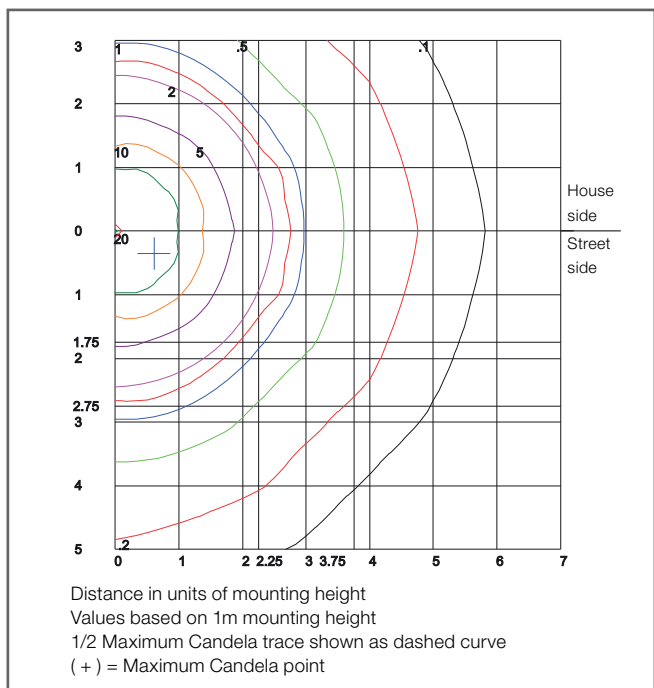


	Wattage (W)	Delivered Lumens (lm)	No. of LED (Chip-on-board)	CRI	Colour Temp. (K)	Colour
AL22300	26	2282	4 COB	80+	4100	Black

Key features



Dimensions



Polar diagram

All dimensions are in mm.

LEVATA AL21800 BOLLARD

IP65

Technical Features

- Three wattage options: 7W, 14W or 25W
- Face shape options: square, round or oval
- Bollard height options: 500mm, 900mm or 1200mm
- Two possible light distributions: one way or two way (as specified in the product table)
- IP65 rated
- Class I protection
- 6063 aluminium alloy post
- ADC3 die-cast aluminium alloy housing
- 1090 high purity aluminium reflector with filter hood light control
- Water vapour resistant silicone gasket
- Stainless steel fixings, allen headed screws
- Galvanised steel recessed frame
- Mechanical and chemical anti-corrosion pre-treatment, powder coated with 10 year normal UV protection
- Integrated electronic driver with thermal and overload protection
- Surge protection 4kV
- Waterproof cable at maximum ø10mm insert to luminaire
- Ambient temperature tested: -40°C ~ +50°C
- Matching wall versions available as part of the Levata LED family



AL21801
AL21802



AL21803
AL21804



AL21805
AL21806
AL21807
AL21808



AL21809
AL21810
AL21811
AL21812

Applications

- Amenity

Colours

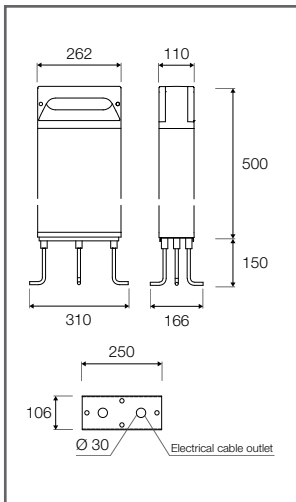
- Anthracite
- Light grey
- Black



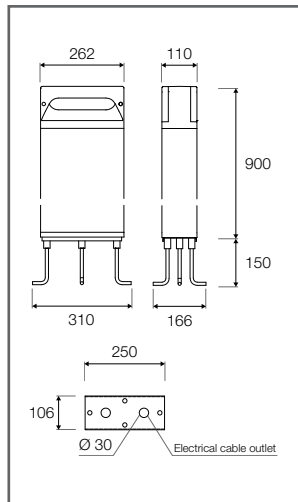
	Wattage (W)	No. of LEDs	Colour Temp. (K) *	Lumen Output (lm)	Input Voltage	Distribution	Face Shape	Total Height (mm)	Weight (kg)
AL21801	14	30	2700	1290	AC220-240V	2 Way	Rectangle	500	6.94
	14	30	3000	1560	AC220-240V	2 Way	Rectangle	500	6.94
	14	30	4000	1860	AC220-240V	2 Way	Rectangle	500	6.94
	14	30	5600	2130	AC220-240V	2 Way	Rectangle	500	6.94
AL21802	14	30	2700	1290	AC220-240V	2 Way	Rectangle	900	TBA
	14	30	3000	1560	AC220-240V	2 Way	Rectangle	900	TBA
	14	30	4000	1860	AC220-240V	2 Way	Rectangle	900	TBA
	14	30	5600	2130	AC220-240V	2 Way	Rectangle	900	TBA
AL21803	25	10	2700	2400	AC100-240V	1 Way	Square	900	16.3
	25	10	3000	2600	AC100-240V	1 Way	Square	900	16.3
	25	10	4000	2800	AC100-240V	1 Way	Square	900	16.3
	25	10	5600	3000	AC100-240V	1 Way	Square	900	16.3
AL21804	25	10	2700	2400	AC100-240V	1 Way	Square	1200	TBA
	25	10	3000	2600	AC100-240V	1 Way	Square	1200	TBA
	25	10	4000	2800	AC100-240V	1 Way	Square	1200	TBA
	25	10	5600	3000	AC100-240V	1 Way	Square	1200	TBA
AL21805	25	10	2700	2400	AC100-240V	1 Way	Round	900	13.3
	25	10	3000	2600	AC100-240V	1 Way	Round	900	13.3
	25	10	4000	2800	AC100-240V	1 Way	Round	900	13.3
	25	10	5600	3000	AC100-240V	1 Way	Round	900	13.3
AL21806	25	10	2700	2400	AC100-240V	1 Way	Round	1200	16.3
	25	10	3000	2600	AC100-240V	1 Way	Round	1200	16.3
	25	10	4000	2800	AC100-240V	1 Way	Round	1200	16.3
	25	10	5600	3000	AC100-240V	1 Way	Round	1200	16.3
AL21807	25	10	2700	2400	AC100-240V	2 Way	Round	900	13.3
	25	10	3000	2600	AC100-240V	2 Way	Round	900	13.3
	25	10	4000	2800	AC100-240V	2 Way	Round	900	13.3
	25	10	5600	3000	AC100-240V	2 Way	Round	900	13.3
AL21808	25	10	2700	2400	AC100-240V	2 Way	Round	1200	16.3
	25	10	3000	2600	AC100-240V	2 Way	Round	1200	16.3
	25	10	4000	2800	AC100-240V	2 Way	Round	1200	16.3
	25	10	5600	3000	AC100-240V	2 Way	Round	1200	16.3
AL21809	7	15	2700	645	AC220-240V	1 Way	Oval	500	TBA
	7	15	3000	780	AC220-240V	1 Way	Oval	500	TBA
	7	15	4000	930	AC220-240V	1 Way	Oval	500	TBA
	7	15	5600	1085	AC220-240V	1 Way	Oval	500	TBA
AL21810	7	15	2700	645	AC220-240V	1 Way	Oval	900	TBA
	7	15	3000	780	AC220-240V	1 Way	Oval	900	TBA
	7	15	4000	930	AC220-240V	1 Way	Oval	900	TBA
	7	15	5600	1065	AC220-240V	1 Way	Oval	900	TBA
AL21811	14	30	2700	1390	AC100-240V	1 Way	Oval	500	TBA
	14	30	3000	1560	AC100-240V	1 Way	Oval	500	TBA
	14	30	4000	1860	AC100-240V	1 Way	Oval	500	TBA
	14	30	5600	2130	AC100-240V	1 Way	Oval	500	TBA
AL21812	14	30	2700	1390	AC100-240V	1 Way	Oval	900	TBA
	14	30	3000	1560	AC100-240V	1 Way	Oval	900	TBA
	14	30	4000	1860	AC100-240V	1 Way	Oval	900	TBA
	14	30	5600	2130	AC100-240V	1 Way	Oval	900	TBA

* Please confirm colour temperature when quoting / ordering

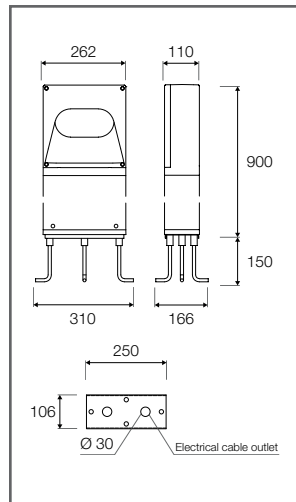
Dimensions



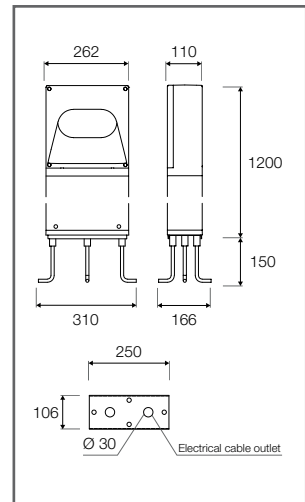
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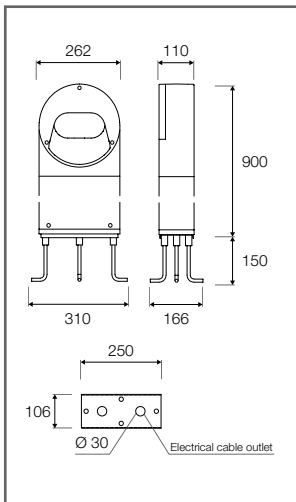
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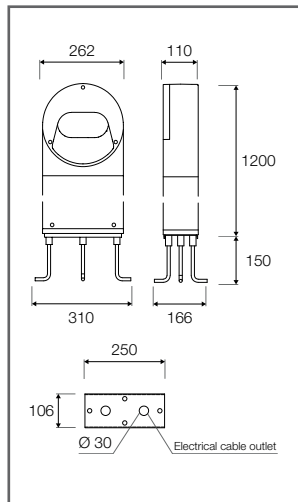
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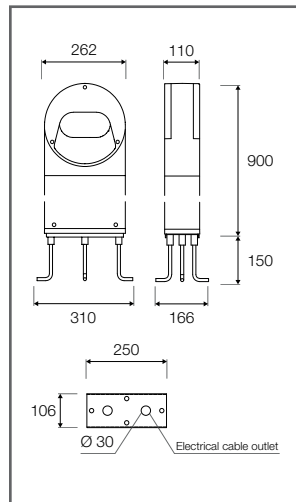
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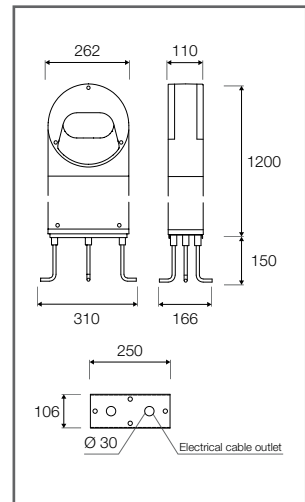
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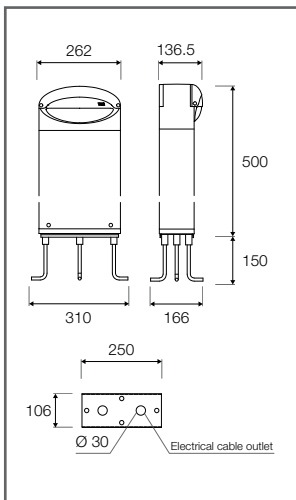
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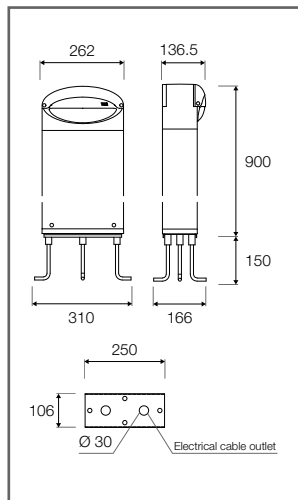
AL21807



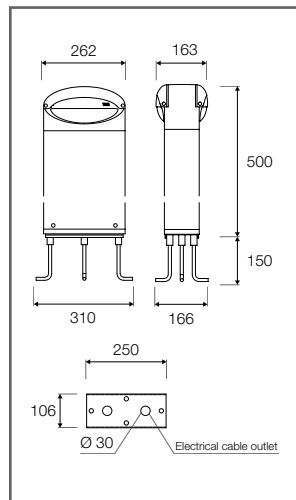
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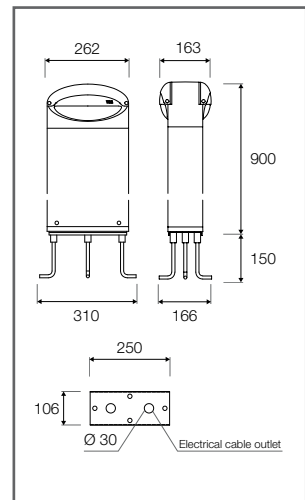
AL21809



AL218010



AL218011

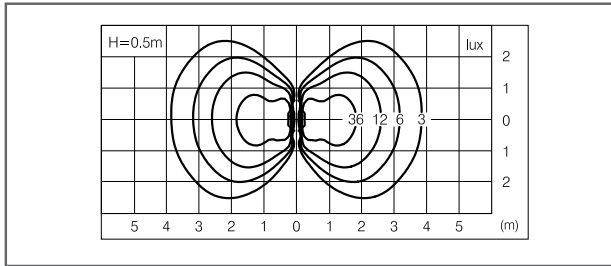


AL218012

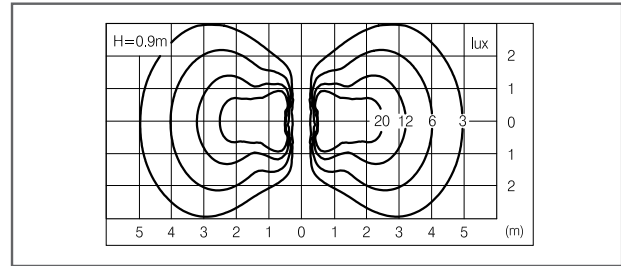
All dimensions are in mm.



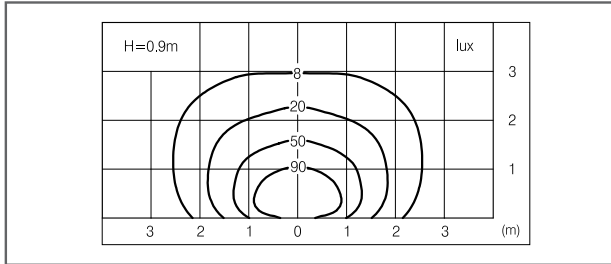
Photometry



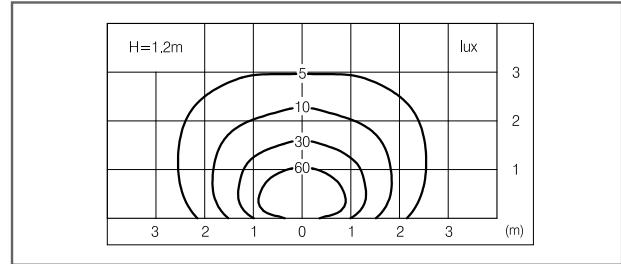
AL21801



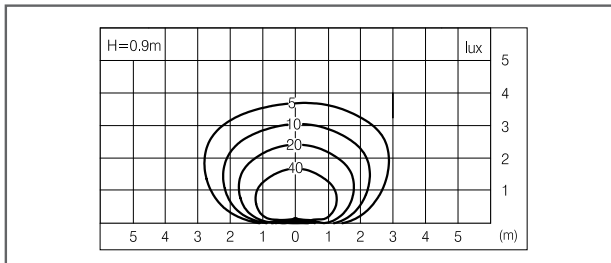
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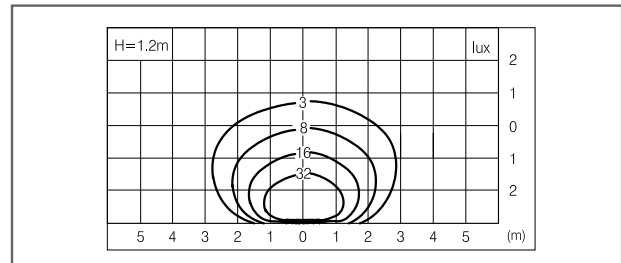
AL21803



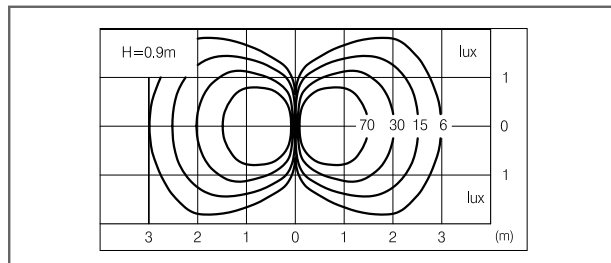
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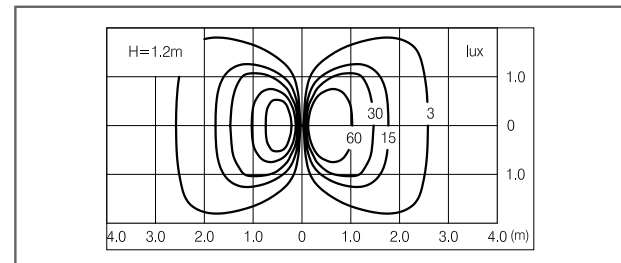
AL21805



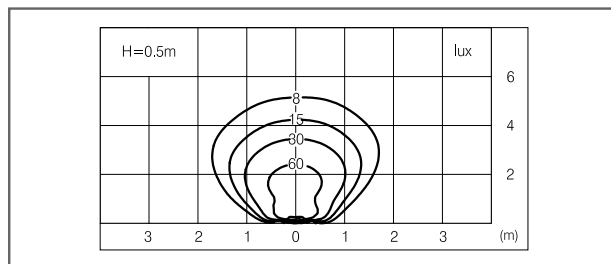
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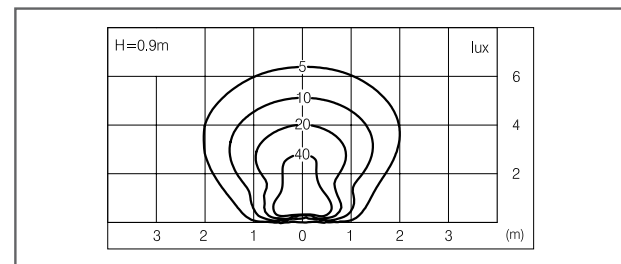
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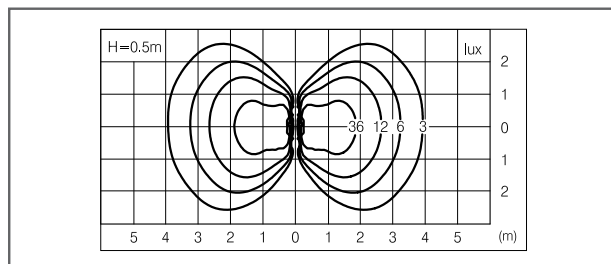
AL21808



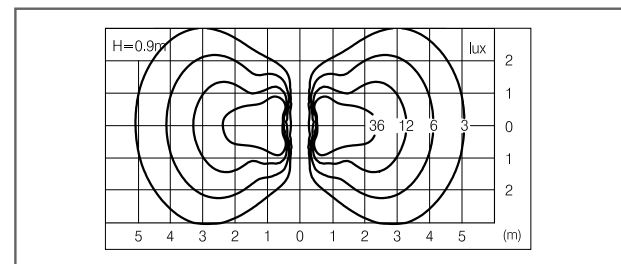
AL21809



AL218010



AL218011



AL218012

LEVATA AL21800 WALL

IP65

Technical Features

- Three wattage options: 7W, 13W or 21W
- Face shape options: rectangular, square, round or oval
- IP65 rated
- Class I protection
- ADC3 die-cast aluminium alloy housing
- 1090 high purity aluminium reflector
- 4mm tempered clear glass
- Stainless steel fixings, allen headed screws
- Mechanical and chemical anti-corrosion pre-treatment, powder coated with 10 year normal UV protection
- Integrated electronic driver with thermal and overload protection
- Surge protection 4kV
- Waterproof cable at maximum $\varnothing 10\text{mm}$ insert to luminaire
- Ambient temperature tested: $-40^{\circ}\text{C} \sim +50^{\circ}\text{C}$



AL21813



AL21814



AL21815



AL21816



AL21817



AL21818

- Matching bollard versions available as part of the Levata LED family
- Mounting position; Wall recessed: AL21813, AL21814, AL21815, AL21816, AL21817
Surface mount: AL21818

Applications

- Amenity

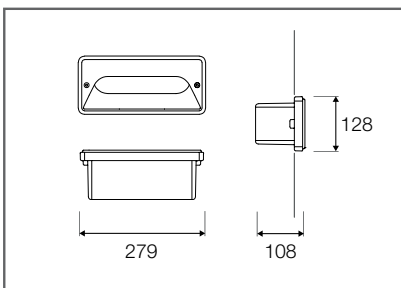
Colours

● Anthracite

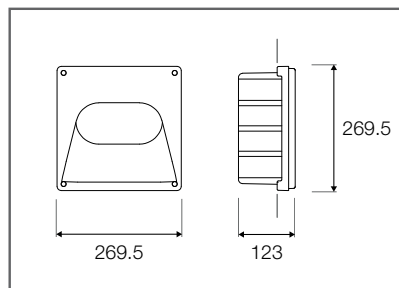
● Black

○ Light grey

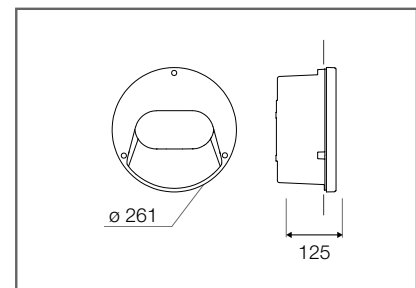
Dimensions



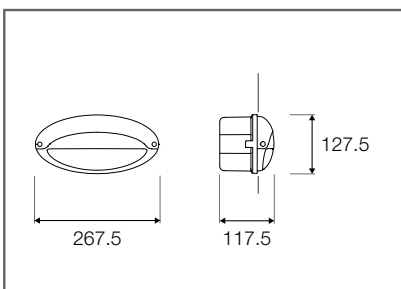
AL21813



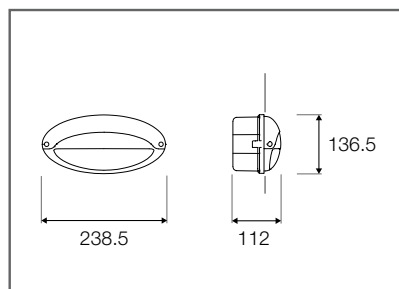
AL21814



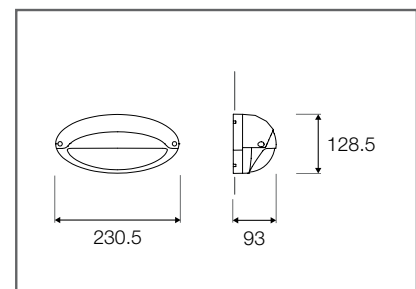
AL21815



AL21816



AL21817

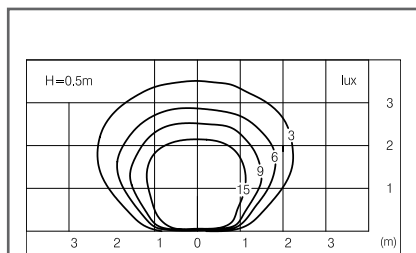


AL21818

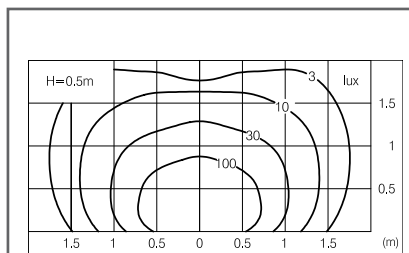


	Wattage (W)	No. of LEDs	Colour Temp. (K) *	Lumen Output (lm)	Input Voltage	Input Voltage for 1:10V	Face Shape	Weight (kg)
AL21813	7	15	2700	645	AC220-240V	N/A	Rectangle	2.38
	7	15	3000	780	AC220-240V	N/A	Rectangle	2.38
	7	15	4000	930	AC220-240V	N/A	Rectangle	2.38
	7	15	5600	1065	AC220-240V	N/A	Rectangle	2.38
AL21814	21	24	2000	1944	AC220-240V	AC100-240V	Square	3.64
	21	24	2400	2208	AC220-240V	AC100-240V	Square	3.64
	21	24	2700	2304	AC220-240V	AC100-240V	Square	3.64
	21	24	3000	2400	AC220-240V	AC100-240V	Square	3.64
	21	24	4000	2496	AC220-240V	AC100-240V	Square	3.64
	21	24	5600	2616	AC220-240V	AC100-240V	Square	3.64
AL21815	21	24	2000	1944	AC220-240V	AC100-240V	Round	3.65
	21	24	2400	2208	AC220-240V	AC100-240V	Round	3.65
	21	24	2700	2304	AC220-240V	AC100-240V	Round	3.65
	21	24	3000	2400	AC220-240V	AC100-240V	Round	3.65
	21	24	4000	2496	AC220-240V	AC100-240V	Round	3.65
	21	24	5600	2616	AC220-240V	AC100-240V	Round	3.65
AL21816	13	15	2700	1440	AC220-240V	AC100-240V	Oval	2.58
	13	15	3000	1560	AC220-240V	AC100-240V	Oval	2.58
	13	15	4000	1860	AC220-240V	AC100-240V	Oval	2.58
	13	15	5600	2130	AC220-240V	AC100-240V	Oval	2.58
AL21817	7	15	2700	645	AC220-240V	AC100-240V	Oval	1.89
	7	15	3000	780	AC220-240V	AC100-240V	Oval	1.89
	7	15	4000	930	AC220-240V	AC100-240V	Oval	1.89
	7	15	5600	1065	AC220-240V	AC100-240V	Oval	1.89
AL21818	7	15	2700	645	AC220-240V	AC100-240V	Oval	1.89
	7	15	3000	780	AC220-240V	AC100-240V	Oval	1.89
	7	15	4000	930	AC220-240V	AC100-240V	Oval	1.89
	7	15	5600	1065	AC220-240V	AC100-240V	Oval	1.89

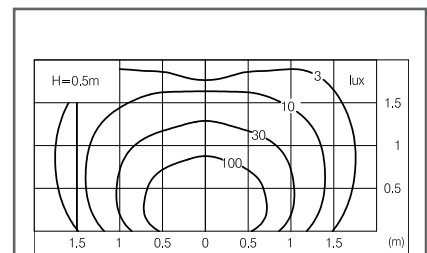
Photometry



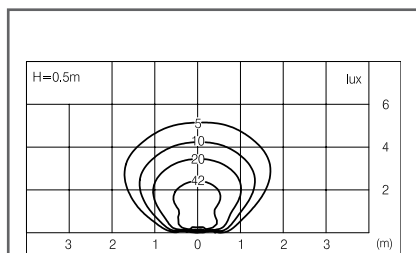
AL21813



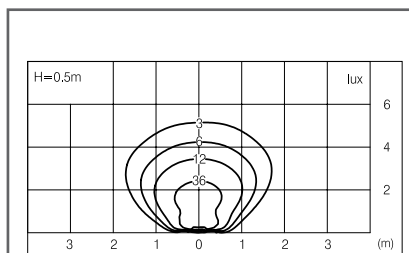
AL21814



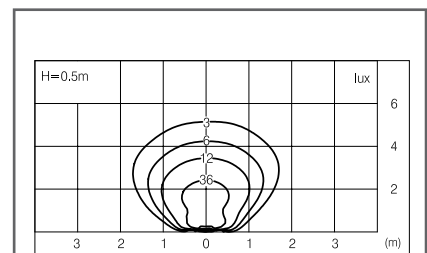
AL21815



AL21816



AL21817



AL21818

ADARA AL11400 UP / DOWNLIGHT



Benefits

- Powerful LEDs offer energy savings and cost reduction for maintenance
- Luminaire housing has a high resistance to UV and is treated with highly antioxidant water-repellent lubricating solution to lengthen lifespan
- Available in anthracite or light grey for architectural use
- Highly efficient thermoplastic with high vacuum deposit for heightened luminaire care
- 15° or 50° beam option offer effective and evenly distributed up / downlighting
- Design allows for ease of maintenance

Technical Features

- Wall mounted luminaire
- Integral driver
- Double powder coated polyester finish with high resistance to UV and oxidation
- Sealed to IP65
- Stainless steel A4-70 treated external fixings
- Extruded aluminium housing EN AW-6063 T5 / EN-AB 47100
- Soda-lime tempered glass 4mm
- Silicon sealing gasket
- Polypropylene cable gland M16 ø5, 5 / 10mm

Applications

- Architectural
- Surface Mounted



Beam Types

- 15°
- 50°

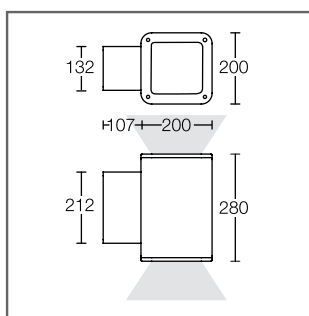
Colours

- Anthracite
- Light grey

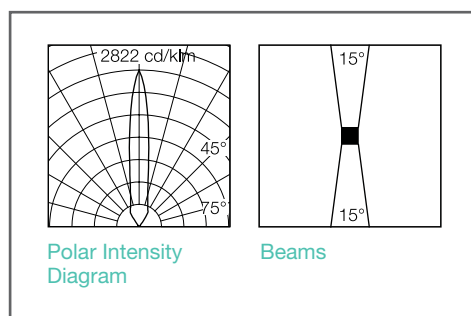
	Wattage (W)	Power Supply	No. of LEDs	Beam	Colour Temp. (K) **	Lumen Output (lm)	LED Driver	Fixture Colour
AL11405	52	220-240V 50/60HZ	2 x 1	15°	3000	2 x 2760	Integral	Anthracite
AL11406	52	220-240V 50/60HZ	2 x 1	15°	3000	2 x 2760	Integral	Light grey
AL11407	52	220-240V 50/60HZ	2 x 1	50°	3000	2 x 2760	Integral	Anthracite
AL11408	52	220-240V 50/60HZ	2 x 1	50°	3000	2 x 2760	Integral	Light grey

** Other colour temperatures available on request

Key features

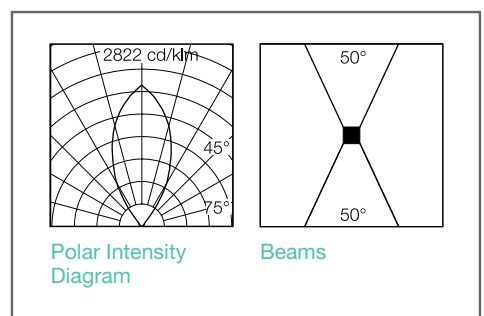


Dimensions



AL11405 & AL11406

Luminaire: 52W 3000K
Lamp: 2 LED
Power: 220-240V 50/60HZ



AL11407 & AL11408

Luminaire: 52W 3000K
Lamp: 2 LED
Power: 220-240V 50/60HZ

All dimensions are in mm.



ADARA AL11400 DOWNLIGHT



Benefits

- Powerful LEDs offer energy savings and cost reduction for maintenance
- Luminaire housing has a high resistance to UV and is treated with highly antioxidant water-repellent lubricating solution to lengthen lifespan
- Available in anthracite or light grey for architectural use
- Highly efficient thermoplastic with high vacuum deposit for heightened luminaire care
- 15° or 50° beam option offers effective downlighting
- Ability to be used as either a down or uplighter
- Design allows for ease of maintenance

Technical Features

- Wall mounted luminaire
- Integral driver
- Double powder coated polyester finish with high resistance to UV and oxidation
- Sealed to IP65
- Stainless steel A4-70 treated external fixings
- Extruded aluminium housing EN AW-6063 T5 / EN-AB 47100
- Soda-lime tempered glass 4mm
- Silicon sealing gasket
- Polypropylene cable gland M16 ø5, 5 / 10mm

Applications

- Architectural
- Surface Mounted

Beam Types

- 15°
- 50°

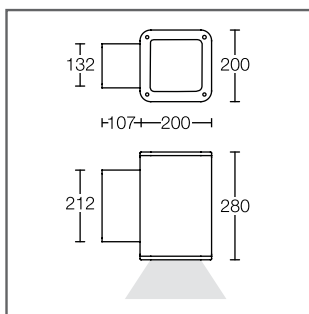
Colours

- Anthracite
- Light grey

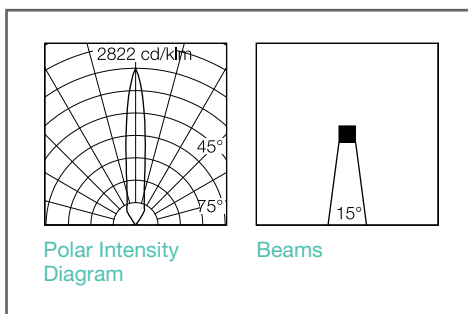
	Wattage (W)	Power Supply	No. of LEDs	Beam	Colour Temp. (K) **	Lumen Output (lm)	LED Driver	Fixture Colour
AL11401	26	220-240V 50/60HZ	1	15°	3000	2760	Integral	Anthracite
AL11402	26	220-240V 50/60HZ	1	15°	3000	2760	Integral	Light grey
AL11403	26	220-240V 50/60HZ	1	50°	3000	2760	Integral	Anthracite
AL11404	26	220-240V 50/60HZ	1	50°	3000	2760	Integral	Light grey

** Other colour temperatures available on request

Key features

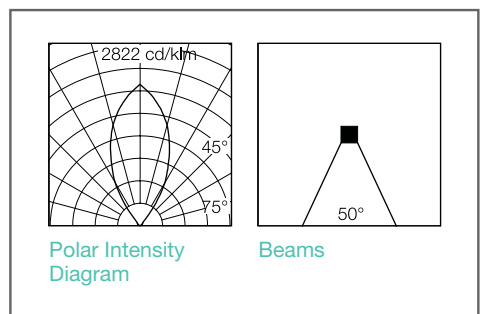


Dimensions



AL11401 & AL11402

Luminaire: 26W 3000K
 Lamp: 1 LED
 Power: 220-240V 50/60HZ



AL11403 & AL11404

Luminaire: 26W 3000K
 Lamp: 1 LED
 Power: 220-240V 50/60HZ

All dimensions are in mm.

INDUSTRIAL LIGHTING

INDUSTRIAL LIGHTING

H-LUM AL60500

IP65

IK08

H-LUM light is a durable, highly effective industrial LED luminaire for high ceiling installation. It is an ideal solution for distribution centres, production facilities, and warehouses or gyms, which require high illumination but minimum maintenance. With a finely engineered housing, made of anodised, extruded aluminum, H-LUM fixture dissipates heat and keeps the LEDs inside cool and bright for years.



In association with
 LUMENIA

Benefits

- Low maintenance
- Easy to mount
- Detachable driver
- Durable die cast aluminium housing
- Optics to suit all applications
- Dimming options available

- Emergency option available
- Protection against overheating

Applications

- Industrial
- Amenity

Colour

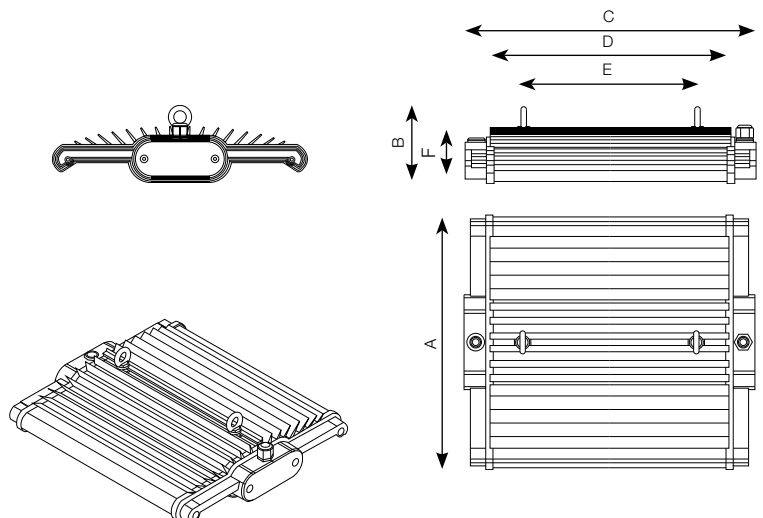
-  Silver Matt

Technical Features

- IP65 and IK08 rated
- Efficacy up to 149 lm/W
- CRI >80
- Colour temperature 4,000K
- Surge protection 2kV / 4kV
- Controls; Dali

Dimensions

Sizes	198	288	396	576
A	405	405	405	405
B	123	123	123	123
C	360	460	590	800
D	276	381	507	717
E	171	276	402	612
F	89	89	89	89
kg	4	5	7	9



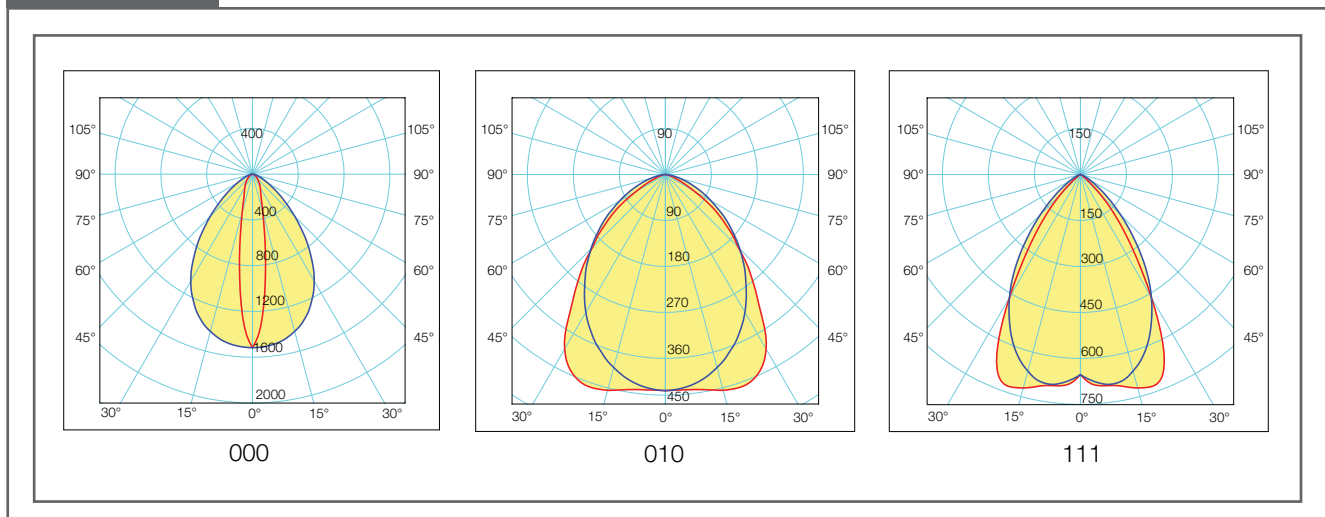
All dimensions are in mm.

	H-LUM Standard	H-LUM Premium
System efficacy (lm/W)	Up to 145	Up to 149
Supply voltage (VAC)	220-240	220-240
LED	198 - 576	198 - 576
Power (W)	120 - 290	60 - 260
Luminous flux (lm)	16,000 - 42,100	8,740 - 38,720
Weight (kg)	4, 5, 7, 9	4, 5, 7, 9
Power factor	> 0.97	> 0.97
Advisable installation height	Up to 16m	Up to 16m
Lifetime L80B10	> 60,000 h	> 60,000 h
CCT	4,000K; optional 5,700K	4,000K; optional 5,700K
CRI	> 80	> 80
Ingress protection	IP65	IP65
Mechanical strength	IK08	IK08
Surge protection options (kV)	2, 4	2, 4
Operating temperature	-30°C to +45°C	-30°C to +55°C
Electrical / Appliance class	Class 1	
Dimming levels	0 - 100%	
Emergency Lighting	1 or 3 h	
Colour	Silver Matt	
Housing material	Housing: extruded anodised aluminium. Cover: extruded PMMA optics	
Mounting	Pendant	
Remote control options	DALI	
Warranty	5 years on electronics, 10 years on mechanical parts	

Item No.	LED	Power (W)	Luminous flux (lm)	Efficacy (lm/W)	Optics available	Control	Additional options
AL60501	198	120	16,000	133	000	DALI, programmable	Motion Detector MD7
	288	150	21,400	143			Emergency module 1/3 h Motion Detector MD7
	396	220	31,400	143			Motion Detector MD15
	576	290	42,100	145			Motion Detector MD15
AL60502	198	120	16,000	133	010	DALI, programmable	Motion Detector MD7
	288	150	21,400	143			Emergency module 1/3 h Motion Detector MD7
	396	220	31,400	143			Motion Detector MD15
	576	290	42,100	145			Motion Detector MD15
AL60503	198	120	16,000	133	111	DALI, programmable	Motion Detector MD7
	288	150	21,400	143			Emergency module 1/3 h Motion Detector MD7
	396	220	31,400	143			Motion Detector MD15
	576	290	42,100	145			Motion Detector MD15

Premium versions available upon request.

Photometry





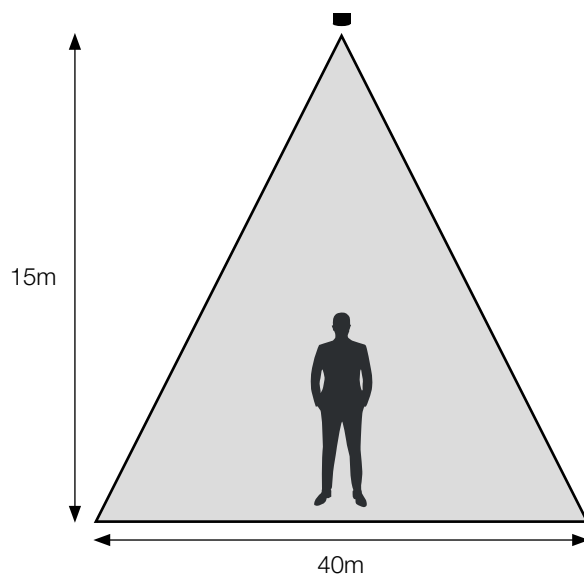
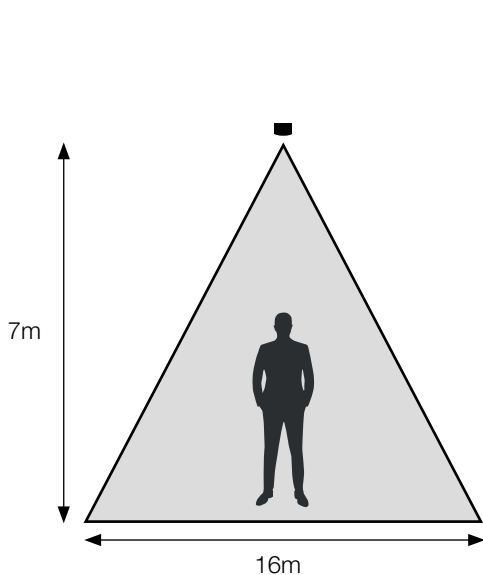
Motion detector

Reducing energy consumption of buildings is no longer possible just with an integration of highly efficient LEDs. Integrated sensor solutions provide additional energy savings and dynamic control of the light, not only with presence detection, but also with measuring the daylight and adjusting the light levels of the light. Because the H-LUM luminaires are suitable for high installations, we provide the PIR technology of the sensors. There are two solutions available in order to optimise the usage of

them. The sensors can be used for mounting heights up to 7m and up to 15m and provide a wide detection area. Programming or commissioning of the sensors can be done by using IR handheld unit, from the ground.

Functional specifications

- ▶ Daylight sensing
- ▶ Time delay function
- ▶ Adjustable detection sensitivity
- ▶ Programmable via optional IR handset
- ▶ ON / OFF override via optional IR handset



Sensor reference	Sensor technology	Mounting heights	IR remote programming	Additional masking shields to tailor detection zones
MD7	PIR	7m	Optional IR handheld unit	No
MD15	PIR	15m	Optional IR handheld unit	Yes

Q-LUM AL61200

IP65

IK08

Q-LUM is a unique industrial LED lamp with a thoughtfully designed gasket, end caps and extruded profile that provide a high level of protection against dust and water permeation. It is made of polycarbonate, and is high heat and shock resistant. The Q-LUM LED is ideal for garages, production facilities, workshops, and corridors.



In association with
LUMENIA

Benefits

- Low maintenance
- Long lifetime
- Energy saving
- Easy to mount

Applications

- Industrial

Colour

- Silver (RAL 7035)

Technical Features

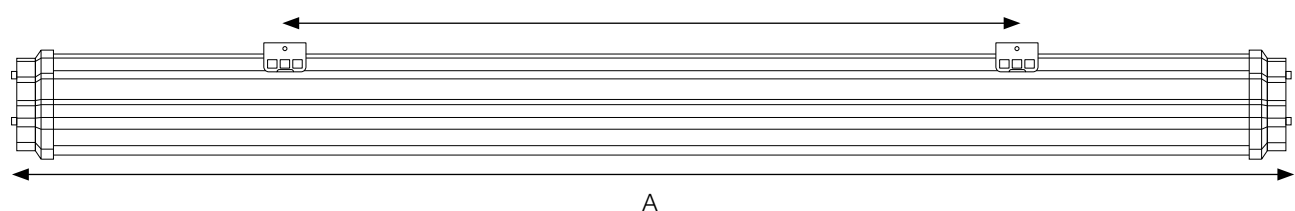
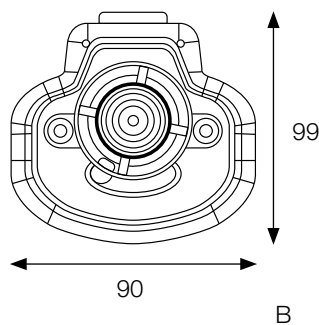
- IP65 and IK08 rated
- Plug & play lightweight installation
- Quick access to connectors
- Efficacy up to 112 lm/W
- CRI >80
- Controls: DALI (optional)

Mounting accessory



Dimensions

Sizes	Type 1	Type 2
A	1,208	1,488
B	575	575
kg	3.08	3.25

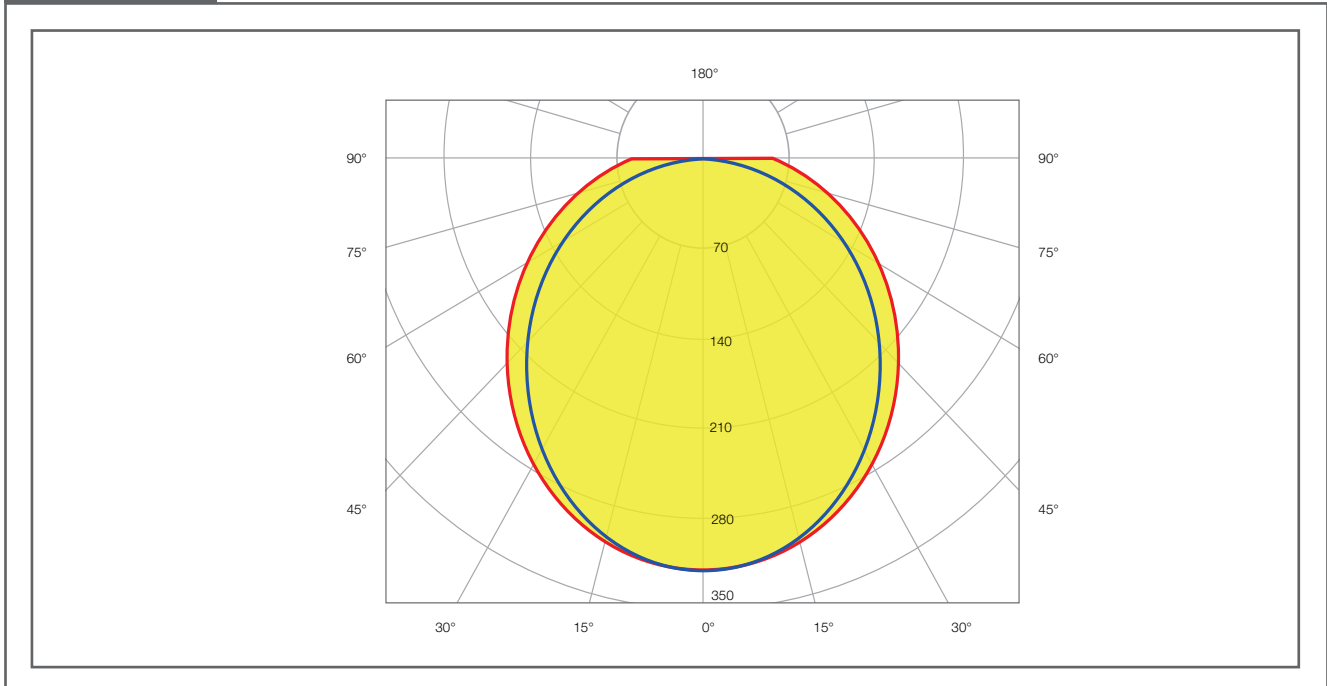


All dimensions are in mm.



	Q-LUM
System efficacy (lm/W)	Up to 112
Supply voltage (VAC)	220-240
Power (W)	50 - 60
Luminous flux (lm)	5,600 - 6,500
Weight (kg)	3.08, 3.25
Lifetime L80B10	> 60,000 h
CCT	4,000K
CRI	> 80
Photobiological risk	Risk group 0
Ingress protection	IP65
Mechanical strength	IK08
Operating temperature	-10°C to +35°C
Electrical / Appliance class	Class 1
Colour	Silver (RAL7035)
Housing material	Polycarbonate (PC)
Mounting	Pendant or surface mounting
Remote control options	DALI (optional)
Warranty	5 years
Certificates	EN 55015: 2013 + A1: 2015, EN 61547: 2009, EN 61000-3-2: 2014, EN 61000-3-3: 2013, EMC, EN 60598-1: 2015, EN 60598-2-1: 1989, EN 62493: 2015, CE

Photometry



	Power (W)	Luminous Flux (lm)*	Efficacy (lm/W)	Body type
AL61201	50	Up to 5,600	112	1
AL61202	60	Up to 6,500	108	2

*Luminous Flux is valid for CCT 4000K

ARDUO AL22700

IP65

Benefits

- Continuity without changing fitting with covers to suit lighting requirements

Technical Features

- Power: 17W (System power 19.5W)
- Colour temperature 5000K as standard
- Available in two sizes
- Available with half eyelid cover
- Heavy-duty die-cast aluminium housing and top frame with powdercoat finish
- Can be tapped for side conduit entry
- LumaLens clear or opal polycarbonate vandal-resistant lens
- LumaFit LEDs on aluminium boards
- Surface mount with included brackets (optional adjustable brackets available)



- Dimmable driver
- 5 year warranty
- Rated life: 50000 hours
- Voltage 120 - 277V, 50/60Hz
- Operating temperature -40°C ~ + 40°C

Colour

- Grey
- White
- Bronze
- Black

Arduo Range

AL22701



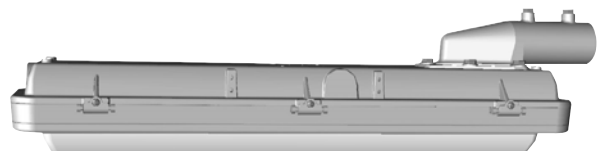
AL22702



AL22703



AL22704





	Wattage (W)	Lumen Output (lm)	Length (mm)	Style	Colour Temp. (K)	Colour (As Standard) ***	Lens
AL22701 *	43	5538	308	Horizontal, full lens	5000	Grey	Clear
	26.2	2940	308	Horizontal, full lens	5000	Grey	Opal
AL22702	43	4879	308	Horizontal, eyelid	5000	Grey	Clear
	26.5	2369	308	Horizontal, eyelid	5000	Grey	Opal
AL22703	43	5294	308	Vertical, eyelid	5000	Grey	Clear
	26.5	2369	308	Vertical, eyelid	5000	Grey	Opal
AL22704 **	81.4	9183	613	Horizontal, full lens	5000	Grey	Clear
	52	6632	613	Horizontal, full lens	5000	Grey	Opal

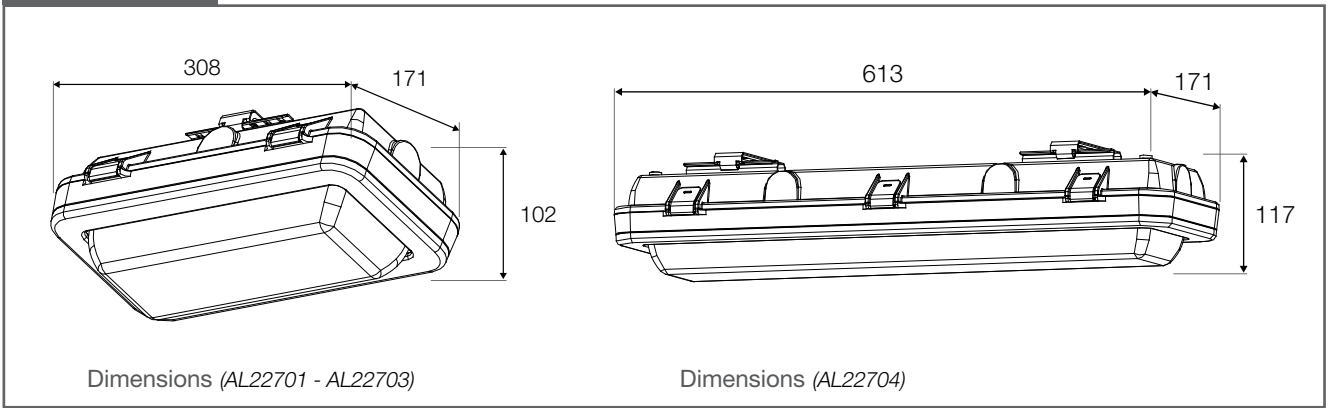
STIRRUP AND COLOUR OPTIONS:

* Stirrup option available, add code: LV1BR

** Stirrup option available, add code: LV2BR

*** Please specify if other colour when quoting / ordering: Z = Bronze / W = White / G = Grey

Key features



All dimensions are in mm.

ABACUS – FIRST CHOICE FOR SAFETY

ROAD LIGHTING



E-LUM AL62000

IP66

IK09

An aerodynamic road lighting luminaire designed to integrate perfectly into urban spaces. With its modular construction, upgrades and replacements of key components such as; power supply, light engine and LED modules, ensure the luminaire takes full advantage of technological improvements.

Available in two body sizes and offering 10 standard lumen packages, from 1,450 to 19,350 lumens, the AL62000 Series comes with six different optics to suit a wide variety of lighting scenarios.



In association with
 LUMENIA

Benefits

- Easily maintained
- Durable die cast aluminium housing
- Flexibility with vertical or horizontal spigot mounting
- Multiple optics
- -40°C to +40°C

Technical Features

- Controls; Dali, 1-10V, RF or PLC (specify at enquiry)
- Efficacy up to 112 lm/W
- Integrated 5 level dimming module (optional)

- Protection against overheating
- Constant light output (optional)
- Time-dependant luminous flux control
- Power reduction; flexible luminous flux
- IP66 and IK09 rated
- Colour temperature 4000K as standard (options available)
- CRI ≥ 70
- Power supply 220Vac - 277Vac
- Standard surge protection 4kV (10kV option available)
- Solar options available in 26W & 56W

Applications

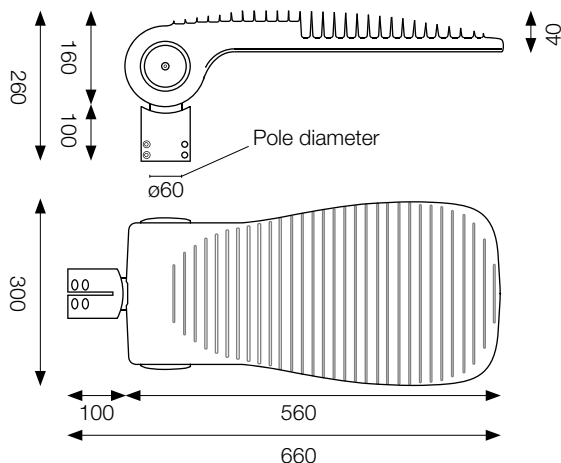
- Road
- Open Area
- Rail
- Amenity

Colour

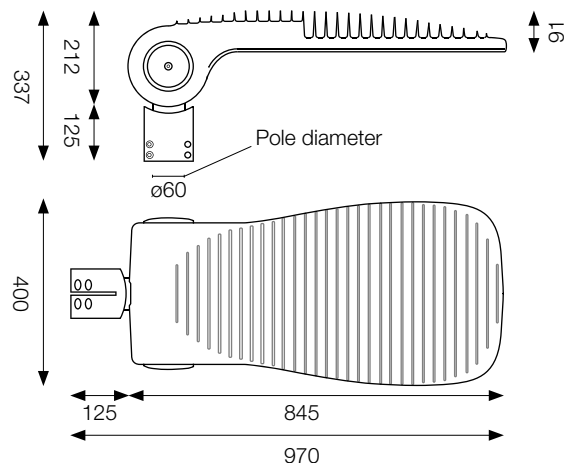
- Grey

Dimensions

Body type #1



Body type #2



All dimensions are in mm.

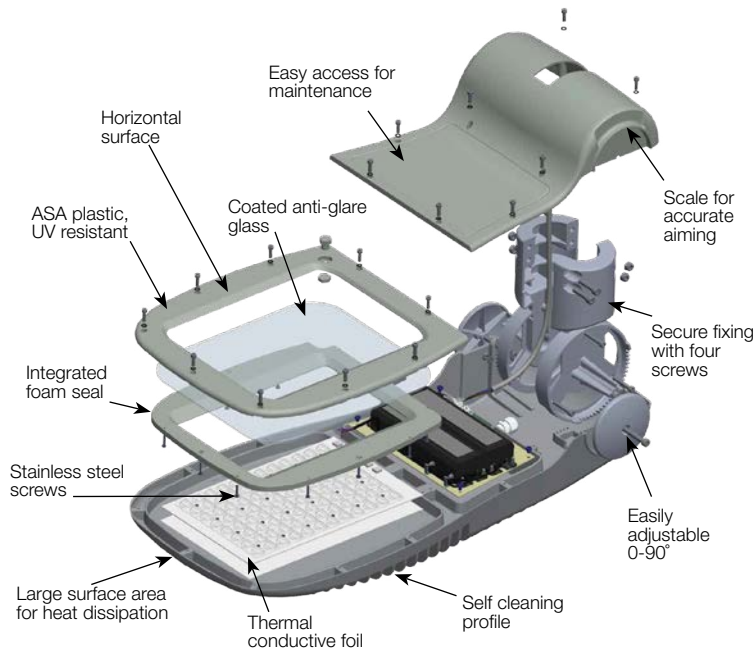
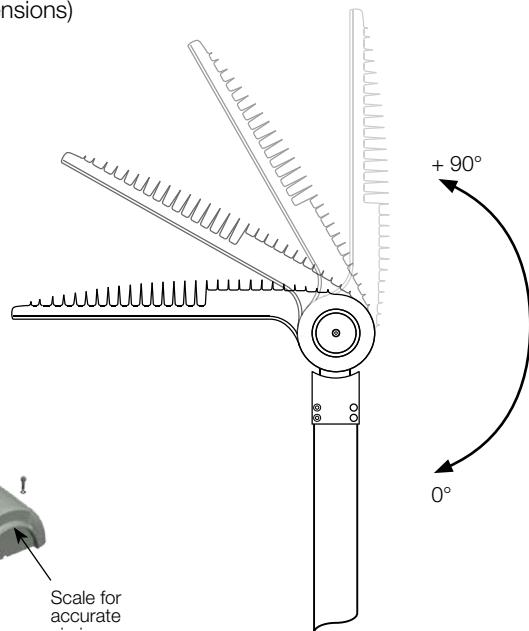
	Body type 1	Body type 2
LED	8-24	48-96
Power (W)	10 - 80	80 - 220
Light flux (lm)	1,450 - 8,400	8,490 - 27,000
Weight	7kg	15kg
EPA Rating	0.0552m ²	0.0862m ²
Dimensions (mm)	660 x 300 x 260	970 x 400 x 377
Factor of colour rendering CRI	≥ 70	
Mechanical strength	IK09	
Protection class	IP66	
Additional surge protection	10kV / 6kV; additional SPD 10kV / 10kA	
Operating temperature	-40°C to +55°C	
Lifetime L80B10	> 65,000 hours	
Supply voltage	220Vac - 240Vac 50,60Hz	
Power factor	> 0.96	
CCT	4,000K (others upon request)	
Mounting	60mm pole (adaptor required for other columns dimensions)	
Tilt	-10° to +15° (horizontal and vertical installation)	
Certificates	IEC 60529:2001; EN 60598-1:2008; cl.9.2.2 & 9.2.7; IEC 60598-2-3 (Third edition):2002 +A1:2011 used in conjunction with IEC 60598-1 (Seventh edition): 2008; IEC 60598-26:1994+A1:1996 used in conjunction with IEC 60598-1:2008; EC 62031:2008 (First edition); CE; ENEC; ZIK	
Guarantee	5 years on electrical, 10 years on mechanical	
Wireless control	Optional	

Installation

The rotor enables both side and post top mounting of the luminaire on a 60mm diameter pole. Angular adjustments can be made between 0-90° in ± 5° increments. A security system within the rotor mechanism prevents unintentional tilting, thus preventing possible damage occurring during installation or maintenance of the light fitting.

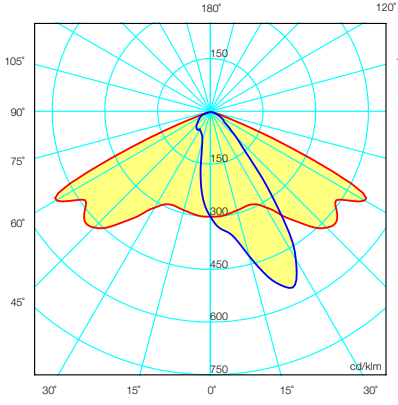
To provide maximum security and robustness of installation, four screws are used to fix the light fitting to the pole.

Mounting pole: ø60 mm (adapter available for other dimensions)
Tilt: 0 - 90°, step ± 5°

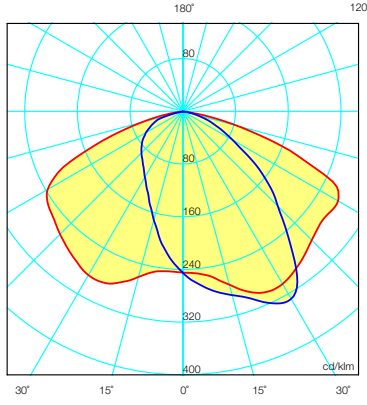




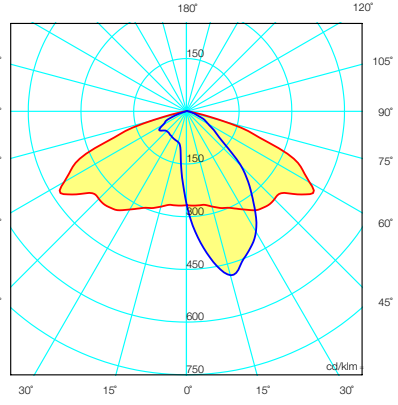
Optics



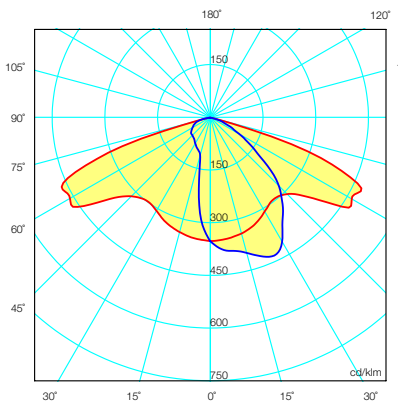
(000) Suitable for larger distance between poles and high mounting installations



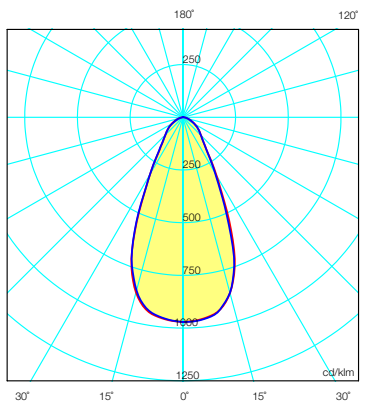
(001) Suitable for wider roadways with smaller distances between poles



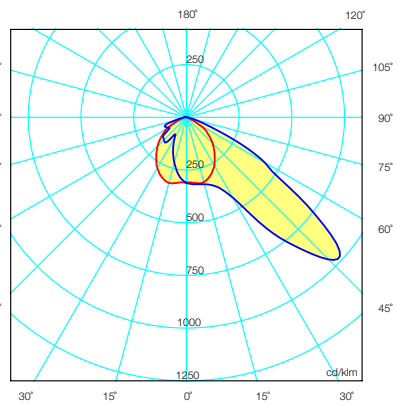
(002) Suitable for narrower roadways across roads, cycling and pedestrian areas



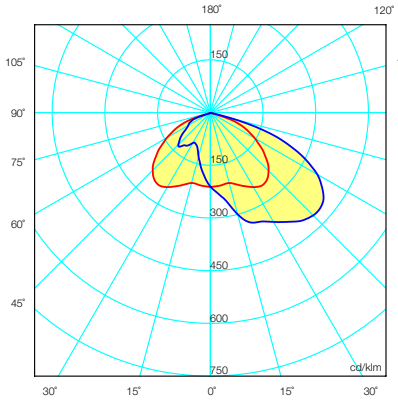
(010) Suitable for parking spaces and pedestrian crossings



(100) Suitable for parking spaces and small distance between poles



(101) Suitable for larger distance between poles and high mounting installations. Higher uniformity factor



(110) Suitable for wide roadways and parking spaces with smaller distances between poles

Luminaire code	LED type	Luminaire Wattage (W)	Luminaire - Lumen output (lm)	Number of LEDs	Body type	Light distribution type	Weight (kg)	Wind area (m ²)
AL62001	Standard	15	1450	8	1	(000) Suitable for larger distance between poles and high mounting installations	7	0.0552
		30	2850	12	1		7	0.0552
		40	3800	24	1		7	0.0552
		60	6000	24	1		7	0.0552
		80	8400	24	1		7	0.0552
		80	8490	48	2		15	0.0862
		95	10500	80	2		15	0.0862
		120	11450	48	2		15	0.0862
		140	14900	80	2		15	0.0862
		190	19350	96	2		15	0.0862
AL62002	Standard	15	1450	8	1	(001) Suitable for wider roadways with smaller distances between poles	7	0.0552
		30	2850	12	1		7	0.0552
		40	3800	24	1		7	0.0552
		60	6000	24	1		7	0.0552
		80	8400	24	1		7	0.0552
		80	8490	48	2		15	0.0862
		95	10500	80	2		15	0.0862
		120	11450	48	2		15	0.0862
		140	14900	80	2		15	0.0862
		190	19350	96	2		15	0.0862
AL62003	Standard	15	1450	8	1	(002) Suitable for narrower roadways across roads, cycling and pedestrian areas	7	0.0552
		30	2850	12	1		7	0.0552
		40	3800	24	1		7	0.0552
		60	6000	24	1		7	0.0552
		80	8400	24	1		7	0.0552
		80	8490	48	2		15	0.0862
		95	10500	80	2		15	0.0862
		120	11450	48	2		15	0.0862
		140	14900	80	2		15	0.0862
		190	19350	96	2		15	0.0862
AL62004	Standard	15	1450	8	1	(100) Suitable for parking spaces and pedestrian crossings	7	0.0552
		30	2850	12	1		7	0.0552
		40	3800	24	1		7	0.0552
		60	6000	24	1		7	0.0552
		80	8400	24	1		7	0.0552
		80	8490	48	2		15	0.0862
		95	10500	80	2		15	0.0862
		120	11450	48	2		15	0.0862
		140	14900	80	2		15	0.0862
		190	19350	96	2		15	0.0862



Luminaire code	LED type	Luminaire Wattage (W)	Luminaire - Lumen output (lm)	Number of LEDs	Body type	Light distribution type	Weight (kg)	Wind area (m ²)
AL62005	Standard	15	1450	8	1	(101) Suitable for parking spaces and small distance between poles	7	0.0552
		30	2850	12	1		7	0.0552
		40	3800	24	1		7	0.0552
		60	6000	24	1		7	0.0552
		80	8400	24	1		7	0.0552
		80	8490	48	2		15	0.0862
		95	10500	80	2		15	0.0862
		120	11450	48	2		15	0.0862
		140	14900	80	2		15	0.0862
		190	19350	96	2		15	0.0862
AL62006	Standard	15	1450	8	1	(1010) Suitable for larger distance between poles and high mounting installations. Higher uniformity factor	7	0.0552
		30	2850	12	1		7	0.0552
		40	3800	24	1		7	0.0552
		60	6000	24	1		7	0.0552
		80	8400	24	1		7	0.0552
		80	8490	48	2		15	0.0862
		95	10500	80	2		15	0.0862
		120	11450	48	2		15	0.0862
		140	14900	80	2		15	0.0862
		190	19350	96	2		15	0.0862
AL62007	Standard	15	1450	8	1	(110) Suitable for wide roadways and parking spaces with smaller distances between poles	7	0.0552
		30	2850	12	1		7	0.0552
		40	3800	24	1		7	0.0552
		60	6000	24	1		7	0.0552
		80	8400	24	1		7	0.0552
		80	8490	48	2		15	0.0862
		95	10500	80	2		15	0.0862
		120	11450	48	2		15	0.0862
		140	14900	80	2		15	0.0862
		190	19350	96	2		15	0.0862

S-LUM AL61000

IP66

IK09

An innovative road lighting luminaire of modular construction designed with ease of maintenance in mind. Tool-less upgrades of key components such as power supply and light engine along with field-replaceable LED modules ensure the luminaire takes full advantage of future improvements in LED technology.

Constructed from high pressure die-cast aluminium, the AL61000 series is available in two body sizes and offers six standard lumen packages, from 1200 to 15,600 lumens.



In association with
 LUMENIA

Benefits

- Tool-less quick access latch
- Screw-less maintenance
- Durable die-cast aluminium housing
- Vertical or horizontal spigot mounting
- Multiple optics

Technical Features

- Controls; Dali, 1-10V, RF or PLC (specify at enquiry)
- Efficacy up to 130 lm/W
- Integrated 5 level dimming module (optional)

- Overheat protection
- Constant light output (optional)
- Time-dependant lumious flux control
- Power reduction; flexible lumious flux
- IP66 and IK09 rated
- Colour temperature 4000K as standard (options available)
- CRI ≥ 70 (80 optional)
- Power supply 100Vac - 277Vac
- Standard surge protection 6kV

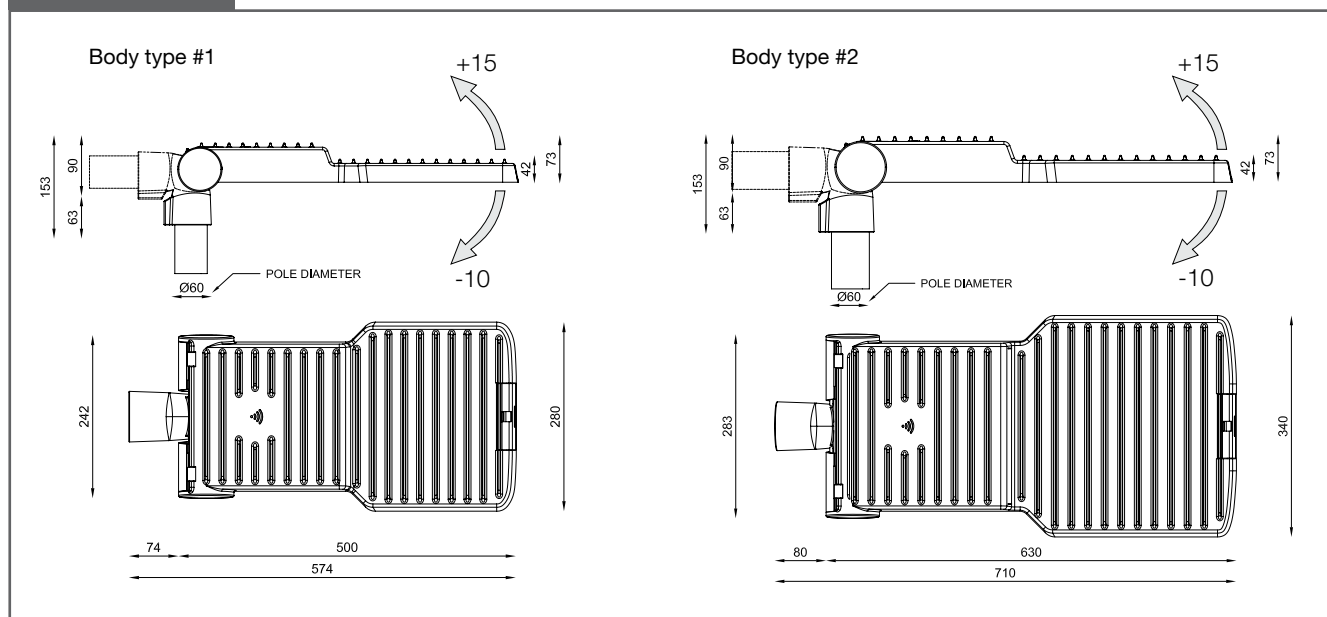
Applications

- Road
- Open Area
- Rail
- Amenity

Colour

- Grey

Dimensions

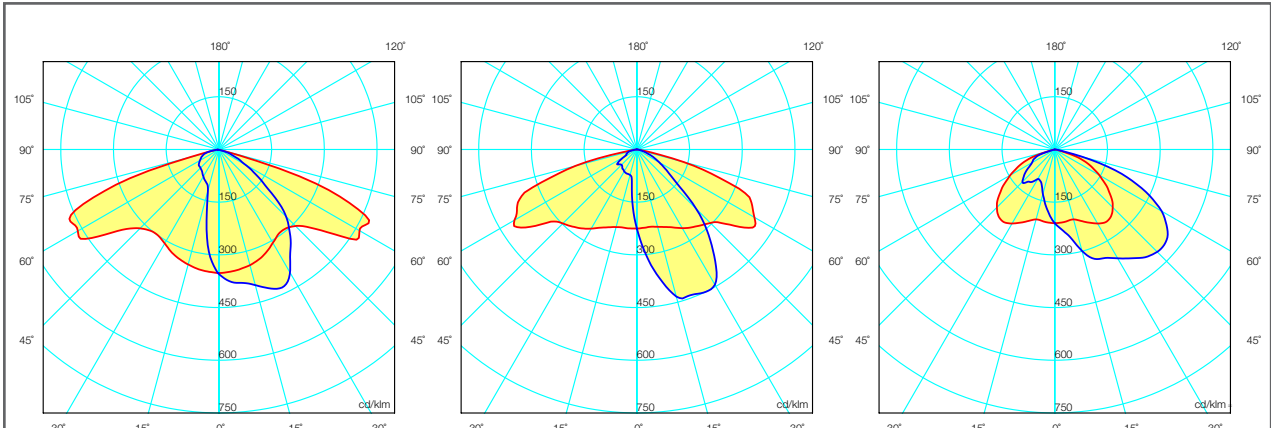


All dimensions are in mm.



	Body type 1	Body type 2
LED	4-8	12-24
Power (W)	10, 25, 40	60, 80, 120
Light flux (lm)	1,188 - 5,600	6,500 - 16,800
Weight	6kg	9kg
EPA Rating	0.0336m ²	0.0406m ²
Dimensions (mm)	574 x 242 x 153	703 x 285 x 153
Factor of colour rendering CRI	≥ 70 (80 optional)	
Mechanical strength	IK09	
Protection class	IP66	
Additional surge protection	10kV / 6kV; additional SPD 10kV / 10kA	
Operating temperature	-40°C to +55°C	
Electrical class	Class I (Class II optional)	
Lifetime L80B10	> 100,000 hours	
Supply voltage	220Vac - 240Vac	
Power factor	> 0.96	
CCT	4,000K (others available on request)	
Mounting	60mm or 76mm pole	
Tilt	-10° to +15° (horizontal and vertical installation)	
Certificates	IEC 60598-1:2014 (8 edition); IEC 60598-2-3:2002 + A1:2011; EN 60598-1:2015; EN 60598-2-3:2003 + A1:2011; IEC/EN 62031:2008 + A1+A2; IEC/TR 62778:2014; EN60068-2-6; N60068-2-27: CE, ENEC	
Guarantee	5 years on electrical, 10 years on mechanical, upon request	
Remote control	Optional RF or PLC	

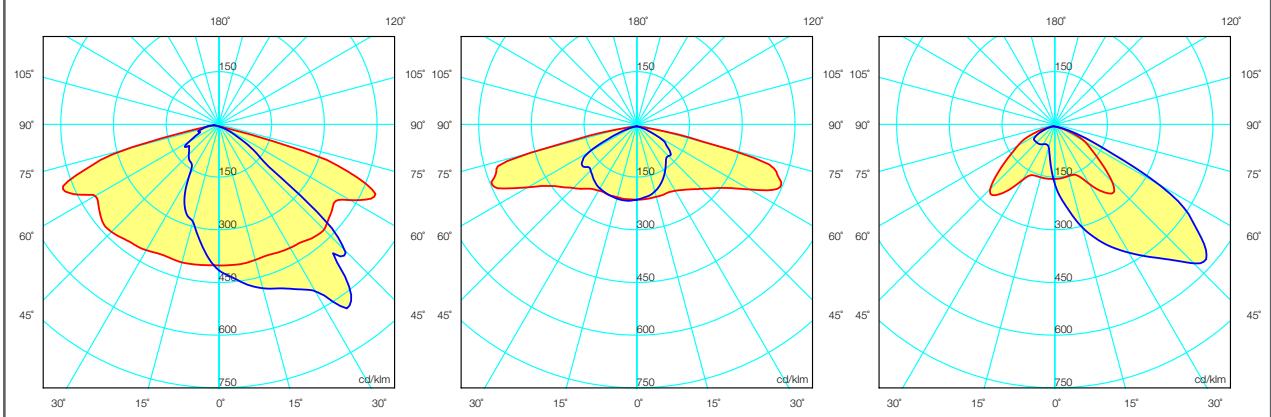
Optics



(010) Suitable for larger distance between poles and high mounting installations. Higher uniformity factor

(002) Suitable for narrower roadways across roads, cycling and pedestrian areas

(110) Suitable for wide roadways, parking spaces. Smaller distance between columns



(020) Suitable for wide roadways, larger distance between columns

(200) Suitable for larger distance between columns, within bicycle paths

(202) Suitable for wide roadways and parking spaces with smaller distances between columns

Luminaire code	LED type	Luminaire Wattage	Lumen output (lm)	Driver current (mA)	Number of LEDs	Body type	Light distribution type	Weight (kg)	Wind area (m ²)
AL61001	Standard	10	1200	700	4	1	(010) Suitable for larger distance between poles and high mounting installations. Higher uniformity factor	6	0.0336
		25	3270	700	6	1		6	0.0336
		40	5110	700	8	1		6	0.0336
		60	7540	700	12	2		9	0.0406
		80	10200	700	16	2		9	0.0406
		120	15530	700	24	2		9	0.0406
AL61002	Standard	10	1200	700	4	1	(002) Suitable for narrower roadways across roads, cycling and pedestrian areas	6	0.0336
		25	3270	700	6	1		6	0.0336
		40	5110	700	8	1		6	0.0336
		60	7540	700	12	2		9	0.0406
		80	10200	700	16	2		9	0.0406
		120	15530	700	24	2		9	0.0406
AL61003	Standard	10	1200	700	4	1	(110) Suitable for wide roadways and parking spaces. Smaller distance between columns	6	0.0336
		25	3270	700	6	1		6	0.0336
		40	5110	700	8	1		6	0.0336
		60	7540	700	12	2		9	0.0406
		80	10200	700	16	2		9	0.0406
		120	15530	700	24	2		9	0.0406
AL61004	Standard	10	1200	700	4	1	(020) Suitable for wide roadways, larger distance between columns	6	0.0336
		25	3270	700	6	1		6	0.0336
		40	5110	700	8	1		6	0.0336
		60	7540	700	12	2		9	0.0406
		80	10200	700	16	2		9	0.0406
		120	15530	700	24	2		9	0.0406
AL61005	Standard	10	1200	700	4	1	(200) Suitable for larger distance between columns, within bicycle paths	6	0.0336
		25	3270	700	6	1		6	0.0336
		40	5110	700	8	1		6	0.0336
		60	7540	700	12	2		9	0.0406
		80	10200	700	16	2		9	0.0406
		120	15530	700	24	2		9	0.0406
AL61006	Standard	10	1200	700	4	1	(202) Suitable for wide roadways and parking spaces with smaller distances between columns	6	0.0336
		25	3270	700	6	1		6	0.0336
		40	5110	700	8	1		6	0.0336
		60	7540	700	12	2		9	0.0406
		80	10200	700	16	2		9	0.0406
		120	15530	700	24	2		9	0.0406

APOLLO LED AL6666

IP66

IK10



In Association with:
 KINGSUN

Benefits

- Easy assembly and maintenance
- Modular future-proof designed LEDs for easy maintenance
- Excellent thermal management
- High reliability and performance from Cree or Lumiled LEDs
- LM-80 compliant
- >50000 life time to 70% lumen maintenance
- Independent LED drive compartment with Philips Xitanium LED electronic driver(s) built in
- Adaptive for most bracket diameters
- Internal adjustable luminaire elevation

Technical Features

- A number of optics available for tailored performance A3 Type 3 Long as standard)

- Philips drivers (Xitanium), dimming available as an option 1:10 Dali
- Utilising CREE LEDs as standard or Lumiled LEDs as an option
- Adjustable mounting bracket to allow for luminaire elevation both bracket or post mounting solutions
- Post top and side mounted spigot entry positions 60mm & 40mm with adaptor accessory (State at time of quoting & ordering)
- NEMA Photoelectric interface option available
- CRI > 75

- CE and UL Certified
- 5 year Warranty for luminaire body, LED modules and driver

Applications

- Road
- Open Area
- Rail
- Amenity

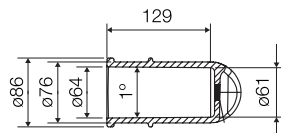
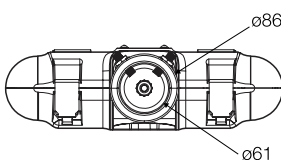
Colour

- Light grey

	Wattage (W)	No. of LED Modules	No. of LEDs	Power Consumption (W)	Typical Flux at 4000K (lm)	Dimensions L x W x D (mm)	Windage (m ²)	Weight (kg)
AL6666 / 30	30	1	14	33	3300	502 x 346 x 102	0.07	3.4
AL6666 / 60	60	2	28	62	6600	546 x 346 x 102	0.07	4.3
AL6666 / 90	90	3	42	93	9500	626 x 346 x 102	0.07	5.3
AL6666 / 120	120	4	56	123	12500	688 x 346 x 102	0.08	6.3
AL6666 / 150	150	5	70	155	15500	750 x 346 x 102	0.08	7.3
AL6666 / 180	180	6	84	185	18500	812 x 346 x 102	0.08	8.3
AL6666 / 210	210	7	98	216	21500	874 x 346 x 102	0.09	9.3
AL6666 / 240	240	8	112	246	24500	936 x 346 x 102	0.10	10.3
AL6666 / 270	270	9	126	277	27500	998 x 346 x 102	0.10	11.3
AL6666 / 300	300	10	140	308	30500	1060 x 346 x 102	0.11	12.3

Dimensions

Dimensions in mm



Key features

Colour Rendering:	>75
Colour Temperature:	5000K as standard, 3000K, 4000K upon request
Power Factor:	>0.95
Luminaire Efficiency:	>85%
Ambient Environment:	Temperature: -40 ~ +50°C ; Humidity: 10% ~ 95%
Driver Current:	700mA

INDUS LED AL21000



Benefits

- Modern looking slim line luminaire for a positive aesthetic feel in a variety of surroundings and application areas
- Fitting equipped with an automatic anti-closing mechanism for safer assembly, installation and maintenance purposes reducing health & safety risks

Technical Features

- Classification I
- IP66 and IK08 rated
- Constructed to meet EN 60598-1, EN 60598-2-3 standards
- Power correction factor >0.9
- Power supply 220-240V / 50-60Hz VAC
- Overload and surge protection upto 10kV
- First brand LED mounted on a pressed aluminium circuit, highly heat dissipating Metal Core Printed Circuit Board (MCPCB)
- Die-cast aluminium body and cover with highly aesthetic aspect
- Spigot post top mounting and spigot side entry mount 46-76mm
- Extra clear 4mm tempered flat glass
- Replacement of the entire LED module including upper luminaire cover
- Power supply cable access through a PG 13.5 cable gland (IP68)
- Anti-ageing rubber gaskets with stainless steel closure clips
- Teflon pressure compensation filter
- Driver specification: high efficiency powersource and duration for external use
- Optional body with fin casing on the upper cover available upon request

Applications

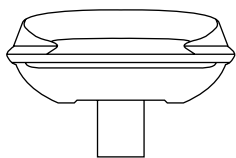
- Road
- Pathways

Colour

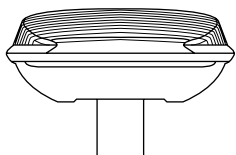
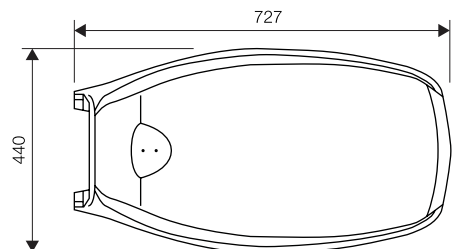
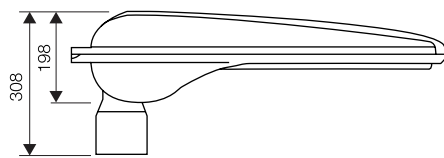
- Silver

Dimensions

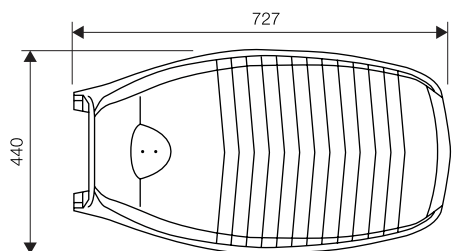
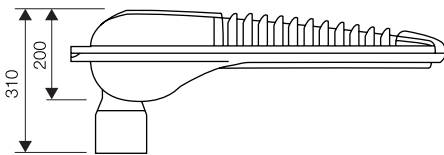
Dimensions in mm



Standard body



Optional fin body (F)



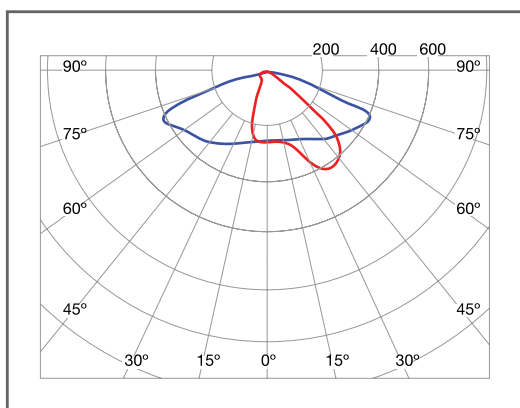


	Wattage (W)	Lumen Output (lm)	Driver Current (mA)	No. of LEDs	Fixed Driver Available	Light Distribution	Optic	Weight Standard Body (kg)	Weight Fin Body f (kg)	Wind Area (m ²)
AL21001	81	9920	530	49	Y	(A) Road width greater than 0.85 x the column height	AB1 / AB1 Optic	16.9	16.0	0.084
	90	11050	530	56	Y			16.9	16.0	0.084
	105	12360	530	63	Y			17.0	16.1	0.084
	117	13480	530	70	Y			17.1	16.2	0.084
	122	14310	530	75	N			17.1	16.2	0.084
AL21011	106	12240	700	49	Y	(A) Road width greater than 0.85 x the column height	AB1 / AB1 Optic	16.0	16.0	0.084
	120	13640	700	56	Y			16.0	16.0	0.084
	135	15250	700	63	Y			17.0	16.1	0.084
	148	16650	700	70	N			17.1	16.2	0.084
	162	17630	700	75	N			17.5	16.6	0.084
AL21002	81	9920	530	49	Y	(B) Road equal or less than 0.85 x the column height - bike/ pedestrian pathways	B1 / B1 Optic	16.9	16.0	0.084
	90	11050	530	56	Y			16.9	16.0	0.084
	105	12360	530	63	Y			17.0	16.1	0.084
	117	13480	530	70	Y			17.1	16.2	0.084
	122	14310	530	75	N			17.1	16.2	0.084
AL21012	106	12240	700	49	Y	(B) Road equal or less than 0.85 x the column height - bike/ pedestrian pathways	B1 / B1 Optic	16.9	16.0	0.084
	120	13640	700	56	Y			16.9	16.0	0.084
	135	15250	700	63	Y			17.0	16.1	0.084
	138	16650	700	70	N			17.1	16.2	0.084
	162	17630	700	75	N			17.5	16.6	0.084

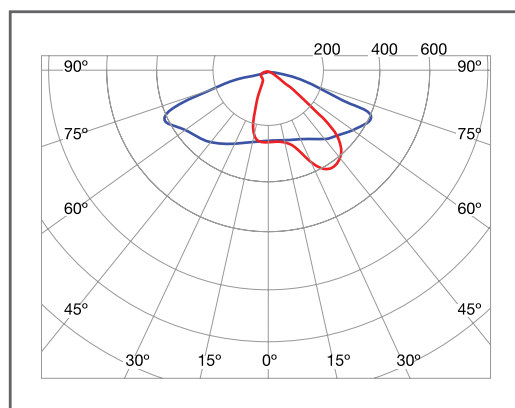
PROGRAMMABLE DRIVER AVAILABLE ON ALL OPTIONS

For optional body with fin casing (f) please request when quoting and ordering.

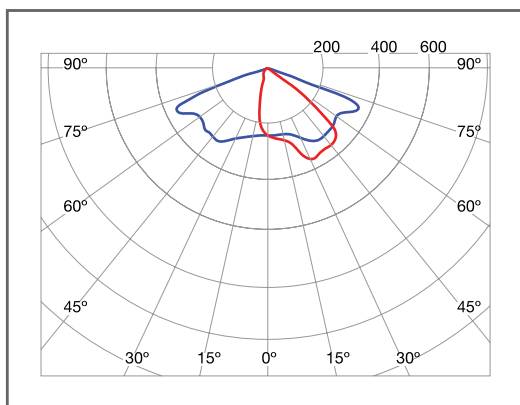
Key features



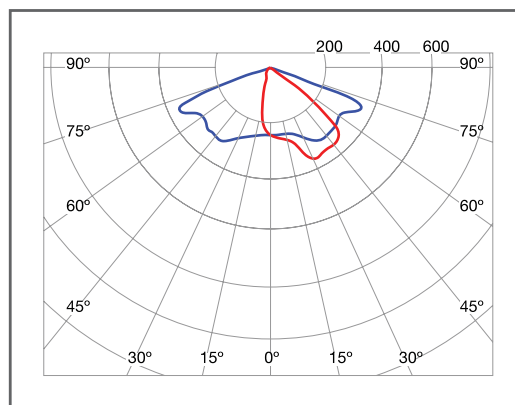
Indus AB1 Vertical — Horizontal —



Indus (f) AB1 Vertical — Horizontal —



Indus B1 Vertical — Horizontal —



Indus (f) B1 Vertical — Horizontal —

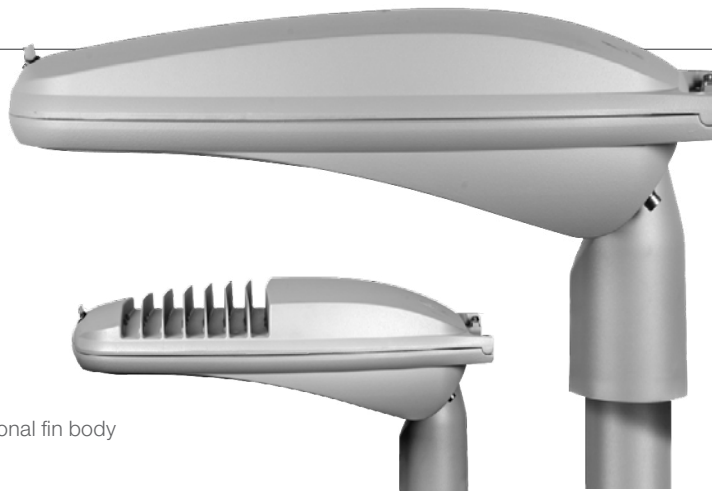
INDUS CITY LED AL21000

IP66

IK09

Technical Features

- IP66 and IK09 rated
- XLP or XHP-70 LEDs
- Colour temperature 4000K
- CRI >70
- Power correction factor >0.9
- Constructed to EN 60598-1, EN 60598-2-3
- Programmable and high efficiency electronic power source and duration, knife switch included
- Power supply cable access through PG16 cable gland (IP68)
- Power supply 220 - 240V / 50 - 60Hz as standard
- Power supply available in 120 - 277V / 50 - 60 Hz VAC
- Insulation class I and II
- Programmable drive available
- Cable plate is complete with easily replaceable electronic unit
- L80 >70000
- L70 >80000



*Optional fin body

- Die-cast aluminium body finished in silver polyester powder (RAL 9006)
- Top cover available as a smooth case as standard, with option to have cross-sectional cooling fin case
- LED module replaceable as one unit including the upper cover
- Extra clear 4mm thick tempered flat glass
- Stainless steel closing clips and anti-ageing rubber gaskets
- Teflon pressure compensation filter
- Automatic anti-closing mechanism to prevent accidental closure during assembly and maintenance

- Post top or side entry with adjustable spigot
- Spigot entry $\varnothing 46 - \varnothing 76$ mm

Applications

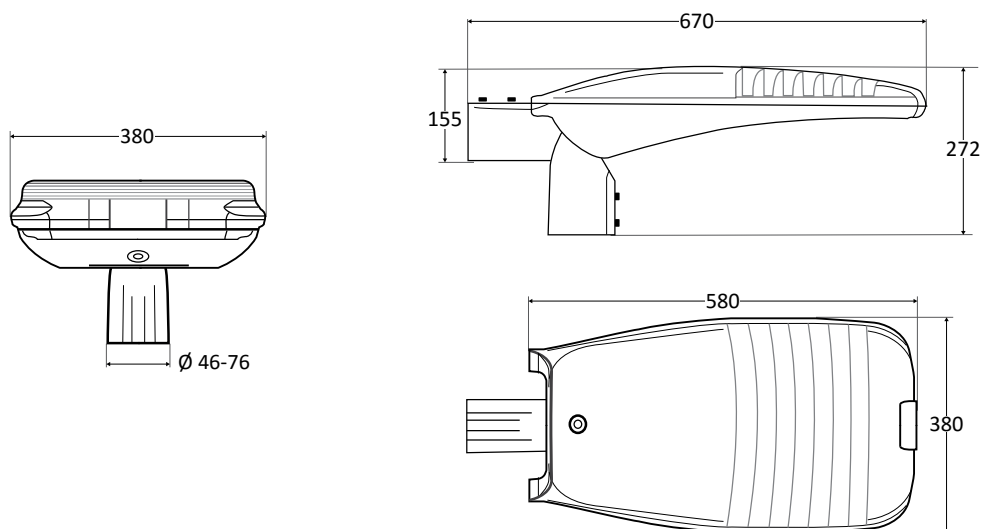
- Commercial
- Rail
- Road
- Amenity

Colour

- Silver

Dimensions

Dimensions in mm

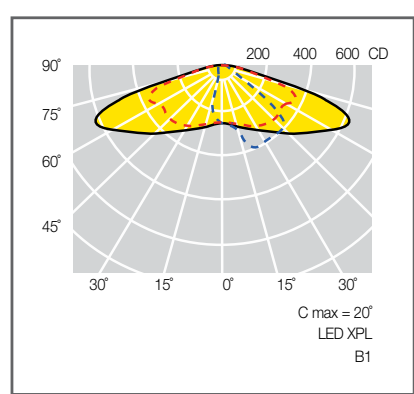
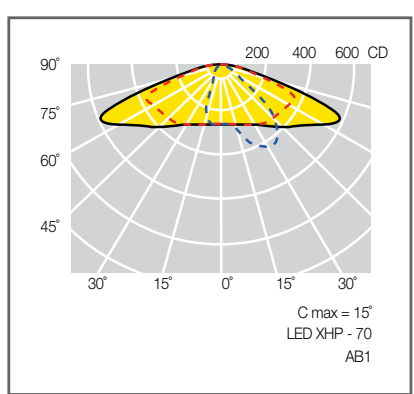
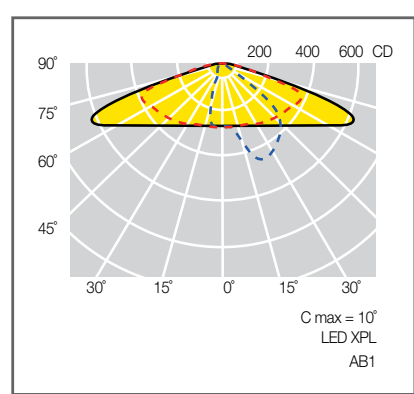




Technical Specifications

	LED Type	Wattage (W)	No. of LEDs	Lumen Output (lm)	Driver Current (mA)	Prog. Driver	Distribution	Optics	Standard body		Fin Body (f)	
									Weight (kg)	Wind Area (m ²)	Weight (kg)	Wind Area (m ²)
AL21020	XPL	30	12	4430	800	Y	(A) Road width greater than 0.85 x the column height	AB1	10.65	0.091	9.3	0.091
		44	18	6330	800	Y		/ AB1	10.75	0.091	9.9	0.091
		60	24	8400	800	Y		Optic	10.85	0.091	10.0	0.091
AL21022	XPL	38	12	5170	1000	Y		AB1	10.65	0.091	9.3	0.091
		57	18	7670	1000	Y		/ AB1	10.75	0.091	9.9	0.091
		76	24	10060	1000	Y		Optic	10.85	0.091	10.0	0.091
AL21024	XHP-70	103	12	16120	700	Y		AB1	10.65	0.091	9.3	0.091
		127	15	19500	700	Y		/ AB1	N/A	N/A	9.9	0.091
		135	26	20530	700	Y		Optic	10.85	0.091	N/A	N/A
AL21026	XHP-70	60	6	9340	800	Y			10.45	0.091	9.6	0.091
		88	9	13800	800	Y		AB1	10.55	0.091	9.7	0.091
		156	16	22620	800	Y		/ AB1	10.75	0.091	N/A	N/A
		165	15	23560	900	Y		Optic	N/A	N/A	9.9	0.091
AL21028	XHP-70	76	6	11150	1000	Y		AB1	10.45	0.091	9.3	0.091
		113	9	16360	1000	Y		/ AB1	10.55	0.091	9.7	0.091
		150	12	21000	1000	Y	Optic	10.65	0.091	9.8	0.091	
AL21021	XPL	30	12	4430	800	Y		10.65	0.091	9.8	0.091	
		44	18	6330	800	Y	B1 / B1	10.75	0.091	9.9	0.091	
		60	24	8400	800	Y	Optic	10.85	0.091	10.0	0.091	
AL21023	XPL	38	12	5170	1000	Y		10.65	0.091	9.8	0.091	
		57	18	7670	1000	Y	B1 / B1	10.75	0.091	9.9	0.091	
		76	24	10060	1000	Y	Optic	10.85	0.091	10.0	0.091	
AL21025	XHP-70	103	12	16120	700	Y		10.65	0.091	9.8	0.091	
		137	15	19500	700	Y	B1 / B1	N/A	N/A	9.9	0.091	
		135	16	20530	700	Y	Optic	10.75	0.091	N/A	N/A	
AL21027	XHP-70	60	6	9340	800	Y		10.45	0.091	9.6	0.091	
		88	9	13800	800	Y	B1 / B1	10.55	0.091	9.7	0.091	
		156	16	22620	800	Y	Optic	10.75	0.091	N/A	N/A	
		165	15	23560	900	Y		N/A	N/A	9.9	0.091	
AL21029	XHP-70	76	6	11150	1000	Y		10.45	0.091	9.6	0.091	
		113	9	16360	1000	Y	B1 / B1	10.55	0.091	9.7	0.091	
		150	12	21000	1000	Y	Optic	10.65	0.091	9.8	0.091	

Photometry



All the optics have CUT-OFF emissions with zero-impact when the floodlight is installed with the glass parallel to the ground.

AB1: for carriageway with a width greater than 0.85 times the height of installation; suitable for large & high speed road ways.

(B) Road width equal or less than 0.85 x the column height (pathways)

FLOODLIGHTING





AAA-LUX RANGE

The AAA-LUX range of innovative high powered LED floodlights is built with control, safety and security in mind. The AL Series is designed for large area lighting in places such as ports and airports, whilst the high performance WS Series focuses on sports lighting.

The technical capabilities underpinning this LED range allows ease of control, instant start up and variable switching using the AAA-LUX lighting control management system. This system is capable of dimming or switching all or select sections of a lighting application, lighting via fingertip control or use of sensors, with pre-programmed lighting scenes available including an emergency function which brings all lights up to 100% power. Use of the systems tracking and analytical ability allows designated personnel to optimise for best performance and cost effective performance in addition to implementing preventative maintenance.



AL Series

- Large area lighting: ports, airports, car parks
- Mounting height between 12m and 45m
- Three illumination distributions: 60°, 90°, 180°



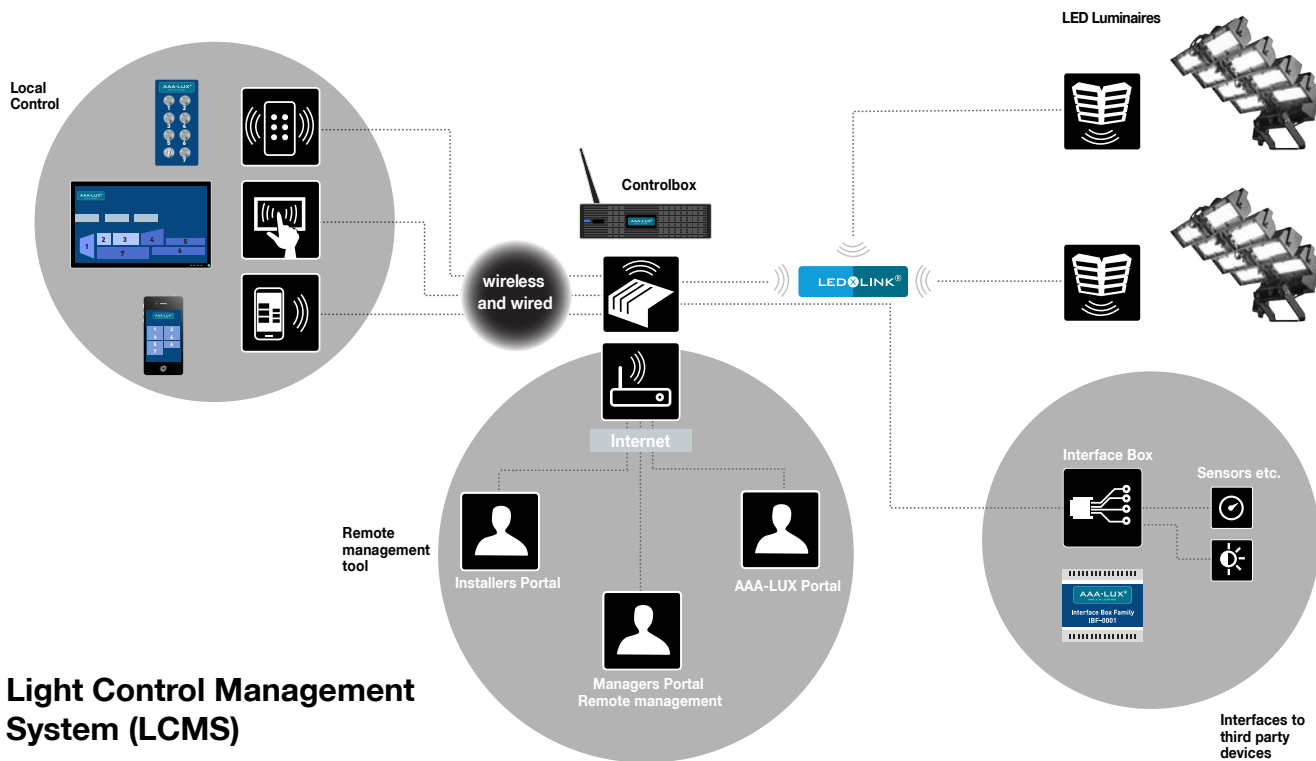
AL360 Series

- Large area lighting: ports, airports, car parks
- Mounting height upto 25m
- Illumination distribution: 360°



WS Series

- Sports floodlighting
- Six variations to suit



Light Control Management System (LCMS)

Control, switching and dimming of AAA-LUX floodlights is made possible by the use of a number of user friendly interfaces all connected to the LCMS via LEDxLINK protocol, either locally or remotely. Switchboxes, touchscreens and smart devices provide fingertip control to enable the selection of a number of pre-programmed lighting configurations. In addition, third party devices such as sensors, timers and software interfaces can be seamlessly integrated into the system, providing further functionality and security benefits.

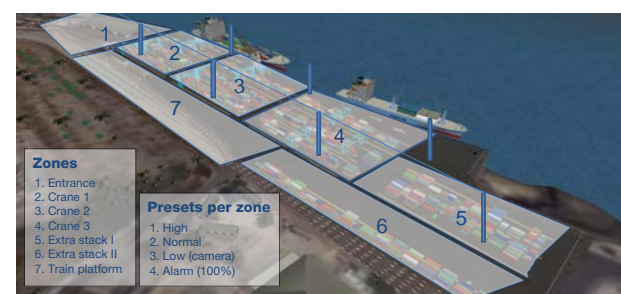
Easy replacement

- Direct 400VAC or 240VAC connection
- Wireless control
- No complicated bracketry required

Electrically the luminaire will be connected to existing 400VAC / 200VAC electrical installations. Even the existing light switches can remain in place. However, in the case of new installations, cabling costs are significantly lower. First, the product has no in-rush of start-up current, resulting in a much simpler cabling layout and also, fuses can have a lower rating. Secondly, with the wireless control of the luminaires no extra control cabling is needed.

Energy saving - Total-cost-of-ownership

- Dimmed to the right level
- Switched on when needed
- Short ROI



Conventional luminaires are based on Metal Halide (MH) or High Pressure Sodium (HPS) lamps. These sources have a start-up and cooling period and cannot be dimmed. Over lifetime these lamps suffer from significant lumen depreciation, which means that new installations over-illuminate the area every night by approximately 40%. Even areas with no activity, but camera surveillance only, are illuminated at full power with MH or HPS lighting sources.

With the AAA-LUX lighting management system luminaires are set at the requested illumination level.

Areas with no human activities are dimmed to camera level, increasing energy savings above 70%. Beside this, the projected 15 year lifetime reduces lamp replacements costs as well. In many cases, our TCO model calculates breakeven times below 3 years.

AL SERIES LED AL60, AL90, AL180, AL700

IP66



Benefits

- Wireless control simplifies operation for ease of use
- Centrally monitor and adjust power consumption
- Control system enables efficient planning of maintenance
- No re-lamping costs
- L80 70,000 hours at 25°C ambient
- Driver MTBF > 50,000 hours
- Instant startup allows the light to be switched on and off as and when required, thus saving energy costs by reducing power consumption from wasted light
- Flexible dimming to 10% for low use & security giving substantial energy savings over conventional HID lamps
- Increased system efficiency by reducing wasted light

Technical Features

- Controllable via smart devices, touchscreen or wireless switch box
- Mounting height 12-45m
- 3 phase as standard
- Single phase 230V option available
- Marine grade as standard
- Die-cast aluminium polyester powder coated body with integrated heat sink and flexible bracket mount
- Lenses installed behind toughened flat glass for maximum integrity of the lenses
- High powered 1.375kW luminaire (AL60, AL90, AL180)
- High powered 0.690kW luminaire (AL700)
- Dimmable in accordance with EN 12193
- Highly efficient optics

Lighting Distribution

- 60°
- 90°
- 180°

Applications

- Large area
- Ports & terminals
- Airports
- Car parks

Colour

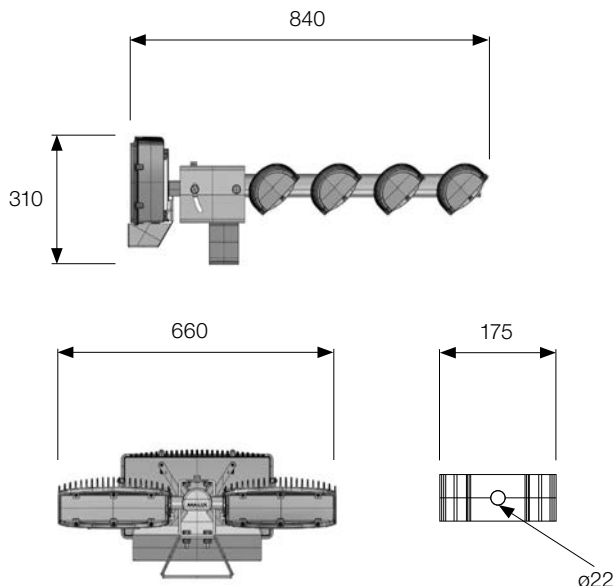
- Grey

Lighting Control & AL Series

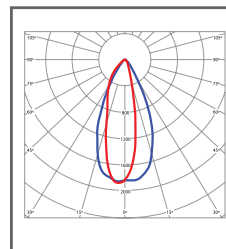
When different zones of a site require full lighting levels and others need to be dimmed at different times through the dark hours, the dimmed zones can be brought back up to full lighting levels instantly for emergencies or to allow maximum dimming duration between working time of the zones. This saves energy, keeps running costs low and increases the level of site security.

Dimensions

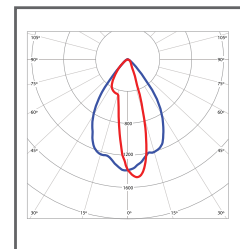
Dimensions in mm



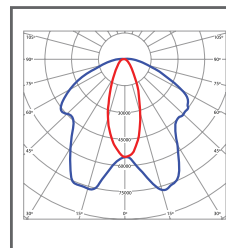
Key features



AL60
Lamp: 8 LED Modules



AL90
Lamp: 8 LED Modules



AL180
Lamp: 8 LED Modules

cd/klm
C0 - C180 —
C90 - 270 —



Technical Specifications

AL60, AL90, AL180	Minimum	Typical	Maximum
Voltage input (VAC)	370	400	430
Power factor at 20%-100%	0.90	0.98	
Frequency (Hz)	45		60
Standby power (W)		5	
Colour temperature (K)	4000 & 5200 options available		
Colour rendering index	70	80	
Weight (kg)		28	
Ingress protection		IP66	
Electrical insulation class		I	
Frontal surface		0.26 C _w = 1	
Expected lifetime at Tamb = 25°C		70000hrs	100000hrs
Power consumption at 100%			
Standard - Heavy Duty (W)		1375	1425
High Temperature (W)		1200	1250
Current			
		(At 400VAC)	(At 375VAC)
Standard - Heavy Duty (A)		3.5	3.9
High Temperature (A)		3.2	3.5
Operating temperature			
Standard - Heavy Duty (°C)	-20		40
High Temperature (°C)	-20		50
Luminous efficacy*			
Standard - Heavy Duty (lm / W)	103.3	113.1	140
High Temperature (lm / W)	114.1	117.2	140

* Based on the AL90

AL700	Minimum	Typical	Maximum
Voltage input (VAC)	370	400	430
Power factor at 20%-100%	0.90	0.98	
Frequency (Hz)	45		60
Standby power (W)		5	
Colour temperature (K)	4000 & 5200 options available		
Colour rendering index	70	80	
Weight (kg)		17	
Ingress protection		IP66	
Electrical insulation class		I	
Frontal surface		0.26 C _w = 1	
Expected lifetime at Tamb = 25°C		70000hrs	100000hrs
Power consumption at 100%			
Standard - Heavy Duty (W)		700	725
High Temperature (W)		600	625
Current			
		(At 400VAC)	(At 375VAC)
Standard - Heavy Duty (A)		1.7	1.8
High Temperature (A)		1.5	1.6
Operating temperature			
Standard - Heavy Duty (°C)	-20		40
High Temperature (°C)	-20		50
Luminous efficacy*			
Standard - Heavy Duty (lm / W)	109.7	11.38	140
High Temperature (lm / W)	114.8	117.9	140

* Based on the AL710

AL SERIES LED AL360

IP66



Benefits

- Wireless control simplifies operation for ease of use
- Centrally monitor and adjust power consumption
- Control system enables efficient planning of maintenance
- No re-lamping costs
- Instant startup allows the light to be switched on and off as and when required, thus saving energy costs by reducing power consumption from wasted light
- Flexible dimming down to 10% for low use and security giving substantial energy savings over conventional HID lamps
- Increased system efficiency by reducing wasted light

Technical Features

- Controllable via smart devices, touchscreen or wireless switch box
- Mounting height 12-25m
- Mounted and pre-aimed onto a 360° bracket

- 3 phase as standard
- Single phase 230V option available
- Marine grade as standard
- Die-cast aluminium polyester powder coated body with integrated heat sink and flexible bracket mount
- Lenses installed behind toughened flat glass for maximum integrity of the lenses
- High powered 1.375kW luminaire
- Dimmable in accordance with EN 12193
- Highly efficient optics

Lighting Distribution

- 360° distribution with beam options 45° / 50° / 55° / 60°

Applications

- Large area
- Ports & terminals
- Airports
- Car parks

Colours

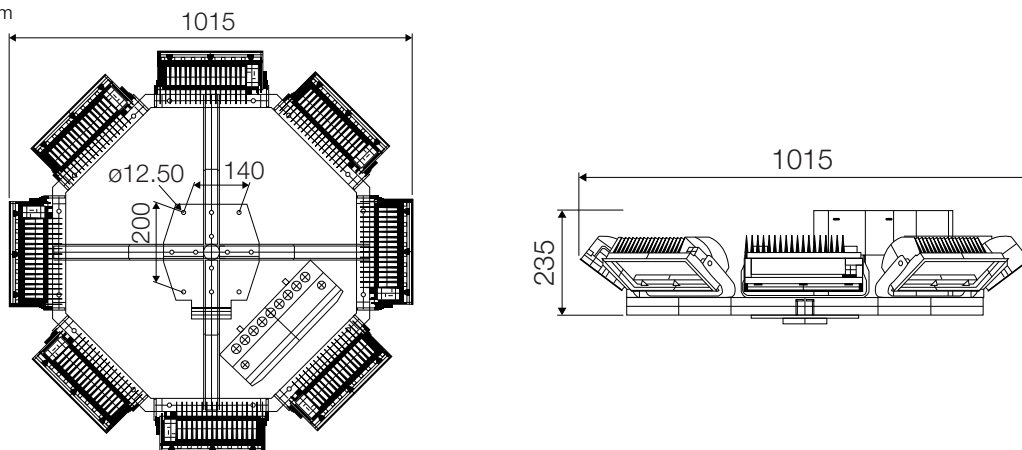
- Black

Lighting Control & AL360

When different zones of a site require full lighting levels and others need to be dimmed at different times through the dark hours, the dimmed zones can be brought back up to full lighting levels instantly for emergencies or to allow maximum dimming duration between working time of the zones. This saves energy, keeps running costs low and increases the level of site security.

Dimensions

Dimensions in mm

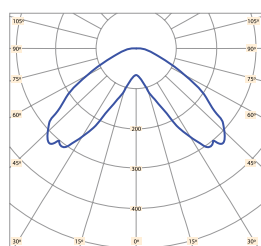




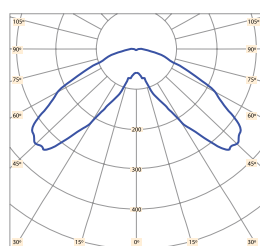
Technical Specifications

AL360	Minimum	Typical	Maximum
Voltage input (VAC)	370	400	430
Power factor at 20%-100%	0.90	0.98	
Frequency (Hz)	45		60
Standby power (W)		5	
Colour temperature (K)		5200	
Colour rendering index	70	80	
Weight (kg)		28	
Ingress protection		IP66	
Electrical insulation class		I	
Frontal surface		0.26 C _w = 1	
Expected lifetime at Tamb = 25°C		60000hrs	100000hrs
Power consumption at 100% (W)		1375	1425
Current (A)		(At 400VAC) 3.5	(At 375VAC) 3.9
Operating temperature (°C)	-20		+40
Luminous efficacy (lm / W)	103.3	113.1	140

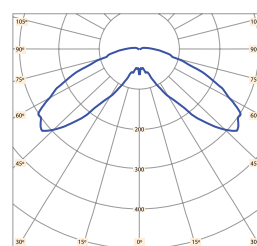
Key features



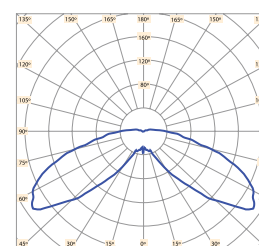
AL360 / 45°
Lamp: 8 LED Modules



AL360 / 50°
Lamp: 8 LED Modules



AL360 / 55°
Lamp: 8 LED Modules



AL360 / 60°
Lamp: 8 LED Modules

WS SERIES LED

WS100-WS600

IP66



Benefits

- Wireless control simplifies operation for ease of use
- Centrally monitor and adjust power consumption
- Control system enables efficient planning of maintenance
- No re-lamping costs
- Instant startup allows the light to be switched on and off as and when required, thus saving energy costs by reducing power consumption from wasted light
- Flexible dimming down to 10% for low use and security giving substantial energy savings over conventional HID lamps
- Increased system efficiency by reducing wasted light

Technical Features

- Controllable via smart devices, touchscreen or wireless switch box
- Mounting height 12-45m
- 3 phase as standard
- Single phase 230V option available
- Marine grade as standard
- Die-cast aluminium polyester powder coated body with integrated heat sink and flexible bracket mount

- Lenses installed behind toughened flat glass for maximum integrity of the lenses
- High powered 1.55kW luminaire (WS100 - WS600)
- High powered 0.775kW luminaire (WS400)
- Dimmable in accordance with EN 12193
- Highly efficient optics

Lighting Distribution

The AAA-LUX WS Series of LED Luminaires offers a variety distribution options to suit individual requirements

Applications

- Sports

Colours

- Grey

Lighting control & WS Series

Using a pitch side control box, smart device, sensors or a computer based in house, individual courts or areas can be switched on and others dimmed or switched off, with the ability to switch lighting to full power instantly to allow for unexpected use or for a maximum energy saving between uses of the sport pitches or courts with little downtime.



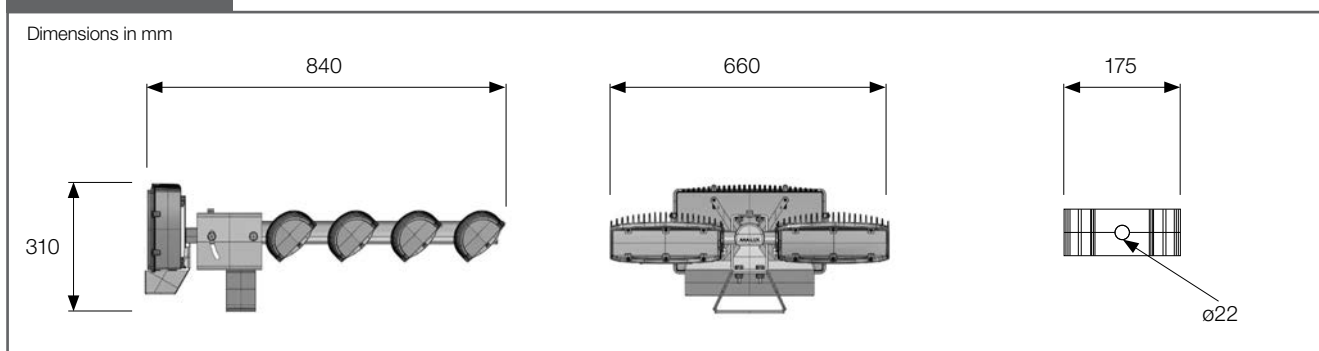


Technical Specifications

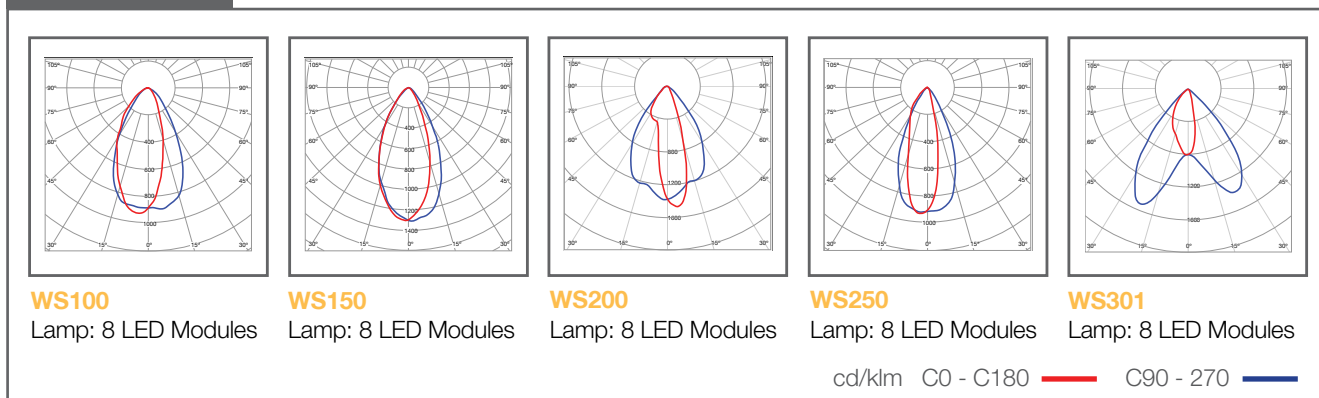
WS100 - WS600	Minimum	Typical	Maximum
Voltage input (VAC)	370	400	430
Power factor at 20%-100%	0.90	0.98	
Frequency (Hz)	45		60
Standby power (W)		5	
Colour temperature (K)		5200	
Colour rendering index	70	80	
Weight (kg)		28	
Ingress protection		IP66	
Electrical insulation class		I	
Frontal surface		0.26 C _w = 1	
Expected lifetime at Tamb = 25°C		35000hrs	60000hrs
Power consumption at 100%			
Standard - Heavy Duty (W)		1550	1600
Maximum Power (W)		1700	1750
High Temperature (W)		1375	1425
Current		(At 400VAC)	(At 375VAC)
Standard - Heavy Duty (A)		3.9	4.3
Maximum Power (A)		4.3	4.8
High Temperature (A)		2.5	3.9
Operating temperature			
Standard - Heavy Duty (°C)	-20		+40
Maximum Power (°C)	-20		+50
High Temperature (°C)	-20		+50
Luminous efficacy*			
Standard - Heavy Duty (lm / W)	103.3	113.1	140
Maximum Power (lm / W)	98.7	109.0	140
High Temperature (lm / W)	114.1	117.2	140

* Based on the WS2005

Dimensions



Key features



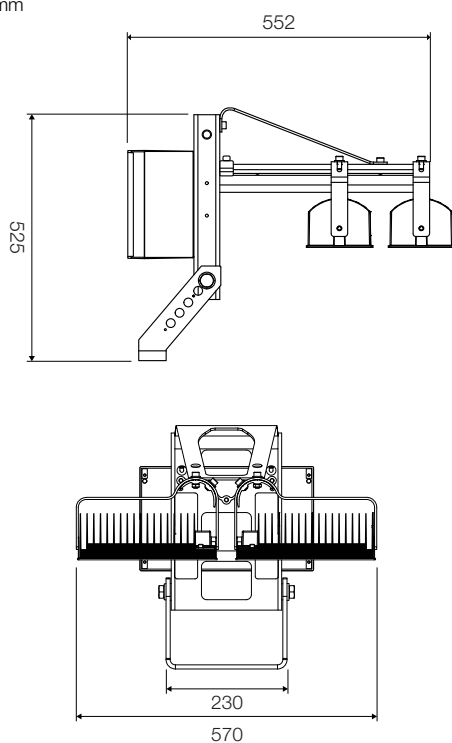
Technical Specifications

WS400	Minimum	Typical	Maximum
Voltage input (VAC)	370	400	430
Power factor	0.95	0.98	
Frequency (Hz)	45		60
Standby power (W)		7.6	8
Colour temperature (K)		5200	
Colour rendering index	70	80	
Weight (kg)		19	
Ingress protection		IP65	
Electrical insulation class		I	
Frontal surface		0.26 C _w = 1	
Expected lifetime at Tamb = 25°C		35000hrs	60000hrs
Power consumption at 100%			
Standard - Heavy Duty (W)		775	800
Maximum Power (W)		850	875
High Temperature (W)		700	735
Current		(At 400VAC)	(At 370VAC)
Standard - Heavy Duty (A)		2.0	2.2
Maximum Power (A)		2.1	2.4
High Temperature (A)		1.8	2.0
Operating temperature**			
Standard - Heavy Duty (°C)	-20		40
Maximum Power (°C)	-20		30
High Temperature (°C)	-20		50
Luminous efficacy*			
Standard - Heavy Duty (lm / W)	103.3	113.1	140
Maximum Power (lm / W)	98.7	109.0	140
High Temperature (lm / W)	114.1	117.2	140

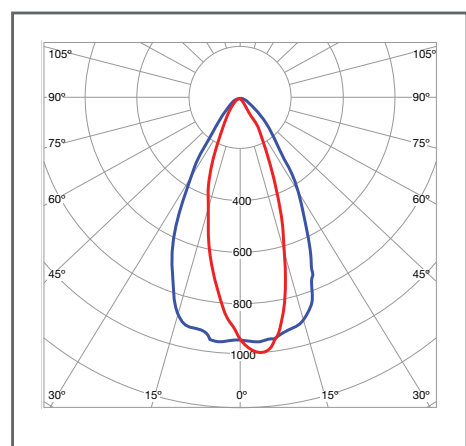
*Luminous efficacy WS400 **Absolute maximum temperature 60°C; auto dimming may occur at high temperatures

Dimensions

Dimensions in mm



Key features



WS400

Lamp: 4 LED Modules

cd/klm C0 - C180 — C90 - 270 —



FLOODLIGHTING

RS SERIES LED WS1005-WS6005

IP66

Lighting a sporting venue can be a challenge with residents living in close proximity.

The AAA-LUX RS Floodlight delivers unrivalled LED lighting on the field, with extreme low spill light for neighbouring houses. Councils, sports clubs and residents living close by agree the RS truly delivers the best of both worlds.



Benefits

- Increased game experience, with improved visibility on the field, players and ball
- Reduction of stray light
- No start up time needed
- Can be retrofitted on to existing masts
- No extra installation costs or cables
- Flexible and easy to control
- Adjustable power consumption
- Dimming options which can be controlled remotely
- No re-lamping costs

Key Technical Features

- Superior colour rendering
- Improved uniformity
- Central monitoring and control
- Direct connection to 400 VAC

Accessories

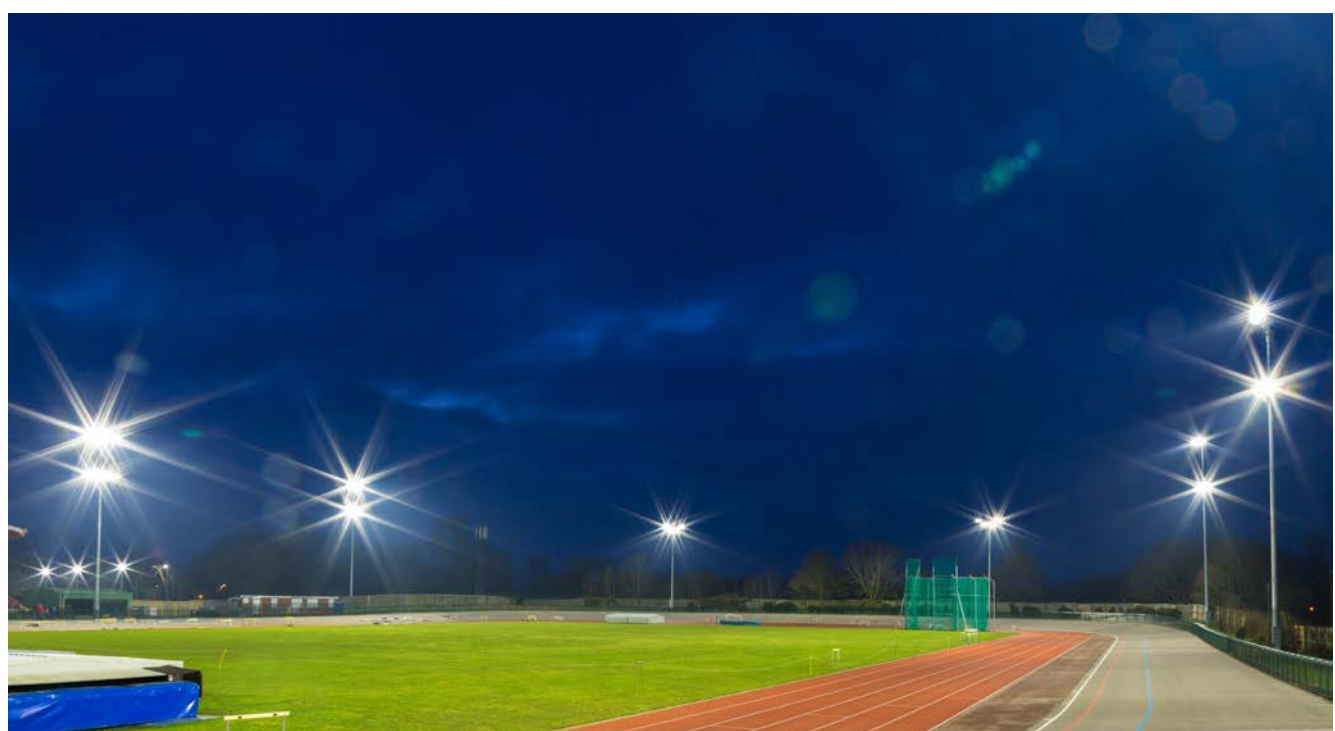
- Light spill shield
- Aiming visor

Applications

- Sports

Colours

- Grey



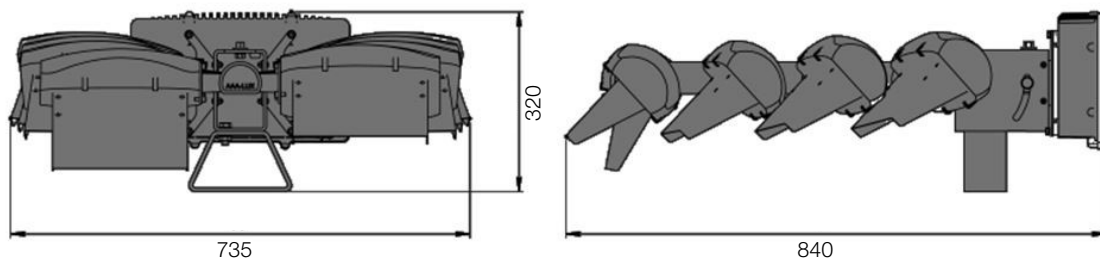
Technical Specifications

WS1005 - WS6005	Minimum	Typical	Maximum
Voltage input (VAC)	370	400*	430
Colour temperature (K)		5200	
Colour rendering index	70	75	
Weight (kg)		22	
Ingress protection		IP66	
Expected lifetime at Tamb = 25°C	35000 hrs	60000hrs	
Luminous flux (lm)		181980	
Luminous efficacy (lm/W)	110		
Power consumption (W)		1550	1600
Current (A)		3.9	4.3

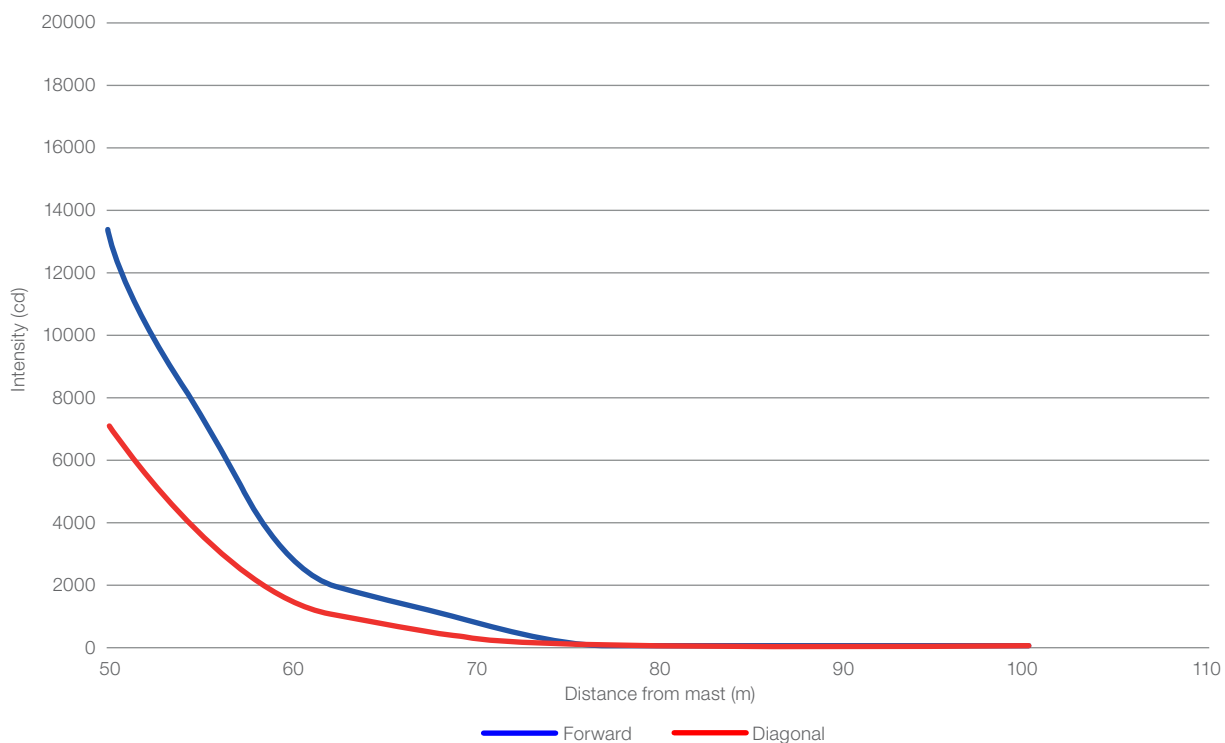
* 230Vac available on request

Dimensions

Dimensions in mm



WS2006RS on 15m mast



WS200RS calculated intensity vs. distance from mast at 15° tilt (standard)



Definitions

Standard:

STD luminaires are designed for an average ambient temperature of 30°C. The STD can handle high temperatures up to 40°C although it is recommended to switch to the HT version when, during normal operating hours, the ambient temperature is regularly above 30°C in combination with still winds.

Maximum power:

Product is optimised for maximum luminous flux (lm) instead of optimal efficacy (lm/W) and cannot be combined with High Temperature option.

High temperature:

Product is designed for high temperature environments and cannot be combined with Maximum Power option.

Lifetime:

Can only be assured when the system prohibits the luminaires working during daytime (not designed to operate in full sun load)

- All sensitive bolts, nuts, washers and mounting clips are made of Stainless Steel
- Light sources are made of corrosion resistant aluminum with low copper content

Luminaire technical information and dimming-power

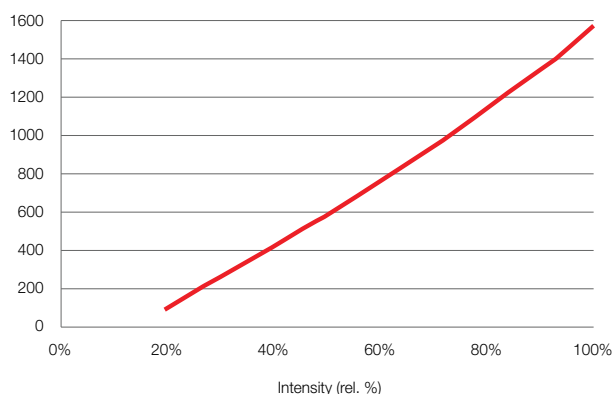
The Gen6 products are available with various beams to accommodate different areas, mast heights and sports fields. For better light spill control, luminaires can be equipped with light spill caps.

Luminaire technical information and dimming-power

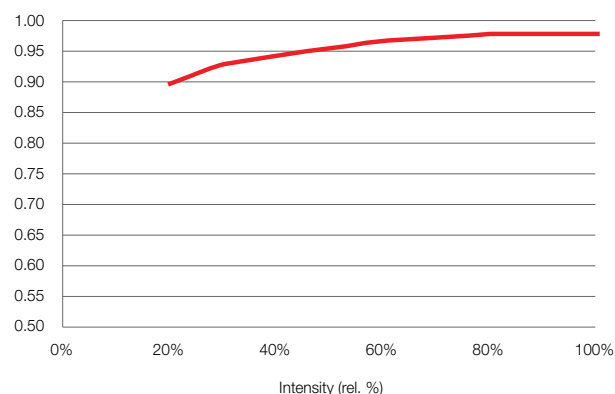
	Luminaire Type		
	Standard	Maximum Power	High Temperature
WS1005	152,615	159,729	142,472
WS1505	152,615	159,729	142,472
WS2005	160,665	168,589	149,774
WS2205	159,515	167,323	148,731
WS2305	159,515	167,323	148,731
WS2505	160,665	168,589	149,774
WS3005	159,515	167,323	148,731
WS4005	73,308	79,865	71,236
WS6005	152,615	159,729	142,472

Luminous flux in lm per lamp type based on DEKRA LM-79 measurement

Intensity vs Power



Power Factor vs Dimming



STAD SERIES LED

IP65

The AAA-LUX WS-STAD series family of floodlights are a true retrofit for existing 2 kW Metal Halide (2.2 kW power dissipation) floodlights. The white light produced by the luminaire gives a daylight perception, which enhances play at all levels.

The Lighting Control Management System (LCMS) can wirelessly switch and dim the luminaires via the proprietary LEDxLINK protocol. In the absence of a LCMS, the luminaires switch on at full power.



Benefits

- Lightest weight on the market at 22kg
- 5 Year (20,000 hours) warranty as standard for LED and driver
- Hardened scratch resistant glass
- Class A LED's driven at max. 60%:
- Efficiency > 160lm/W
- High uniformity
- Stainless steel fastenings
- Anti-corrosion double coated aluminium body

Driver Features

- Class A capacitors with long lifetime
- IP65/66 glands oriented downwards
- High efficiency >95%
- High power factor >0.9 from 20-100%
- No in-rush current
 - No voltage peak
 - Reduces total power requirement
 - Reduced costs
- Automatic temperature protection. Protects against over / under voltage. Surge protection 6,000v

Accessories

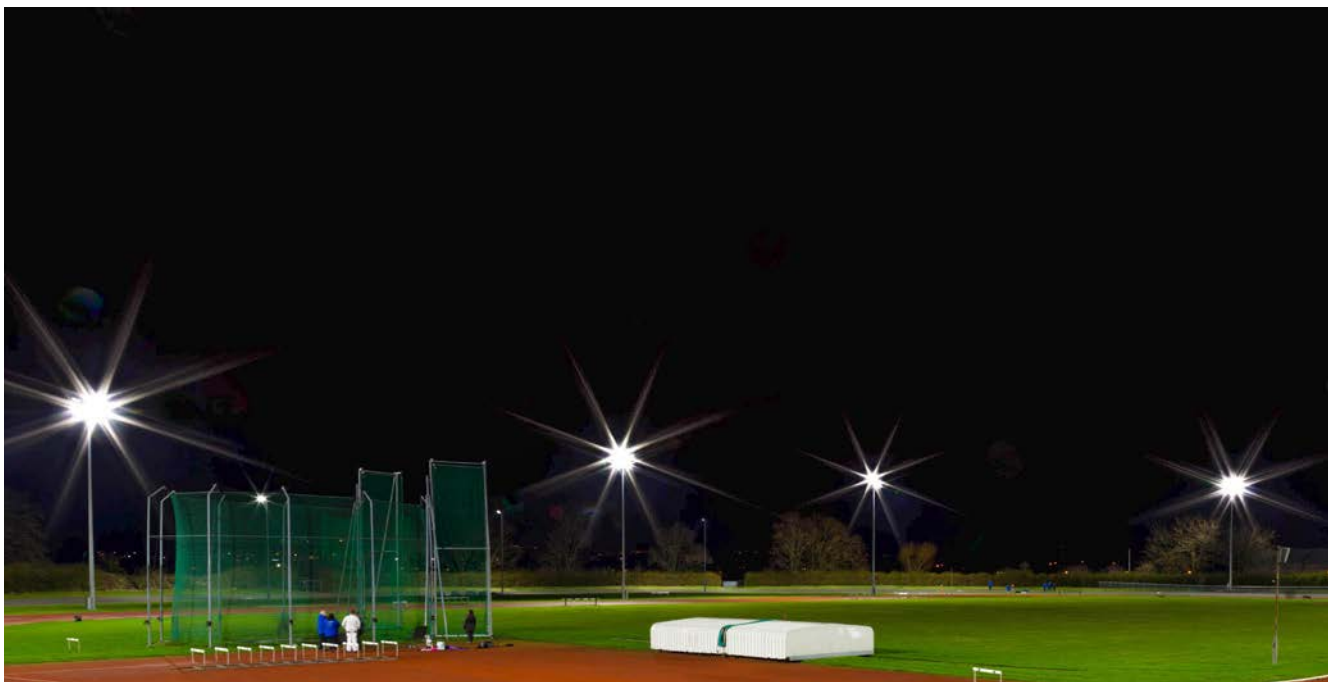
- Light spill shield
- Aiming visor

Applications

- Sports

Colours

- Grey



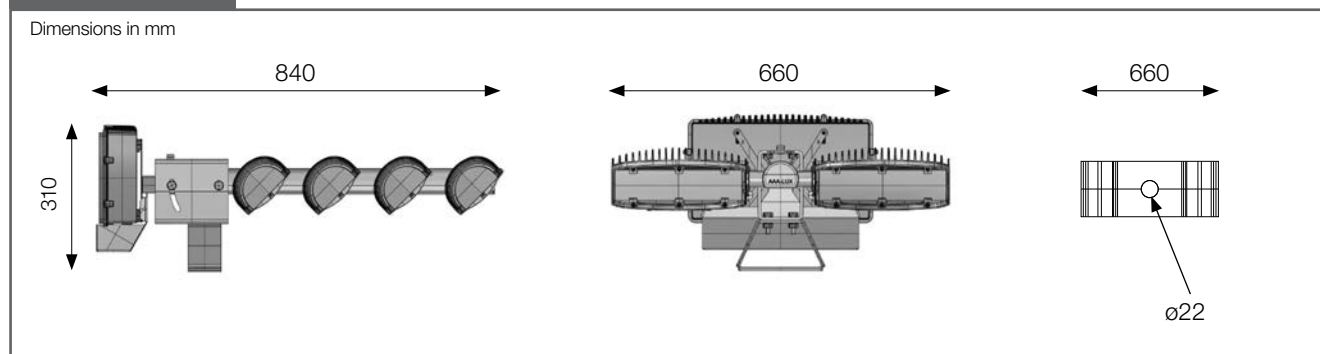


Technical Specifications

WS1005 - WS6005	Minimum	Typical	Maximum
Voltage input (VAC)	370	400*	430
Colour temperature (K)		5200	
Colour rendering index	70	80	
Weight (kg)		22	
Ingress protection		IP65	
Expected lifetime at Tamb = 25°C		35000 hrs	60000hrs
Luminous efficacy (lm/W)	96.4	105.8	159.9
Power factor (K)	0.95	0.98	
Frequency (Hz)	45		60
Electrical insulation class		I	
Frontal surface (tilt) (m ²)		0.17(15°)Cw=1	
Operating temperature (°C)	-20		
Power consumption at 100% (W) MP version		1550 1700	1650
Current (A)		4.0 4.3	4.5 5.0

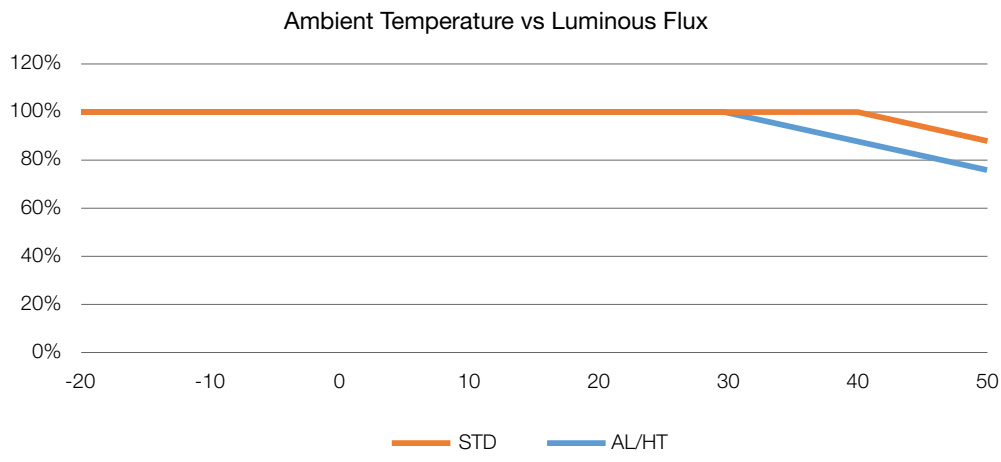
* 230Vac available on request

Dimensions



The AAA-LUX Gen.6 is tested according to ANSI/UL1598 ISTM (In Situ Temperature Measurement). The built-in temperature protection dims the luminaire automatically, based on the ambient temperature. The graph below shows the maximum luminous output for the

different products per ambient temperature and wind still weather conditions. When the product is already dimmed with the LCMS control system, the temperature protection dims only when this dim level is lower than the set dim level.



Definitions

Standard:

STD luminaires are designed for an average ambient temperature of 30°C. The STD can handle high temperatures up to 40°C although it is recommended to switch to the HT version when, during normal operating hours, the ambient temperature is regularly above 30°C in combination with still winds.

Maximum power:

Product is optimised for maximum luminous flux (lm) instead of optimal efficacy (lm/W) and cannot be combined with High Temperature option.

High temperature:

Product is designed for high temperature environments and cannot be combined with Maximum Power option.

Lifetime:

Can only be assured when the system prohibits the luminaires working during daytime (not designed to operate in full sun load)

- All sensitive bolts, nuts, washers and mounting clips are made of Stainless Steel
- Light sources are made of corrosion resistant aluminum with low copper content

Luminaire technical information and dimming-power

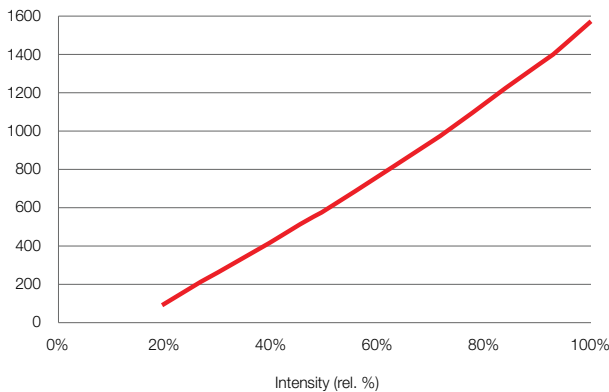
The Gen6 products are available with various beams to accommodate different areas, mast heights and sports fields. For better light spill control, luminaires can be equipped with light spill caps.

Delivered lumen output and power consumption

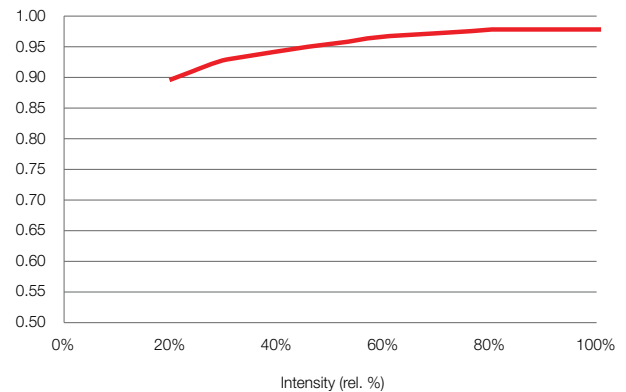
Type	Flux (LM)	MP Type	Flux (LM)
WS-STAD-01-03	157,777	WS-STAD-01-03	156,912
WS-STAD-02-03	157,777	WS-STAD-01-03	156,912

Luminous flux in lm per lamp type based on DEKRA LM-79 measurement

Intensity vs Power



Power Factor vs Dimming





FLOODLIGHTING

CHALLENGER® SERIES

THE RANGE THAT MEETS ANY CHALLENGE

PRODUCT

Our Challenger® product range is a serious contender for any floodlighting application. From stadia to grassroots pitches, industrial applications to golf courses, these products deliver superior floodlighting every time.

Specifically designed to meet any requirement, the series starts with the high performance Challenger® 1 for side-lit applications, moves on to the roof mounted Challenger® 2 and finishes with the mighty Challenger® 3 for larger stadia projects.

BENEFITS:

Here are just some of the Challenger® Series' features

- Effective obtrusive light control
- Precision aiming for superior results
- GORE™ membrane breather system for optimal performance
- Sturdy toughened glass and pressure die-cast bodies for longer outdoor life

Whatever your floodlighting needs the Challenger® series and our additional floodlighting products, AAA-LUX, Vela, Trent and Mura are sure to perform.

Abacus floodlighting for all architectural, security, utility and sports applications.



Hyderabad Stadium, India (Challenger® 3)



Edgbaston Cricket Ground, UK (Challenger® 3)



Winter Palace, St.Petersburg, Russia (Challenger® 3)



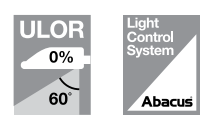
Vantovy Bridge (Challenger® 3)





FLOODLIGHTING

CHALLENGER® 1 AL6000



Benefits

- Reduced light overspill and glare with excellent forward throw of light
- Multiple options for effective light distribution as the adjustable lamp holder offers three variations of peak beam elevation
- Dark skies friendly fitting ideal for projects nearby residential areas with specific light regulations, with low light pollution ULOR 0%
- Ease of maintenance via two rear doors with no requirement for tools

Technical Features

- High powered lamp capabilities 1kW / 2kW metal halide
- 1000W and 2000W MHN-LA & MHN-FC 2200W, MH-TS2000W/XL, HQI-TS2000WNL
- High pressure die-cast aluminium type EN AC 43400
- Stainless steel clamps and fixings
- 6mm galvanised steel mounting bracket with M20 bolt hole

- 4mm tempered, low iron, high transmission glass
- IP66, IK08 ratings, CE
- Available in double asymmetric: narrow, medium and wide beam distributions
- 60° peak beam elevation as standard on all beam widths
- High purity, polished and anodised aluminium reflector system
- Lamp holder support can be adjusted for 55° and 65° peak beam elevation capabilities as standard
- Upward Light Output Ratio (ULOR): < 0% at 60° peak beam elevation

- Low light pollution resulting in a dark skies friendly lantern
- Front, rear and side cowl available
- Electrical connection box : (IP66) housing containing the ignitor and the power connection, located on the side of the stirrup
- Fitted with 2 x GORE™ membrane breathers for floodlight air pressure regulation
- Toolless lamp access via two rear doors, secured with hand operated latches

Applications

- Sport



Fells Point Tennis Club, Ireland

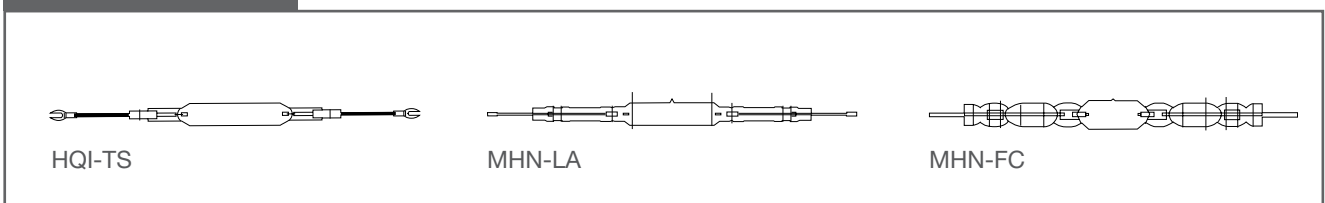
Technical Specifications

	Wattage (kW)	Beam Type	Lamp	Lamp Manufacturer	Lamp Reference	Weight (kg)
AL6001	2.2	Narrow	MHN-FC/B	Philips	MHN-FC2.2KW400V/640	21.4
AL6002	2.2	Medium	MHN-FC/B	Philips	MHN-FC2.2KW400V/640	21.4
AL6003	2.2	Wide	MHN-FC/B	Philips	MHN-FC2.2KW400V/640	21.4
AL6004	2	Narrow	MHN-LA	Philips	MHN-LA2KW400V/842	21.4
AL6005	2	Medium	MHN-LA	Philips	MHN-LA2KW400V/842	21.4
AL6006	2	Wide	MHN-LA	Philips	MHN-LA2KW400V/842	21.4
AL6007	2	Narrow	HQI-TS/N/L	Osram	HQI-TS2000WNL	21.4
AL6008	2	Medium	HQI-TS/N/L	Osram	HQI-TS2000WNL	21.4
AL6009	2	Wide	HQI-TS/N/L	Osram	HQI-TS2000WNL	21.4
AL6010	1	Narrow	MHN-FC	Philips	MHN-FC1KW230V/740	21.4
AL6011	1	Medium	MHN-FC	Philips	MHN-FC1KW230V/740	21.4
AL6012	1	Wide	MHN-FC	Philips	MHN-FC1KW230V/740	21.4
AL6013	2	Narrow	MH-TS 2kW/XL	Venture	MH-TS2000W/XL/K12/745	21.4
AL6014	2	Medium	MH-TS 2kW/XL	Venture	MH-TS2000W/XL/K12/745	21.4
AL6015	2	Wide	MH-TS 2kW/XL	Venture	MH-TS2000W/XL/K12/745	21.4
AL6016	1	Narrow	MHN-LA 842	Philips	MHN-LA1KW230V/842	21.4
AL6017	1	Medium	MHN-LA 842	Philips	MHN-LA1KW230V/842	21.4
AL6018	1	Wide	MHN-LA 842	Philips	MHN-LA1KW230V/842	21.4
AL6019	1	Narrow	MHN-LA 956	Philips	MHN-LA1KW230V/956	21.4
AL6020	1	Medium	MHN-LA 956	Philips	MHN-LA1KW230V/956	21.4
AL6021	1	Wide	MHN-LA 956	Philips	MHN-LA1KW230V/956	21.4
AL6022	2	Narrow	MHN-LA 956	Philips	MHN-LA2KW400V/956	21.4
AL6023	2	Medium	MHN-LA 956	Philips	MHN-LA2KW400V/956	21.4
AL6024	2	Wide	MHN-LA 956	Philips	MHN-LA2KW400V/956	21.4

Lamp Manufacturer & Lamp Reference	Wattage (kW)	Colour Temp. (K)	RA	Lamp Lumen Output (Initial lm)	Current (A)	Supply Voltage (V)	Total Circuit Power (W)
Venture							
MH-TS2000W/XL/K12/745	2	4500	65	240000	10.3	380/400/415	2280
Philips							
MHN-FC2.2kW400V/640	2.2	4100	60	232000	11.0	380/400/415	2370
MHN-LA2KW400V/842	2	4100	80	220000	9.6	380/400/415	2310
MHN-LA2KW400V/956	2	5600	90	190000	10.3	380/400/415	2310
MHN-LA1KW230V/842	1	4200	70	95800	9.3	230/240	1140
MHN-LA1KW230V/956	1	5600	80	87000	9.3	230/240	1140
MHN-FC2KW400V/740	2	4200	60	210000	19.11	380/400/415	2105
MHN-FC1KW230V/740	1	4100	65	93000	8.9	230/240	1140
Osram							
HQI-TS2000WNL	2	4100	65	230000	10.4	380/400/415	2280

Technical information may alter dependent on control gear used

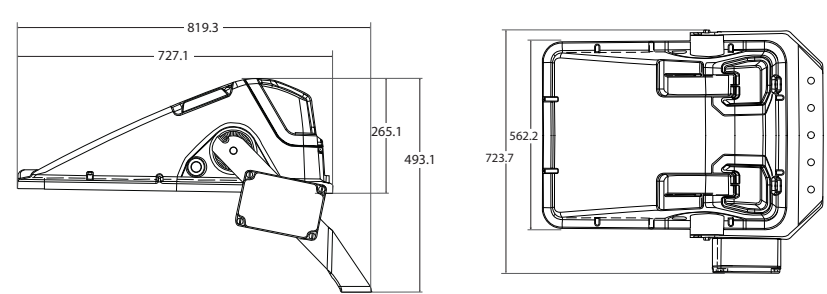
Lamp references





Dimensions

Dimensions in mm



Mounting:
Stirrup mounted using M20 fixing.
Stirrup adjustment +/- 140°
Weight: 21.4kg.

Front wind area:
@60° setting (Flat Glass) - 0.126m² 70° max setting (+10 elevation) - 0.135m². Side wind area: 0.108m²

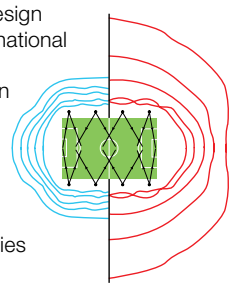
Maintenance



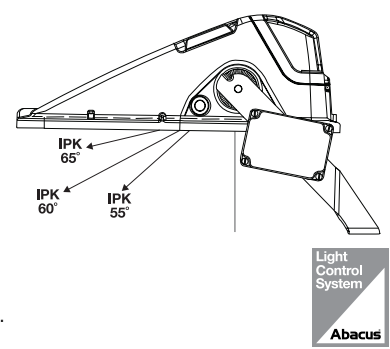
Easy Maintenance:
Access to the lamp by means of opening the rear door

Key features

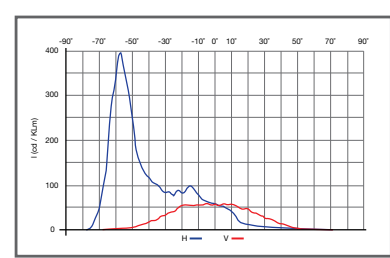
Abacus Light Control System
Efficient, careful lighting design has given Abacus an international reputation for combining powerful, sharp illumination with low light pollution. Abacus' Lighting Control System – exclusive to the Challenger® 1 – features a series of complementary technologies to help achieve this.



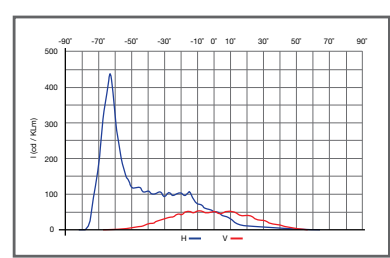
Double Asymmetric Reflector
The double asymmetric reflector is designed to better concentrate and focus the light produced by each lantern. By emitting the main beam at an angle of 55, 60 or 65 degrees from the normal to the front glass, it results in a flat appearance (right), making less of the reflector visible to spectators as well minimising glare.



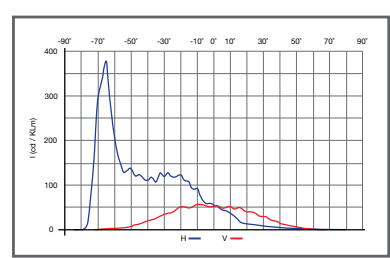
Photometry



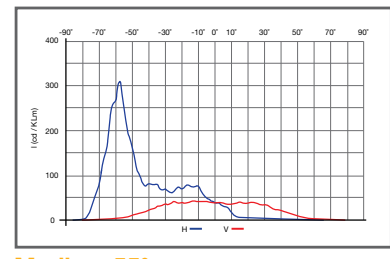
Narrow 55°



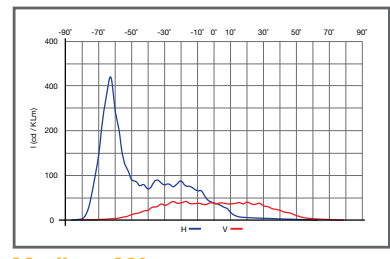
Narrow 60°



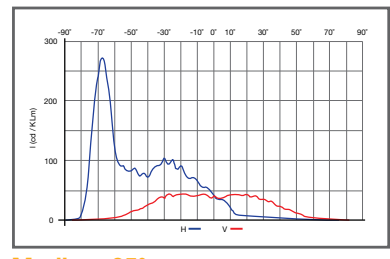
Narrow 65°



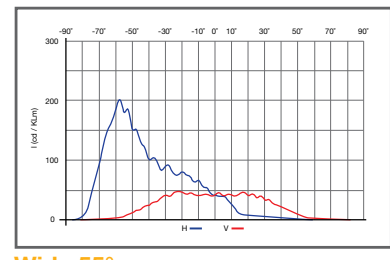
Medium 55°



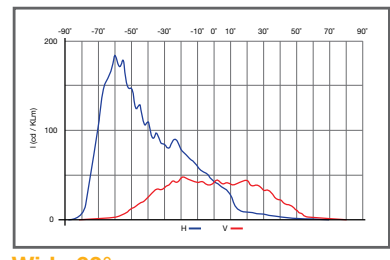
Medium 60°



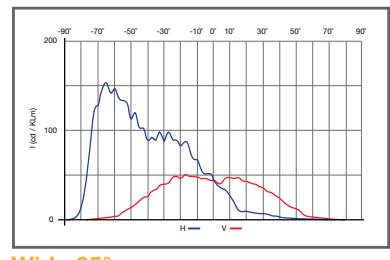
Medium 65°



Wide 55°



Wide 60°



Wide 65°

CHALLENGER® 3 AL5900

IP66

Benefits

- The Challenger® 3 delivers an optically precise symmetrical beam specifically designed and suited to stadium floodlighting requirements

Technical Features

- Body of high pressure die-cast aluminium, finished in light grey (RAL7035), polyester powder coating
- Reflector system of high purity, polished and anodised aluminium. Incorporating an internal baffle to improve efficiency and reduce glare
- Toughened front glass, secured by cast aluminium front frame
- Galvanised steel stirrup, with additional elevation locking screws
- Electrical connection box (IP66) housing ignitor, located on side of stirrup, fitted with 2 x Gore™ membrane breathers



- Designed to accept double ended, short arc 2kW or 1kW metal halide lamps
- Dual provision on side of floodlight body to attach gun sight aiming device to allow accurate beam alignment (AL5931)
- Easy access for re-lamping via opening of the rear cover. Positive closure via large stainless steel catch

Options

- Half concentric louvre (AL5921) or single blade visor (AL5922) to reduce light pollution.
- Gun sight aiming kit, incorporating gun sight and bracket (AL5931)



Lord's, London



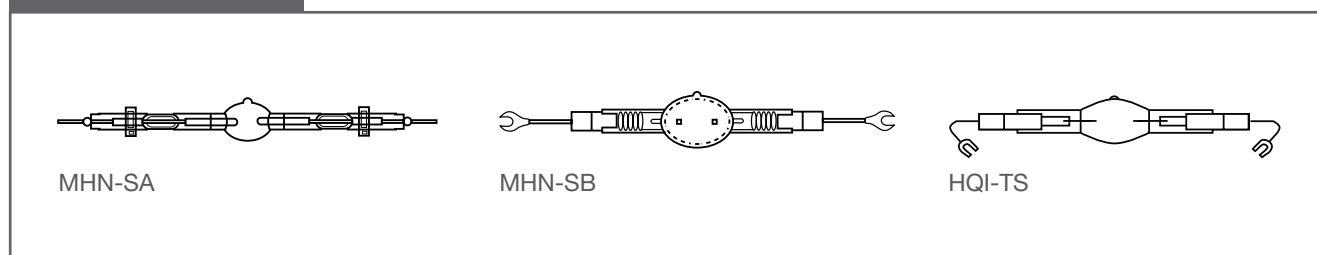
Technical Specifications

	Beam Type	Lamp: Manufacturer Product Code	Lamp Manufacturer	Lamp: Abacus Product Code	Lamp Holder
AL5901	Narrow	2kW: HQI-TS 2000WDS	Osram	LPW2000M/D	K12s-7 cable
AL5902	Medium	2kW: HQI-TS 2000WDS	Osram	LPW2000M/D	K12s-7 cable
AL5903	Wide	2kW: HQI-TS 2000WDS	Osram	LPW2000M/D	K12s-7 cable
AL5904	Narrow	1kW: HQI-TS 1000WDS	Osram	LPW1000MB/L	K12s-7 cable
AL5905	Medium	1kW: HQI-TS 1000WDS	Osram	LPW1000MB/L	K12s-7 cable
AL5906	Wide	1kW: HQI-TS 1000WDS	Osram	LPW1000MB/L	K12s-7 cable
AL5907	Narrow	MHN-SA 2KW 400V /956	Philips	LPP2000MHN-SA	XW UNP
AL5908	Medium	MHN-SA 2KW 400V /956	Philips	LPP2000MHN-SA	XW UNP
AL5909	Wide	MHN-SA 2KW 400V /956	Philips	LPP2000MHN-SA	XW UNP
AL5910	Extra Narrow	MHN-SA 2KW 400V /956	Philips	LPP2000MHN-SA	XW UNP
AL5911	Narrow	MHN-SB/HO 2KW 400V /956	Philips	LPP2000MHN-SB	K12s-7 WH UNP
AL5912	Medium	MHN-SB/HO 2KW 400V /956	Philips	LPP2000MHN-SB	K12s-7 WH UNP
AL5913	Wide	MHN-SB/HO 2KW 400V /956	Philips	LPP2000MHN-SB	K12s-7 WH UNP
AL5914	Extra Narrow	MHN-SB/HO 2KW 400V /956	Philips	LPP2000MHN-SB	K12s-7 WH UNP

ELECTRONIC CONTROL GEAR AVAILABLE

Please request when quoting and ordering.

Lamp references



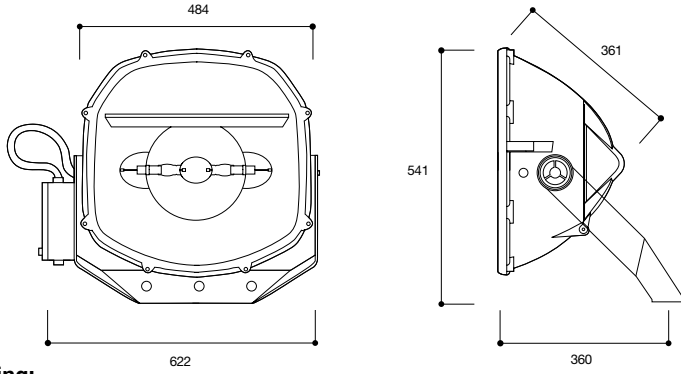
Lamp Manufacturer & Lamp Reference	Lamp Wattage (kW)	Colour Temp. (K)	RA	Lamp Lumen Output (Initial lm)	Lamp Current (A)	Supply Voltage (V)	Total Circuit Power (W)
Philips							
MHN-SB 2000W/956	2	5600	90	200000	11.5	380/400/415	2136
MHN-SB/HO 2000W/956	2	5600	90	220000	11.5	380/400/415	2136
MHN-SA 2000W/956	2	5600	90	200000	11.3	380/400/415	2136
Osram							
HQI-TS2000/D/S	2	5900	93	200000	11.5*	380/400/415	2105
HQI-TS1000/D/S	1	5900	90	90000	9.4	380/400/415	1140

*Measured on a 10.3A ballast.

Technical information may alter dependent on control gear used

Dimensions

Dimensions in mm



Mounting:

Stirrup mounted using M20 fixing
Stirrup adjustment +/- 140°
No baffle in extra narrow version

Weight: 15kg. **Front wind area:** 0.196m²
at 70° elevation

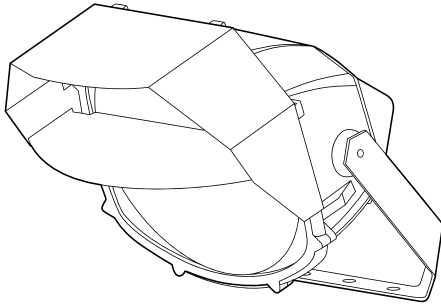
Maintenance



Easy Maintenance:

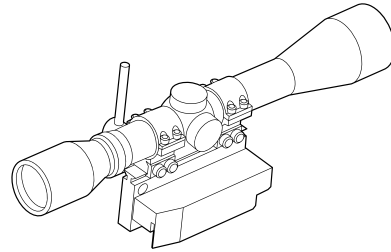
Access to the lamp by means of opening the rear door

Accessories



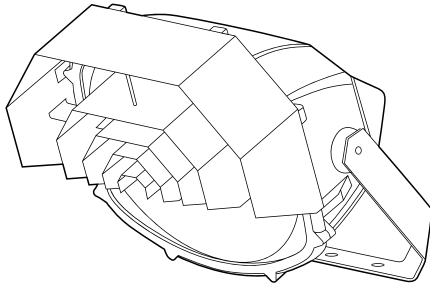
Single blade louvre – AL5922

This accessory for the Challenger® 2 & 3 minimises upward light while maintaining good vertical lighting levels on the playing field



Aiming tool kit – AL5931

Set of equipment and instructions to enable the Challenger® 2 & 3 to be aimed with pinpoint accuracy to a specific point on the design area. Allows the highest level of control over the aiming and commissioning part of a floodlighting project



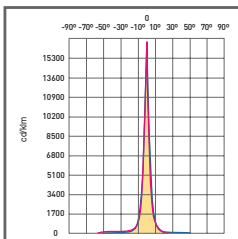
Half concentric louvre – AL5921

This accessory for the Challenger® 3 provides the highest level of upward light and overspill control



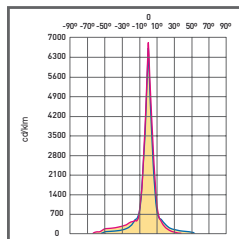
Challenger® 3 with louvres

Key features



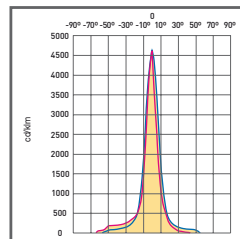
AL5911

MHN-SA Pro 2kW
Narrow beam



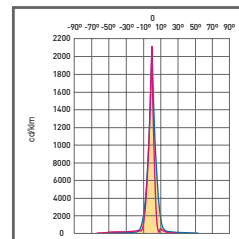
AL5912

MHN-SB Pro 2kW
Medium beam



AL5913

MHN-SB Pro 2kW
Wide beam



AL5914

MHN-SB Pro 2kW
Extra narrow beam



FLOODLIGHTING

VAGO SERIES AL61101

IP66 IK09

Benefits

- Durable die cast aluminium housing
- 160° rotation allows for a variety of mounting options

Technical Features

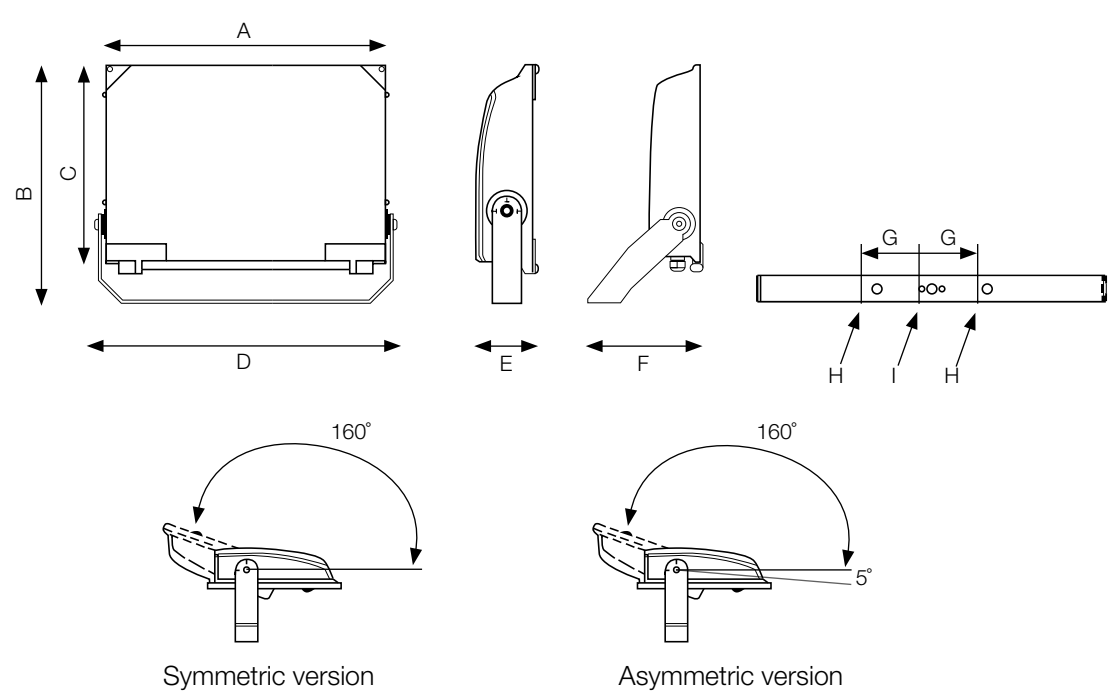
- CRI >70
- Colour temperature 4,000K
- Controls; DALI, 1:10V (optional)
- Protection against overheating
- Surge protection:
 - 2kV / 4kV (13-50W models)
 - 10kV / 6kV (73-400W models)

Applications

- Sport
- Architectural

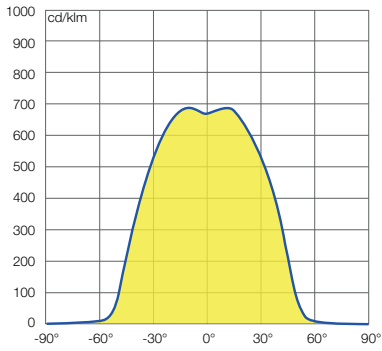


Dimensions

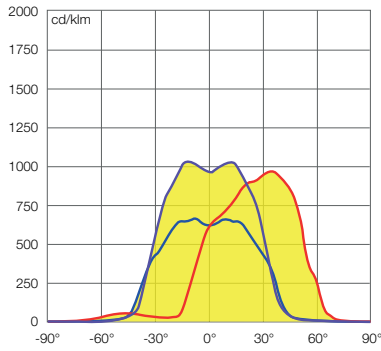


All dimensions in mm	A	B	C	D	E	F	G	H	I
AL61101/1 - AL61101/8	183	234	180	193	60	-	50	ø10.5	ø10.5
AL61101/9 - AL61101/12	223	277	220	233	64	-	50	ø10.5	ø10.5
AL61101/13 - AL61101/28	324	381	300	348	92	-	75	ø11	ø15
AL61101/29 - AL61101/34	384	381	300	408	92	-	75	ø11	ø15
AL61101/35 - AL61101/38	454	381	300	478	92	-	75	ø11	ø15
AL61101/39 - AL61101/46	606	481	400	633	92	205	70	ø13	ø15
AL61101/47 - AL61101/50	606	481	400	633	92	205	70	ø13	ø15

Body type 0

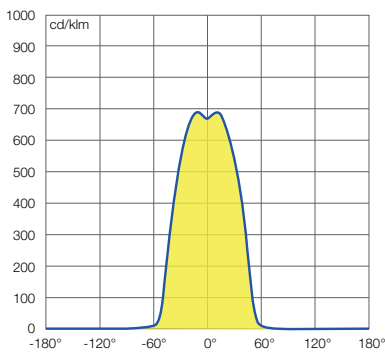


Symmetric optic - WB 2x40°

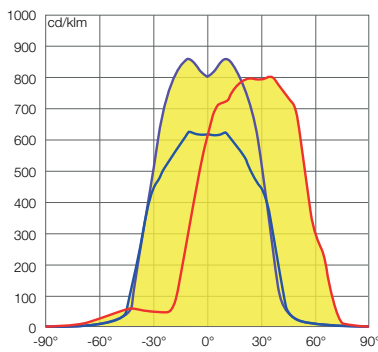


Asymmetric optic

Body type 1

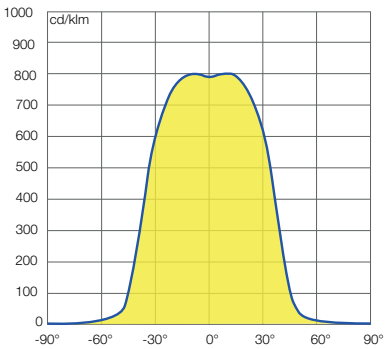


Symmetric optic - WB 2x40°

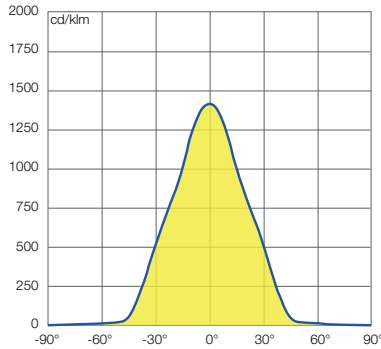


Asymmetric optic

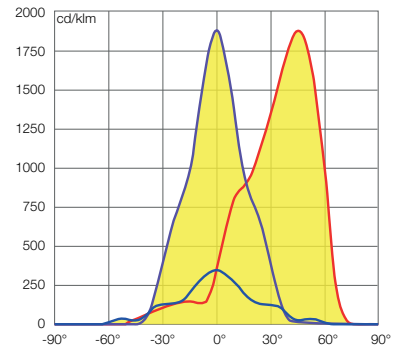
Body type 2 - 8



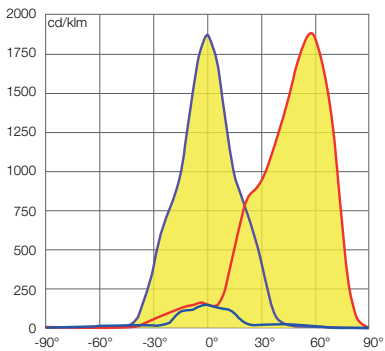
Symmetric optic - WB 2x40°



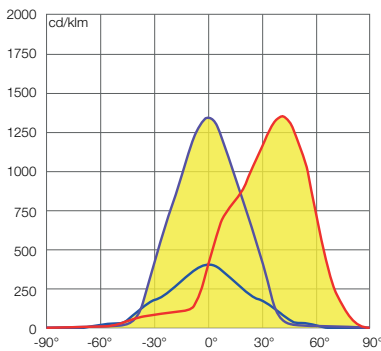
Symmetric optic - MB 2x30°



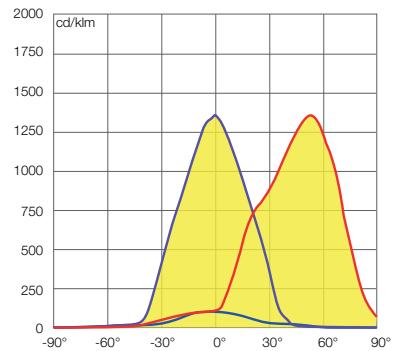
Asymmetric optic A1



Asymmetric optic A1 with visor 57°



Asymmetric optic A2



Asymmetric optic A2 with visor 55°

Photometric data measured according to UNI EN 13032-1 and IES LM 79-08



Beam type	Body type	Wattage (W)	Output (lm)	Weight (kg)	Lifetime	Beam elevation	
AL61101/13	Asymmetric medium	73	8,600	6	L80B10: >100,000h L90B10: >50,000h	45°	
AL61101/14		93	10,800	6			
AL61101/15		102	14,000	6			
AL61101/16		130	16,800	6			
AL61101/29		3	130	18,000			6.5
AL61101/30			162	21,800			6.5
AL61101/35		4	192	25,400			8
AL61101/39		6	219	28,000			13
AL61101/40			270	36,500			13
AL61101/47		8	334	47,200			13.2
AL61101/1	Asymmetric wide	13	1,500	1.7	L80B10: >75,000h	35°	
AL61101/2		0	19	2,100			1.7
AL61101/3			27	2,850			1.7
AL61101/4			32	3,300			1.7
AL61101/9		1	38	4,750	2.5	L80B10: >100,000h L90B10: >50,000h	37.5°
AL61101/10			50	6,500	2.5		
AL61101/17		2	73	8,600	6		42.5°
AL61101/18			93	10,800	6		
AL61101/19			102	14,000	6		
AL61101/20			130	16,800	6		
AL61101/31	3	130	18,000	6.5			
AL61101/32		162	21,800	6.5			
AL61101/36	4	192	25,400	8			
AL61101/41	6	219	28,000	13			
AL61101/42		270	36,500	13			
AL61101/48	8	334	47,200	13.2			
AL61101/21	Symmetric medium	73	9,000	6	L80B10: >100,000h L90B10: >50,000h	42.5°	
AL61101/22		2	93	11,500			6
AL61101/23			102	14,000			6
AL61101/24		130	17,500	6			
AL61101/33		3	162	22,400			6.5
AL61101/37		4	192	26,100			8
AL61101/43		6	219	29,500			13
AL61101/44			316	44,800			13
AL61101/49	8	400	58,000	13.2			
AL61101/5	Symmetric wide	13	1,600	1.7	L80B10: >75,000h	42.5°	
AL61101/6		0	19	2,200			1.7
AL61101/7			27	3,000			1.7
AL61101/8			32	3,500			1.7
AL61101/11	1	38	5,000	2.5	L80B10: >100,000h L90B10: >50,000h	42.5°	
AL61101/12		50	6,800	2.5			
AL61101/25	2	73	9,000	6			
AL61101/26		93	11,500	6			
AL61101/27		102	14,000	6			
AL61101/28		130	17,500	6			
AL61101/34	3	162	22,400	6.5			
AL61101/38	4	192	26,100	8			
AL61101/45	6	219	29,500	13			
AL61101/46		316	44,800	13			
AL61101/50	8	400	58,000	13.2			

Wind exposed surface (m²)				
Body type		Tilt °		
		0	45	90
0	Lateral	0.011	0.011	0.011
	Front	0.009	0.027	0.035
1	Lateral	0.014	0.014	0.014
	Front	0.012	0.040	0.050
2	Lateral	0.028	0.028	0.028
	Front	0.024	0.081	0.102
3	Lateral	0.028	0.028	0.028
	Front	0.028	0.096	0.121
4	Lateral	0.028	0.028	0.028
	Front	0.033	0.113	0.143
6	Lateral	0.028	0.028	0.028
	Front	0.076	0.194	0.253
8	Lateral	0.028	0.028	0.028
	Front	0.076	0.194	0.253

F-LUM SERIES AL60900

IP66

IK08

An outdoor fixture used to illuminate medium sized areas. Available in a wide range of lumen output options and various symmetric and asymmetric beam angles. Featuring a die cast aluminium housing with cooling fins, long lifetime and high system efficiency.

Benefits

- Low maintenance
- Easy to mount
- Detachable driver
- Durable die cast aluminium housing
- Optics to suit all applications

Technical Features

- IP66 and IK08 rated
- Efficacy up to 150lm/W
- CRI >70
- Colour temperature 5,000K
- Surge protection 10kV/10kA
- Controls; Dali, 0-10V
- Protection against overheating



600W

900W

1200W

In association with
 LUMENIA

Applications

- Sport
- Amenity
- Industrial
- Airport / Port

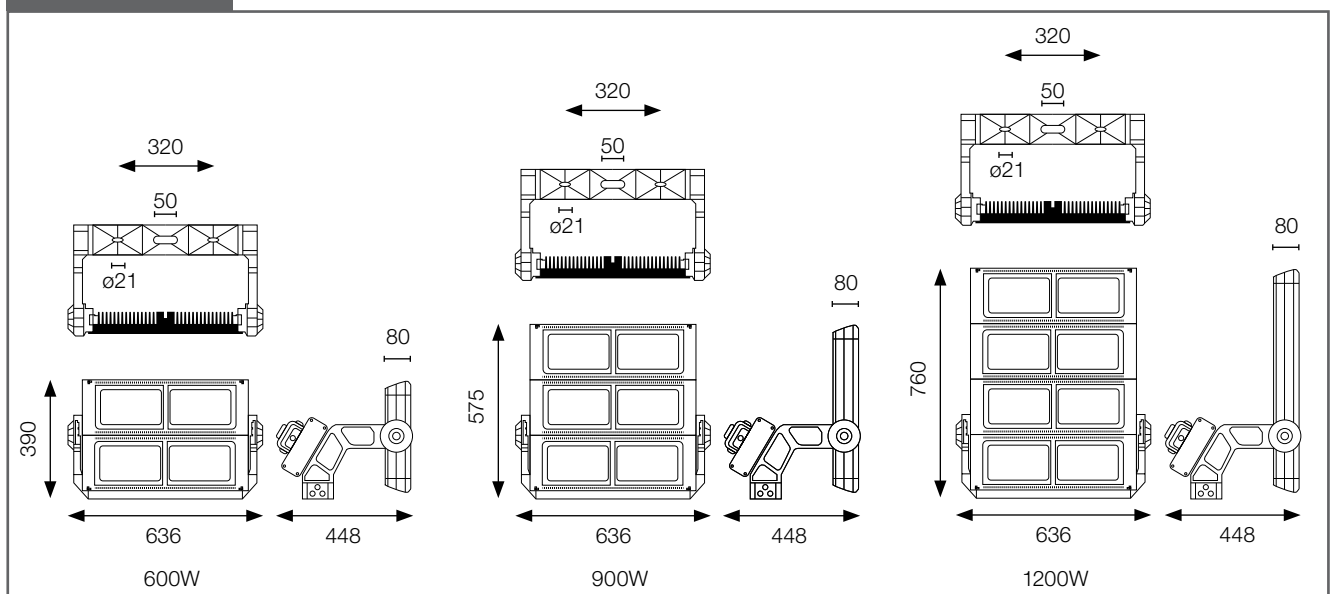
Colours

- Grey

Accessories

- Precision aiming device
- Light spill shield
- Wireguard protection

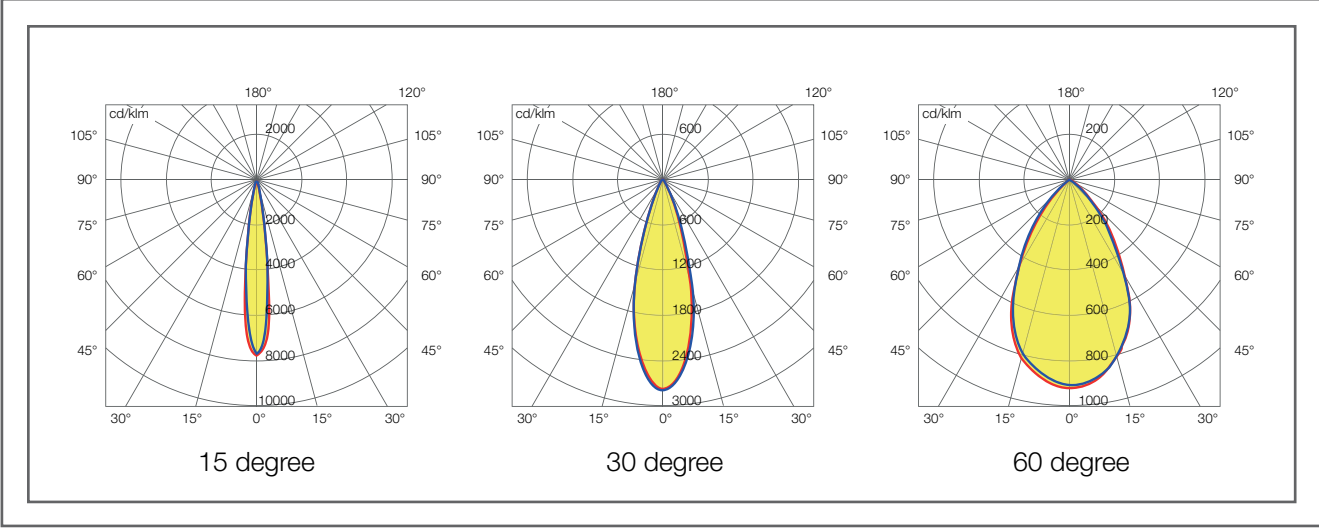
Dimensions



All dimensions in mm



Optics



F-LUM			
System efficacy	Up to 150 lm/W		
Supply voltage	220-240 VAC		
Power	600W	900W	1200W
Luminous flux	Up to 90,000 lm	Up to 135,000 lm	Up to 180,000 lm
Weight	22.5kg	29.5kg	35.5kg
Power factor	> 0.95		
Lifetime L70B10	> 60,000 h		
CCT	5,000K (others available)		
CRI	> 70		
Ingress protection	IP66		
Mechanical strength	IK08		
Surge protection options	10 kV / 10kA (optional 20kV / 20kA)		
Operating temperature	-30°C to +50°C		
Colour	Matt grey		
Housing material	Aluminium		
Remote control options	DALI, 0-10V		
Warranty	5 years on electronics		

	Power (W)	Luminous flux (lm)*	Beam angle	Efficacy (lm/W)
AL60901/600	600	78,000	15°	130
AL60901/900	900	117,000	15°	130
AL60901/1200	1200	156,000	15°	130
AL60902/600	600	90,000	30°	150
AL60902/900	900	135,000	30°	150
AL60902/1200	1200	180,000	30°	150
AL60903/600	600	90,000	60°	150
AL60903/900	900	135,000	60°	150
AL60903/1200	1200	180,000	60°	150

*Luminous flux is valid for CCT 5,000K.

F-LUM MIDI AL60700

- IP66
- IK08

A mid-sized outdoor fixture used to illuminate medium sized areas. Available in a wide range of lumen output options and various symmetric and asymmetric beam angles. Featuring a die cast aluminium housing with cooling fins, long lifetime and high system efficiency.

Benefits

- Low maintenance
- Easy to mount
- Durable die cast aluminium housing
- Compact size and lightweight



In association with
 LUMENIA

Technical Features

- IP66 and IK08 rated
- Efficacy up to 144lm/W
- CRI >70
- Colour temperature 4,000 - 5,000K
- Surge protection 10kV
- Controls; Dali, 0-10V
- Protection against overheating

Applications

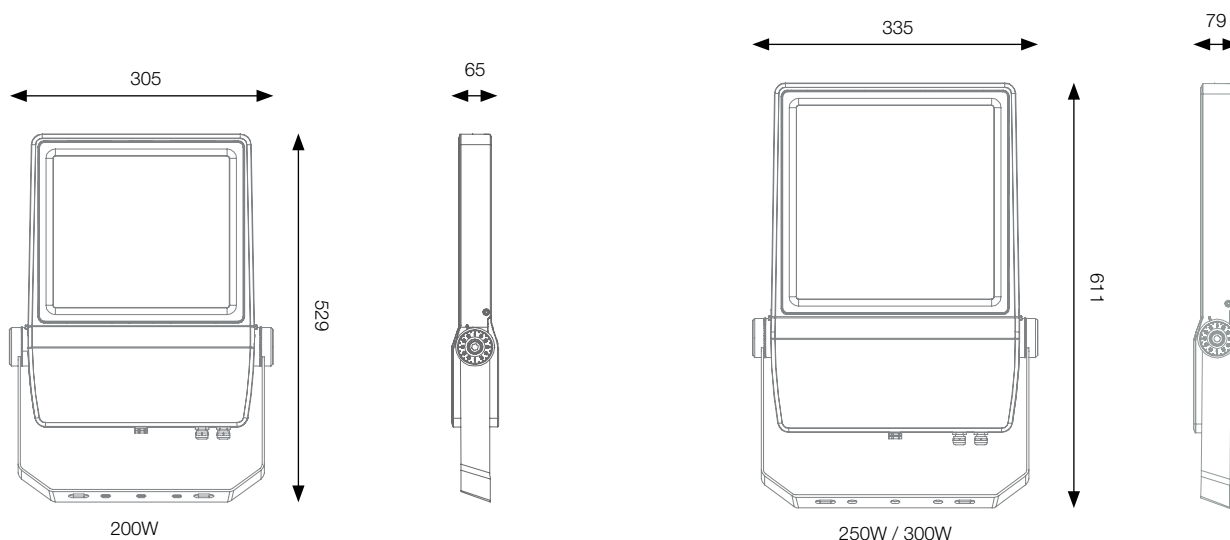
- Road
- Amenity
- Open area
- Sport

Colours

- Grey

Dimensions

Dimensions in mm



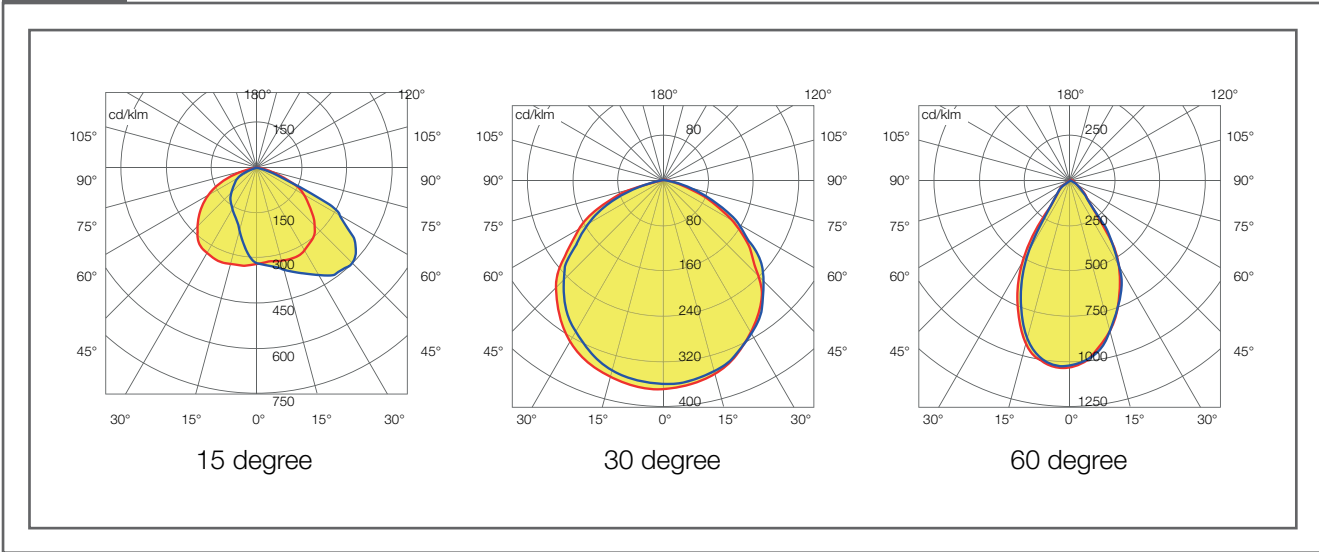


F-LUM Midi			
System efficacy	Up to 144 lm/W		
Supply voltage	220-240 VAC		
Power	200W	250W	300W
Luminous flux	Up to 28,400 lm	Up to 36,000 lm	Up to 42,300 lm
Weight	5.9kg	7.2kg	7.2kg
Power factor	> 0.95		
Lifetime L70B10	> 50,000 h		
CCT	4,000K, 5,000K		
CRI	> 70		
Ingress protection	IP66		
Mechanical strength	IK08		
Surge protection options	10 kV		
Operating temperature	-30°C to +50°C		
Colour	Aluminium grey		
Housing material	Aluminium, PC		
Remote control options	DALI, 0-10V		
Warranty	5 years on electronics		

	Power (W)	Luminous flux (lm)*	Beam angle	Efficacy (lm/W)
AL60701/200	200	26,400	45°	132
AL60701/250	250	33,000	45°	132
AL60701/300	300	39,000	45°	130
AL60702/200	200	26,600	60°	133
AL60702/250	250	34,000	60°	136
AL60702/300	300	40,800	60°	136
AL60703/200	200	28,400	110°	142
AL60703/250	250	36,000	110°	144
AL60703/300	300	42,300	110°	141

*Luminous flux is valid for CCT 4,000K.

Optics



F-LUM MINI AL60800

IP65 IK08

A compact outdoor fixture used to illuminate small areas. Available in a wide range of lumen output options. Featuring a compact design and light weight, whilst maintaining excellent heat dissipation properties.



In association with
LUMENIA

Benefits

- Low maintenance
- Easy to mount
- Durable die cast aluminium housing
- Compact size and lightweight

Technical Features

- IP65 and IK08 rated
- Efficacy up to 132lm/W
- CRI >70
- Colour temperature 4,000K - 5,000K
- Surge protection 10kV
- Controls; Dali, 0-10V
- Protection against overheating

Applications

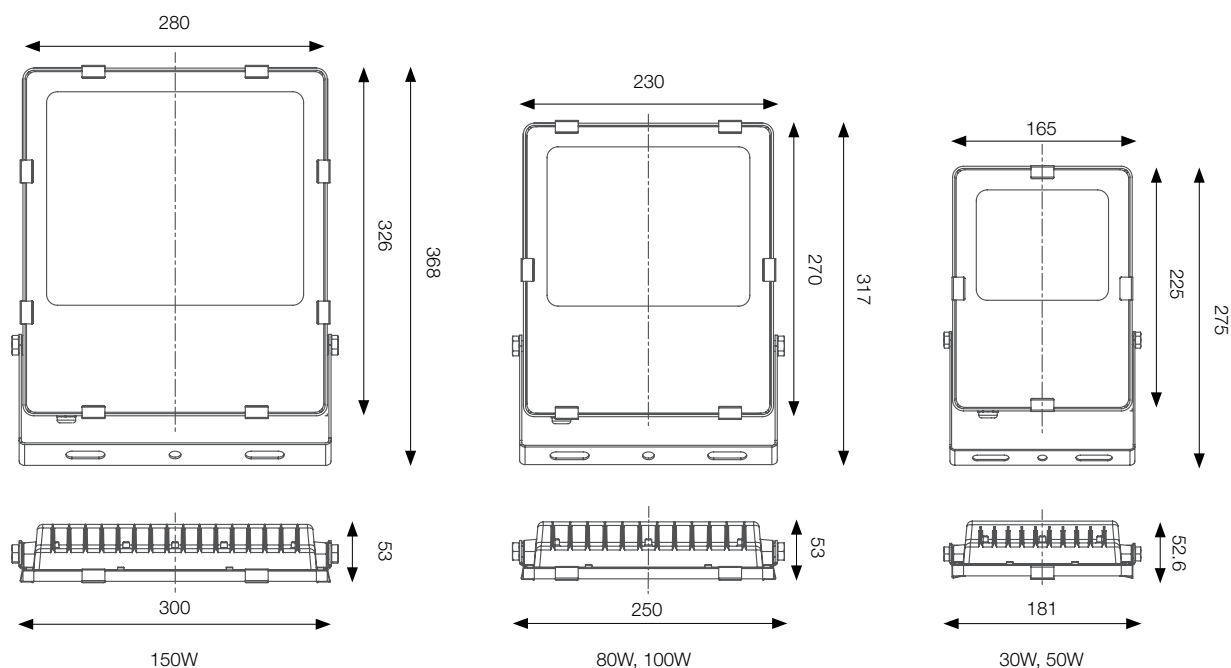
- Road
- Amenity
- Open area

Colours

- Grey

Dimensions

Dimensions in mm



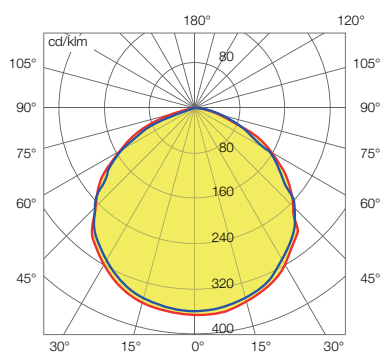


	F-LUM Mini		
System efficacy	Up to 132 lm/W		
Supply voltage	220-240 VAC		
Power	30W - 50W	80W - 100W	150W
Luminous flux	3,960 - 6,550 lm	10,480 - 13,200 lm	Up to 19,650 lm
Weight	1.2kg	2.2kg	3kg
Power factor	> 0.90		
Lifetime L70B10	> 50,000 h		
CCT	4,000K, 5,000K		
CRI	> 70		
Ingress protection	IP65		
Mechanical strength	IK08		
Surge protection options	10 kV		
Operating temperature	-20°C to +50°C		
Colour	Matt black		
Housing material	Aluminium, PC		
Remote control options	DALI, 0-10V		
Warranty	5 years on electronics		

	Power (W)	Luminous flux (lm)*	Efficacy (lm/W)
AL60801/30	30	3,960	132
AL60801/50	50	6,550	131
AL60801/80	80	10,480	131
AL60801/100	100	13,200	132
AL60801/150	150	19,650	131

*Luminous flux is valid for CCT 4,000K.

Optics



TRENT 2 LED AL5500



Symmetrical Small body 4
Low-medium lumen output



Symmetrical Large body 5
Medium-high lumen output

Benefits

- Maximum glare control allows for mounting indoors or at lower height to avoid glare for site users
- Aesthetic styling suitable for architectural and commercial locations

Technical Features

- IP66 and IK08 rated
- Class I as standard, Class II available on select ranges upon request
- Class I has surge protection fitted, up to 10kV protection
- Body 4 & 5 consist of a symmetrical distribution with 3 beam widths
- Body 8 & 9 consist of street lighting optics
- Multiple wattages available in all versions
- Programmable drivers on selected versions
- Die-cast aluminium and front frame, degreased and phosphor chromate treated with surface protection coat & polyester powder coating
- Double goniometric scale for ease of vertical aiming on site for body styles 4 & 5
- Tempered glass with high temperature thermal shock resistance, mechanically fixed into the frame
- Pressure compensation filter on the body
- High efficiency metalised polycarbonate vacuum formed reflectors
- Power correction factor >0.90
- Stirrup for bodies 4 & 5
- 60 or 76mm diameter post mount for bodies 8 & 9
- Access options : Hexagon stainless steel screws, or tool-less access by stainless steel securing clip. State on order
- Bodies 4 & 5 come with Multichip Philips Luxeon M LEDs
- Bodies 8 & 9 come with Luxeon T e or Cree XM-L2 LEDs



Cosmo Option - Asymmetric



Cosmo Option - Symmetric



Street Optic Large body 9
Medium-high lumen output



Street Optic Small body 8
Low-medium lumen output

- Mounted on a pressed aluminium circuit, highly heat dissipating Metal Core Printed Circuit Board
- Photobiological Risk Group exempt based on EN 62471

Applications

- Area
- Sport

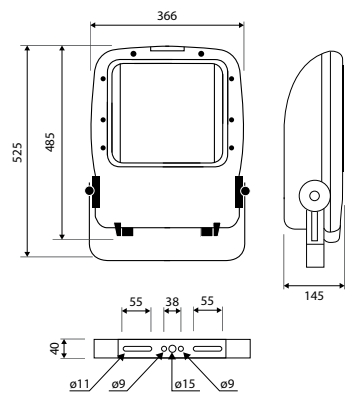
Colour

- Light grey

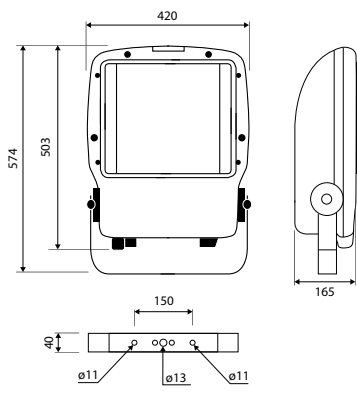


Dimensions

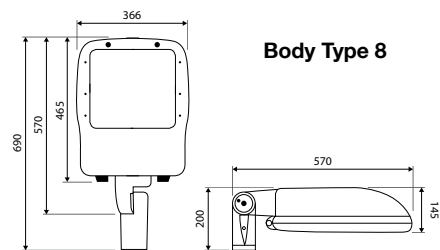
Dimensions in mm



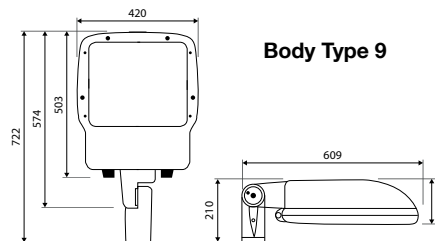
Body Type 4



Body Type 5



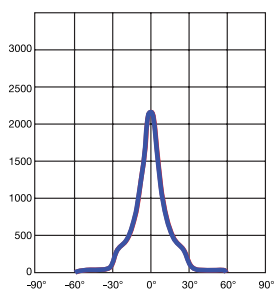
Body Type 8



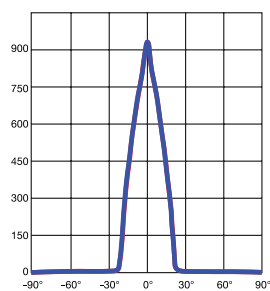
Body Type 9

Key features

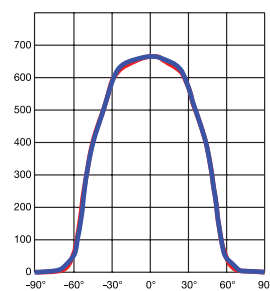
Symmetric Body 4



AL5541 30°

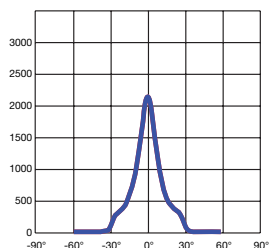


AL5542 60°

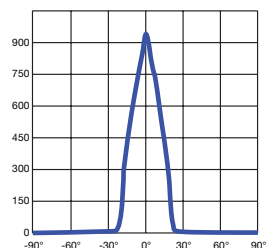


AL5544 80°

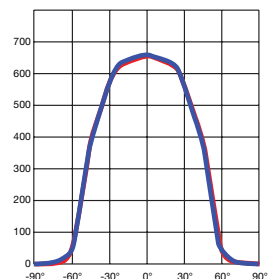
Symmetric Body 5



AL5551 30°

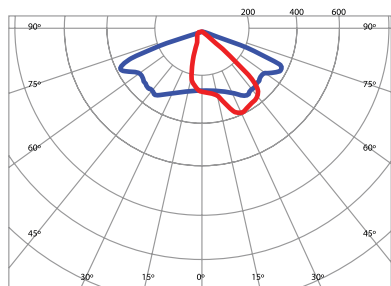


AL5552 60°



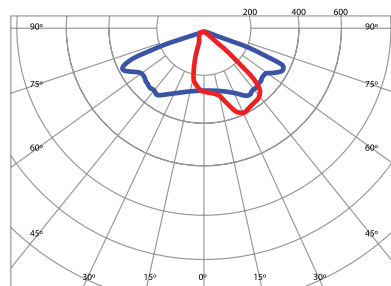
AL5554 80°

Street Optic Body 8



AL5580 15°

Street Optic Body 9



AL5590 15°

Technical Specifications

	Wattage (W) <i>Includes Driver</i>	No. of LEDs	Nominal Lumen Output (lm)	Lumen Output (lm)	L80 Hours (TA=25°)	CCT & CRI	Fixed Current Driver	Prog. Driver	Running Current (mA)	Beam Width	Body Type	Weight (kg)	Wind Area (m ²)
AL5541	60	9	8350	7390	>70000	4000K / >70 CRI	Y	N	530	30°	4	11.3	0.077
	78	12	10930	9670	>70000		Y	N	530	30°	4	11.3	0.077
	100	16	14200	12600	>65000		Y	N	530	30°	4	11.3	0.077
AL5542	60	9	8350	7390	>70000	4000K / >70 CRI	Y	N	530	60°	4	11.3	0.077
	78	12	10930	9670	>70000		Y	N	530	60°	4	11.3	0.077
	100	16	14200	12600	>65000		Y	N	530	60°	4	11.3	0.077
AL5544	60	9	8350	7390	>70000	4000K / >70 CRI	Y	N	530	80°	4	11.3	0.077
	78	12	10930	9670	>70000		Y	N	530	80°	4	11.3	0.077
	100	16	14200	12600	>65000		Y	N	530	80°	4	11.3	0.077
AL5551	134	16	17740	15700	>60000	4000K / >70 CRI	Y	N	700	30°	5	11.4	0.087
	144	20	19430	17200	>60000	>70 CRI	N	Y	600	30°	5	11.4	0.087
AL5552	134	16	17740	15700	>60000	4000K / >70 CRI	Y	N	700	60°	5	11.4	0.087
	144	20	19430	17200	>60000	>70 CRI	N	Y	600	60°	5	11.4	0.087
AL5554	134	16	17740	15700	>60000	4000K / >70 CRI	Y	N	700	80°	5	11.4	0.087
	144	20	19430	17200	>60000	>70 CRI	N	Y	600	80°	5	11.4	0.087

LIGHT DISTRIBUTION TYPE: Symmetric
MOUNT: Stirrup

	Wattage (W) <i>Includes Driver</i>	No. of LEDs	Nominal Lumen Output (lm)	Lumen Output (lm)	L80 Hours (TA=25°)	CCT & CRI	Fixed Current Driver	Prog. Driver	Running Current (mA)	Body Type	Weight Spigot (kg)	Weight Wall Mount (kg)	Wind Area (m ²)
AL5580	52	24	6540	5700	>70000	4000K / >70 CRI	Y	N	700	8	9.68	10.83	0.083
	65	30	8150	7100	>70000		Y	N	700	8	9.68	10.83	0.083
	79	36	9460	8250	>65000		Y	N	700	8	10.68	11.83	0.083
	91	42	10980	9580	>65000		Y	N	700	8	10.68	11.83	0.083
AL5590	106	49	13200	11100	>70000	4000K / >70 CRI	Y	N	700	9	13.0	14.25	0.112
	120	56	16510	130	>70000		Y	N	700	9	13.0	14.25	0.112
	134	42	17500	15650	>70000		N	Y	1000	9	13.0	14.25	0.112

LIGHT DISTRIBUTION TYPE: Street Optic
MOUNT: Spigot or wall mount

	Wattage (W) <i>Includes Driver</i>	No. of LED COB	Nominal Lumen Output (lm)	Lumen Output (lm)	CCT & CRI	Prog. Driver	Optic	Distribution	Body Type	Weight (kg)	Wind Area (m ²)
AL5591	110	2	19700	14250	4000K / >70 CRI	Y	Wide 2 x 34°	Symmetric	4	11.3	0.0494
AL5592	110	2	19700	14250		Y	Spot 2 x 20°		4	11.3	0.0494
AL5593	124	3	25000	18000		Y	Wide 2 x 34°		4	11.3	0.0494
AL5594	124	3	25000	18000		Y	Spot 2 x 20°	4	11.3	0.0494	
AL5595	178	5	35700	26500		Y	Wide 2 x 34°	Asymmetric	5	13.35	0.0494
AL5596	178	5	35700	26500		Y	Spot 2 x 20°		5	13.35	0.0494
AL5597	98	2	17200	12700		Y	Maximum intensity 36°		4	11.3	0.0494
AL5598	117	3	22100	16400		Y	Maximum intensity 36°	Asymmetric	4	11.3	0.0494
AL5599	145	4	26700	19850		Y	Maximum intensity 36°		5	13.35	0.0494
AL5600	154	5	29200	21650	Y	Maximum intensity 36°	5		13.35	0.0494	

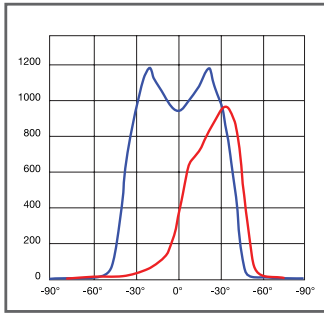
LIGHT DISTRIBUTION TYPE: Cosmo Optic
MOUNT: Stirrup

Technical Specifications

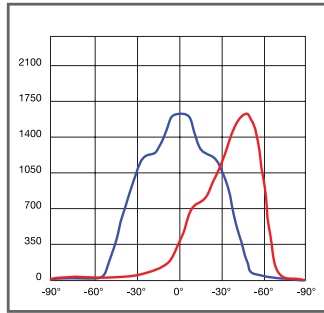
	Wattage (W) <i>Includes Driver</i>	No. of LEDs	Nominal Lumen Output (lm)	Lumen Output (lm)	L80 Hours (TA=25°)	CCT & CRI	Fixed Current Driver	Prog. Driver	Running Current (mA)	Beam Elevation	Body Type	Weight (kg)	Wind Area (m ²)
AL5545	90	12	12650	10000	>70000		N	Y	600	35°	4	11.3	0.077
AL5546	90	12	12650	10000	>70000	4000K / >70 CRI	N	Y	600	45°	4	11.3	0.077
AL5547	90	12	12650	10000	>70000		N	Y	600	55°	4	11.3	0.077
AL5548	90	12	12650	10000	>70000		N	Y	600	60°	4	11.3	0.077
AL5555	100	16	13900	11300	>60000	4000K / >70 CRI	N	Y	530	35°	5	14.4	0.087
	127	20	17200	14000	>60000		Y	N	530	35°	5	14.4	0.087
AL5556	100	16	13900	11300	>60000	4000K / >70 CRI	N	Y	530	45°	5	14.4	0.087
	127	20	17200	14000	>60000		Y	N	530	45°	5	14.4	0.087
AL5557	100	16	13900	11050	>60000	4000K / >70 CRI	N	Y	530	55°	5	14.4	0.087
	127	20	17200	13690	>60000		Y	N	530	55°	5	14.4	0.087
AL5558	100	16	13900	11050	>60000	4000K / >70 CRI	N	Y	530	60°	5	14.4	0.087
	127	20	17200	13690	>60000		Y	N	530	60°	5	14.4	0.087

LIGHT DISTRIBUTION TYPE: Double Asymmetric
MOUNT: Stirrup

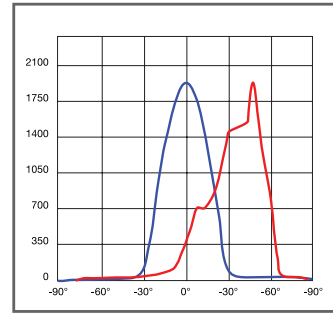
Key features



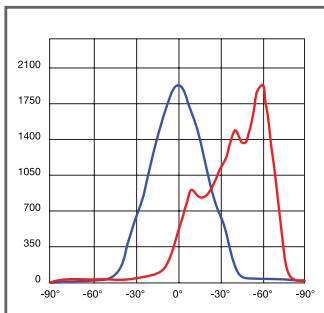
Body 4 35°



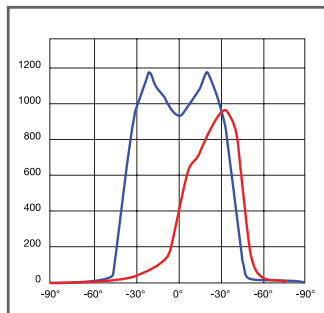
Body 4 45°



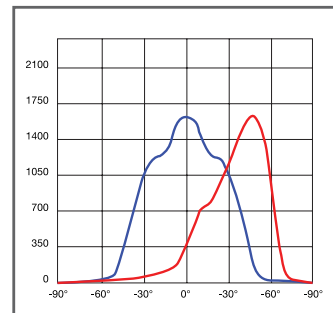
Body 4 55°



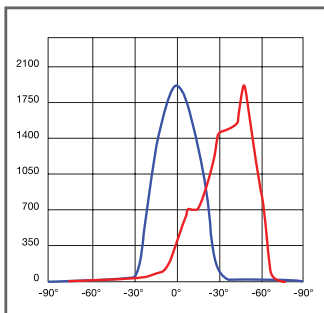
Body 4 60°



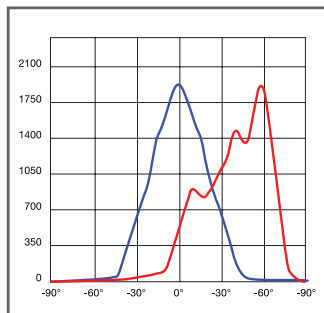
Body 5 35°



Body 5 45°



Body 5 55°



Body 5 60°

Vertical — Horizontal —



FLOODLIGHTING

MURA 2 LED AL5300



Body Type 6 Standard LED



Body Type 7 Standard LED



Body Type 7 RGB LED Symmetric

Benefits

- Design of optics gives maximum glare control and visual comfort for use at lower levels or in sporting applications where low height or indoor areas are to be lit
- Vertical orientation indicator allows for ease of elevating allowing for adaptability and quick adjustment to be undertaken during installation and maintenance

Technical Features

- IP67 and IK08 rated
- Class I
- RGB LED version with four pre-programmed light scenes with 12 variations available and light intensity dimming to 25%, 50% and 75%. A master unit controls up to 30 slave units to programme scenes by remote control
- Die-cast aluminium body and front frame
- Galvanised and painted steel bracket with vertical orientation indicator with stainless steel external screws
- Power correction factor >0.90
- Anti-ageing silicon rubber gasket

- Extra clear tempered 4mm thick glass sealed to the front cover
- Standard LED and RGB versions available, multiple wattages available in two body sizes
- Available in symmetrical or asymmetrical light distributions
- High efficiency metalised polycarbonate vacuum formed reflectors (none RGB version)
- LED types are mounted on a pressed aluminium circuit, highly heat dissipating Metal Core Printed Circuit Board
- Surge protection fitted, up to 6kV protection, option of 10kV
- Photobiological Risk Group exempt based on EN 62471

Applications

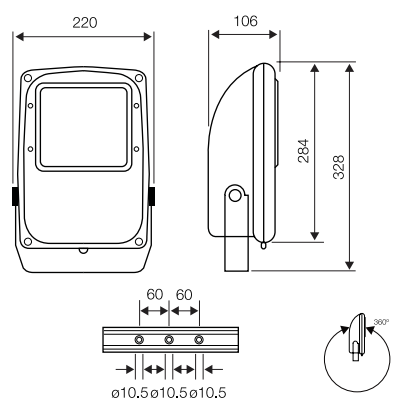
- Area

Colour

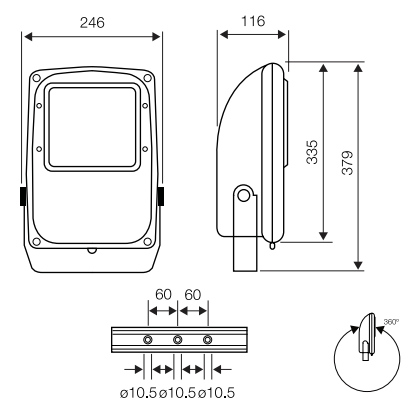
- Light grey

Dimensions

Dimensions in mm



Body Type 6
AL5380



Body Type 7
AL5381

	Wattage (W) <i>Includes Driver</i>	No. of LEDs	Nominal Lumen Output (lm)	Lumen Output (lm)	L80 Hours (TA=25°)	CCT & CRI	Fixed Current Driver	Prog. Driver	Running Current (mA)	Beam Width	Body Type	Weight (kg)	Wind Area (m²)
AL5380	27	12	3300	2570	>65000	4000K /	N	Y	700	2 x 40°	6	3.95	0.056
	36	16	4420	3380	>65000	>70 CRI	N	Y	700	Symmetrical	6	3.95	0.056
AL5381	42	25	5330	4150	>65000	4000K /	Y	N	530	2 x 40°	7	4.75	0.075
	54	25	6700	5200	>65000	>70 CRI	Y	N	700	Symmetrical	7	4.75	0.075
	42	36	Dependent on Colour Configuration		>50000	RGB	N	Y	530	2 x 30° Symmetrical	7	4.75	0.075
	42	36			>50000		N	Y	530	2 x 40° Symmetrical	7	4.75	0.075
AL5382	27	12	3380	2640	>65000		Y	N	700		6	3.95	0.056
AL5383	36	16	4520	3520	>65000	4000K /	Y	N	700	30°	7	4.75	0.075
	45	20	5500	4300	>65000	>70 CRI	Y	N	700	Asymmetrical	7	4.75	0.075
LIGHT DISTRIBUTION TYPE: Symmetrical (AL5380, AL5381), Asymmetrical (AL5382, AL5383)													
MOUNT: Stirrup													



VELA LED AL7000



Benefits

- Ease of maintenance and replacement of parts due to the modular construction
- Effective light control and low light output ratio (ULOR) with the design of the outer body and canopy

Technical Features


- Various wattages available: 200W, 400W, 600W
- 250W driver (IP67)
- Colour temperature: 5000K
- CRI: 70
- Cree / Philips Lumileds
- Single phase 230V
- Single plug and play high quality connector for power and controls
- Running current: 700mA
- Lumens per watt circa 102.5+lm / W
- 1-10V dimming available as standard
- Five distribution types available: narrow, medium, wide, extra narrow and extra wide

- Low upward light output ratio (ULOR)
- Die-cast aluminium black LED modules
- 3mm sheet aluminium outer body
- Polyester power coated body as standard, finished silver (RAL 9006)
- Mounting bracket options: under slung or over slung
- Modular construction

Applications

- Area
- Sport

Colour

-  Silver (RAL 9006)

Technical Specifications

	Wattage (W)	Lumen Output (lm)	No. of LED Modules	No. of LEDs	Beam Distribution	Efficacy	Drivers (W)	Effective Projection Area	Weight (kg)
AL7001	396	42059	2	48	Narrow	106.2	2 x 250 (On the fitting)	0.328	27
AL7002	396	41428	2	48	Medium	104.6	2 x 250 (On the fitting)	0.328	27
AL7003	394	40787	2	48	Wide	103.5	2 x 250 (On the fitting)	0.328	27
AL7004	609	64957	3	72	Narrow	106.7	3 x 250 (Remote)	0.23	31.4
AL7005	609	63008	3	72	Medium	103.5	3 x 250 (Remote)	0.23	31.4
AL7006	609	61118	3	72	Wide	100.4	3 x 250 (Remote)	0.23	31.4
AL7007	196	20516	1	24	Wide	104.6	1 x 250 (On the fitting)	0.246	16
AL7008	396	44036	2	48	Extra Narrow	111.2	2 x 250 (On the fitting)	0.328	27
AL7009	332	33567	2	48	Extra Wide	103.9	2 x 250 (On the fitting)	0.328	27

AMENITY LIGHTING

Amenity lighting is used to enhance and provide a safe night environment for the benefit of local residents, pedestrians, car park and road users.

It covers a wide range of general applications and purposes:

- To improve night time visual attractiveness and surroundings for residents and visitors
- To allow safer movement of pedestrians in the outdoor environment
- To offer outdoor car park users the appropriate level of lighting to balance the requirements of security, comfort and visibility
- To provide security lighting for local properties by deterring or revealing intruders
- To discourage violence, vandalism and crime by providing less concealment and allowing visual recognition of people within the night scene
- To provide low level general lighting of access roads, low traffic residential roadways and footpaths
- To provide the appropriate level of lighting for the level of security risk, be it low, medium or high

These requirements may usually be achieved by introducing relatively low lighting levels dependent, however, upon the overall purpose and degree of attractiveness desired. High levels of illuminance uniformity are usually unnecessary.

It is more important to ensure that minimum illuminance values are achieved in order to allow safe movement of pedestrians. The minimum values are determined in the relevant categories. The lighting of roadways should comply with the relevant code of practice or standard.

Increasing illuminance levels will also improve visual performance and instill in the pedestrian the psychological effect of increased safety, providing glare is controlled. Surround ratios of road and footpath illuminance against the illuminance of the surrounding area are governed by British and European standards (BS 5489-1 and BS EN 13201-2).

In the night environment a poorly designed lighting installation may produce lighting pollution. This can cause serious adverse effects, both physiological and ecological, in both urban and rural areas.

There are three distinct areas of light pollution: Overspill, Glare and Sky Glow.

The objective for the lighting system should be to limit these to an acceptable level for the location and application by careful design. By controlling obtrusive light, both the lighting quality and performance are increased.

Amenity lighting can create a positive effect. Showing luminaire form may enhance the night time appearance and reflections can also create attractive sparkle. Good amenity lighting should take into consideration all aspects of the lit environment.

Application	Lighting Level	Uniformity
Safety		
Safe pedestrian movement. Revealing obstacles and scene irregularities	1 Lux (min)	
For safe facial recognition (friend or foe)	5 Lux (ave)	
Outdoor Car Parks (ref: BS 5489-1:2003+A2:2008)		
Light traffic: Shop parking areas, housing, cycle parks	5 Lux (ave)	U _o = 0.25
Medium traffic: Parking at major stores, office buildings, sports and multi-purpose building complexes	10 Lux (ave)	U _o = 0.25
Heavy traffic: Parking areas at schools, churches, major sports and multi-purpose building complexes	20 Lux (min)	U _o = 0.25
Open Footbridges, Stairways & Ramps (ref: BS 5489-1:2003+A2:2008)	30 Lux (ave)	U_o = 0.5
Roadways & Public Amenity areas: (S, C, ME Classes) Please refer to BS 5489-1:2003+A2:2008 & EN 13201-2:2003 for guidance.		

U_o=E_{min}/E_{ave}. These are guidelines only



FLOODLIGHTING

The use of floodlights to illuminate exterior areas has a wide and varied range of applications.

Some typical categories are:

- General lighting
- Working areas
- Security
- Sports

Applications such as lighting for sports, security, airports, docks and the illumination of hostile and hazardous environments often require specialist attention. Our lighting design service is available to advise on these and all other aspects of exterior lighting. You can also refer to the Abacus Sports Lighting Solutions brochure and the Abacus website for detailed information on standards and recommended solutions.

General and working areas

Most general and working areas are illuminated by floodlights mounted on masts or buildings. The type of floodlight, lamp selection and mounting height are dependent upon the overall size of the area, illuminance level, visual task, site restrictions and the cost effectiveness of the overall design.

Calculations

All general exterior lighting calculations will include a maintenance factor due to depreciation caused by various elements. Where a 'Maintained Illuminance Level' is required, it is necessary to incorporate a full maintenance factor comprising all depreciation factors:

1. Depreciation due to build-up of dirt on a luminaire
2. Lamp lumen depreciation
3. Lamp survival
4. Deterioration of internal reflecting surfaces
5. Atmospheric losses

The use of a 'Maintained Illuminance' should ensure the specified illuminance level is always provided during the period to planned maintenance. It is of particular importance in specifications for sports lighting.

Application	Lighting Level	Uniformity
Safety & Security		
Very low risk: occasional light traffic areas	5 Lux (ave)	Uo = 0.25
Low risk: General lighting – occasional use	10 Lux (ave)	Uo = 0.40
Medium risk: Storage areas with frequent traffic	20 Lux (ave)	Uo = 0.40
High risk: Operational areas requiring high levels of safety	50 Lux (ave)	Uo = 0.40
Industrial Sites & Storage Areas		
Short term handling of large units and raw materials. Loading and unloading of bulk goods	20 Lux (ave)	Uo = 0.25
Continuous handling of large units and raw materials. Loading and unloading of freight; open loading platforms	50 Lux (ave)	Uo = 0.40
Reading documents; using tools	100 Lux (ave)	Uo = 0.50
Demanding work; machine operation, inspection	200 Lux (ave)	Uo = 0.50
General Circulation Areas		
Pedestrian walkways	5 Lux (ave)	Uo = 0.25
Slow moving traffic areas	10 Lux (ave)	Uo = 0.40
Regular traffic areas	20 Lux (ave)	Uo = 0.40
Pedestrian use, turning vehicles, loading and unloading points	50 Lux (ave)	Uo = 0.40
Please refer to BS EN 12464-2:2007 or CIE S 015E:2005 for a wider range of application guidance		

These are guidelines only



BASE-HINGED COLUMNS

PRODUCT

Why not consider the base-hinged column for your car park or large area lighting project? The benefits of a simple and quick maintenance solution are clear. Ground level operation and lamp change, means there's no need to work at heights. The 4m to 8m spring operated light duty range, for example, can be lowered for maintenance in less than one minute.

BENEFITS:

Offering ground level maintenance for lantern cleaning, lamp change and column painting, the base-hinged column is available from a height of 4m up to a maximum of 50m. It is the best selling base-hinged column, and with good reason!

To see our columns in operation visit www.abacuslighting.com





COLUMNS & MASTS

We design, manufacture and install a variety of columns and masts. Base-hinged and fixed columns, and the widest range of high mast systems – even unique telescopic masts. Whatever your requirements, we'll either have a product in our range or we can design one for you.

Standard columns

Abacus manufactures and supplies a wide range of standard columns in tubular, octagonal and conical styles, often in a choice of galvanised steel or aluminium. We also offer a variety of brackets designed to accommodate most standard luminaires, as well as a bespoke service, tailoring columns and brackets to specific requirements for your project.

A range of three architecturally styled columns, type LoCone, HiCone and Classic, are available with complementary brackets. A shield-shaped flush door enhances its appeal for amenity and architectural applications.

You can also enhance the appearance and longevity of your products with a wide range of paint finishes and surface protections; from standard finishes to specialist options such as marine and anti-graffiti protection.



High mast systems

Whether you need a mast for lighting a port or stadium, road junction or industrial facility, we have the right product for you. Choose from fixed masts, base-hinged or raising and lowering winch masts. We also manufacture masts for telecoms, wind turbines, CCTV, signage and a whole host of other uses, not related to lighting.

Telescopic masts

Our latest innovation is the unique telescopic mast system, perfect for addressing planning issues. These masts can be raised using the latest touchscreen technology and are installed in some of the world's most iconic sports stadia.

PAINT SHOP FACILITY

COLUMN FINISHING & PROTECTION OPTIONS

Abacus offers a wide range of paint finishes designed to suit the requirements of our customers. Finishes are applied to the column once the column has been hot dip galvanised in accordance with the British and European standard, EN1461. Download the full list of options from our website.



INSTALLATION & MAINTENANCE FROM THE PROFESSIONALS



Installation

We are proud to offer a professional turnkey solution, from design through to installation. Our highly skilled installation teams work worldwide across a whole range of industries. We can supply everything from foundations to commissioning, either as a subcontractor or main contractor.

Let us take the worry out of your project by handling it, from start to finish.

Maintenance

At Abacus the great service doesn't stop with installation. Our fully qualified engineers can also offer you a variety of maintenance packages to suit every requirement.

Working at all heights, we will inspect and report on all aspects of your lighting system – including testing your electrical systems and cabling to certify compliance to NICEIC standards. We can also repair and replace key components and develop a tailored maintenance programme to suit your specific project.

Our reputation is built on providing professional and efficient maintenance services for a wide variety of customers. We are also a RISQS approved contractor for work on rail projects.

Our expertise covers all types of industry sectors including:

- Sports lighting systems
- Airport, port and industrial high mast floodlighting
- Retail parks and amenity lighting
- Railway lighting
- All hinged mast systems
- High masts with lowering headframes
- Fixed masts with and without ladders



Maintenance Elements designed around you

Abacus Maintenance Elements can be applied to a wide variety of applications:

- Sports lighting systems
- Retail parks & amenity lighting
- Airport, port & industrial high mast floodlighting
- Railway lighting
- Hinged & fixed masts
- High masts with lowering headframes
- Fixed masts with & without ladders
- Anything else? Give us a call



**To find out more about
Abacus Maintenance Elements,
call +44 (0)1623 518 316 or
visit our website, www.abacushlighting.com**



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Web www.abacushlighting.com

Conditions of sale

All goods supplied are subject to the company's general conditions of sale which are available on request.

Registered Office:

Oddicroft Lane, Sutton-in-Ashfield, Nottinghamshire, NG17 5FT, United Kingdom.
Registered in England No. 8494722

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