



- COMPLETE LED PERMANENT solution for tunnel lighting
 - Eventually associated with the TunnelLed TESEO for the Reinforcement solution
 - System International patent (2008) for total light emission by reflectors
 - Visual Confort and Uniform lighting without glare
 - Safety
 - Autodimming or total light output management
 - 120 000 hours
 - Running temperatures:
 - 20/+55 °C from 85 to 105W models
 - 20/+60 °C from 45 to 65W models
 - Made 100% in Italy and western of Europe
 - 5 Years warranty





ELECTRICAL SPECIFICATIONS

Voltage	220 ÷ 240 V ac
Frequency	50 - 60 Hz
Electrical safety class	Classe II
Power supply efficiency	92,5%
Driver Input	1-10V or Dali for external Control
Flux control system	Power line communication
Certifications	CE - RoHS - ENEC

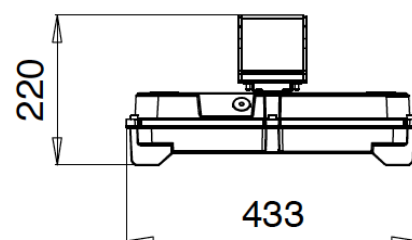
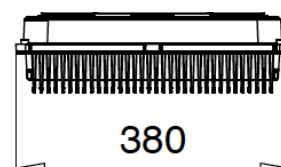
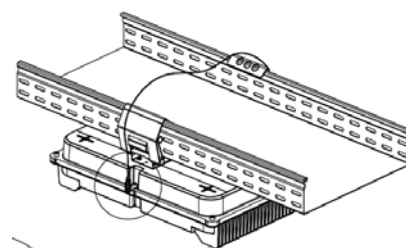
MECHANICAL FEATURES

Body	Die-cast aluminium EN 46100
Paint	Resistant to 1000 hours in salt spray
Glass	Tempered extra clear, 4-mm thick
External screws	A2 stainless steel
Total weight	10,2 kg
Ingress protection	IP 66
Impact resistance	IK08 - 5j
Wind exposed surface	0,175

OPTICAL FEATURES

Total reflection patent	1395290
LED	PHILIPS LUMILEDS LUXEON M (optics B)
Photobiological safety	Exempt group

DIMENSIONS



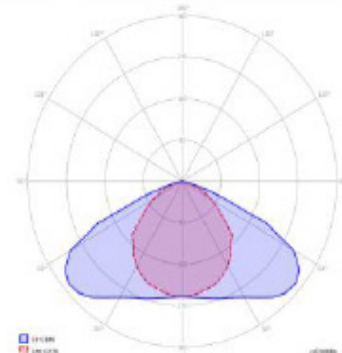
units : mm

TYPE B OPTICS

Model	n.LED	Luminaire flux lm@5700k	Luminaire flux lm@6000k	CRI	Power W	Efficacy lm/W mini
45 watt	20	4412	4510	70	45	98/ 100
65 watt	30	6601	6749	70	67	98/ 101
85 watt	40	8780	8976	70	88	100/ 102
105 watt	50	10948	11193	70	110	100/ 102

Available mounting accessories sizes

A mm	B mm
300	75
200	75
150	75
100	75
200	60

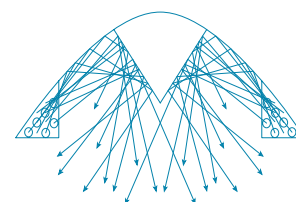


TYPE B



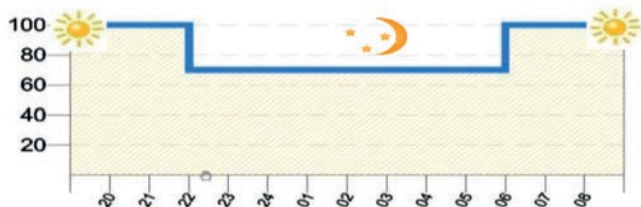
INTERNATIONAL PATENT

The international total reflection involves the usage of reflector that captures and blends the light emission through the initial optical assembly and then uses a second assembly to cast it uniformly. Applied in its standard form above all for street lighting, it delivers visual comfort and uniform lighting, without creating dark spots or glare.

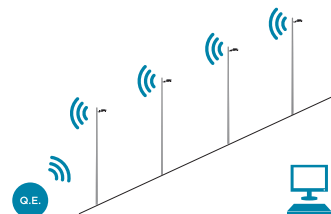




AUTO DIMMING DEVICE



Full Management Dali SYSTEM Wires, radio or Wifi



The tunnel entrance area requires a very high level of illumination to make the transition from bright light outside the tunnel to the dark environment inside the tunnel. For this specific area, an asymmetrical counter-beam lighting solution which projects the light in the opposite direction of travel.

Ensuring a high level of safety, this method tends to enhance the visibility of obstacles by increasing the contrast between illuminated background and the vertical surface of any obstacles remaining in the shadow (because it is illuminated in the opposite direction).

To eliminate the uncomfortable feeling of enclosed spaces, the illumination levels within tunnels are slightly higher than street lighting for open roads. The aim is to achieve a uniformly illuminated interior space without shaded areas.

this complete Led permanent and reinforced lighting systems was retained for the Val di Sambro tunnel, in the new section of the A1 motorway between Bologna and Florence, with energy saving of 60% compared to traditional lighting systems.

It has been designed to achieve the highest results in terms of efficiency and uniformity, without compromising on safety in terms of visibility.

.ies files are available for Dialux simulation



Accessories

Licence No. ENEC-00660 for tunnel streetlighting

Rated Voltage / Frequency 220-240 V ~ 50-60 Hz

Insulation Class II

Degree of protection (IP) 66

Tested acc. to EN 60598-1:2008/A11:2009, EN 60598-1:2008, EN 60598-2-3:2003/A1:2011,
EN 60598-2-3:2003

The luminaire was additionally tested in accordance with the standard IEC/EN 62262:2002 (degrees of protection provided by enclosure for electrical equipment against external mechanical impacts, IK code).

Luminaire withstand the test for IK08 code

CE - Conformity Declaration

Series: TUNNELLED TITLIS

Are compliant with the following Directives:

- 2006/95/EC LV
- 2004/108/EC EMC
- 2009/125/EC ErP
- 2011/65/EU RoHS

And they are in compliance with the following standards:

- EN 60598-1: 2008 +A11:2009
- EN 60598-2-3: 2003 +A1:2011
- EN 55015: 2006 +A1:2007 +A2:2009
- EN 61547: 2009
- EN 61000-3-2: 2006 +A1:2009 +A2:2009
- EN 61000-3-3: 2008
- EN 62471: 2008
- EN 62493: 2010

