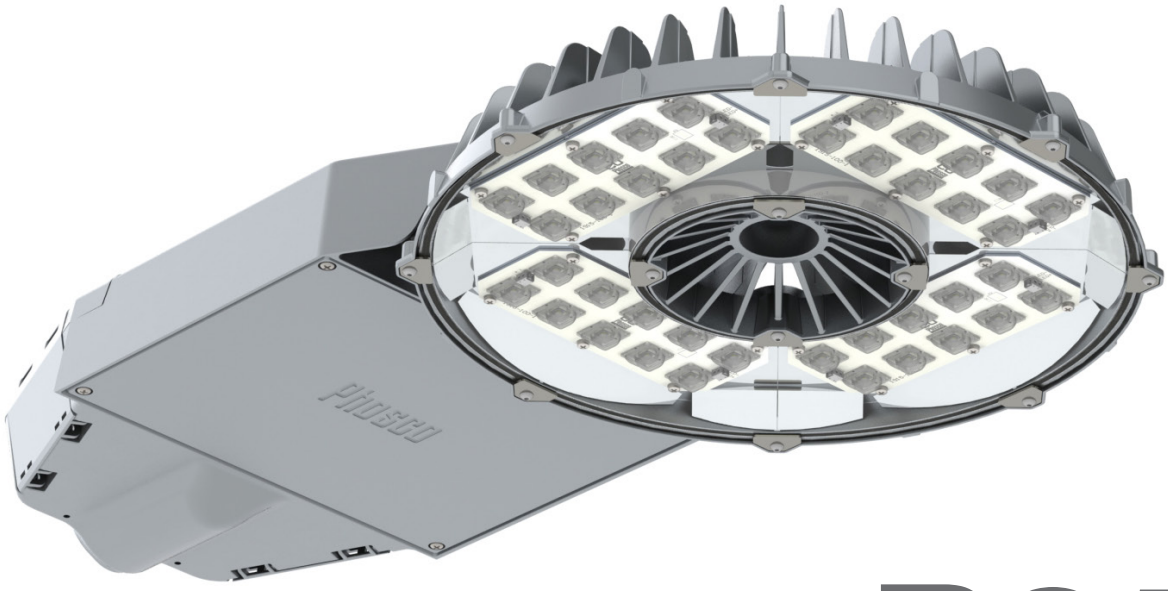


P855

Next Generation High Mast LED Luminaire with variable geometry STAR-optic®

CU Phosco LIGHTING

P855 is a highly innovative, High Mast LED luminaire with 360° rotating STAR-optic®. The functional yet compact design delivers exceptionally powerful optical and thermal performance, whilst maintaining low weight and wind area.

P855's wide range of optical distributions coupled with 360° rotation delivers unlimited freedom in lighting design regardless of luminaire orientation, whilst optimising energy efficiency for even the most challenging scheme.

It is the ultimate solution to replace traditional High Mast HID sources with superior efficacy and reliability.

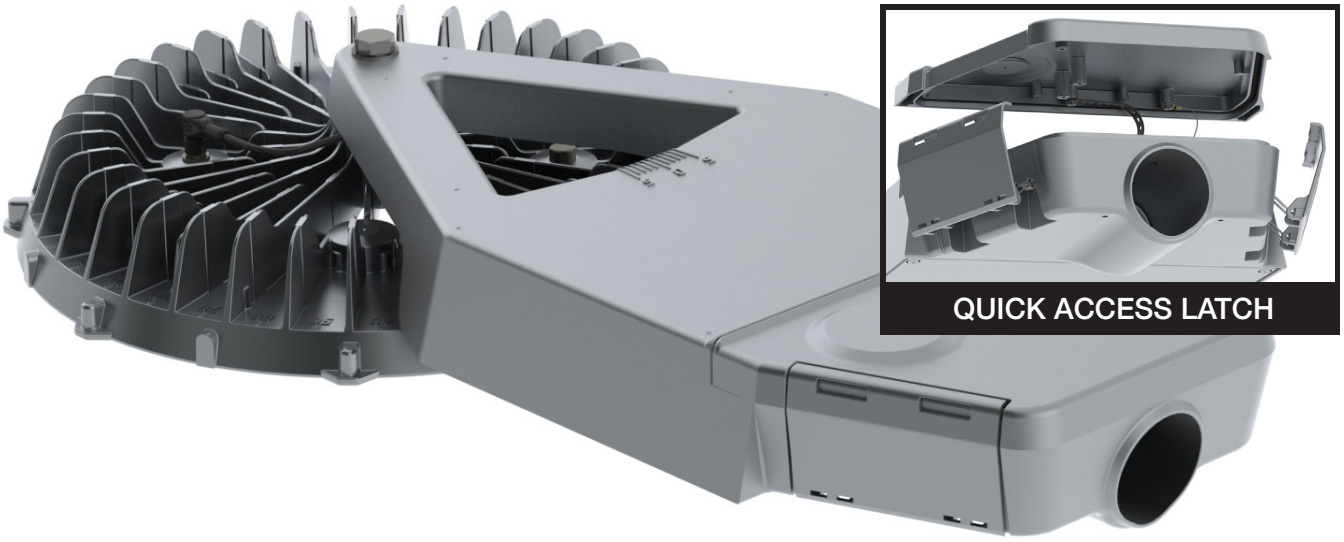
FEATURES AND BENEFITS

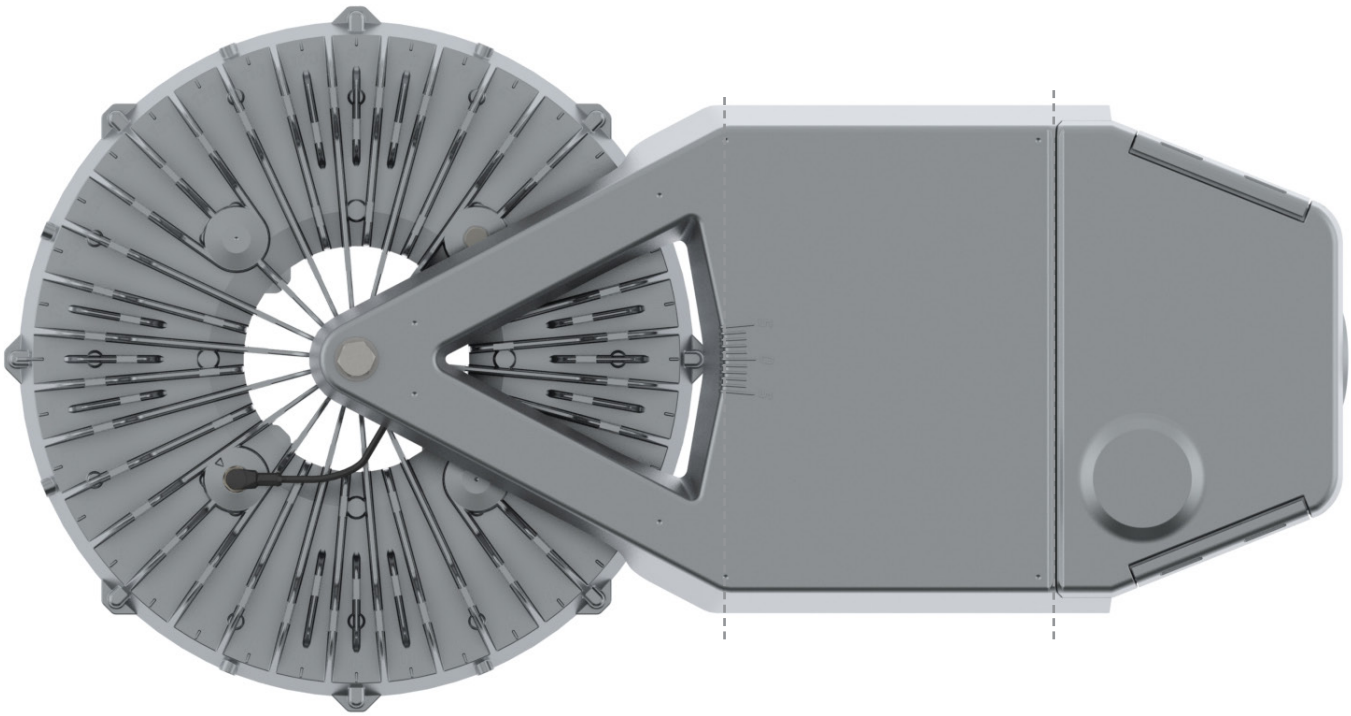
- STAR-optic® system delivers 360° variable photometry
- Hybrid lens + reflector optic minimises light at angles near the horizontal
- Up to G6 glare rating. Dark sky friendly, no upward light
- Slim, elegant and state-of-the-art design
- High flux density and efficacy LED
- Powerful output up to 36,000 lm
- Superior luminaire efficacy up to 126 lm / W
- Wide range of light distributions
- Low lumen depreciation (L95 at 90,000 hours) at full power
- User friendly installation
- Maximised savings on energy and maintenance costs
- Minimal total cost of ownership
- Flexible and intelligent lighting control options
- Lightweight and low windage allowing retrofit onto most existing masts
- IP66 ingress protection for Optical & Driver Compartment
- 100% recyclable, low carbon footprint

	P655 (400W SON)	P855 (308W LED)
Weight	16kg	16kg
Size (L x W x H)	750 x 470 x 189	925 x 485 x 124
Wind Area	0.120m^2	0.085m^2
Luminaire Luminous Flux	39,000lm	36,000lm
System Power	449W	308W (CLO)
Luminaire Efficacy	98 lm/W	103 - 126 lm/W
Photometric Options	5	10
Energy Saving	-	32%

A NEW ERA

The new P855 offers a wide choice of optics and lumen packages. In comparison to the P655 the P855 has a lower wind area and an equal weight and can therefore be safely retrofitted onto High Masts currently using P655.





STAR-optic® Module

- 360° STAR-optic® system
- Single security fixing for module
- Plug and play power connection
- Upgradeable on site
- IP66

Driver Compartment

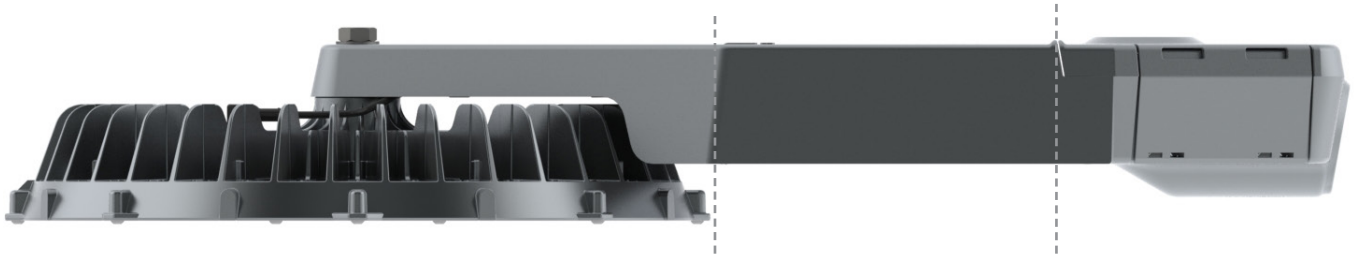
- Cool to maximise lifetime of the drivers
- Bottom opening for optimum ingress protection
- Access not required for installation
- IP66

Connection Compartment

- Separated for easy installation
- Quick tool-less access to:

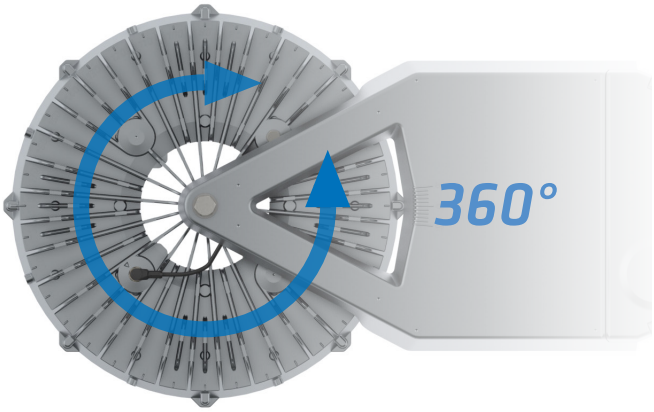
  - Luminaire spigot fixing
  - Supply termination
  - Fit and wire PECU / CMS node

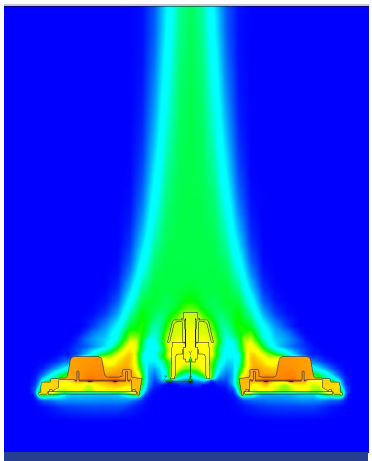
- IP54



STAR-optic® SYSTEM

The unique STAR-optic® system is designed to provide 360° variable photometry tailored for LED lighting operating in high ambient temperatures. The hybrid optics, formed with both PMMA lenses and reflectors, offer 10 optical distributions to suit roads, floodlighting and amenity lighting, whilst maximising Light Output Ratio and minimising the light spill. Flat glass ensures no upward light, is easily cleaned, and is suitable for use in harsh environments with high UV and wind blown sand. The result is a highly efficient system with powerful output for high mast applications. The light module can be easily replaced on site for servicing or upgrading.





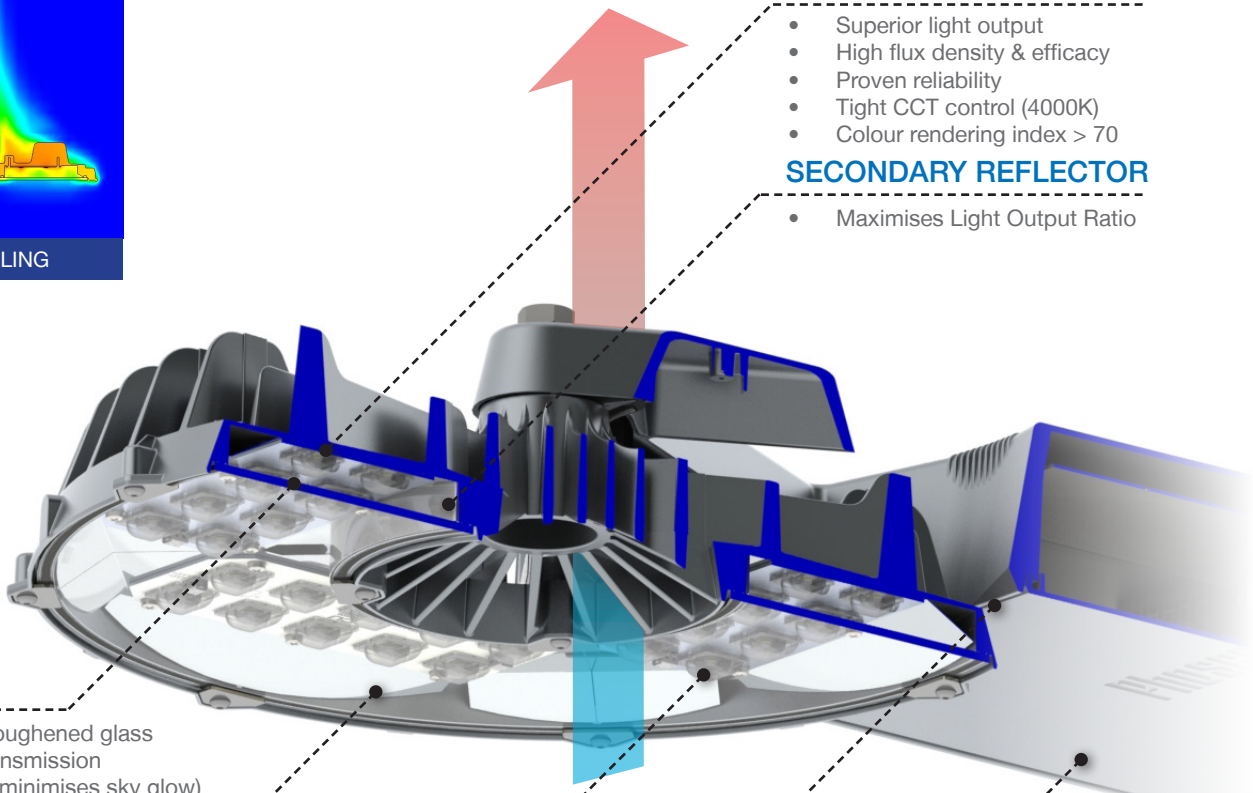
POWERFUL COOLING

LUXEON® M LEDs

- Superior light output
- High flux density & efficacy
- Proven reliability
- Tight CCT control (4000K)
- Colour rendering index > 70

SECONDARY REFLECTOR

- Maximises Light Output Ratio



FLAT GLASS

- Vandal resistant toughened glass
- Increased light transmission
- Dark sky friendly (minimises sky glow)
- Suitable for harsh environment
- Easy cleaning externally

PMMA LENSES

- 10 distributions
- Exceptional uniformity

PRIMARY REFLECTOR

- Maximise LOR
- >95% Total Reflectance
- Highly specular surface

AIR VOID

- Minimises heat transfer from the optical module to the Driver compartment
- Allows air flow all around optical module for maximised cooling

HOUSING

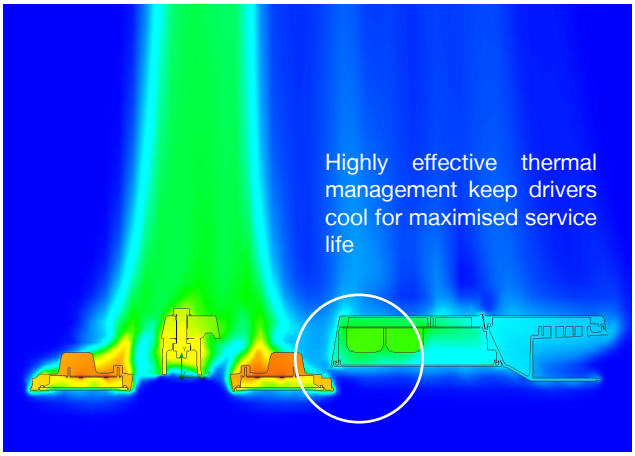
- Aluminium high pressure die cast body
- Unique design that optimises thermal performance
- Corrosion resistant materials
- Finish polyester powder coated for long life
- Sustainable and recyclable

THERMAL MANAGEMENT

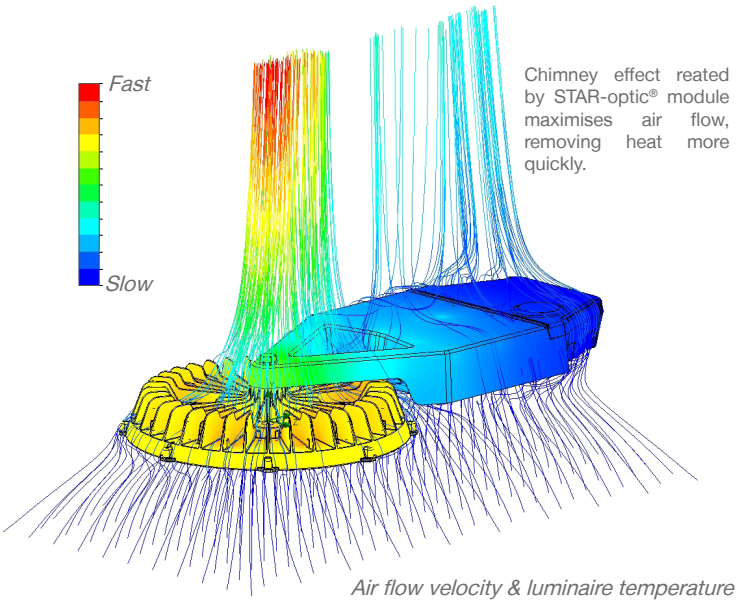
P855 is powerful whilst compact and efficient, thanks to its design and unique thermal management.

Aerodynamic vents created by the vertical fins at the centre void are designed to accelerate natural convection. Hot air converges smoothly into a fast laminar flow, quickly removing heat from the luminaire, increasing the performance of LEDs and drivers.

Fin profiles are designed to minimise weight whilst allowing an even thermal dissipation for all LEDs.



Air and luminaire temperature results from CFD



Chimney effect reated by STAR-optic® module maximises air flow, removing heat more quickly.

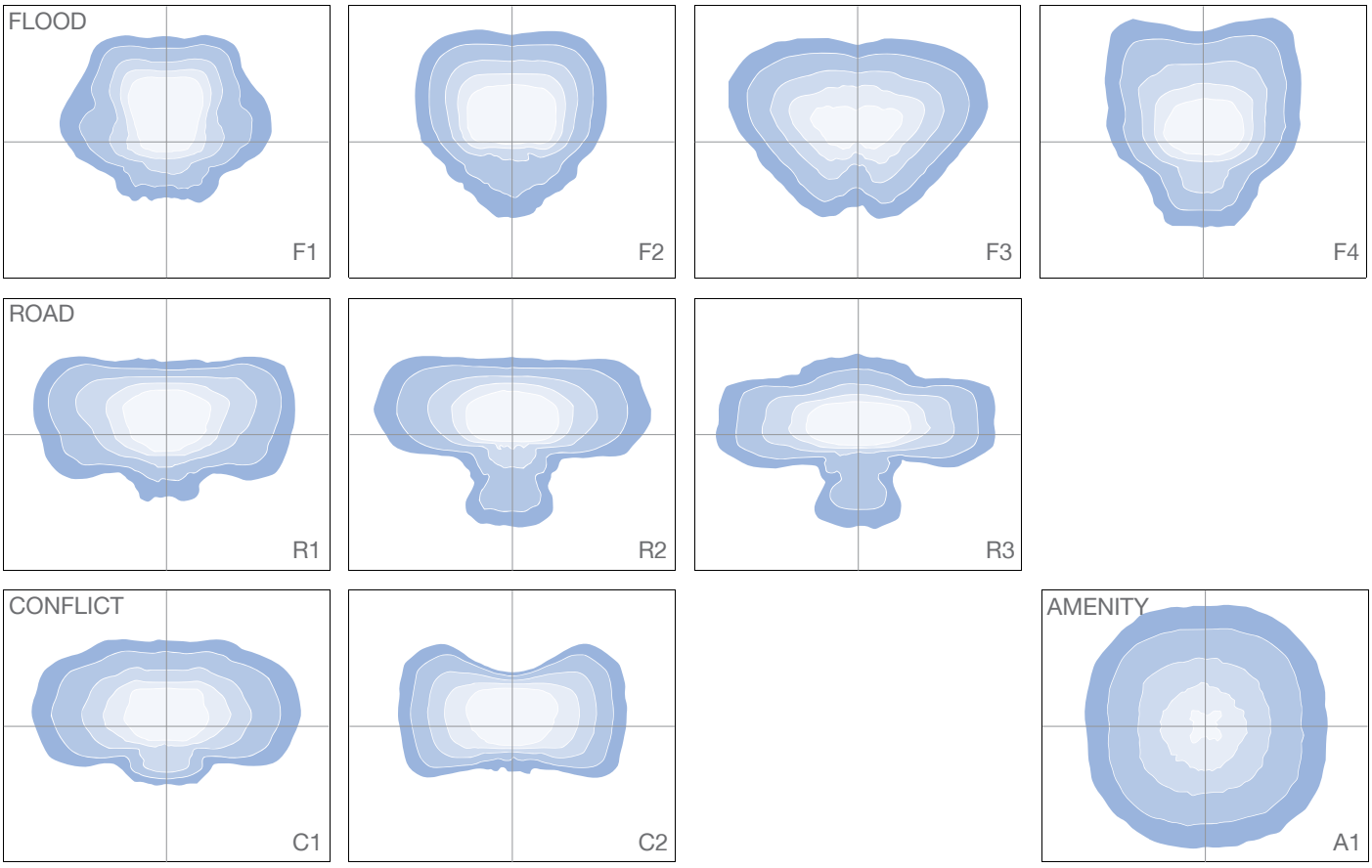
Air flow velocity & luminaire temperature

The complete separation of the driver compartment from LEDs keeps the drivers very cool, significantly increasing the luminaire operating life in high ambient operating temperatures.

P855 can be used at maximum power in an environment of 45ºC whilst still achieving low lumen depreciation and long life (L85 @ 100,000 hours).

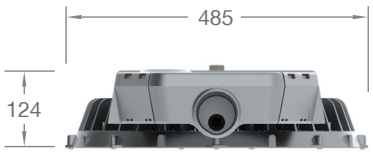
LIGHT DISTRIBUTION

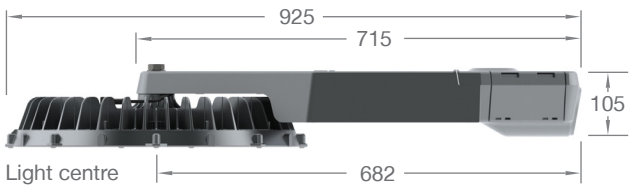
P855 offers a wide choice of optics and lumen packages. The optics include both road, flood and amenity distributions which, coupled with 360° rotation, allows even the most challenging of schemes to be effectively lit with maximum energy efficiency.



P855 SPECIFICATION

Light Source	Lumileds LUXEON® M LEDs
Number of LEDs	40
Power Consumption	99 - 324W
Correlated Colour Temperature	Neutral white, 4000K
Glare Rating	up to G6
Colour Rendering Index	> 70
Optical Cover	Flat Glass
Luminaire Luminous Flux	11,500 ~ 36,000 lm
Luminaire Efficacy	103 - 126 lm/W (Ta = 25°C)
Electrical Class	I
Input Voltage Range	120-277V 50/60Hz (Philips driver) 195-264V 50/60Hz (Osram driver)
Control System Input	1-10V • DALI • Switch dim
Lumen Maintenance Output	L85 @ 100,000 hrs (Ta = 45°C) L90 @ 100,000 hrs (Ta ≤ 40°C) L95 @ 90,000 hrs (Ta ≤ 25°C)
Driver Current	200mA ~ 675mA (in 25mA steps)
Surge Protection	ANSI C62.41.2 high exposure up to 10kV, 10kA level
Lighting Regulation	Mini Photocell • NEMA Socket • Wireless CMS options
Operating Temperature	-30°C to +45°C
Storage Temperature	-25°C to +80°C
Installation Height	15 ~ 40m
Installation	Ø 42 - 60mm x 100mm Side Entry
Accessories	Bird spikes • Light Shields • Solar Shield
Material	High pressure die cast aluminium (housing)
Finish	Polyester powder coat cured under heat
Colour	Light grey (RAL 7035), other RAL colours available on request
Ingress Protection	IP66 (STAR-optic® module and driver compartment) IP54 (connection compartment)
Wind Area	0.085m^2
Weight (Total)	16kg





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