

## Flori-67/3P Plug-in 110V LED Site Lighting System

Flori-67/3P is a 110 volt plug-in lighting system developed by Blakley Electrics specifically for temporary site installations. It is a factory made system with all wiring carried out "off site", which eliminates all on-site wiring. The connectors are rated at 6 amps and have been Type Tested in accordance with BS EN 60309-1:1999 and are classified as watertight. The system comprises of two main elements:

(i) LED floodlights, anti-corrosives and bulkheads pre-wired with a 2m Adaptor cable made from 1.5mm<sup>2</sup> 3C Yellow PVC Arctic grade cable with a moulded-on 6A, 3P, 110V, watertight plug.

(ii) 100m lengths of 2.5mm<sup>2</sup> or 4mm<sup>2</sup> 3C Yellow PVC Arctic grade cable fitted with a unique, moulded-on, 6A, 3P, 110V, watertight outlet at 5m, 7m or 10m intervals.

Once luminaires are fixed in position, electrical connection is simply achieved by plugging in to the nearest Flori-67/3P outlet.

### Luminaires

As standard we offer the following types of 110V luminaire:

(i) i-Site IP65 anti-corrosive intelligent luminaires with integral movement and light level detection. Fittings incorporate 30W or 44W LED arrays with or without 3 hour emergency battery back-up. i-Site luminaires allow energy consumption and emissions to be decimated without the need to adopt 4C wiring systems or fit time clocks in site transformers. See data sheet SLDS008 for full details of the i-Site range.

(ii) IP65 anti-corrosive fittings incorporating 27W or 37W LED arrays with or without 3 hour maintained emergency battery back-up. All fittings are complete with suspension hooks. LEDs have a colour temperature of 5000K and are fitted with an opaque diffuser to eliminate glare.

(iii) IP65 floodlights with 50W, 70W, 100W, 150W, 200W or 300W LED arrays. Versions with integral photocells are available from 100W to 300W. Floodlights are supplied complete with a wall mounting bracket and separate scaffold brackets are available.

(iv) IP65 bulkheads with red or clear covers incorporating 6W LED arrays. A 3 hour maintained emergency bulkhead with clear cover is also available.

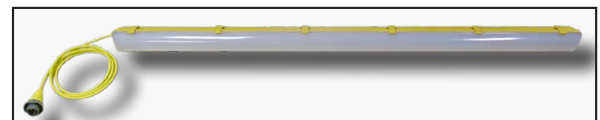
Flori-67/3P utilises 3C cable, therefore circuits with emergency luminaires must be permanently energised to avoid damaging battery packs through repetitive discharging. Where there is a requirement to control lighting (to reduce consumption and emissions), either select i-Site fittings with integral movement and light level detection or adopt our Flori-67/4P system, which incorporates 4 core cable, enabling an unswitched supply to be provided for emergency packs. Please refer to data sheet SLDS002 for full details of Flori-67/4P.

From early 2025, Flori-67/3P strings will incorporate T drops with a Flori outlet fitted to the end of a 300mm drop (the new outlets are fully compatible with the earlier version of Flori-67/3P). During the transition period, either style of Flori-67/3P string could be supplied.

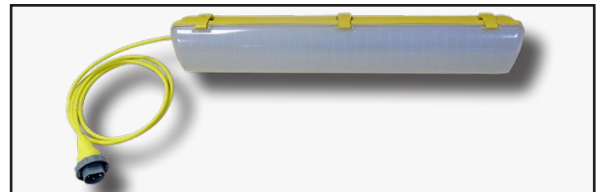
Please see over the page for standard Flori-67/3P part numbers.



5' 44W 110V i-Site LED and Flori-67/3P String



5' 37W 110V LED, Standard or Emergency



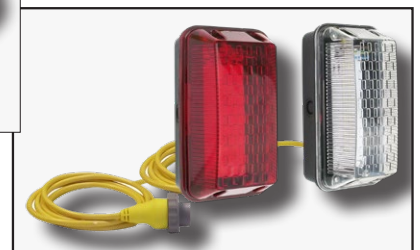
2' 27W 110V LED, Standard or Emergency



70W and 150W 110V LED Floodlight

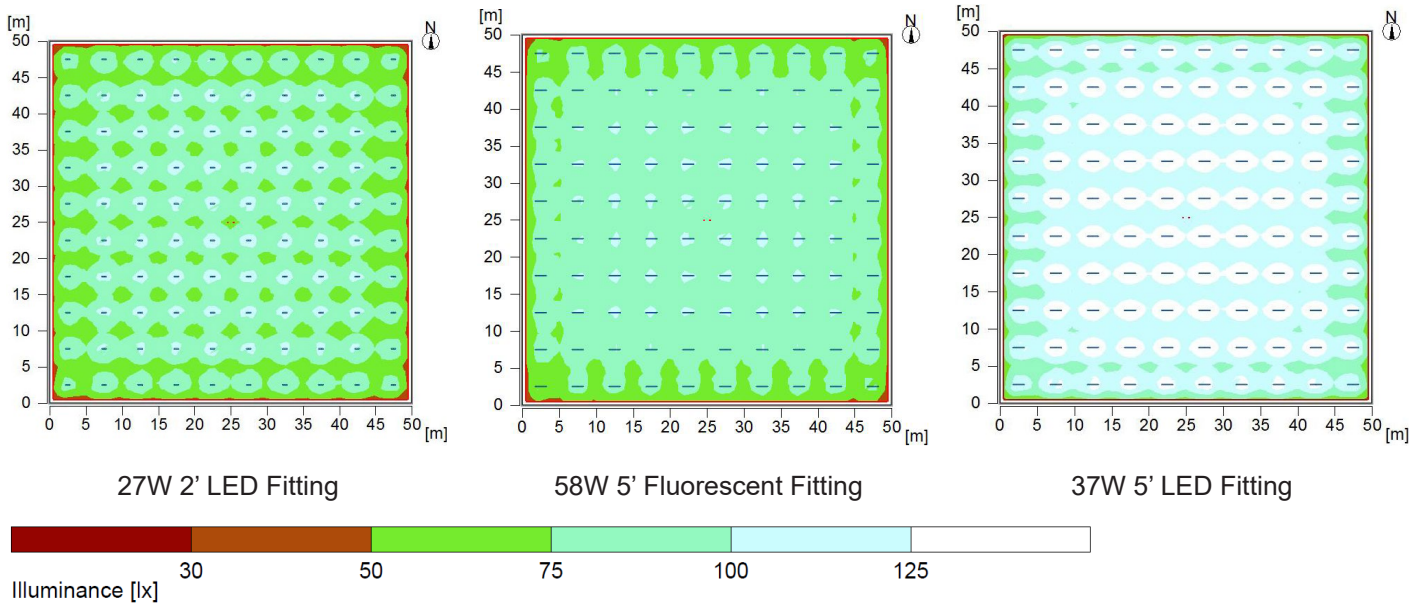


Flori-67/3P outlet moulded to cable every 5m, 7m or 10m



6W 110V LED Bulkhead

## Comparison of Average Illumination Levels between 27W 2' LEDs, 37W 5' LEDs and 58W 5' Fluorescent Anti-Corrosive Luminaires (equivalent data on the i-Site range is available)



The three schemes shown above are based on: a room measuring 50m x 50m; a luminaire every 5 metres in the X and Y axis; a mounting height of 3 metres; the floor as the working plane; a reflectance level of 20% for all surfaces. A maintenance factor of 0.67 has been applied to the scheme based on fluorescent lights and a maintenance factor of 0.72 to the schemes based on LED lights, due to the longer “lamp” life of LED arrays. As a reduction in average lux of 2 lux cannot be detected by the human eye, 2' 27W LED fittings can be used in place of 5' 58W 110V fluorescent fittings on a 1 for 1 basis, which results in energy cost savings of over 50%.

Summary of illumination levels, running costs and emissions based on 100 luminaires per annum

Luminaire	Average Lux	Average Uniformity	Consumption	Cost per year #	CO <sub>2</sub> per annum #
27W LED	77	0.72	2.7 kW per hour	£4730.40	5.5 tonnes
37W LED	110	0.70	3.7 kW per hour	£6482.40	7.5 tonnes
58W Fluorescent	79	0.72	5.8 kW per hour	£10161.60	11.8 tonnes
# Based on 100 fittings operating 24 hours per day, for 365 days (at a cost of £0.20 per kWhr & 0.233 kg CO <sub>2</sub> per kWhr)					

The compact 27W anti-corrosive LED has replaced the 5' 58W fluorescent as the “industry standard” for lighting open floor areas, corridors and stairwells. It should generally only be necessary to install 5' 37W LED fittings when a high level of illumination is required or to illuminate large diameter tunnels.

Adopting 27W LEDs also halves the load current and the volt drop (in comparison to 58W fluorescents), enabling a lighting circuit of up to 20 no. 27W luminaires to be protected by a 6A DP MCB, which may reduce the need to adopt RCD protection in order to achieve a disconnection time of 5 seconds on longer 110V circuits.

In emergency mode, the light output of LEDs is greater than that of fluorescents. In the above generic schemes, if every other fitting is a maintained emergency, the minimum lux level achieved with fluorescent fittings is 1 lux and with LEDs the minimum is 2 lux.

On page 4 of this data sheet there is further information on the consumption of different types of luminaire, including anti-corrosives, floodlights and bulkhead lights. As can be seen, there are significant gains to be achieved in changing to LED fittings (from discharge lighting). There are even greater savings to be made if lights (and other loads) can be switched OFF out of hours. In addition to the i-Site range of intelligent site lights (with integral movement and light level detection), Blakley Electrics offers a variety of control solutions that have been developed for construction site applications.

## Standard Part Numbers

Flori-67/3P, 110V		
Flori-67/3P strings, 110V, made from PVC Arctic grade cable with yellow outer sheath (4mm <sup>2</sup> strings can be made from LSOH cable). From early 2025, Flori-67/3P strings will start to incorporate a moulded-on T section every 5m, 7m or 10m with the Flori-67/3P outlet moulded to the end of a 300mm drop. Part numbers of this version end in a T (see below).		
Part No.	Type	Description
S061103	Flori-67/3P/2.5/50m/16A	50m 2.5mm <sup>2</sup> 3C cable - a Flori-67/3P outlet every 5m ##
S060759	Flori-67/3P/10/2.5	100m 2.5mm <sup>2</sup> 3C cable - a Flori-67/3P outlet every 10m
S060758	Flori-67/3P/7/2.5	100m 2.5mm <sup>2</sup> 3C cable - a Flori-67/3P outlet every 7m
S060757T	Flori-67/3P/T/5/2.5	100m 2.5mm <sup>2</sup> 3C cable - a Flori-67/3P outlet every 5m
S060801	Flori-67/3P/5/4	100m 4mm <sup>2</sup> 3C cable - a Flori-67/3P outlet every 5m
## 50m Flori strings are fitted with a 16A 3P 110V IP67 plug, ready to plug-in to a standard site transformer		
<b>i-Site Intelligent LED Anti-Corrosive fittings, 110V, IP65, complete with hooks, pre-wired with Flori-67/3P 110V 6A plug</b>		
S061093	Flori-67/ISL/3P/30W/LED	Standard, 30W, 2' twin yellow body c/w Flori-67/3P adaptor and i-Site
S061094F	Flori-67/ISL/3P/30W/LED/EMER	Emergency, 30W, 2' twin yellow body c/w Flori-67/3P adaptor and i-Site
S061095	Flori-67/ISL/3P/44W/LED	Standard, 44W, 5' single yellow body c/w Flori-67/3P adaptor and i-Site
S061096F	Flori-67/ISL/3P/44W/LED/EMER	Emergency, 44W, 5' single yellow body c/w Flori-67/3P adaptor and i-Site
<b>LED Anti-Corrosive fittings, 110V, IP65, complete with hooks, pre-wired with Flori-67/3P 110V 6A plug</b>		
S060916H	Flori-67/3P/27W/LED	Standard, 27W, 2' twin yellow body c/w Flori-67/3P adaptor
S060917H	Flori-67/3P/27W/LED/EMER	Emergency, 27W, 2' twin yellow body c/w Flori-67/3P adaptor
S060918H	Flori-67/3P/37W/LED	Standard, 37W, 5' single yellow body c/w Flori-67/3P adaptor
S060919H	Flori-67/3P/37W/LED/EMER	Emergency, 37W, 5' single yellow body c/w Flori-67/3P adaptor
<b>LED Bulkheads, LED, 110V, pre-wired with Flori-67/3P 110V 6A plug</b>		
S060904	Flori-67/3P/6W/LED/CLEAR/110V	6W LED clear bulkhead c/w Flori-67/3P adaptor
S060905	Flori-67/3P/6W/LED/RED/110V	6W LED red bulkhead c/w Flori-67/3P adaptor
S060906	Flori-67/3P/5W/LED/CLEAR/EM/110V	5W LED clear emergency bulkhead c/w Flori-67/3P adaptor
<b>Floodlights, LED and Metal Halide, 110V, supplied with cradle bracket and pre-wired with Flori-67/3P 110V 6A plug</b>		
S060898E	Flori-67/3P/50W/LED	50W LED floodlight c/w Flori-67/3P adaptor
S060899E	Flori-67/3P/70W/LED	70W LED floodlight c/w Flori-67/3P adaptor
S060900E	Flori-67/3P/100W/LED	100W LED floodlight c/w Flori-67/3P adaptor
S061075	Flori-67/3P/100W/LED/SMD/PC	100W LED floodlight with photocell c/w Flori-67/3P adaptor
S060936E	Flori-67/3P/150W/LED	150W LED floodlight c/w Flori-67/3P adaptor
S061076	Flori-67/3P/150W/LED/SMD/PC	150W LED floodlight with photocell c/w Flori-67/3P adaptor
S061056E	Flori-67/3P/200W/LED/SMD	200W LED floodlight c/w Flori-67/3P adaptor
S061077	Flori-67/3P/200W/LED/SMD/PC	200W LED floodlight with photocell c/w Flori-67/3P adaptor
S061057E	Flori-67/3P/300W/LED/SMD	300W LED floodlight c/w Flori-67/3P adaptor
S061078	Flori-67/3P/300W/LED/SMD/PC	300W LED floodlight with photocell c/w Flori-67/3P adaptor
<b>Accessories</b>		
S060760	Flori-67/3P Adaptor, 2.3m	Yellow 6A 110V 3P Adaptor c/w 2.3m 1.5mm <sup>2</sup> 3C Yellow LSOH cable
S060826	Flori-67/3P Adaptor, 10m	Yellow 6A 110V 3P Adaptor c/w 10m 1.5mm <sup>2</sup> 3C Yellow LSOH cable
<b>For tunnel and other enclosed applications, Flori-67/3P can be made from Low Smoke Zero Halogen cable and a limited range is available from stock, as detailed below.</b>		
S060827	Flori-67/3P/5/4/LSOH	100m 4mm <sup>2</sup> 3C LSOH cable - a Flori-67/3P outlet every 5m
Other configurations are available to order.		

## Running Cost Comparison

Annual Electricity costs to supply 100 fittings based on £0.20 per kWhr for 365 days				
Daily Usage	10 hours per day	12 hours per day	14 hours per day	24 hours per day
Anti-corrosive Fittings				
27W LED	£1971.00	£2365.20	£2759.40	£4730.40
37W LED	£2701.00	£3241.20	£3781.40	£6482.40
58W Fluorescent	£4234.00	£5080.80	£5927.60	£10161.60
Bulkhead Lights				
6W LED	£438.00	£525.60	£613.20	£1051.20
13W CFL	£949.00	£1138.80	£1328.60	£2277.60
60W BC	£4380.00	£5256.00	£6132.00	£10512.00
Floodlights ##				
30W LED	£2190.00	£2628.00	£3066.00	£5256.00
50W LED	£3650.00	£4380.00	£5110.00	£8760.00
70W LED	£5110.00	£6132.00	£7154.00	£12263.00
100W LED	£7300.00	£8760.00	£10220.00	£17520.00
150W LED	£10950.00	£13140.00	£15330.00	£26280.00
200W LED	£14600.00	£17520.00	£20440.00	£35040.00
300W LED	£21900.00	£26280.00	£30660.00	£52560.00
400W Metal Halide	£29200.00	£35040.00	£40880.00	£70080.00
## As a guide, LED floodlights provide approximately twice as much illumination per watt as Metal Halide floodlights i.e. a 70W LED floodlight will provide a similar level of illumination as a typical 150W metal halide.				

### Circuit Protection

Flori-67/3P strings made from 1.5mm<sup>2</sup> or 2.5mm<sup>2</sup> cable are intended to be supplied from DP MCBs with a maximum overcurrent rating of 16A and all Flori-67/3P cabling has a minimum rating of 16A. The Flori-67/3P outlet and adaptor are rated at 6A and should only be used to supply single luminaires with a full load current of 6A each or less.

Flori-67/3P strings made from 4mm<sup>2</sup> cable are intended to be supplied from DP MCBs with a maximum overcurrent rating of 32A. Whilst the 100m strings are rated at 32A, the Flori-67/3P adaptors fitted to the luminaires are made from 1.5mm<sup>2</sup> cable and the Flori-67/3P outlets are rated at 6A. Therefore all luminaires to be supplied from a source where the overcurrent protection exceeds 16A should incorporate double-pole fuse protection to prevent the 6A plug, socket and 1.5mm<sup>2</sup> adaptor lead from overload.

In order to meet the 5 second disconnection time requirement of BS7671 Regulation 411.8.3, it is probably necessary to protect 110V circuits with a medium or high sensitivity RCD. See data sheet TRDS001 for our standard range of Site Transformers with RCD protected lighting circuits.

### Tunnel Applications

Flori-67/3P made from Low Smoke Zero Halogen cable has been widely used in tunnel applications and Blakley Electrics can supply tunnel lighting solutions fed from 3300V, 1000V or 400V supplies with local transformers stepping down to 110V. We are able to provide advice on the complete system to ensure an extendable, reliable source of power and light, which complies with the requirements of BS7671, BS6164 and BS7375 is provided.

### Flori-67/4P

Please see data sheet SLDS002 for full details of our 4 core 110V plug-in lighting system. The use of 4C cable enables emergency fittings to be turned OFF without causing the batteries to discharge.

### Lighting Schemes

We can provide generic designs for typical installations based on the standard 5m, 7m and 10m spacing of Flori-67.