

TUNGSRAM™

Innovation is our heritage
EST. 1896

Outdoor Product Catalogue



2019

tungsram.com



Join us in the new world of LED

LED Outdoor solutions deliver a light closer to natural daylight than the traditional lamps of the past. The latest LED lighting solutions provide an ideal upgrade path for public bodies looking to reduce energy costs and environmental impact. LED can make striking aesthetic improvements to landscapes and cityscapes.



The benefits of LED

- Increased sense of comfort and security
- Streets and car parks are better illuminated
- Enhanced CCTV through better facial recognition
- Improved road safety - faster responses
- Up to 70% higher energy efficiency
- Longer life and reduced maintenance
- Enhanced control/ dimming capabilities
- Colours are more vivid and more real in public areas
- Better light control, less light pollution



12 Road & street lighting

14 SLBt
18 SMBt
22 SMlx
26 Piko
30 Spinella



34 Decorative & pedestrian lighting

36 Navona
40 Nobila



44 Canopy & Area lighting

46 ALIx
50 AMlx
54 AHlx



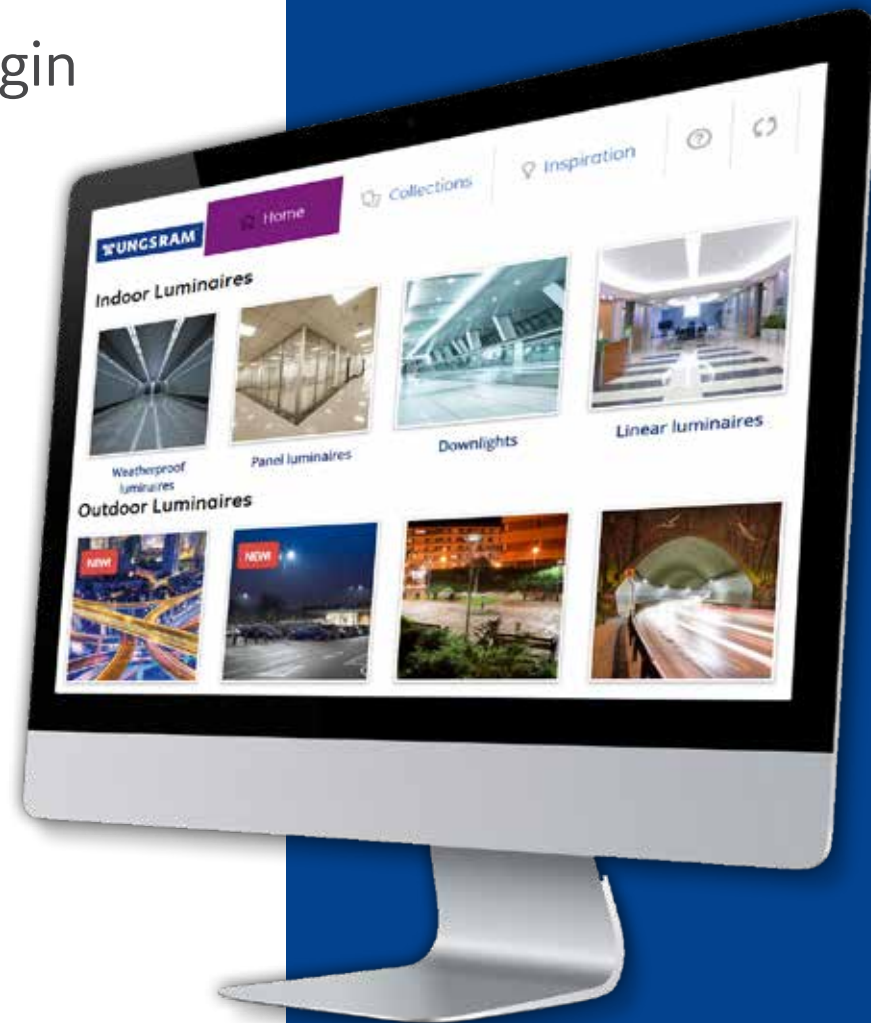
58 Tunnel lighting

60 TLBt
60 TMBt

Order logics 68

DIALux

Lighting Designer software
Dialux
Offline plugin



You can carry out simple and professional light planning by using the Dialux plug-in. Save time through a new user experience. The plugin is filled with plenty of additional solutions like customizable collections, inspirational materials and a completely up-to-date product catalogue.

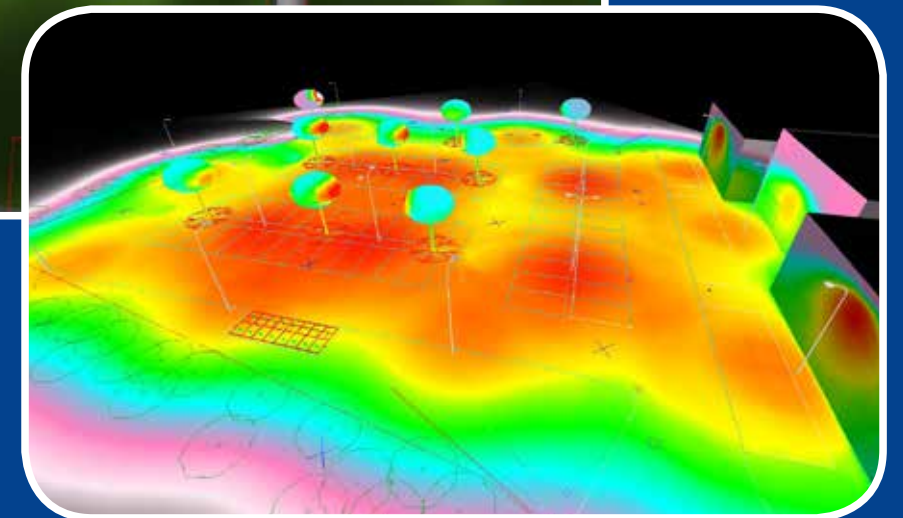
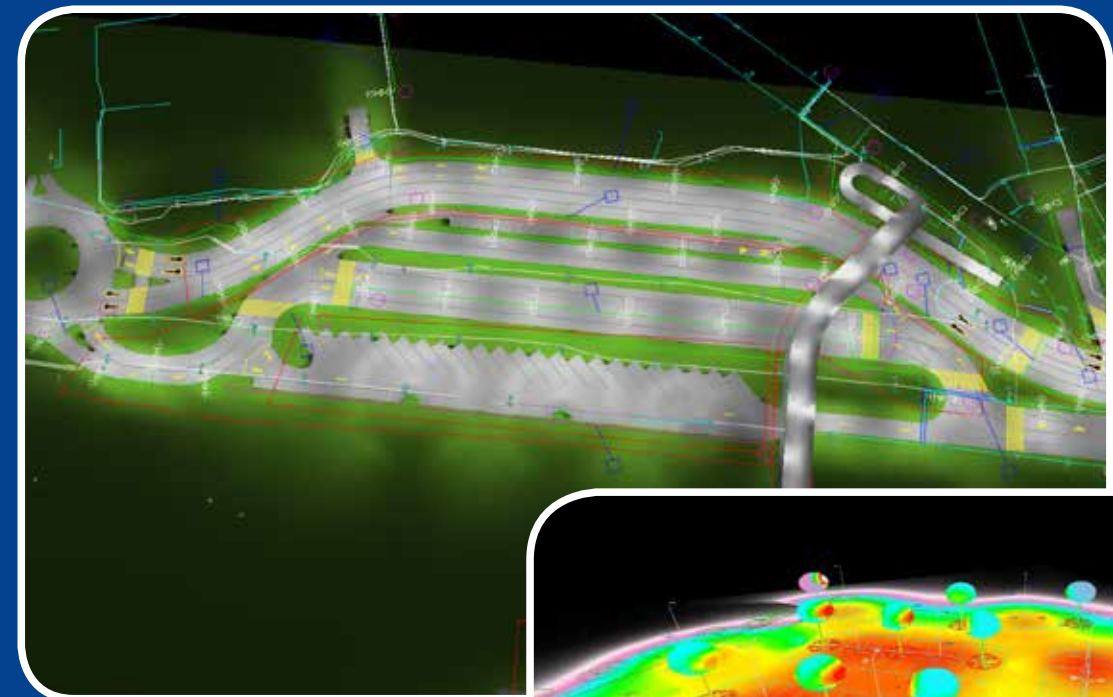
Key plug-in features

- Fast and efficient
- Up to date product info
- Custom collection
- Inspiration material
- New interface
- Industry relevant news

With the plugin you will have the chance to find the products you need quickly and create a digital design of your ideas with Dialux. It's simple and efficient – just like the professional lighting solutions.

What are the benefits of Dialux?

- Simple, effective and professional light planning
- Latest “state of the art” software, always available free of charge
- Fits perfectly into designers' existing workflow.
- Energy evaluation is simple and quick
- Colored light scenes with LED or other luminaires



You can find all our indoor and outdoor luminaires and the related technical files in our eCatalogue as part of our website – www.tungsram.com.

Outdoor lighting

Product overview

Whether it's traffic on the road or people on footpaths, in public areas or visiting shops and restaurants, effective outdoor lighting means greater visibility, which in turn helps to maximise public safety and sense of security, and breathe new life back into cities. Outdoor lighting has other benefits too, including the delivery of dramatic aesthetic benefits and a major savings in energy costs.

We have pioneered the development of efficient LED luminaires that have transformed the outdoor environment and enhanced the night time experience for millions.

The LED lighting is used everywhere from residential streets to highways, creating a bright white light that improves safety through improved visibility, while also reducing energy consumption and associated costs.

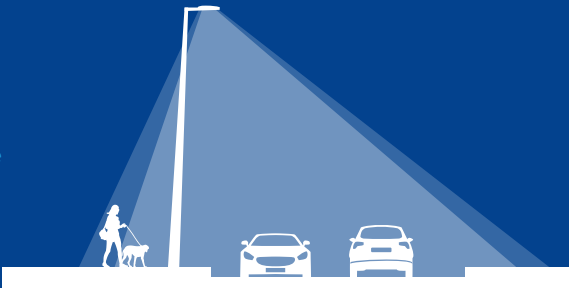
High performance area lighting is designed to ensure that the light is aimed directly where it's needed while also delivering optimum performance in terms of luminance, uniformity and glare.

LED tunnel lighting fixtures combine excellent light quality with high levels of energy efficiency and reliability to deliver a safe and easy-to-maintain solution for tunnels, underpasses and industrial areas.

Outdoor lighting

Lumen output characteristics

M3 to M6 and C Classes for road and street lighting. Mounting above 6m.



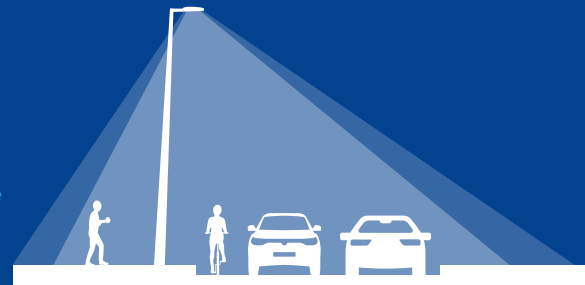
M3 to M6 and C Classes for road and street lighting. Mounting above 6m.



For C, P and S Classes, wide residential street lighting for improved face recognition and safety. Mounting below 4m.



For C Classes - Pedestrian crosswalks, P Classes improved backlight for sidewalks. Mounting above 6m.



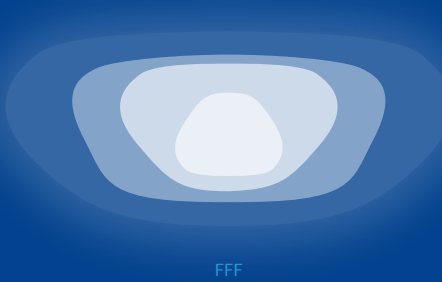
Light distributions and optics



CCC



EEE



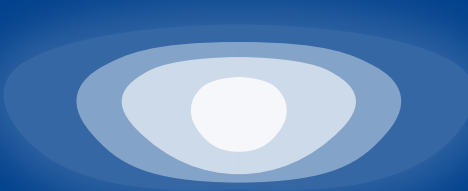
FFF



B, B2, B5, R, S



C, C5



E, E2, E5



D



F



G2, F5



P5



X5



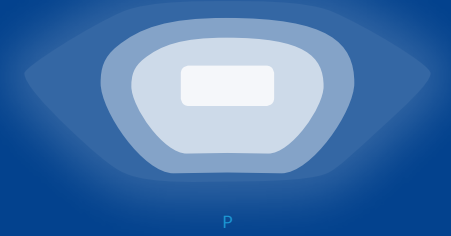
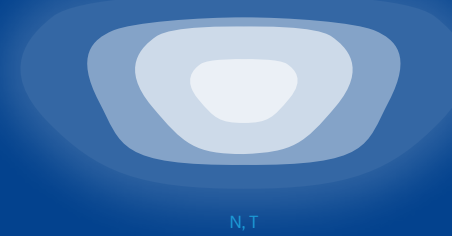
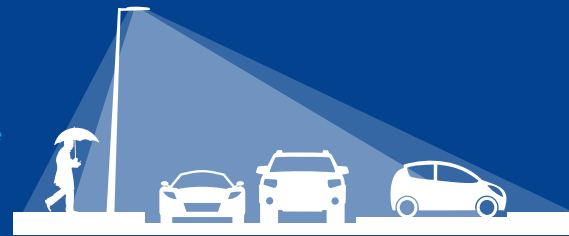
Z5

Light distributions and optics

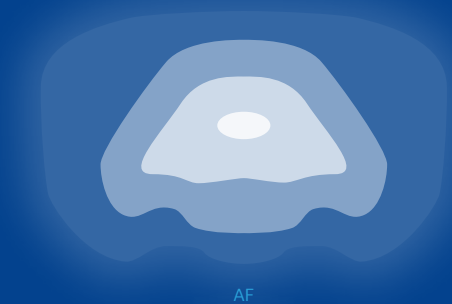
Outdoor lighting

Lumen output characteristics

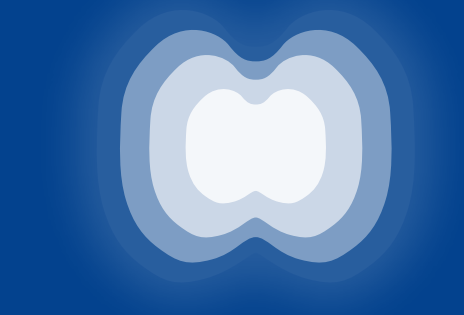
For Wet Road
Classes -
Pedestrian
sidewalks,
parking lanes.
Mounting above
6m.



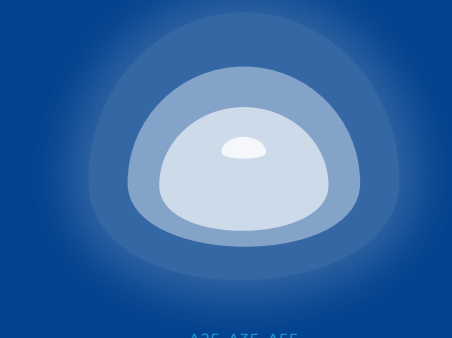
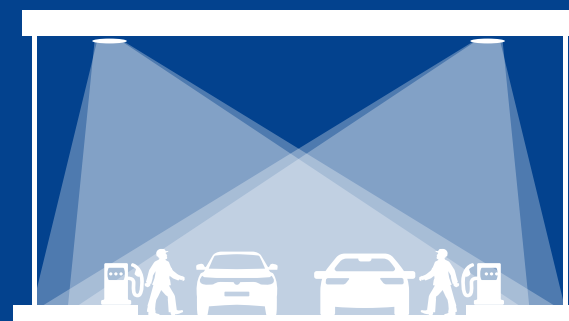
Asymmetrical
distribution for
P Classes - Area,
Square and Park
lighting.
Mounting below
6m.



Symmetrical
distribution for
P Classes - Area,
Square and Park
lighting.
Mounting below
6m.



Symmetrical
and
asymmetrical
distributions for
Canopy lighting.
Mounting 4-6m.



Symmetrical
distributions for
Tunnel lighting.



Outdoor lighting
Product overview

Road & street
lighting



SLBt

Wattage (W): 15 - 70
CCT (K): 2700, 3000, 4000
Lumen (lm): 1 200 - 8 200
IP: IP66
IK: IK09



SMBt

Wattage (W): 50 - 160
CCT (K): 3000, 4000
Lumen (lm): 6 400 - 18 700
IP: IP66
IK: IK09



SMIx

Wattage (W): 35 - 160
CCT (K): 3000, 4000, 5000
Lumen (lm): 5 000 - 22 000
IP: IP66
IK: IK08



Piko

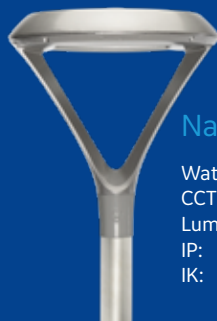
Wattage (W): 12 - 28
CCT (K): 3000, 4000, 5000
Lumen (lm): 1 500 - 3 600
IP: IP66
IK: IK08



Spinella

Wattage (W): 50 - 235
CCT (K): 3000, 4000, 5000
Lumen (lm): 5 500 - 26 300
IP: IP66
IK: IK09

Decorative &
pedestrian
lighting



Navona

Wattage (W): 16 - 72
CCT (K): 2700, 3000, 4000
Lumen (lm): 1 100 - 7 400
IP: IP66
IK: IK08



Nobila

Wattage (W): 20 - 90
CCT (K): 3000, 4000
Lumen (lm): 2 600 - 9 700
IP: IP66
IK: IK08

Canopy & Area
lighting



ALix

Wattage (W): 32 - 140
CCT (K): 3000, 4000, 5000
Lumen (lm): 3 600 - 17 600
IP: IP66
IK: IK08



AMIx

Wattage (W): 40 - 160
CCT (K): 4000, 5000
Lumen (lm): 4 600 - 18 800
IP: IP65
IK: IK08



AHix

Wattage (W): 200 - 300
CCT (K): 4000, 5000
Lumen (lm): 21 000 - 37 600
IP: IP66
IK: IK08

Tunnel
lighting



TLBt

Wattage (W): 32 - 90
CCT (K): 4000
Lumen (lm): 3 800 - 9 800
IP: IP66
IK: IK09



TMBt

Wattage (W): 130 - 150
CCT (K): 4000
Lumen (lm): 1 4500 - 17 400
IP: IP66
IK: IK09

Road & street lighting



Road and street lighting SLBt



Product information

Introducing our latest LED road and street fixture, the SLBt, which makes the advantages of outdoor LED lighting available for everyone, even those on tight budgets. Designed to replace 35-100W HID and 24-36W CFL fixtures, the SLBt is a great LED solution for minor roads, residential streets and other public spaces where modest levels of illumination is required.

Application areas



Residential



Road and street
Motorways



Car park



Details SLBt



Driver feature

- Electronic, dimmable DALI driver with autonomous dimming: 15-72W.
- Constant Light Output (optional)

Structures and materials

- Housing material: die-cast aluminium body, corrosion resistant screws and brackets
- Optic material: coated polycarbonate or aluminium
- Colour: RAL7035
- Optical cover: UV stabilized polycarbonate
- All materials used in this product are WEEE and ROHS compatible.

Performance

- Rated luminous flux range: from 1 200 to 8 200 lm at 4000K
- Rated luminaire efficacy: up to 122 lm/W at 4000K.
- Photometric code: 727/559 , 730/559, 740/559
- Rated median useful life and the associated rated LM factor L80B50: > 218.000 hours
- Rated abrupt failure value: 11.5 %
- Lumen maintenance code: 9
- Rated ambient temperature (tq) related to Performance for a luminaire: 25°C

* Definitions and tolerances according to IEC 62722-2-1.

**Rated abrupt failure value depends on the configuration type.

Installation and maintenance

Mounting options

- Side mount bracket ø42mm-60mm
- Post top bracket ø48mm-76mm
- Universal coupler side ø35mm-76mm
- Universal coupler post ø35mm-76mm
- Bracket can be adjusted: 0°, +5° (with accessories -5° also available)
- Universal Coupler can be adjusted -15°, -10°, -5°, 0°, +5°, +10°, +15° by 5°degree steps
- Recommended mounting height: 4-15m
- Weight: 5 kg
- Only two hand-tools required for installing the fixture
- Storage temperature up to 85°C.
- Ambient temperature from -40°C to 35°C

Optics

Available photometric distributions:

- Narrow Asymmetric – medium (B, B2, B5)
- Asymmetric – short (C, C5)
- Asymmetric forward – very short (D)
- Asymmetric – medium (E, E2, E5)
- Forward asymmetric – medium (F, F5, G2)
- Narrow asymmetric – short (N)
- Narrow asymmetric with backlight – short (P, P5)
- Narrow asymmetric – medium (R)
- Narrow asymmetric – medium (S)
- Asymmetric – short (T)
- Asymmetric – medium (U)
- Pedestrian cross walk (X5, Z5)
- Symmetric – medium (Y5)

Rated colour rendering index:>70

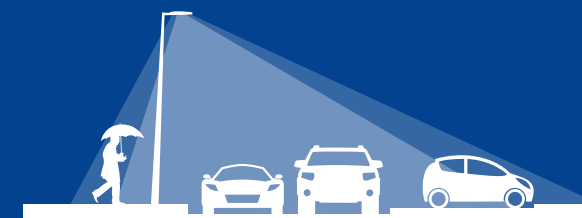
Rated correlated colour temperatures*: 2700K, 3000K, 4000K

S/P rating for : 2700K: 1.09 , 3000K: 1.33, 4000K: 1.56

ULOR (Upward Light Output Ratio): 0

Rated initial chromaticity co-ordinate values

- CIE(x=0.43, y=0.403) 5SDCM
- CIE(x= 0.38, y= 0.38) 5SDCM
- CIE(x=0.4578, y=0.4101) 5SDCM



Asymmetric – short

Electrical

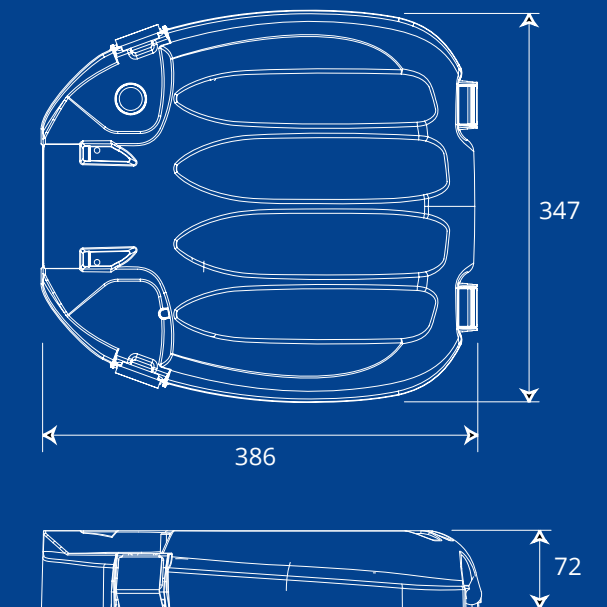
Input voltage and frequency: 220-240V, 50-60Hz

Class I: standard, Class II: on request

Surge protection: 10 kV

Rated input power: 14W to 70W

Dimensions (mm)



Road and street lighting SMBt



Product information

Our LED roadway lighting fixture makes all the advantages of LED lighting available for a wide audience. Designed to replace 35-150W HID fixtures, SMBt is a great LED solution for minor roads, residential streets and other public spaces where modest level of illumination is required.

Application areas



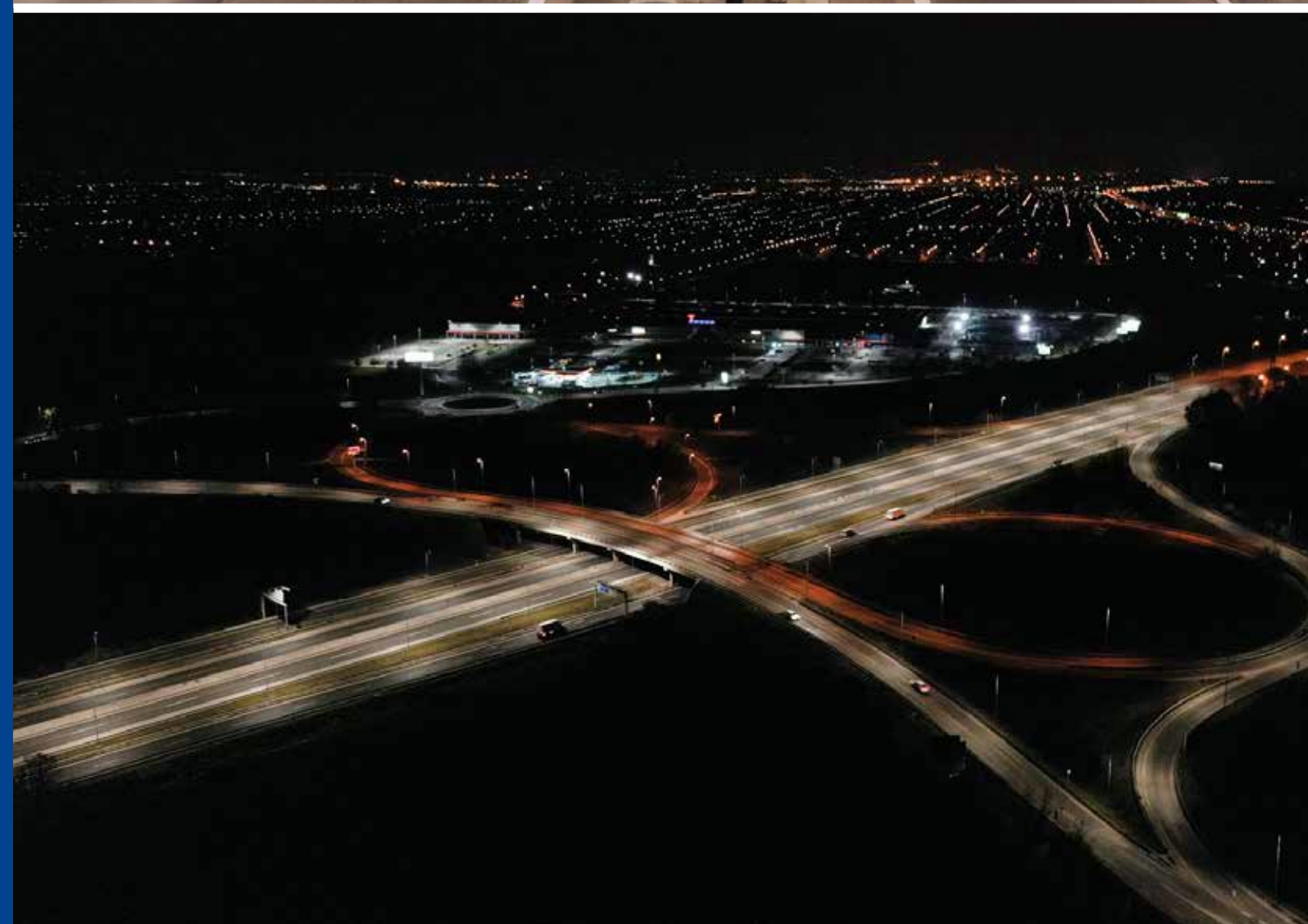
Residential



Road and street
Motorways



Car park



Details SMBt



Driver feature

- Electronic, dimmable (DALI) driver with autonomous dimming: 50W-160W
- Minimum dimming level 20W
- • Constant Light Output (optional)

Structures and materials

- Housing material: die-cast aluminium body, corrosion resistant screws and brackets
- Optic material: coated polycarbonate or aluminium
- Optical cover: glass
- Colour: RAL7035
- All materials used in this product are WEEE and ROHS compatible.

Performance

- Rated luminous flux range: from 6 400 to 18 700 lm at 4000K
- Rated luminaire efficacy: Up to 146 lm/W at 4000K.
- Photometric code: 730/559, 740/559
- Rated median useful life and the associated rated LM factor L80B50: > 102.000 hours
- Rated abrupt failure value: 11.5 %
- Lumen maintenance code: 9
- Rated ambient temperature (tq) related to performance for a luminaire: 25°C

* Definitions and tolerances according to IEC 62722-2-1.

**Rated abrupt failure value depends on the configuration type.

Installation and maintenance

Mounting options

- Side mount bracket ø42mm-60mm
- Post top bracket ø42mm-76mm
- Universal coupler side ø35mm-76mm
- Universal coupler post ø35mm-76mm
- Bracket can be adjusted: -5°, 0°, +5°
- Universal Coupler can be adjusted -15°,-10°, -5°, 0°, +5°, +10°, +15° by 5°degree steps
- Weight: 7,5 kg
- Storage temperature up to 85°C.
- Ambient temperature from -40°C to +50°C up to 140W
- +40°C up to 160W

Optics

Available photometric distributions:

- Narrow Asymmetric – medium (B, B2, B5)
- Asymmetric – short (C, C5)
- Asymmetric forward – very short (D)
- Asymmetric – medium (E, E2, E5)
- Forward asymmetric – medium (F, F5)
- Narrow asymmetric – short (N)
- Narrow asymmetric with backlight – short (P, P5)
- Asymmetric – short (T)
- Pedestrian cross walk (X5, Z5)
- Symmetric - (Y5)
- Asymmetric – medium (U)

Rated colour rendering index:>70

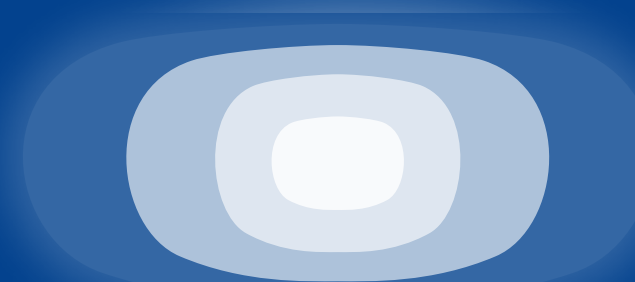
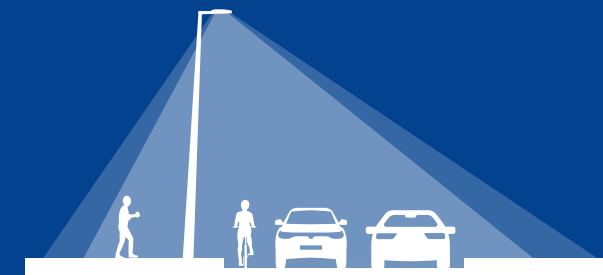
Rated correlated colour temperatures: 3000K, 4000K

S/P rating for : 3000K: 1.33, 4000K: 1.56

ULOR (Upward Light Output Ratio): 0

Rated initial chromaticity co-ordinate values

- CIE(x=0.43, y=0.403) 5SDCM
- CIE(x= 0.38, y= 0.38) 5SDCM



Narrow Asymmetric – medium

Electrical

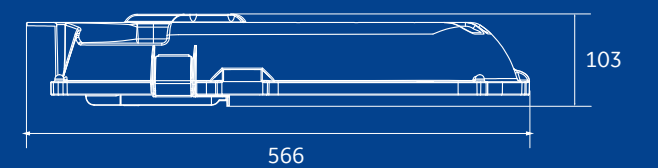
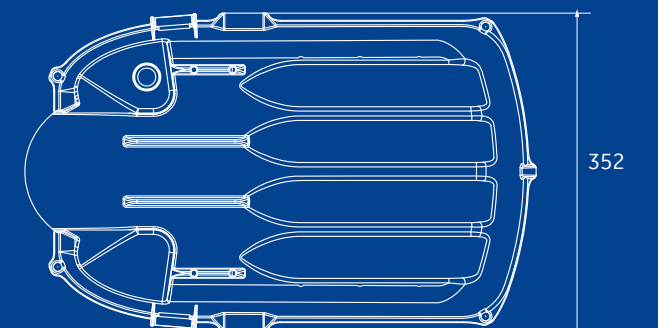
Input voltage and frequency: 220-240V, 50-60Hz

Class I: standard, Class II: on request

Surge protection: 10 kV

Rated input power: 52W to 158W

Dimensions (mm)



Road and street lighting SMIx



Product information

SMIx offers an optimal solution for street lighting. Modular refractive optic system, a wide range of light distributions can be achieved. The optimized mechanical design provides simple installation, adjustability and reliability.

Application areas



Residential



Road and street
Motorways



Details SMIx



Driver feature

- Electronic, dimmable (DALI) driver with autonomous dimming: 35-160W

Structures and materials

- Housing material: die-cast aluminium body and UV stable plastic door with corrosion resistant polyester powder coat, stainless steel screws and brackets
- Optic material: Optical-grade polycarbonate
- Optical cover: Tempered glass
- Colour: RAL7035
- Impact Strength: IK08 on optical parts, IK09 on housing and coupler
- All materials used in this product are WEEE and ROHS compatible.

Performance

- Rated luminous flux range: from 5 000 to 22 000 lm
- Rated luminaire efficacy: Up to 152 lm/W at 4000K
- Rated median useful life and the associated rated LM factor L80B50: > 121.000 hours
- Rated abrupt failure value: 3.12 %*
- Photometric code: 730/559, 740/559, 750/559
- Lumen maintenance code: 9
- Rated ambient temperature (tq) related to performance for a luminaire: 25°C

* Definitions and tolerances according to IEC 62722-2-1.

**Rated abrupt failure value depends on the configuration type.

Installation and maintenance

Mounting options

- Side-mounting coupler for 30-60mm diameters and -15°, -10°, -5°, 0° tilt options
- Post top mounting coupler for 30-60mm diameters and 15°, 10°, 5°, 0° tilt options
- Weight: 8 kg
- Recommended mounting height: 4 - 15m
- Only two hand-tools required for installing the fixture
- Storage temperature up to 85°C.
- Ambient temperature from -40°C to 50°C

Optics

Available photometric distributions:

- C: optimized for high traffic ME class roads
- E: optimized for narrow S class roads
- F: optimized for wide S class roads

Rated colour rendering index >70

Rated correlated colour temperatures: 3000K, 4000K, 5000K

S/P rating for : 3000K: 1.24, 4000K: 1.47, 5000K:1.71

ULOR (Upward Light Output Ratio): 0

Rated initial chromaticity co-ordinate values

- CIE(x=0.43, y=0.403) 5SDCM
- CIE(x= 0.38, y= 0.38) 5SDCM
- CIE(x= 0.34, y= 0.35) 5SDCM



Optimized for high traffic ME class roads

Electrical

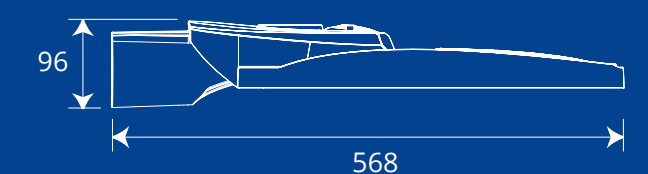
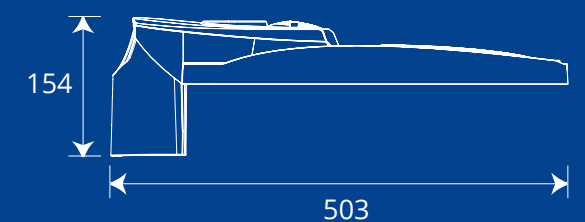
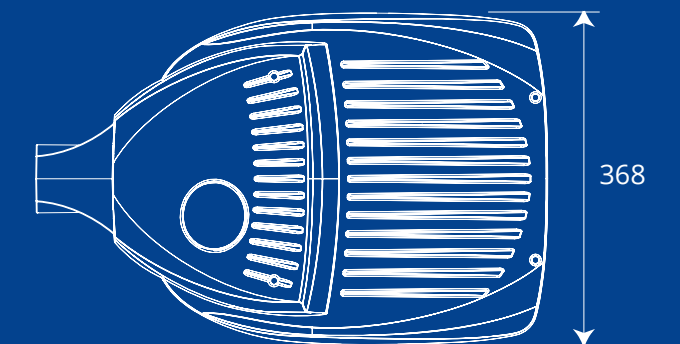
Input voltage and frequency: 220-240V, 50-60Hz

Class I: standard, Class II: on request

Surge protection: 10 kV

Rated input power: 35W to 160W

Dimensions (mm)



Road and street lighting

Piko



Product information

Tungsram's LED road and street fixture, the PIKO, which makes the advantages of outdoor LED lighting available for everyone, even those on tight budgets. Designed to replace 11-36 W CFL and 35-70 W HID fixtures, the PIKO is a great LED solution for minor roads, residential streets and other public spaces where modest levels of illumination are required.



Application areas

-  Street & residential road lighting
-  Car park
-  Pedestrian street
-  Public area



Details

Piko



Driver feature

- Electronic, non-dimmable driver

Structures and materials

- Housing material: die-cast aluminium body, corrosion resistant screws
- Color: RAL7035
- Optical cover: tempered glass

Performance

- Rated luminous flux range: from 1 500 to 3 600 lm
- Rated luminaire efficacy: Up to 140 lm/W
- Photometric code: 730/559, 740/559, 750/559
- Rated median useful life and the associated rated LM factor: L80B50 > 110.000 hours
- Rated median useful life and the associated rated LM factor: L80B10 > 110.000 hours
- Rated median useful life and the associated rated LM factor: L90B50 > 54.000 hours
- Rated abrupt failure value: 10% at 50.000 hours
- Lumen maintenance code: 9
- Rated ambient temperature (tq) related to performance for a luminaire: 25°C

* Definitions and tolerances according to IEC 62722-2-1.

**Rated abrupt failure value depends on the configuration type.

Installation and maintenance

Mounting options

- Side mount ø35mm-60mm
- Recommended mounting height: 4-8m
- Weight: 2 kg
- Only two hand-tools required for installing the fixture
- Storage temperature up to 85°C.
- Ambient temperature from -40°C to +35°C

Optics

Available photometric distributions:

- C: optimized for low traffic M class roads
- E: optimized for narrow P type roads
- F: optimized for wide P type roads

Rated colour rendering index: >70

Rated correlated colour temperatures: 3000K, 4000K, 5000K

S/P rating for: 3000K - 1.33, 4000K - 1.56, 5000K - 1.78

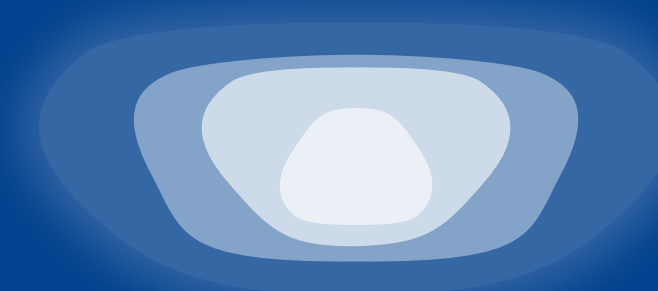
ULOR: 0

Rated initial chromaticity co-ordinate values

3000K - CIE(x=0.43, y=0.403) 5SDCM

4000K - CIE(x= 0.38, y= 0.38) 5SDCM

5000K - CIE(x= 0.34, y= 0.35) 5SDCM



Optimized for residential area

Electrical

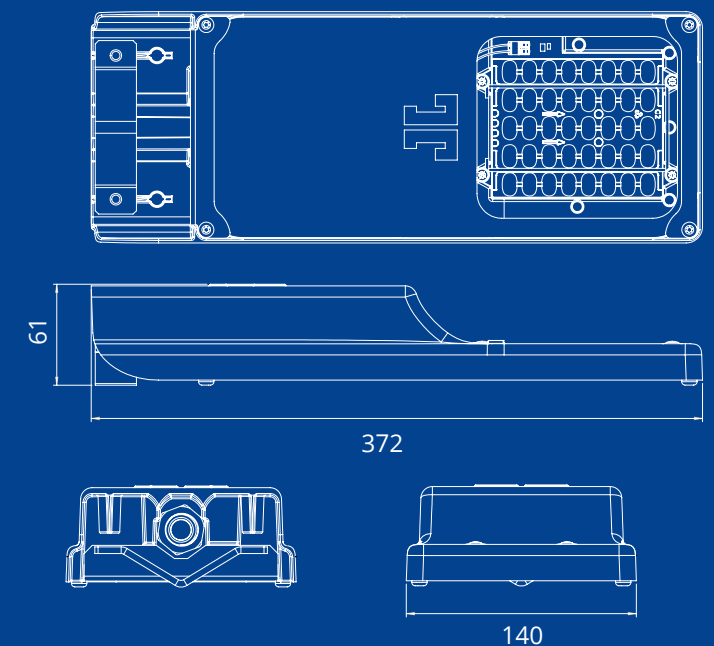
Input voltage and frequency: 220-240V, 50Hz

IEC Safety Classification: Class I

Driver surge immunity: 6kV

Rated input power: 12W to 28W

Dimensions (mm)



Road and street lighting Spinella



Product information

Introducing Spinella, single and multiple module roadway fixtures. From residential streets to highways, the Spinella fixture is changing the way you light your roads. Developed and produced in EMEA, balances the technical needs of a sophisticated LED system with the functional demands of a reliable outdoor fixture for all weather conditions, while offering a platform for controls and intelligence.

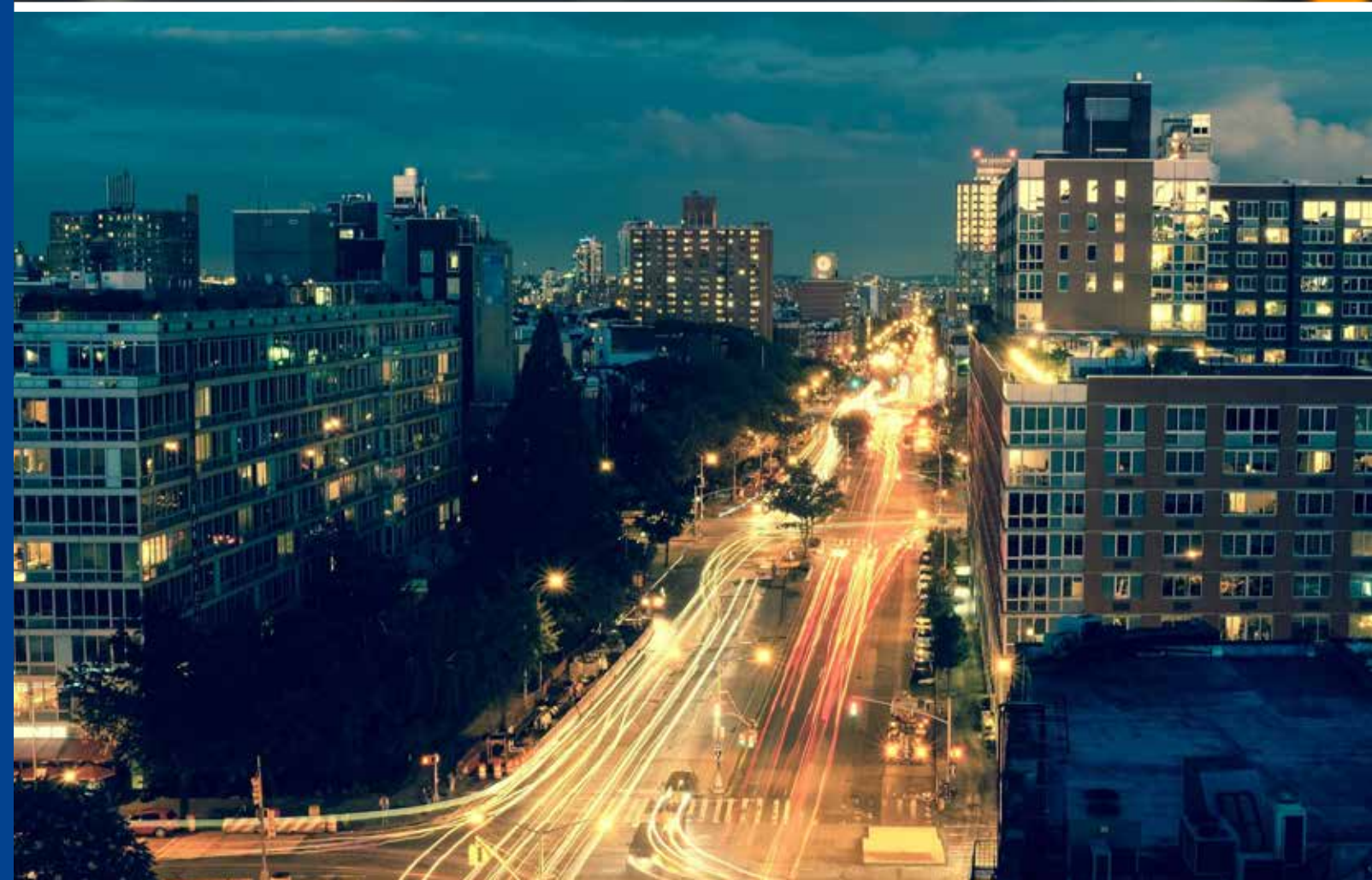
Application areas



Residential



Road and street
Motorways



Details Spinella



Performance

Single module

- Rated luminous flux:
from 5 500 lm to 12 720 lm at 5000K
- Rated luminaire efficacy:
up to 123 lm/W at 5000K
- Photometric code: 730/559, 740/559, 750/559
- Lumen maintenance code: 9
- Rated ambient temperature (tq) related
to performance for a luminaire 25°C*
- Rated median useful life and the associated
rated LM factor: L80B50 >128.000 hours (for P≤100W)
- Rated abrupt failure value*: 11.14%**

Multiple module

- Rated luminous flux:
from 7 320 lm to 26 300 lm
- Rated luminaire efficacy: up to 121 lm/W
- Lumen maintenance code: 9
- Photometric code: 730/559, 740/559, 750/559
- Rated ambient temperature (tq) related
to performance for a luminaire 25°C*
- Rated median useful life and the associated
rated LM factor: L80B50 > 195.000 hours
- Rated abrupt failure value*: 5.59 %**

* Definitions and tolerances according to IEC 62722-2-1.

**Rated abrupt failure value depends on the configuration type.

Installation and maintenance

Mounting options

- Side mount ø55mm-60mm
- Post top ø55mm-76mm
- Coupler can be adjusted to -15°, -10°, -5°, 0°, +5°, +10° and +15° by 5°degree steps.
- Weight: 10,5kg (Single), 20,5kg (Multiple)
- Recommended mounting height: 6-12m (Single), 6-15m (Multiple)
- Only two hand-tools required for installing the fixture. Storage temperature up to 85°C.
- Ambient temperature from -30°C to 50°C.
- All materials used in this product are WEEE and ROHS compatible.

Optics

Available photometric distributions:

- Narrow Asymmetric – medium (B)
- Asymmetric – short (C)
- Asymmetric – medium (E)
- Forward asymmetric – medium (F)
- Narrow asymmetric – short (N)
- Narrow asymmetric with backlight – short (P)
- Narrow asymmetric – medium (R)
- Narrow asymmetric – medium (S)
- Asymmetric – short (T)
- Asymmetric – medium (U)

Rated colour rendering index: >70 at 4000K

Rated correlated colour temperatures*: 3000K, 4000K, 5000K

S/P rating for : 3000K: 1.24, 4000K: 1.47, 5000K: 1.71

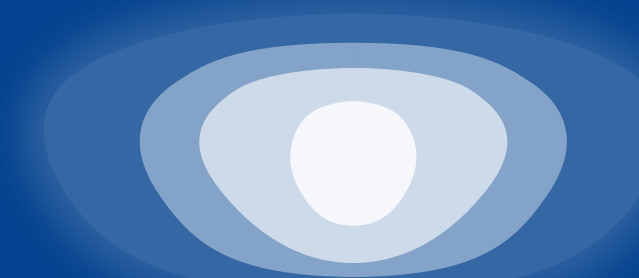
ULOR (Upward Light Output Ratio): 0

Rated initial chromaticity co-ordinate values

CIE(x=0.43, y=0.403) 5SDCM

CIE(x= 0.38, y= 0.38) 5SDCM

CIE(x= 0.34, y= 0.35) 5SDCM



Asymmetric medium

Electrical

Input voltage and frequency: 220-240V, 50-60Hz

Class I: standard, Class II: on request

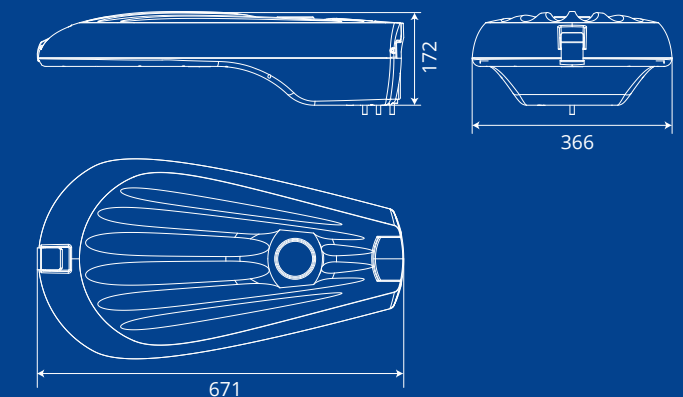
Surge protection: 10 kV

Rated input power: 52W to 230W

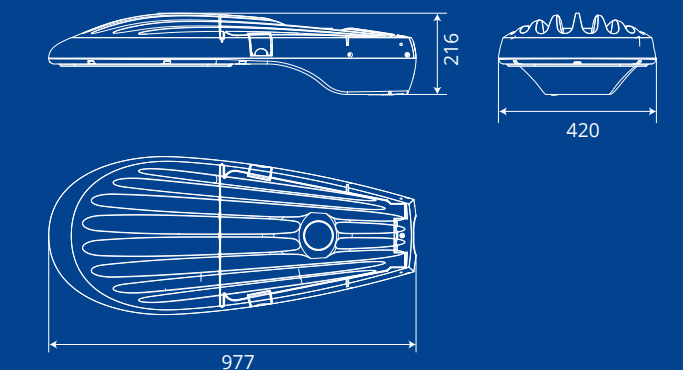
Power factor: >0.9

Dimensions (mm)

Single module



Multiple module



Decorative & Pedestrian lighting



Decorative & Pedestrian lighting Navona



Product information

Navona is a LED solution to replace traditional fixtures in parks, pedestrian areas, city centers. Timeless design incorporates the aesthetic necessities with the optimal optical distribution, providing several lumen packages with symmetrical and asymmetrical distribution and a power range from 16W to 72W to meet a wide range of lighting scenarios. Navona offers a major increase in both vertical and horizontal uniformity. Combined with the high chromatic reproduction contributed by LED technology (white light), this uniform quality facilitates face recognition and visual comfort. Its advanced optical design enables the light to be directed specifically where it is needed.

Application areas



Residential



City centres
(road classifications: from P2 to P6)



Parks



Details Navona



Driver feature

- Electronic, programmable & dimmable (DALI and 0-10V**).
- Controllable driver with astronomical clock availability.
- Controls system inputs: Analog, DALI, Dynadim
- ** In case of 0-10V control please do not dimming below 40%.

Structures and materials

- Housing material: in three pieces (upper-housing, lowerhousing and arm with coupler), all made from die-cast aluminium with a polyester powder paint finish and oven cured.
- Surface finish: polyester powder coat
- Colour: RAL9007
- Optical cover: flat tempered glass
- All materials used in this product are WEEE and ROHS compatible.

Performance

- Rated luminous flux range: 1 100 to 7 400 lm
- Rated luminaire efficacy: Up to 109 lm/W
- Rated median useful life and the associated rated LM factor
- L80B50: > 200.000 hours
- Rated abrupt failure value: 13.2 %*
- Photometric code: 727/559 , 730/559, 740/559
- Lumen maintenance code: 9
- Rated ambient temperature (tq) related to performance for a luminaire: 25°C

* Definitions and tolerances according to IEC 62722-2-1.

** Rated abrupt failure value depends on the configuration type.

Installation and maintenance

Mounting options

- 1- and 2-arm through 42-48, 60, 76 mm standard post top mounting. Side mounting through 60 mm diameter pole.
- Weight: 11,2 kg
- Recommended mounting height: 4-6 m
- Ambient operating temperature: -30°C to 50°C
- Storage temperature: up to 85°C

Optics

Available photometric distributions:

- Asymmetric Forward Clear (AFC)
- Asymmetric Wide Clear (AWC)
- Asymmetric Narrow Clear (ANC)
- Asymmetric Wide Diffuser (AWD)
- Symmetric Wide Clear (SWC)
- Symmetric Wide Diffuser (SWD)
- Symmetric Forward Clear (SFC)

Rated colour rendering index >70

Rated correlated colour temperatures: 2700K, 3000K, 4000K

ULOR (Upward Light Output Ratio): 0

S/P rating for : 2700K: 1.09, 3000K: 1.24, 4000K: 1.47

Rated initial chromaticity co-ordinate values

- CIE(x=0.43, y=0.403) 5SDCM
- CIE(x= 0.38, y= 0.38) 5SDCM
- CIE(x=0.4578, y=0.4101) 5SDCM



Symmetric Wide, Forward

Electrical

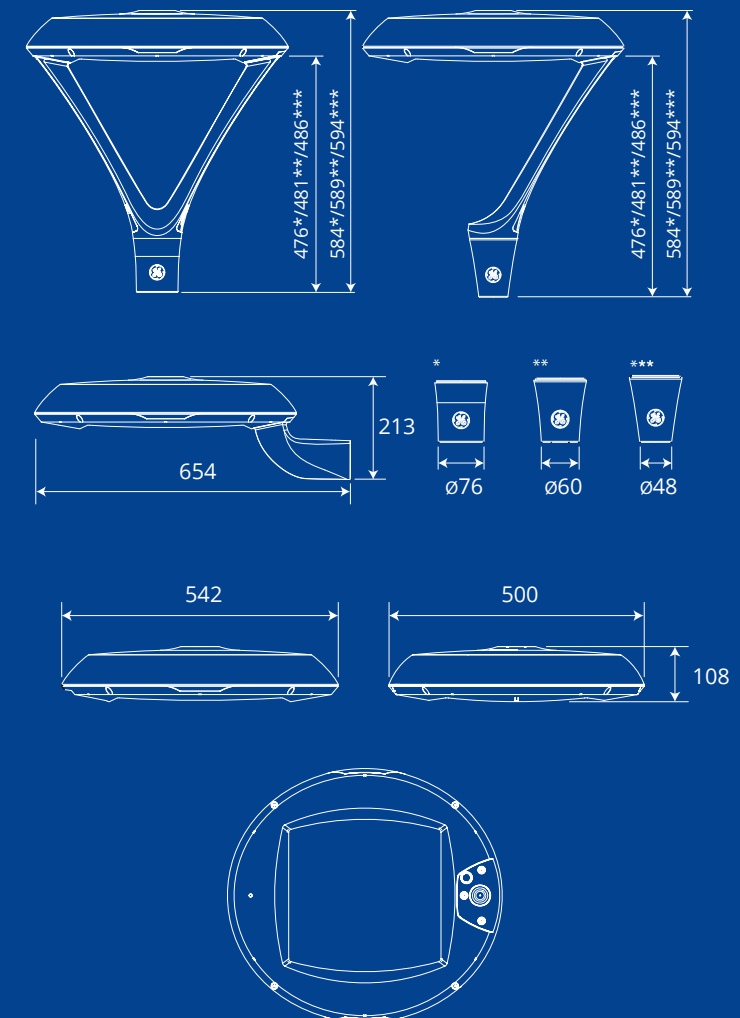
Input voltage and frequency: 220-240V, 50-60Hz

IEC Protection Class: Class I

Surge protection: 10 kV

Rated input power: 16W to 72W

Dimensions (mm)



Decorative & Pedestrian lighting

Nobila



Product information

Introducing Tungsram's latest LED decorative fixture, the Nobila, which has the advantage of aesthetic outdoor luminaires with great performance. Designed to replace 35-100 W HID and 24-36 W CFL fixtures, the Nobila is a great LED solution for roads, where heritage style is needed.

Application areas



Pedestrian street



Car park



Street & residential road lighting



Details Nobila



Driver feature

- Electronic, dimmable driver: Dali, CLO and dynadim from 20-90W
- minimum dimming level 5,5 W

Structures and materials

- Housing material: die-cast aluminium body, corrosion resistant screws
- Color: RAL9005 or any RAL color
- Optic material: coated polycarbonate
- Optical cover: UV stabilized polycarbonate
- Gear Tray material: galvanized steel

Performance

- Rated luminous flux range: from from 2 600 to 9 700lm at 4000K
- Rated luminaire efficacy: Up to 135lm/W at 4000K
- Photometric code: 730/559, 740/559
- Rated median useful life and the associated rated LM factor L80B50: > 100.000 hours
- Rated abrupt failure value: ??? %
- Lumen maintenance code: 9
- Rated ambient temperature (tq) related to performance for a luminaire: 25°C

* Definitions and tolerances according to IEC 62722-2-1.

** Rated abrupt failure value depends on the configuration type.

Installation and maintenance

Mounting options

- Post top coupler Ø48mm-76mm
- Recommended mounting height: 4-15m
- Weight: 6 kg
- Only two hand-tools required for installing the fixture
- Storage temperature up to 85°C.
- Ambient temperature from -40°C to +50°C

Optics

Lens layout (4 lenses in every scenario):

- A: asymmetric
- S: symmetric
- C: circular

Available photometric distributions:

- C: optimized for high traffic ME class roads
- E: optimized for narrow S type roads
- F: optimized for wide S class roads
- AC - asymmetric C
- AE - asymmetric E
- AF - asymmetric F
- SC - symmetric C
- SE - symmetric E
- SF - symmetric F
- CC - circular C
- CE - circular E
- CF - circular F

Rated colour rendering index: >70

Rated correlated colour temperatures: 3000K, 4000K

S/P rating for: 3000K - 1.33, 4000K - 1.56

ULOR: 0

Rated initial chromaticity co-ordinate values

3000K - CIE(x=0.43, y=0.403) 5SDCM

4000K - CIE(x= 0.38, y= 0.38) 5SDCM



Symmetric Wide, Forward

Electrical

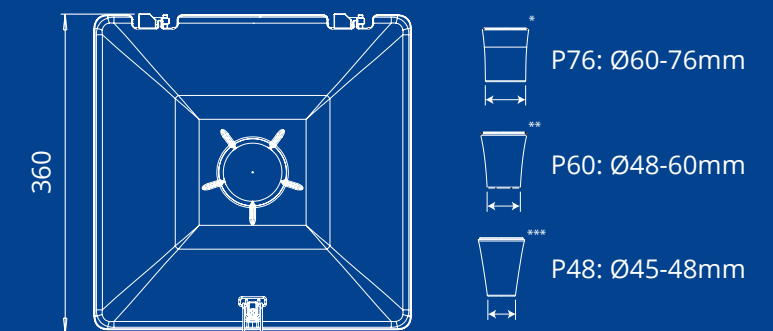
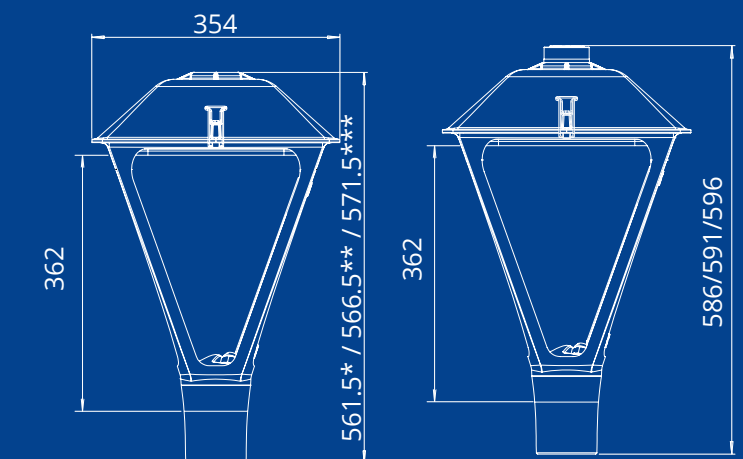
Input voltage and frequency: 220-240V, 50-60Hz

Class I, Class II

Surge protection: 10kV

Rated input power: 21W to 86W

Dimensions (mm)



Canopy & Area lighting



Area lighting ALix



Product information

ALix LED outdoor luminaire delivers outstanding features, style and attractive form factor. This latest design offers excellent efficacy even at higher lumen outputs to meet a wide range of area lighting needs.

Using reflective optic technology, Tungsram offers superior horizontal and vertical illuminance with high uniformity, while minimizing glare. This system delivers unusually low perceived glare when viewed from beneath. ALix provides reduced energy consumption, combined with a long rated life that virtually eliminates ongoing maintenance expenses, enabling significant operating cost benefits over the life of the fixture.



Application areas



Car park



Industrial
& logistic



Shopping centres



Pedestrian crossings



Details ALIx



Driver feature

- Electronic, dimmable (DALI) driver with autonomous dimming: 32-140W
- Minimum dimming level 15W
- DynaDimmer
- Constant Light Output

Structures and materials

- Housing material: die-cast aluminium body, corrosion resistant screws and brackets
- Optic material: highly reflective aluminium coated plastic
- Optical cover: tempered glass
- Colour: RAL9007
- All materials used in this product are WEEE and ROHS compatible.

Performance

- Rated luminous flux range: from 3 600 to 17 600 lm at 5000K
- Rated luminaire efficacy: Up to 140lm/W at 5000K.
- Photometric code: 730/559, 740/559, 750/559
- Rated median useful life and the associated rated LM factor L80B50 > 131.000 hours
- Rated abrupt failure value: 2.5 %
- Lumen maintenance code: 9
- Rated ambient temperature (tq) related to performance for a luminaire: 25°C

* Definitions and tolerances according to IEC 62722-2-1.

**Rated abrupt failure value depends on the configuration type.

Installation and maintenance

Mounting options

- Coupler ø60mm for side-mount or post-top
- Adjustable bracket (between -85° and 85° from horizontal)
- Recommended mounting height: 8-15m
- Tool-less driver maintenance
- Storage temperature up to 85°C.
- Operating temperature from -40°C to 50°C

Optics

Available photometric distributions:

- Asymmetric Forward (AF)
- Asymmetric Wide (AW)
- Asymmetric Narrow (AN)
- Asymmetric Extra Wide Flood (AEF)
- Asymmetric Forward Throw Narrow* (AFN)
- Symmetrical Wide Flood (SWF)
- Symmetrical Narrow Spot (SNS)

*AFN optics only available with Powers 100W & 140W

Rated colour rendering index:>70 at 4000K

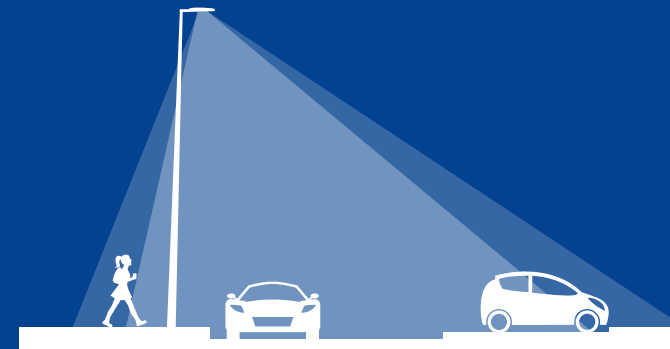
Rated correlated colour temperatures: 3000K, 4000K, 5000K

S/P rating for : 3000K: 1.24, 4000K: 1.47, 5000K: 1.71

ULOR (Upward Light Output Ratio): 0

Rated initial chromaticity co-ordinate values

- CIE(x=0.43, y=0.403) 5SDCM
- CIE(x= 0.38, y= 0.38) 5SDCM
- CIE(x= 0.34, y= 0.35) 5SDCM



Asymmetric Narrow

Electrical

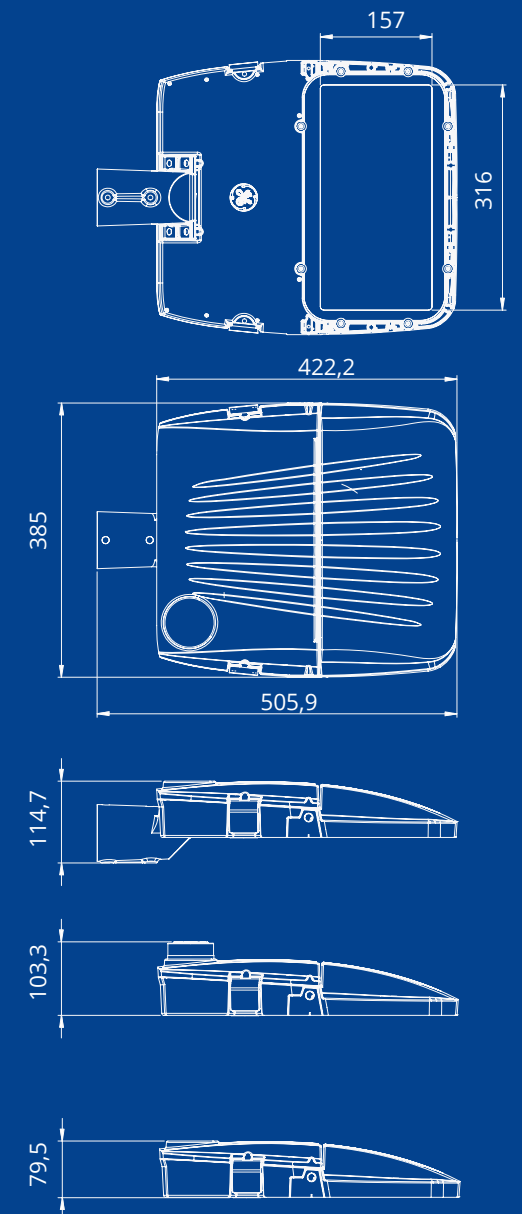
Input voltage and frequency: 220-240V, 50-60Hz

Class I, Class II

Surge protection: 10 kV

Rated input power: 31W to 142W

Dimensions (mm)



Canopy lighting AMlx



Product information

AMlx is our latest LED canopy fixture, provides a flexible and rapid installation solution for petrol stations, high bays, parking garages, industrial and other lighting application areas. AMlx is ideally suited both for replacing traditional fixtures such as HID luminaires and for new installations.

Application areas

-  Parking garages
-  Petrol station
-  Industrial
High bay
-  Floodlighting



Details

AMix



Driver feature

- Electronic, dimmable driver
- 150 W with DALI control

Structures and materials

- Housing material: die-cast and sheet metal aluminium body, stainless steel screws and brackets
- Surface finish: polyester powder coat
- Colour: RAL9003
- Optical cover: tempered low-iron glass
- All materials used in this product are WEEE and ROHS compatible.

Performance

- Rated luminous flux range: 4 500 to 18 800 lm
- Rated luminaire efficacy: Up to 134lm/W
- Rated median useful life and the associated rated LM factor L80B50: > 189.000 hours
- Rated abrupt failure value: 12.8 %*
- Photometric code: 730/559, 740/559
- Lumen maintenance code: 9
- Rated ambient temperature (tq) related to performance for a luminaire: 25°C

* Definitions and tolerances according to IEC 62722-2-1.

**Rated abrupt failure value depends on the configuration type.

Installation and maintenance

Mounting options

- Bezel, surface mount and flood
- Weight: 9kg
- Recommended mounting height: 4-6 m
- Ambient operating temperature: -40°C to 50°C
- Storage temperature: up to 85°C

Optics

Available photometric distributions:

- S25- symmetric 25°
- S35- symmetric 35°
- S55- symmetric 55°
- A25- asymmetric 25°
- A35- asymmetric 35°
- A55- asymmetric 55°

Rated colour rendering index >70

Rated correlated colour temperatures: 3000K, 4000K

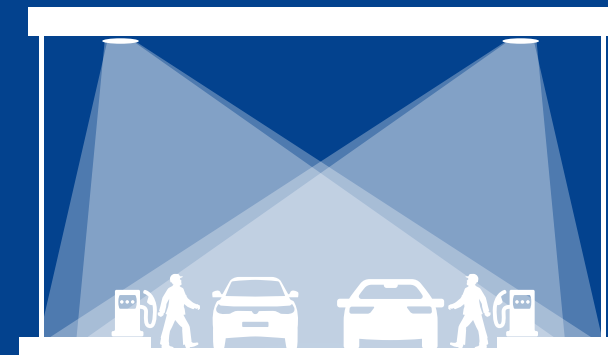
S/P rating for 3000K: 1,33; 4000K: 1,56

ULOR (Upward Light Output Ratio): 0

Rated initial chromaticity co-ordinate values

CIE(x= 0.43, y= 0.403) 5SDCM

CIE(x= 0.38, y= 0.38) 5SDCM



Asymmetric 55°

Electrical

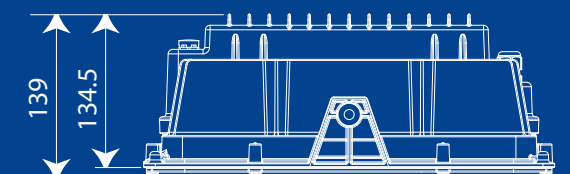
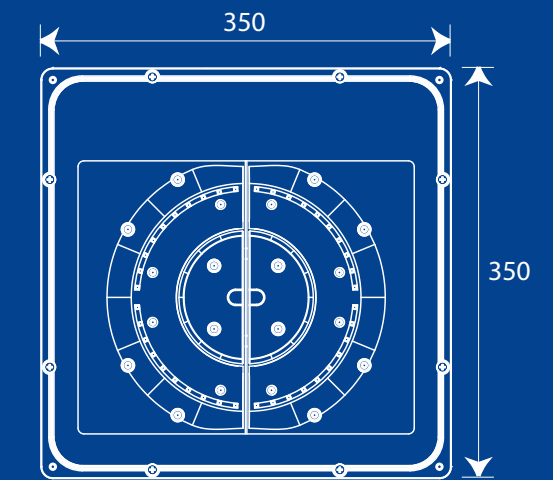
Input voltage and frequency: 220-240V, 50-60Hz

IEC Protection Class: Class I

Surge protection: 10 kV

Rated input power: 39W to 159W

Dimensions (mm)



Area lighting AHlx



Product information

AHlx luminaire offers an optimal LED lighting solution for high lumen package applications. Tried and tested reflective optic technology, combined with the effective thermal management, excellent light efficiency can be maintained throughout the whole lifetime of the luminaire, even under extreme thermal conditions. A wide range of different light distributions makes this luminaire versatile and flexible for numerous application areas. AHlx is a perfect choice for high power LED lighting applications where optical flexibility and reliability are critical.

Application areas



Industrial & Maintenance



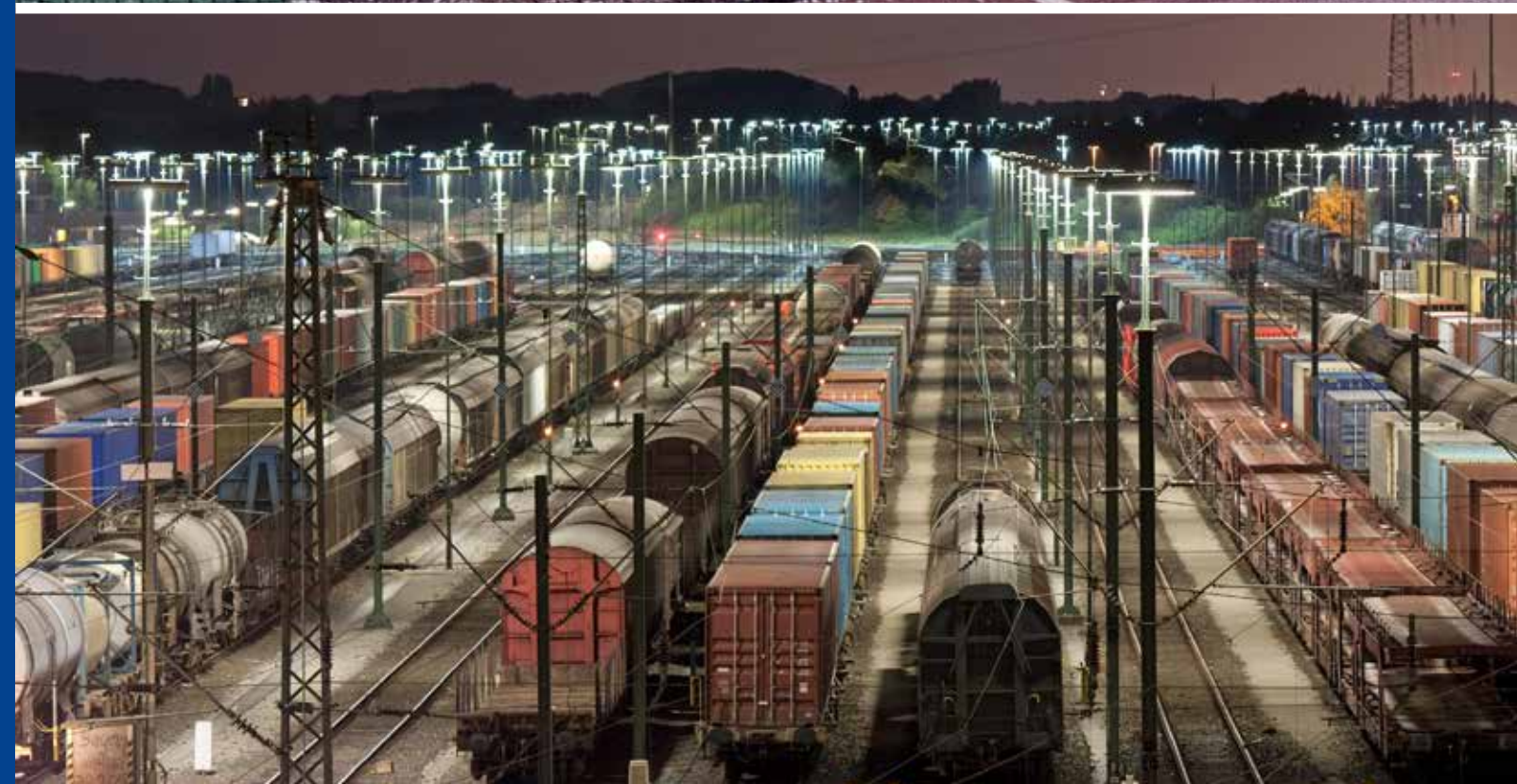
Logistical areas:
airports, ports, trains



Car park



Sport



Details

AHlx



Driver feature

- Electronic dimmable Dali driver
- Minimum dimming level: 30%

Structures and materials

- Housing material: die-cast and sheet metal aluminium body, stainless steel screws and brackets
- Surface finish: polyester powder coat
- Colour: RAL9007
- Optical cover: tempered low-iron glass
- All materials used in this product are WEEE and ROHS compatible.

Performance

- Rated luminous flux range: 21 000 to 37 600 lm at 5000K
- Rated luminaire efficacy: Up to 133lm/W
- Rated median useful life and the associated rated LM factor L80B50: > 110.000 hours
- Rated abrupt failure value: 3.12 %*
- Photometric code: 740/559, 750/559
- Lumen maintenance code: 9
- Rated ambient temperature (tq) related to performance for a luminaire: 25°C

* Definitions and tolerances according to IEC 62722-2-1.

**Rated abrupt failure value depends on the configuration type.

Installation and maintenance

Mounting options

- Adjustable stirrup
- Weight: 15kg
- Recommended mounting height: 10-40 m
- Ambient operating temperature: -40°C to 50°C
- Storage temperature: up to 85°C

Optics

Available photometric distributions:

- Asymmetric Forward (AF)
- Asymmetric Wide (AW)
- Asymmetric Narrow (AN)
- Asymmetric Extra Wide Flood (AEF)
- Asymmetric Forward Throw Narrow (AFN)
- Symmetric Wide Flood (SWF)
- Symmetric Narrow Spot (SNS)
- Symmetric Forward (SF)
- Symmetric Wide (SW)

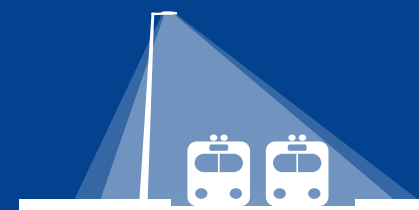
Rated colour rendering index >70

Rated correlated colour temperatures: 4000K, 5000K

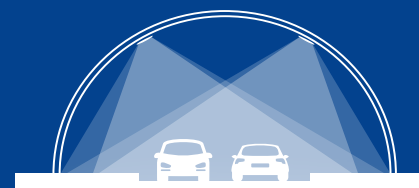
ULOR (Upward Light Output Ratio): 0

Rated initial chromaticity co-ordinate values

- CIE(x= 0.38, y= 0.38) 5SDCM
- CIE(x= 0.34, y= 0.35) 5SDCM



Asymmetric Wide



Asymmetric Forward

Electrical

Input voltage and frequency: 220-240V, 50-60Hz

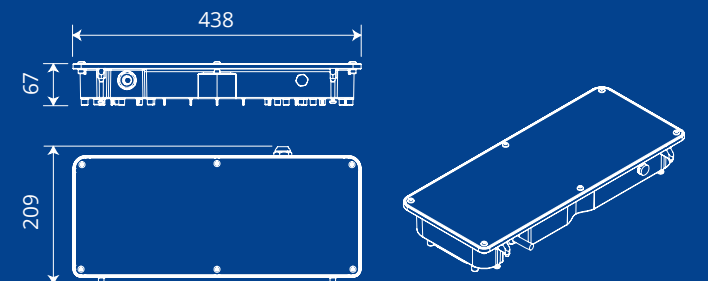
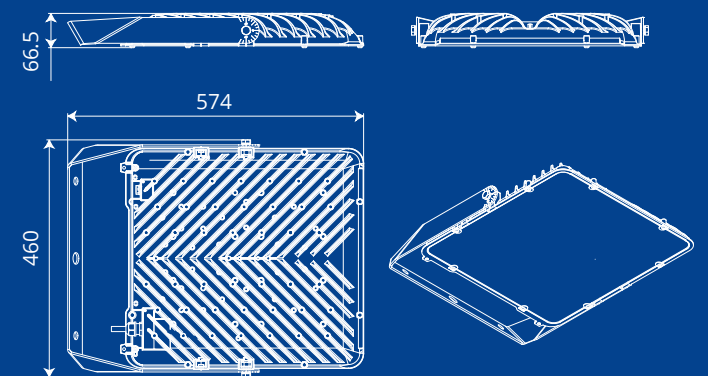
IEC Protection Class: Class I

Surge protection: 10 kV

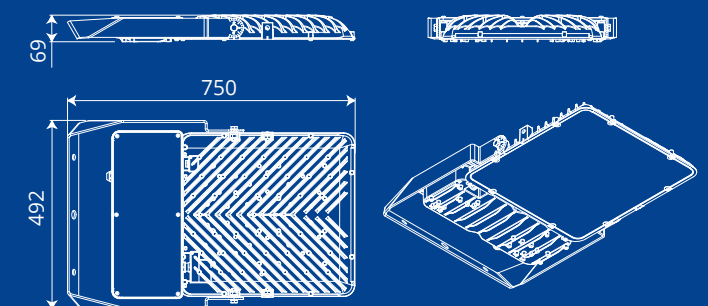
Rated input power: 200W to 300W

Dimensions (mm)

AHlx Remote Driver Luminaire (RST and RSP Accessory Options)



AHlx Integrated Luminaire (ST and SP Accessory Options)



Tunnel lighting



Tunnel lighting

TLBt & TMBt



Product information

TLBt & TMBt are specially designed for tunnel lighting and available in a wide range for low and high speed tunnels, underpasses and other applications.

Maintenance in a tunnel can cause a headache for the operators and for the users as well. The engineers therefore put major focus on developing a highly durable and reliable product with a long lifetime. The products provide easy and fast installation and maintenance to save time and cost. Safety is another important aspect in which lighting plays a key role. Our tunnel lighting solution can improve visibility for drivers with better light quality and as a result they can react faster to emergencies and other situations in tunnels.



Application areas

- Industrial
- Floodlight
- Underpasses



Details

TLBt & TMBt

Driver feature

- Electronic dimmable Dali driver
- Minimum dimming level: 30%

Structures and materials

- Housing material: die-cast aluminium
- Optical material: aluminised plastic
- Optical cover: tempered glass
- Colour: RAL9005
- All materials used in this product are WEEE and ROHS compatible.

Performance

- Rated luminous flux: from 3 800 to 9 800 lm (TLBt)
- Rated luminous flux: from 14 500 to 17 400 lm (TMBt)
- Rated luminaire efficacy: up to 120 lm/W
- Rated median useful life and the associated rated LM factor L80B50: > 218.000 hours
- Rated abrupt failure value: 3.12 %*
- Lumen maintenance code: 9
- Rated ambient temperature (tq) related to performance for a luminaire: 25°C

* Definitions and tolerances according to IEC 62722-2-1.

**Rated abrupt failure value depends on the configuration type.

Installation and maintenance

Mounting options

- Two types of fixing bracket are available: short arm for ceiling mounting, and long arm for wall mounting. Additional mounting solutions are available on request.
- Weight: 9 Kg
- Recommended mounting height: 4-8 m
The LED light engine and driver are replaceable without the need of tools, enabling a quick and easy maintenance solution
- Recommended maintenance factor for lighting design: 0.8
- Ambient temperature from -40°C to 50°C
- Storage temperature up to 85°C

Optics

Available photometric distributions:

- Extra narrow Asymmetric – medium (A)
- Narrow Asymmetric – medium (B, AQ)
- Asymmetric – short (C)
- Asymmetric forward – very short (D)
- Asymmetric – medium (E)
- Extra narrow Symmetric – medium (SA)
- Narrow Symmetric – medium (SB)
- Symmetric – short (SC)
- Symmetric forward – very short (SD)
- Symmetric – medium (SE, Y)
- Rated colour rendering index:>70

Rated correlated colour temperatures: 4000K

S/P rating for 4000K: 1.56

ULOR (Upward Light Output Ratio): 0

Rated initial chromaticity co-ordinate values

- CIE(x= 0.38, y= 0.38) 5SDCM



Symmetric Medium

Electrical

Input voltage and frequency: 220-240V, 50-60Hz

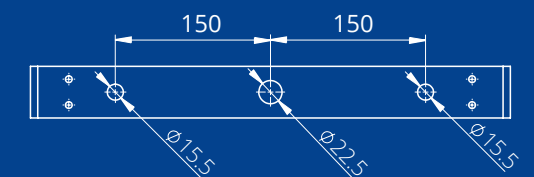
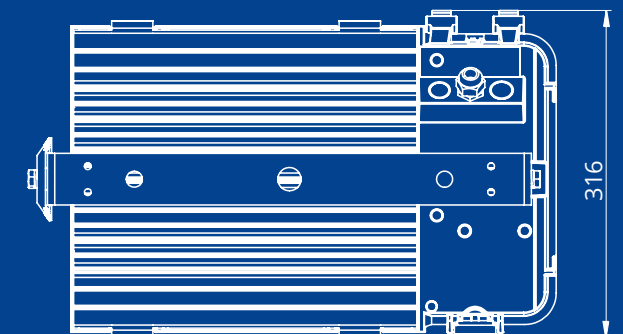
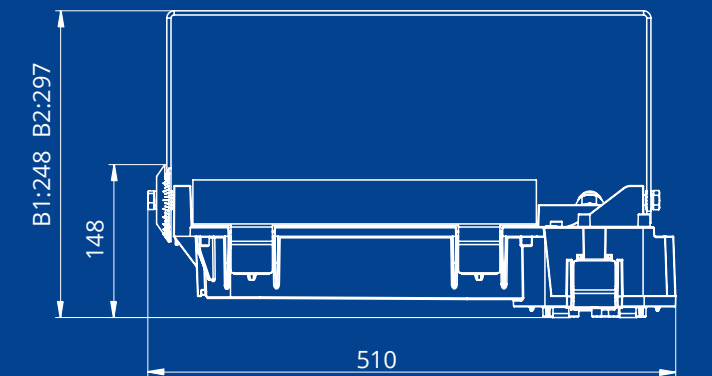
Class I: standard, Class II: on request

Surge protection: 10 kV

• Rated input power: from 32W to 89W(TLBt)

• Rated input power: from 130W to 151W (TMBt)

Dimensions (mm)



Tunnel lighting overview

What you need to know about tunnel lighting

Tunnel lighting

Good tunnel lighting takes care of good visibility conditions for the road users, this requires lighting levels that are matched with the adaptation level of the users' eyes. As this adaptation level gradually changes while travelling through the tunnel, for lighting purposes the tunnel can be divided lengthwise into five zones: the access, threshold, transition, interior and exit zone.

The decision whether a tunnel or underpass has to be lit during the day depends on

- the length of the tunnel
- the visibility of the exit
- the amount of natural light in the tunnel
- the traffic density.

The access zone

The access zone is not a part of the tunnel itself, but the approach road immediately before the tunnel entrance.

The drivers' vision will have to adapt to the conditions in the tunnel. It is very important that the drivers should be able to see any obstacles or any kind of danger even from this access zone, so that they can react on time.

The threshold zone

The required luminance level in the first section of the threshold zone of the tunnel, which length is equal to the safe stopping distance, will proportionally reduce the amount of light and energy needed. In the second half of the threshold zone the luminance level is decreased rapidly to 40 % of the initial level.

Transition zone

In the transition zone the lighting level is gradually reduced further. The reduction speed is related to the adaptation speed of the eyes but the steps of the reduction should not exceed a ratio of 3:1.

Interior zone

In the interior zone the required lighting levels are related to the structure and size of the tunnel, the speed of the traffic and the traffic density.

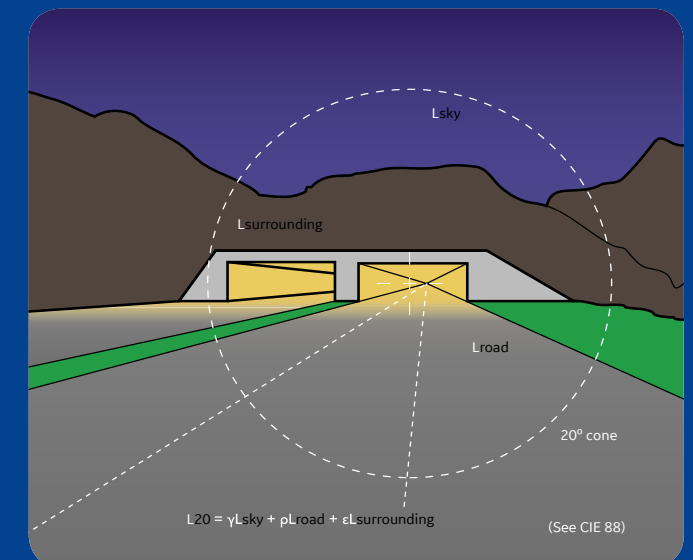
Exit zone

In the exit zone the tunnel lighting has to prepare the eye of the drivers for the outside conditions. Even though visual adaptation from low to high level takes place instantaneously, but there are other reasons for installing an increased lighting level in the exit zone:

- to make following cars more visible in the rear-view mirror of a car leaving the tunnel
- to prepare the driver in case of an emergency when exiting the tunnel.

Emergency lighting

Emergency lighting is usually part of the lighting system and guarantees minimal light when the power supply is interrupted.



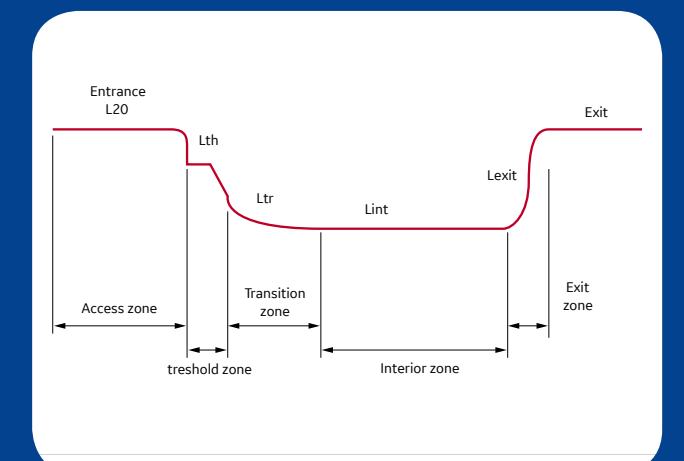
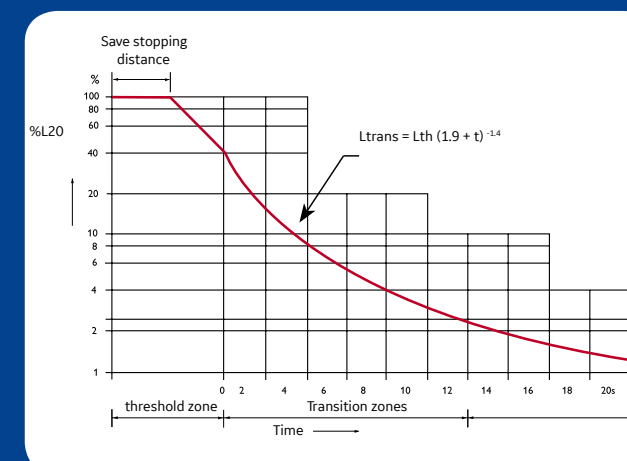
Recommended threshold/access zone luminance ratios

Stopping distance (m)	Symmetrical lighting system Lth/ L20	Counter-beam lighting system Lth/ L20
60	0.05	0.04
100	0.06	0.05
160	0.10	0.07

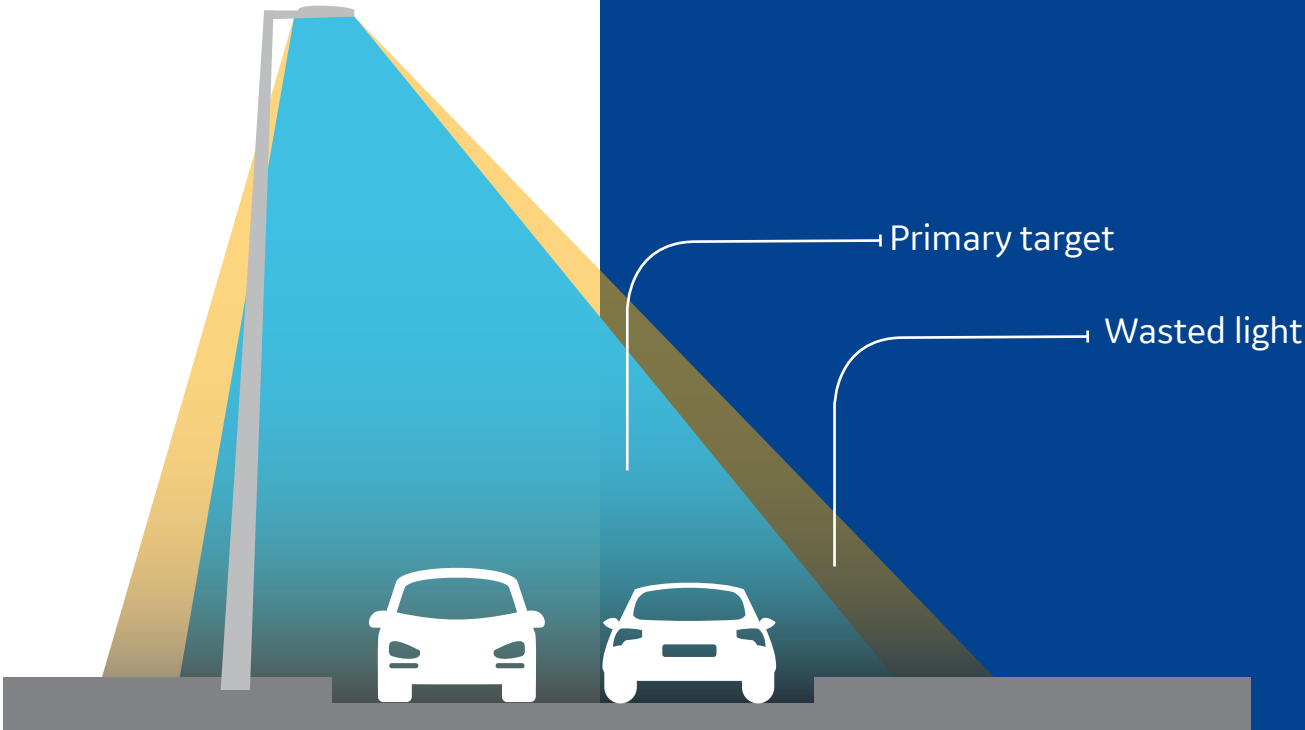
Recommended interior zone luminances (cd/m2)

Stopping distance (m)	Traffic density		
	<100 veh/h	100<veh/h<1000	>1000 veh/h
60	0.05		0.04
100	0.06		0.05
160	0.10		0.07

Tunnel Lighting should provide the driver with the same safety and comfort as driving on an open road. There should be a smooth lighting transition from approaching, transiting and exiting the tunnel, to help the drivers see all obstacles in the environment and the behaviour of other road users.



Reflective vs Refractive Great utilisation factor



The perceived direct glare of refractive optics is greater than reflective optics.

Reflective Strengths

- Application efficiency
- Colour dispersion
- Longevity

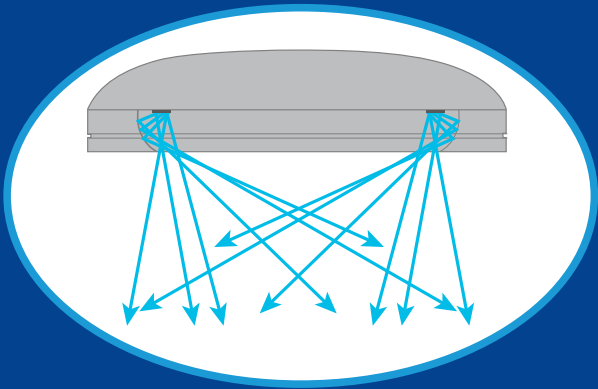
Refractive Strengths

- Thermal behavior
- Luminaire size

Like for like

- Uniformity
- Maintenance
- Manufacturing

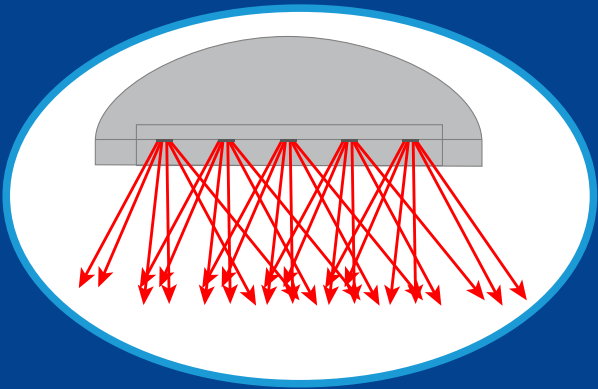
Reflective



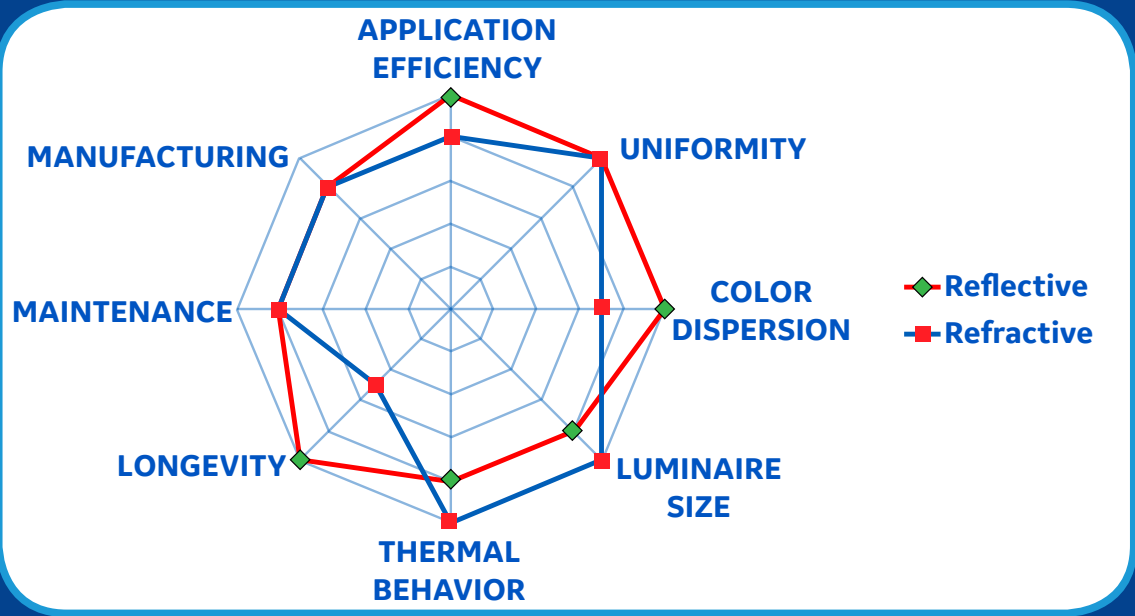
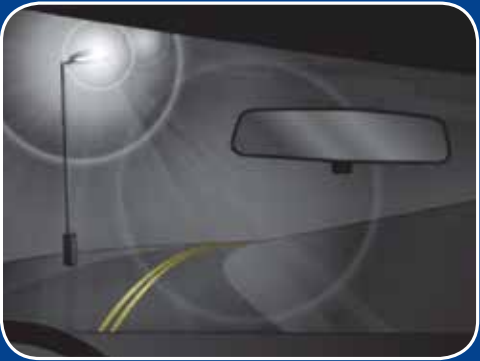
Minimized visibility to LED light source, creating non-pixelated appearance to driver's field of view



Refractive



Visibility to every LED, creating a pixelated appearance and increased glare to driver's field of view



Order logics

Name	Gen.	Front Glass	Optics	Power (W)	CCT (K)	Control	Accessories	IEC Protection Classes	Precabling	Mounting
SLBt	3	F-Flat Glass	B	15 20 30 35 40 50 55 70	27- 2700 30- 3000 40- 4000	N - No control D - DALI Y - DynaDim NL- No control with CLO DL- Dali with CLO YL - DynaDim with CLO	ST - Standard type M3 - Minicell 35lux SP - Extra Surge protection F - Fuse LS - 7 pin NEMA socket* ** LSP - 7 pin NEMA socket + Surge protection* ** SR - Smart ready connector*	C1 - Class I C2 - Class II	N- No precabling PXX- Precabling with XX meters	S60 - Side mount bracket 42-60mm P76 - Post top bracket 48-76mm U35 - Universal coupler 35-42 mm U50 - Universal coupler 42-55 mm U60 - Universal coupler 50-60 mm U76 - Universal coupler 55-76 mm
			C							
			D							
			E							
			F							
			N							
			P							
			R							
			S							
			T							
			U							
			B2							

Example: SLBT/3/F/B/20/40/N/ST/C1/N/S60

Name	Gen.	Front Glass	Optics	Power (W)	CCT (K)	Control	Accessories	IEC Protection Classes	Precabling	Mounting
SMBt	3	F-Flat Glass	B	50 65 80 95 105 120 140 160	30-3000 40-4000	N - No control D - Dali Yxx - Dynadim NLxx - No control with CLO DLxx - Dali with CLO YLxx - DynaDim with CLO	ST - Standard type M3 - Minicell 35lux SP - Extra surge protection F - Fuse LS - 7 pin NEMA socket SR - Smart ready connector	C1 - Class I C2 - Class II	N- No precabling PXX- Precabling with XX meters	S60 - Side mount bracket 42-60mm P76 - Post top bracket 48-76mm U35 - Universal coupler with insert 35-42 mm U50 - Universal coupler with insert 42-55 mm U60 - Universal coupler with insert 50-60 mm U76 - Universal coupler 55-76 mm
			C							
			D							
			E							
			F							
			P							
			R							
			S							
			T							
			N							
			U							
			B2							

Example: SMBT/3/F/B/75/40/N/ST/C1/N/S60

Name	Gen.	Optics	Power (W)	CCT (K)	Control	Accessories	IEC protection classes	Precabling	Mounting
SMlx	2	CFC CEC CCC FCF FEF EEE ECE EFE FFF	35 50 65 80 100 120 140 160	30 - 3000K 40 - 4000K 50 - 5000K	N - No control D - DALI Yxx - DynaDIM NLxx - No control + CLO DLxx - DALI + CLO YLxx - DynaDIM + CLO	ST - 6kV Surge immunity (built-in the driver) SP - Enhanced surge voltage protection10kV/5kA LSP - NEMA socket with Shorting Cap + Enhanced Surge Voltage Protection 10kV/5kA	C1 - Class I C2 - Class II	PX- Pre cabling with X meters PCX- Pre cabling with X meters and connector	U48 - Universal coupler 30-48 mm U60 - Universal coupler 50-60 mm

Example: SMlx/2/FFF/140/40/D/ST/C1/PC3/U60/R7035

Name	Gen.	Optics	Power (W)	CCT (K)	Control	Accessories	IEC Protection Classes	Precabling	Mounting
PIKO	1	C E F	12	3 - 3000K	N - No control	ST - Standard	C1 - Class1	Px - Precabled with x meters	S35 - Coupler 35-40mm
			18	4 - 4000K		F - Fuse		PCx - Precabled with connector with x meters	S60 - Coupler 40-60mm
			21						
			28	5 - 5000K					

Example: : PIKO/1/C/21/4/N/ST/C1/P1/S60

Name	Gen.	Front Glass	Optics	Power (W)	CCT (K)	Control	Accessories	IEC Protection Classes	Precabling	Mounting
SP L	3	F-Flat Glass	B	50 65 85 100 110 125	30-3000 40-4000 50-5000	N - No control D - DALI external Yxx - Dynadim NLxx - Constant Light DLxx - DALI+CLO YLxx - Dynadim+CLO	ST - 6kV surge protection SP - Enhanced surge protection LS - 7pin NEMA socket with SP * M3 - Minicell 35lux F - Fuse with SP	C1 - Class I C2 - Class II	N- No precabling PXX- Precabling with XX meters	P76 - Post top, 55-76mm S60 - Side mounted, 55-76mm P50 - Post top, 42-50mm S50 - Side mounted,42-50mm
			C							
			E							
			F							
			N							
			P							
			R							
			S							
			T							
			U							

Spinella - Multiple module

SP H	3	F-Flat Glass	B C E F N T U	130 150 170 190 210 230	30-3000 40-4000 50-5000	N - No control D - DALI Yxx - DynaDIM NLxx - No control + CLO YLxx - DynaDim + CLO DLxx - DALI + CLO	ST - Standard type LS - 7pin NEMA socket (no SVP) F - Fuse	C1 - Class I C2 - Class II	N - No precabling PX - Precabling with x meters	S60 - Side mount 48-60mm P60 - Post top 48-60 mm P76 - Post top 76 mm

Example: SP L/3/F/P/100/40/Y/ST/C1/P1/S50
SP H/3/F/B/130/40/N/ST/C1/N/P76



TUNGSRAM[™]

Innovation is our heritage
EST. 1896

Outdoor
Product Catalogue
May 2019

We in Tungsum Operations Kft. are constantly developing and improving our products. For this reason, all product descriptions in this catalogue are intended as a general guide, and we may change specifications from time to time in the interest of product development, without prior notification or public announcement. All descriptions in this publication present only general particulars of the goods to which they refer and shall not form part of any contract. Data in this guide has been obtained in controlled experimental conditions. However, Tungsum cannot accept any liability arising from the reliance on such data to the extent permitted by law.