



P852

Next Generation LED Luminaire
for residential road lighting



This luminaire complies with ETL guidelines for White Light Emitting Diode Lighting Units and is eligible for the Enhanced Capital Allowance (ECA) scheme.



HEA Warranty Code
Compliant

P852 is a high quality, low cost solution to replace existing sodium discharge and compact fluorescent luminaires on minor roads and residential areas.

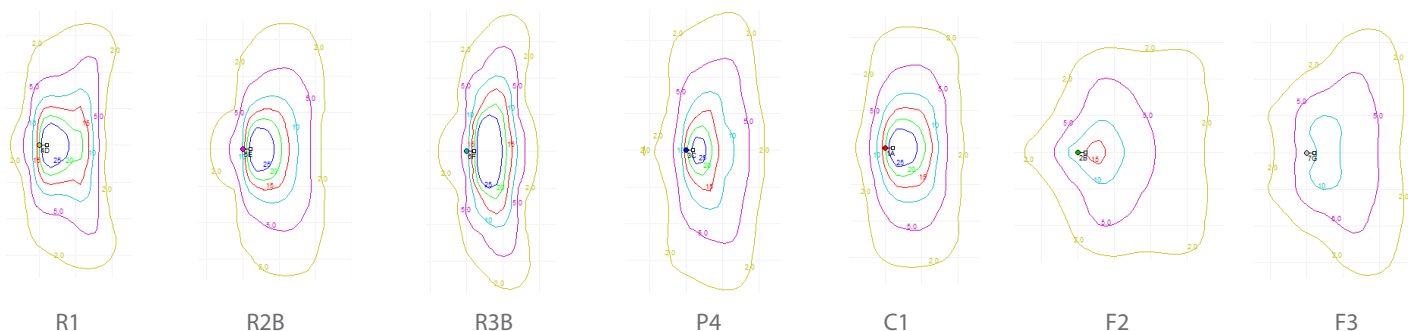
BENEFITS

- Elegant, simple and state-of-the-art design
- Replace conventional LPS/HPS/CFL lanterns at extremely low cost
- Superior luminaire efficacy - 139 lm / W
- Superior thermal management
- L80 @ 100,000 hrs (1000mA, Ta = 15°C) *
- L90 @ 100,000 hrs (750mA, Ta = 15°C) *
- Maximised savings on energy and maintenance costs
- Minimal Total Cost of Ownership (TCO)
- Up to S3/P3 lighting class applications
- Dark sky friendly, no upward light
- Flexible and intelligent lighting control options
- IP66 ingress protection
- 100% recyclable, low carbon footprint

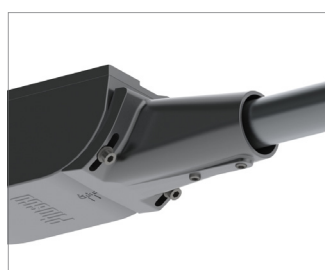
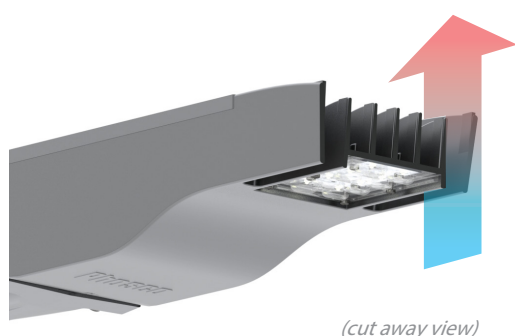
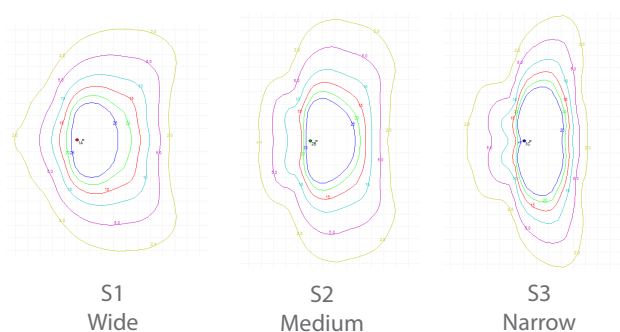
*Lumen depreciation calculated up to 100,000 hours using IES TM-21 method.

EXCEPTIONAL OPTICAL PERFORMANCE

P852 (12 LED) Lens Options



P852 (24 LED) Lens Options



Max. Luminous Flux	730 ~ 9380 lm
Max. Luminaire Efficacy	139 lm/W

SUPERIOR THERMAL MANAGEMENT

P852's simple design quickly transfers heat from the LEDs to the walls of the vertical vents, which dissipate the heat into the air and away from the luminaire.



FLEXIBLE MOUNTING OPTIONS

Choice of side entry spigots Ø34-42mm or Ø42-60mm and post top spigots Ø42-60mm or Ø60-Ø76mm (nominal diameters) providing -10°, -5°, 0°, +5° and +10° tilt (option for -15°) in both post top and side entry arrangements with permanent indication on the luminaire.

PROGRAMMABLE LIGHTING CONTROLS

The LED drivers enable CU Phosco Lighting to adjust the light level to match a specific application with optimised energy savings. The various control options offer different levels of energy savings, using simple stand-alone controls, Dynadimmer, Constant Light Output (CLO) or more advanced Central Management Systems (CMS).

P852 is currently compatible with the following CMS:

- Harvard LeafNut
- Philips Starsense
- Mayflower
- Telensa PLANet
- Zodion Vizion

P852 with	BENEFITS	FUNCTIONALITY	RELATIVE SAVING	With CLO
Photocell	Standard control	Switch on/off with ambient light level	0%	up to 10%
Dynadimmer	Substantial energy saving	Programmable dimming (5 steps)	up to 20%	up to 30%
Wireless CMS	Full control and monitoring of each individual luminaire	DALI and 1-10V dimming inputs with full CMS functionality	up to 40%	up to 50%

Scotopic / Photopic (S/P) Ratio to BS 5489-1: 2013

Recent scientific research shows a correlation between the spectral power distribution of a light source and the visual performance under low lighting levels associated with mesopic vision. If lighting residential and minor roads to the S classes from BS EN 13201-2: 2003, by using P classes from CIE 115: 2010 or BS 5489-1: 2013 the target illuminance for a class can be adjusted according to the S/P ratio.

The S/P ratio of the CU Phosco Lighting neutral white LEDs is 1.64. The target illuminance for the P classes are shown here. For more information, refer to ILP Professional Lighting Guide 03: Lighting for subsidiary roads.

Lighting class	Benchmark Ra < 60		S/P ratio = 1.64 and Ra ≥ 60	
	$\bar{E}$	E _{min}	$\bar{E}$	E _{min}
P1	15.0	3.0	12.76	2.55
P2	10.0	2.0	8.06	1.61
P3	7.5	1.5	5.86	1.17
P4	5.0	1.0	3.66	0.73
P5	3.0	0.6	1.98	0.40
P6	2.0	0.4	1.20	0.40

Modification of BS 5489-1:2013 Table A.7

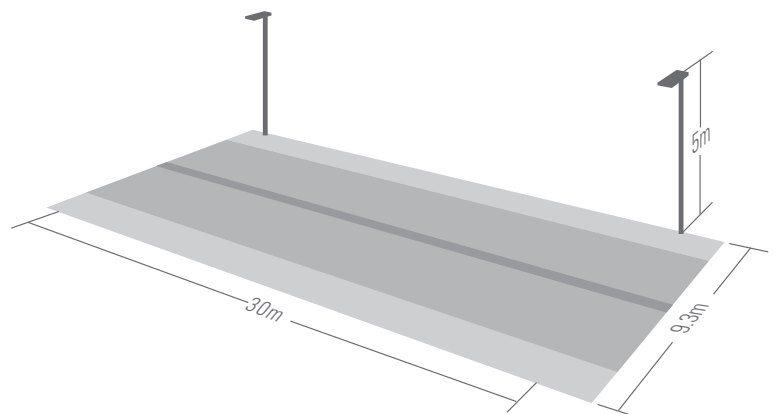
SCHEME EXAMPLE

Road refurbishment S4/P4 lighting class (EN 13201 / BS 5489-1: 2013)

Luminaire replacement with existing column at 30m spacing, 5m height and single sided arrangement.

Result:

P852 can replace a conventional 35W LPS (SOX) or 55W CFL luminaire with better performance. 77% energy savings are achievable depending on column spacing, road configuration and lighting class with the added comfort of white light. Further savings can be achieved using controls like Dynadimmer or a Central Management System.



	$\bar{E}$ (Lx)	E _{min} (Lx)				
Target (S4)	5.0 - 7.5	1.0				
Target (P4)	3.66 - 5.49	0.73				
	$\bar{E}$ (Lx)	E _{min} (Lx)	W (System)	W / km	Luminaire Efficacy	Energy Savings
35W LPS Luminaire	5.1	1.1	65*	2167	49 lm/W	-
35W LPS Luminaire	5.1	1.1	39**	1300	82 lm/W	40%
55W CFL Luminaire	5.2	1.1	62	2067	54 lm/W	5%
P852***	3.75	0.84	16	533	100 lm/W	75%

* Using electromagnetic ballast

** Using HF electronic ballast

*** P852 running at 400mA with CLO, Wide distribution and S/P ratio 1.64

TOTAL COST OF OWNERSHIP

While CFL technology has low initial cost, it requires frequent maintenance that results in a high total cost of ownership.

P852 with dimming and CLO options delivers an attractive total cost of ownership package making it extremely competitive for invest-to-save replacement schemes.



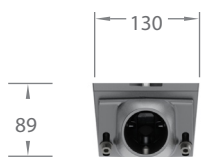
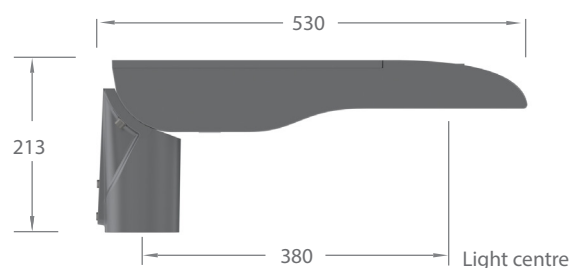
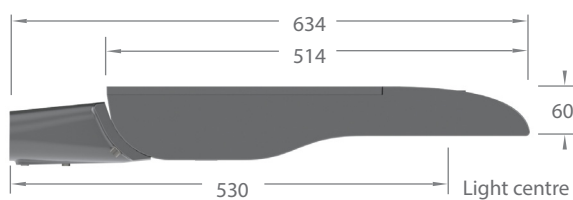
- Luminaire & Installation
- Energy consumption
- Maintenance (including PL-L lamp replacement)

(Based on example above, 20 years expected lifetime)

P852 SPECIFICATION

Number of LEDs	24	12
Power Consumption	15 - 67W (CLO080)	9 ~ 54W
Correlated Colour Temperature	Neutral White, 4000K, Or Warm White 3000K	Neutral White, 4000K, Or Warm White 3000K
Glare Rating	G3 min. G4 max.	G3 max.
Colour Rendering Index	> 70	> 70
Optical Cover	PMMA Lenses	PMMA Lenses
Luminous Flux	2150 ~ 9380 lm	1040 ~ 6360 lm
Max. Luminaire Efficacy	139 lm/W	125 lm/W
Weight (Total)	4.8kg	4.5kg
Wind Area (SCx)	0.035m ²	
Operating Temperature	-40°C to +30°C	-40°C to +15°C (1500mA) -40°C to +25°C (1000mA) -40°C to +40°C (350mA)
Installation Height	5 ~ 12m	3 ~ 8m
Electrical Class	I & II	
Control System Input	1-10V and DALI	
Lumen Maintenance Output *	L80 @ 100,000 hours (1000mA, Ta = 15°C) L90 @ 100,000 hours (750mA, Ta = 15°C)	
Driver Current	200mA ~ 1000mA in 50mA steps (1500mA for 12 LED)	
Surge Protection	10 kV Common Mode, 6 kV Differential Mode to IEC 61000-4-5	
Dimming Control	Multi step dimming	
Lighting Regulation	Mini Photocell • 7-pin ANSI Socket • Zhaga Book 18 Socket • Bluetooth Control Node • Central Management Systems	
Installation	SE Ø 34-42 Ø 42-60, PT Ø 42-60 Ø 60-76 mm	
Post Top / Side Entry Tilt	-10°, -5°, 0°, 5°, 10° (option for -15°)	
Material	Marine grade LM6 aluminium (Housing)	
Finish	Natural aluminium (Polyester powder coat option)	
Colours	Optional polyester powder coat in RAL colours	
Ingress Protection	IP66	

*Lumen depreciation calculated up to 100,000 hours using IES TM-21 method.



Charles House
Gt. Amwell, Ware
UK, SG12 9TA
+44 (0) 1920 860600
enquiries@cuphosco.co.uk
www.cuphosco.co.uk
www.cuphosco.com (Int)

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