

LED lighting system for tunnels



COUNTERBEAM OPTIC has been chosen counterbeam optics for its reinforced lighting solutions, meaning the maximum intensity of light emissions is aimed against the direction of traffic. Obstacles therefore appear as dark objects on a bright road surface and are highly visible, with very high negative contrast values.

By eliminating the vertical and symmetrical components from the light emissions, the beam generates much higher luminance levels, for the same power, than different types of optics; in other words, the design lighting specifications can be achieved with much lower power consumption. This translates directly into lower investment costs for materials and significant energy savings, and consequently an even faster return on investment.

The TunnelLed Teseo performs this task with very high efficiency: the counterbeam optics are designed to guarantee the exact luminance levels required by the standard, thus minimising energy consumption; careful design means light is provided only where needed, eliminating waste and drastically reducing glare. The total-reflection optics stand out immediately for their unique technological features and unrivalled visual comfort.

- COMPLETE LED REINFORCEMENT solution for tunnel lighting
- Eventually associated with the Tunnelled TITLIS for the Permanent solution
- 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
Certifications	CE - Rohs - ENEC

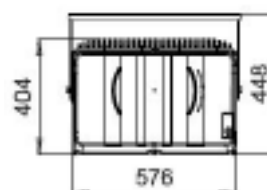
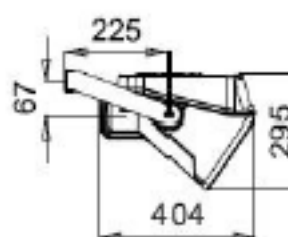
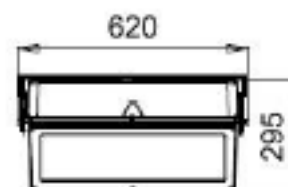
MECHANICAL FEATURES

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	19 kg
Ingress protection	IP 66
Impact resistance	IK07 - 2j
Wind exposed surface	0,174

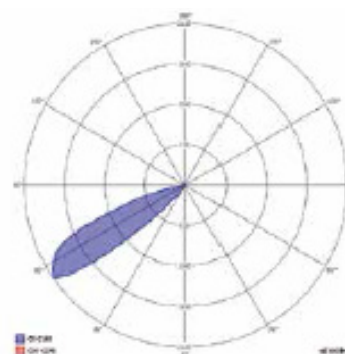
OPTICAL FEATURES

Total reflection patent	1395290
LED	CREE or PHILIPS LUMILEDS LUXEON M (opticsA)
Photobiological safety	Exempt group

DIMENSIONS



units : mm



TYPE A

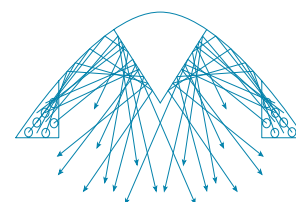
TYPE A OPTICS

Model	n.LED	LED flux lm@4000k	LED flux lm@6000k	CRI	Power W	Efficacy lm/W mini
50 watt	20	4230	4692	70	44	107
80 watt	35	7400	8181	70	77	106
110 watt	50	10150	11646	70	110	106
140 watt	16	13892	14076	70	139	101
175 watt	20	17594	17932	70	174	101
210 watt	24	21114	21520	70	205	103
285 watt	24	NA	27160	70	280	97
305 watt	24	NA	28713	70	306	94



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.



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 TESEO

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

