

# Airfield Lighting

Product Description

Omnidirectional SafeLED Elevated Light  
(SL-TE-E, SL-TH-E)

- Taxiway Edge
- Intermediate Holding Position



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## 1. INTRODUCTION

The elevated SafeLED light is an omnidirectional LED light. The light is available in two versions either to be connected in a series circuit version or a parallel version.

The LED light follows the same light intensity curve as a corresponding halogen lamp with different intensity levels at the CCR. This means that the fitting is fully backwards compatible with a halogen lamp fitting.

### **Utilisation**

- ICAO Elevated Taxiway Edge.
- FAA L-861T.
- MOS139 Elevated, Intermediate holding position.

### **Compliance**

- ICAO: Annex 14 Volume I Paragraphs 5.3.17
- FAA: AC150/5345-46D. L-861T
- FAA: Engineering Brief No 67C: Light Sources other than Incandescent and Xenon for Airport Lighting and Obstruction Lighting Fixtures.
- IEC 61827.
- NATO: STANAG 3316.
- STAC.
- MOS 139: Paragraph 9.13.22.2.

## 2. MAIN ADVANTAGES

### ***LED Source***

The LED technology offers a long lasting light source, low power consumption depending on operation, a technology which is environmentally friendly and robust to vibration. By using SafeLED the maintenance cost, of light fittings and airport operation interruptions, is dramatically reduced.

LED technology secures a future proof Airfield Lighting (AFL) investment and removes the uncertainty of the proposed international phase out regulations for the traditional incandescent lamps.

### ***Robustness***

SafeLED is designed for use in harsh environments. The electronic components are encapsulated in waterproof polyurethane, well protected from wear and tear. Castings are anodised and fixings are stainless steel. Component life cycle is dramatically extended and its operational lifespan is greatly increased. There is also an inbuilt over-voltage surge and lightning protection.

### ***Optical Head Adjustment***

The optical head of the fitting can easily be adjusted by 3 Allen screws. This guarantees a vertical orientation of the LED head which gives a high quality light output.

### ***Mixed Circuit Compatibility\****

Compatible with incandescent halogen lights on CCR circuits (6.6A). The LED fitting follows the same light intensity curve as a halogen lamp. This allows mixed circuits with halogen and LED fittings. There is no need for updating previously installed AFL infrastructure when installing SafeLED.

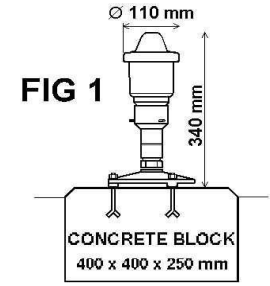
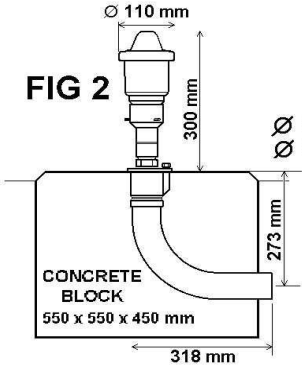
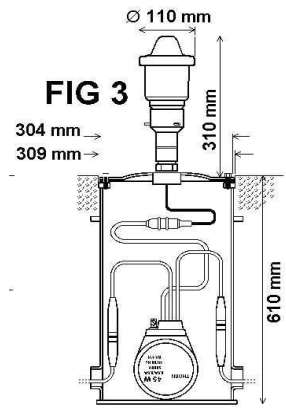
### ***CCR Compatibility\****

The SafeLED works as a halogen lamp with a resistive load profile. When turning on a Constant Current Regulator (CCR), the CCR does not trip as the current does not fluctuate with SafeLED technology.

### 3. TECHNICAL CHARACTERISTICS

Characteristic	Symbol	Min	Max	Unit
<b>Series Circuit</b>				
Supply current from series circuit (50 or 60Hz) with 6 intensity levels 2.8-6.6A	I <sub>SUPPLY</sub>	2.5	7.1 <sup>1</sup> 8.2 <sup>2</sup>	A <sub>RMS</sub>
Parallel version: 50-260Vac (50 or 60 Hz) Fix brightness				
<b>Power consumption</b>				
Total power consumption @ 6.6 A <sub>RMS</sub>	P <sub>tot</sub>		7.5	W
Total power consumption @ 230 VAC	P <sub>tot</sub>		7.5	W
<b>Note:</b> Power Factor (PF) typically 1.0.				
<b>Environment</b>				
Operating humidity range	RH	0	100	%
Operating temperature range	T <sub>A</sub>	-55	+65	°C
Storage temperature range	T <sub>STG</sub>	-55	+100	°C
<b>Power Supply</b>	An integrated, encapsulated electronic converter. Two-pole FAA plug for connection to one transformer (Series circuit version). Cable 2x1 mm <sup>2</sup> , length 0.8 m (VAC version). Power Factor (PF) type 1.0.			
<b>Optics</b>	1 LED inserted in an optical system. Top protection ensured with a clear glass dome. <b>Note:</b> Lifetime LED depending on operation.			
<b>Photometry</b>	Distribution and homogeneity comply with ICAO and FAA.			
<b>Colour</b>	Obtained directly by the LED complying with ICAO Annex 14 Volume I, FAA AC150/5345-46D or MOS 139.			
<b>Finish</b>	Body and support in aluminium alloy casting, painted in aviation yellow. All fixings and fastening are stainless steel. The closing circle is blue or yellow depending on application.			
<b>Fixing</b>	Support fixing thread (2" NPS, 2" BSP) can be mounted on a tripod stand, conduit elbow or FAA deep base.			
<b>Adjustment</b>	Horizontal adjustment obtained using three sets of Allen screws.			
<b>Height</b>	Less than 300 mm as standard.			
<b>Protection</b>	IP55			
<b>Net Weight</b>	2.3 kg			
<b>Packaging</b>	Volume m <sup>3</sup>	Dimensions mm	Weight kg	
Fitting	0.009	420 x 180 x 120	2.7	
Levelling Tool	0.002	200 x 150 x 60	1.5	
<i>Key</i>	<i>Description</i>			
1	In accordance with FAA advisory circular 150/5345-47A (Isolation transformers for airport lighting systems).			
2	For max 1s, in accordance with FAA advisory circular 150/5345-10E (Specification for CCRs and regulator monitors).			
<b>Note:</b> For more information, contact Safegate Group or see <a href="http://www.safegate.com">www.safegate.com</a> .				

4. **INSTALLATION OPTIONS**

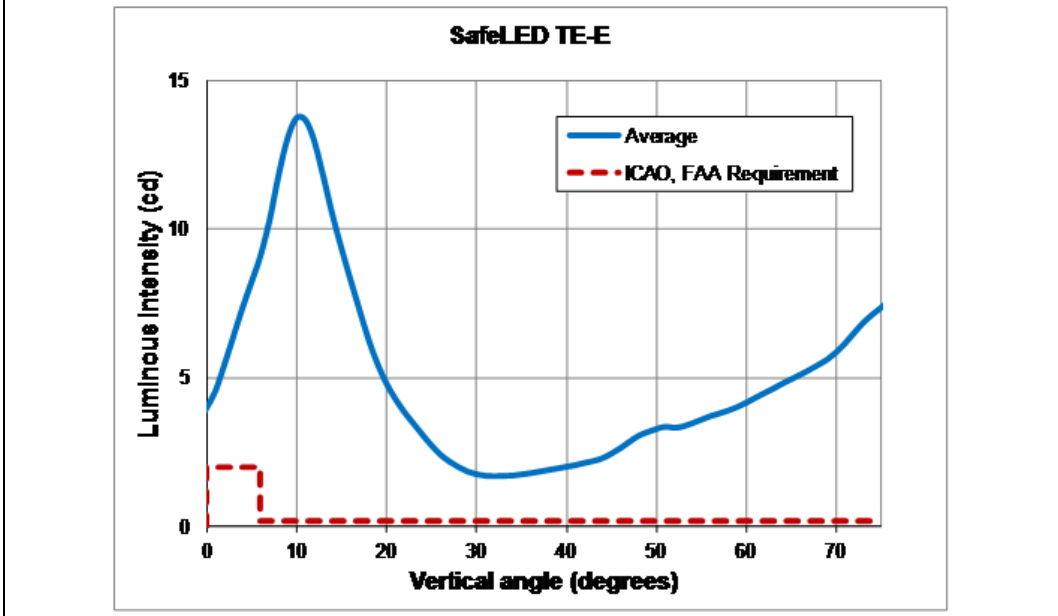
Description	Image example
<ul style="list-style-type: none"> <li>On a tripod stand.</li> </ul>	 <p><b>FIG 1</b></p> <p>CONCRETE BLOCK 400 x 400 x 250 mm</p>
<ul style="list-style-type: none"> <li>On conduit elbow.</li> </ul>	 <p><b>FIG 2</b></p> <p>CONCRETE BLOCK 550 x 550 x 450 mm</p>
<ul style="list-style-type: none"> <li>On FAA deep can and base plate.</li> <li>On any other support with 2" NPS or 2" BSP thread.</li> </ul>	 <p><b>FIG 3</b></p> <p>610 mm</p> <p>304 mm</p> <p>309 mm</p>

5. **PHOTOMETRICS**

This section includes photometric examples according to standards (ICAO, FAA and MOS139).

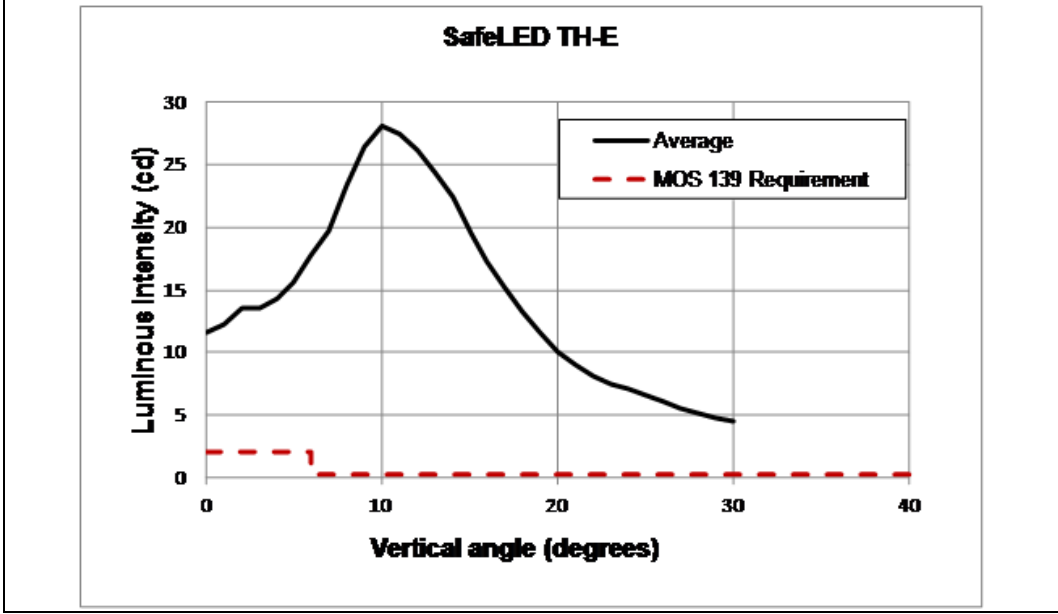
**Photometric examples**

SafeLED TE-E Taxiway Edge ICAO and FAA L-861T. Omni-directional Blue.




**Note:** cd – candela (unit of luminous intensity).

SafeLED TH-E Intermediate holding position MOS 139. Omnidirectional Yellow.



**6. DESIGN**

Components	SL-TE-E; SL-TH-E
<ol style="list-style-type: none"> <li>1. Blue or Yellow Closing circle</li> <li>2. Glass dome</li> <li>3. Gasket</li> <li>4. Power converter with coloured LED</li> <li>5. Body</li> <li>6. Compression packer</li> <li>7. Cone</li> <li>8. *Secondary lead equipped with FAA type plug<sup>1</sup> *Secondary lead 2x1 mm<sup>2</sup>, 0,8m<sup>2</sup></li> <li>9. Level adjustment screws</li> <li>10. Frangible stand</li> </ol>	
<p><i>For more information, contact Safegate Group or see <a href="http://www.safegate.com">www.safegate.com</a>.</i></p>	

<sup>1</sup> **Note:** Series circuit version.

<sup>2</sup> **Note:** VAC version.



**7. ORDER CODES**

The table below is a guide to order codes for a SafeLED fitting with X representing the available component parts.

<b>Ordering Code</b>	<b>SafeLED</b>	<b>X</b>	<b>X</b>	<b>X</b>	<b>X</b>	<b>X</b>	<b>X</b>
<i>Location</i>							
Taxiway Edge	<b>TE</b>						
Intermediate holding position	<b>TH</b>						
<i>Fitting</i>							
Elevated	<b>E</b>						
<i>Type</i>							
Omni-directional	<b>O</b>						
<i>Colour</i>							
Blue	<b>B</b>						
Yellow	<b>Y</b>						
<i>Fixing thread</i>							
2" NPS	<b>NPS</b>						
2" BSP	<b>BSP</b>						
<i>Power supply</i>							
2.8 A - 6.6 A	<b>6.6A</b>						
230 VAC	<b>VAC</b>						
<i>Fitting Supports</i>							
On a tripod stand, conduit elbow, FAA deep can and base plate or any other support with 2" NPS or 2" BSP thread.							
For more information, contact Safegate Group or see <a href="http://www.safegate.com">www.safegate.com</a>							

## 8. SPECIFICATION

The SafeLED TE-E and TH-E lights include numerous technical benefits:

- Taxiway elevated edge omnidirectional blue LED light.
- Taxiway elevated edge omnidirectional for intermediate holding position yellow LED light.
- The electronic components are encapsulated in waterproof polyurethane.
- Over voltage surge and lightning protection.
- The optical head of the fitting can be adjusted for maximal light performance.
- The optical dome is made of glass.
- Can be powered by an isolating transformer on a standard AGL primary loop or a parallel system.
- The LED fitting follows the same light intensity curve as a halogen lamp with the different CCR levels (on series circuit).
- Long LED life time depending on operation.
- All external parts are made of anodised aluminium alloy casting.
- All fixings and fastenings are stainless steel.
- The weight of the fitting is less than 2.7 kg.
- The fitting is designed to allow easy maintenance.
- Supplied as an option with FAA connector.
- Frangibility complies with FAA.
- The total power consumption is lower than 7.5 W.
- Acts as a halogen lamp and does not pulsate due to resistive load.
- Backwards compatible with halogen lamps.

The light is in compliance with standards:

- ICAO: Annex 14 Volume I Paragraphs 5.3.17.
- FAA: AC150/5345-46D. L-861T.
- FAA: Engineering Brief No 67C: Light Sources other than Incandescent and Xenon for Airport Lighting and Obstruction Lighting Fixtures.
- IEC 61827.
- NATO: STANAG 3316.
- STAC.
- MOS 139: Paragraphs 9, 13, 22, 2.

**Note:**

*For more information, contact Safegate Group regarding compliance with other standards.*

*All descriptions and photometric characteristics in this publication present only general particulars and shall not form part of any contract. The right is reserved to change them without prior notification.*

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Can this number be increased without adverse effects on the airport's safety level?  
It is a known fact that traffic volume will rise in the foreseeable future. More movements will demand monitoring of the entire airport. Requirements will be sharpened and the development of an integrated system

controlling not only ground movements but also air traffic close to the airport is of the highest interest.  
The International Civil Aviation Organization (ICAO) already describes A-SMGCS, Advanced Surface Movement Guidance and Control System, as the answer to the future modern airport need to control the entire airport space in one superior system.

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