

LED Retro-fit Kits for Searchlight Signals

LED Technology Lights The Way



Exceptional Value

Make searchlight mechanism maintenance and filament failures a relic of the past. Single LED failures will never result in a dark signal.

Upgrade your current signals to increase safety and reduce maintenance of your signalling system.

Exceptional Reliability

Multiple LEDs and parallel circuitry combined with the exceptional reliability of LED technology leads to lower maintenance costs and fewer train delays than incandescent lamps—essential for today's rail industry.

Application

Upgrade WSA (McKenzie & Holland) or GRS searchlight signals

Unique Design

Direct replacement without changing circuits. Patent pending.

- **Replace life-expired signalling mechanisms**
- **Electrically switched LEDs (red, yellow & green) in each lamp unit perform function of traditional searchlight mechanism.**
- **Low whole-of-life cost**
- **Much less cost than new searchlight mechanisms**
- **Directly uses existing control and detection circuits for both ac and dc applications (patented)**
- **Compatible with most signalling technologies**
- **Reliability far surpasses incandescent signals**
- **Long service life**
- **Low power consumption**
- **Phantom free design**
- **210 mm diameter module**
- **5 year standard warranty**

Description

LED retro-fit kits combine a special tri-colour signal lamp unit with an assembly incorporating Style Q miniature signalling relay(s) and terminals.

LED lamp units accept a wide voltage range—no need to set the voltage at the signal head during installation. In addition, LED lamp units provide constant brightness over a wide voltage range.

Upgrading existing signals

To upgrade an incandescent searchlight signal, simply:

- remove the old mechanism and lenses
- fit the new lamp unit
- bolt the assembly to existing fixings
- terminate the existing cables

Reliability

Doesn't rely on a single light source for safety-critical signalling applications. Multiple LEDs in the signal elements are arranged as an interconnected matrix. Not only is each LED greater than 1000 times more reliable than an incandescent lamp but should one fail, the light output will never reduce by more than 5%.

Westinghouse Signals confidently warrants each LED Retro-fit kit for 5 years.

Construction

High strength polycarbonate LED element enclosure provides:

- clarity
- superior optical properties
- resistance to heat distortion
- resistance to impact
- UV stability
- sealed to IP65 rating

Lamp Proving

Lamp proving is not usually performed on searchlight signals, but can be supported.

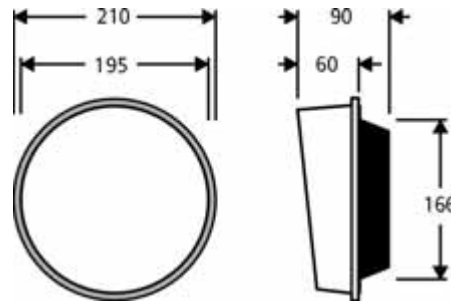
Contact WSA for information on lamp proving for relay and electronic interlocking.

Specifications (Module only)

	12 Vac/dc	110 Vac
Supply voltage range	8.0 – 16 Vac 8.0 – 20 Vdc	85 – 135 Vac
Nominal power	Medium Range	Intermediate Range
@ 110 Vac or 12 Vac or dc	Red 7.8 W Yellow 10.0 W Green 9.7 W	9.5 W 13.0 W 7.3 W
Total harmonic distortion	(ac only) < 20% over full Vac range.	
Power factor	(ac only) > 0.9 over full Vac range.	
Surge protection	Applied for 80 ms	45 V rms 360 V rms
Electrical noise	AAR part 11.5.1 Class A FCC title 47 B section 15	
Operating temperature	-40°C to 74°C	
Resistance to dust and moisture	IP65	
Resistance to vibration	AAR Section 11 Class B	
Illuminated aspect diameter	200 mm nominal	
Colour		
Wavelength and chromaticity	Red 634 nm, x=0.709, y=0.288 (Medium range) 630 nm, x=0.704, y=0.295 (Intermediate range)	
	Yellow 592 nm, x=0.587, y=0.411	
	Green 508 nm, x=0.089, y=0.475	
Typical sighting distance	Against bright skyline.	
Medium range	n.a.	500 m
Intermediate range	1 km	1 km

Dimensions

LED module



Chassis and mounting hardware fit existing enclosures.

Ordering

Please provide:

- voltage
- ac or dc searchlight operation
- signal type (manufacturer or model, as appropriate)

Please refer to WSA's Product List for variations and part numbers.

See also

- Datasheet 1A-16 for searchlight replacement signals