# Tunnels

Tunnel and underpass lighting is a complex and demanding field, so you can not afford to compromise. Correct tunnel and underpass lighting is vital for users safety, and prevents sudden changes in light intensity that can confuse the human eye. Keep traffic moving, guarantee safety, and reduce maintenance and energy consumption.

FlowBase

**352**

TubePoint

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TubeLine

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FlowStar

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FlowLine

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# FlowBase

## Lighting up tunnels for optimum safety

**TunneLogic** system compatible

A lighting design that ensures safety and good visibility is a key element in the success of any tunnel project. Philips FlowBase combines compact design, reliability, and affordability in one complete package to bring the perfect lighting solution for any tunnel application.

FlowBase is a tunnel lighting luminaire designed with motorists' safety and comfort in mind. It offers perfect uniformity and minimized glare, and complies with tunnel lighting standards to ensure safety in the tunnel. The perfect LED retrofit alternative to fluorescent and HPS 250W applications, FlowBase is easy to install and maintain, and ensures long lifetime of up to 50,000 hours.

Truly cost-efficient, FlowBase offers maximized energy savings of up to 50% compared to conventional lighting systems. For optimal cost savings and durability, FlowBase is one LED luminaire that offers high system efficacy, optimized thermal design and dedicated tunnel lighting optic to achieve the best W/m² performance in tunnel applications.
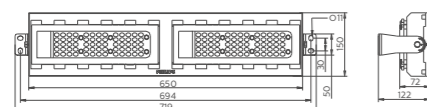
### Features and Benefits

- Maximized energy savings. Reduces the need to install numerous luminaires to deliver optimized energy savings of up to 50% with the lowest W/m²
- Optimal safety. Provides enough illuminance, perfect uniformity and minimized glare, and complies with tunnel lighting norm to ensure protection and complete visibility in the tunnel
- Easy installation. Equipped with mounting brackets that can be adjusted +/60 degrees to fully adapt to different tunnel applications
- Flexible configurations. Offers four housing configurations to cover lumen packages up to 27,400lm to ensure optimized tunnel lighting design and cost savings
- Control interface-enabled. Supports DALI and 1-10v interface that can be used with Philips TunneLogic solution and other available controls
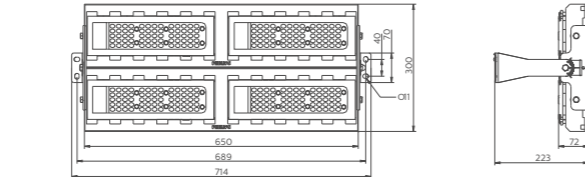- Superior reliability. Designed with high-quality components that provide long lifespan

### Product size
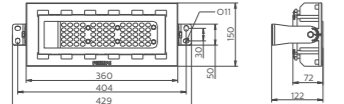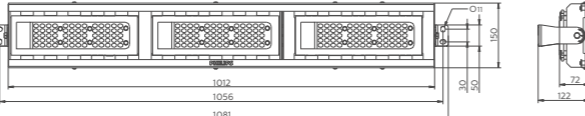
All dimensions in millimeters



70W-120W

190W-240W

25W-60W

130W-180W

## Technical parameters

| Type | FlowBase – BWP352 |
|---|---|
| Classifications | IP66; IK08; Class I; RoHS |
| System Lumen Package | 2,800 to 27,400 lm |
| Color Temperature (CCT) | 4000K (NW) |
| CRI | Min 70% |
| System Power | 25W-240W |
| Input Voltage | 120-277V or 220-240V /50Hz-60Hz |
| Power factor | > 0.95 |
| Control interface | 1-10V, DALI, TunneLogic |
| Optics | DM2 Tunnel optic |
| Operating Temperature | -30°C to 50°C |
| Lumen Maintenance (*) | 50,000 hrs L70 @ 35 °C |
| Installation | Adjustable ±60° ( Wall / Ceiling Mounting ) |
| Housing Material | High pressure cast aluminum |
| Optic Material | Transparent and weather resistant grade Polycarbonate |
| Surge protection | 10KV |
| Dimensions (LxWxH) and Weight | Max 60W ( 429X150X122) 3.5 KG Max 120W (719X150X122) 4.5 KG Max 180W (1081X150X122) 8.5 KG Max 240W (714X300X233) 9.5 KG |
| Certifications | CQC, CB IEC60598, CE |
| Ordering information | BWP352 LED31/NW 25W 220-240V DM2 MP1 BWP352 LED69/NW 60W 220-240V DM2 MP1 BWP352 LED87/NW 70W 220-240V DM2 MP1 BWP352 LED97/NW 80W 220-240V DM2 MP1 BWP352 LED107/NW 90W 220-240V DM2 MP1 BWP352 LED117/NW 100W 220-240V DM2 MP1 BWP352 LED137/NW 120W 220-240V DM2 MP1 BWP352 LED177/NW 150W 220-240V DM2 MP1 BWP352 LED206/NW 180W 220-240V DM2 MP1 BWP352 LED274/NW 240W 220-240V DM2 MP1 more options available |

# TubePoint

## Versatility meets high performance in long-lasting tunnel lighting

**TunneLogic** system compatible

With cities seeking to optimize traffic flow, improve infrastructure, enhance logistics and free up valuable space, tunnels are becoming essential. Tunnels, however, need excellent lighting that is safe, functional, and sustainable in the long-term. In addition, tunnel lighting needs to offer a favorable Return on Investment. Philips Lighting understands these needs and has created TubePoint, a versatile and high perfomance family of LED-based luminaires that is both flexible and long-lasting, and can be easily integrated into a complete tunnel lighting system.

### Features and Benefits

- Wide range of optics
- High level of flexibility
- Performance combined with efficiency
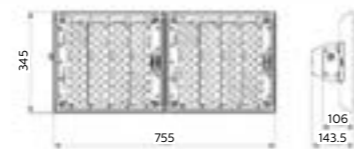- Easy to install
- Future-proof investment

Tunnels and underpasses

IEC EN60598   CE   CB
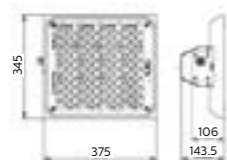
### Product size

All dimensions in millimeters

**TubePoint Mini**

77   321   314

**TubePoint Medium**

345   755   106   143.5

**TubePoint Small**

345   375   106   143.5

**TubePoint Large**

345   1135   108   143.5
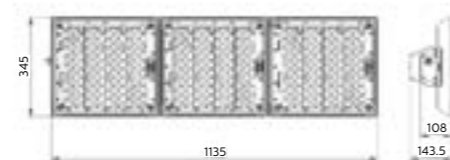
IP66   100Khrs   100 lm/W

### Technical parameters

| | |
|---|---|
| Type | **TubePoint Core:** BGP221, BGP222, BGP223, BGP224<br>**TubePoint Performer:** BGP231, BGP232, BGP233, BGP234 |
| Luminous Flux (±17%) and System Wattage (±11%) | **TubePoint Mini:** (BGP221, BGP231) up to 8,000lm (65W)<br>**TubePoint Small:** (BGP222, BGP232) up to 16,000lm (128W)<br>**TubePoint Medium:** (BGP223, BGP233) up to 26,000lm (210W)<br>**TubePoint Large:** (BGP224,BGP234) up to 43,000lm (343W) |
| System Efficacy | > 100 lm/W |
| Color Temperature (CCT) | 4000K (NW) |
| CRI | >80% |
| Lumen Maintenance (*) | **TubePoint Core:** min 90.000 hrs L80 @ 25 °C<br>**TubePoint Performer**: 100.000 hrs L80 @ 25°C |
| Light distributions / Optics | DTCB; DTS; DTS-WB; DTA; DTA-WB; DTXB optic<br>Optic lenses behind glass cover. Optic material: plastic (PC) |
| Operating temperature range | -30 to 50°C |
| Electrical insulation class | Class I or Class II |
| IP | IP66 |
| IK | IK08 |
| System surge protection | **TubePoint Core:** Standard 6 kV<br>**TubePoint Performer:** Standard 10 kV |
| Material | **TubePoint Core:** Housing : Die-cast aluminum (LM6), finishing in powder painting<br>Electric cover (rail): aluminum (AlMg Si 0.5) anodize (25 um)<br>RAL 7035, Optic cover: Tempered flat glass (Extra white) 5 mm<br>**TubePoint Performer:** Housing : Die-cast aluminum (LM6), finishing in powder painting. Standard Marine Salt Protection (1000 hrs Salt Spray Test)<br>Electric cover (rail): aluminum (AlMg Si 0.5) anodize (25 um)<br>RAL 10714 (Philips Ultra dark grey) other colors are upon request<br>Optic cover: Tempered flat glass (Extra white) 5 mm |
| Weight excl. brackets (kg) | Mini: 4,4 Kg<br>Small: 7,3 Kg<br>Medium: 14 Kg<br>Large: 20,7 Kg |
| Electrical connection | **TubePoint Core:** Flying lead (with or without plug) or socket connection (MO, MDO)<br>**TubePoint Performer:** Flying lead (with or without plug) or various socket connections: 1 socket for MO or MDO, 2 sockets for MAINS and DALI separated, Loop-in/out options and through wiring options. |
| Control | **TubePoint Core:** No Control<br>**TubePoint Performer:** Standard DALI, Optional: 1-10V |
| Cable type: | LS0H or FG7OM (others on request) |
| Options | Optional 5700 K (CW) and CRI > 70<br>Constant Light Output (CLO)<br>Marine salt protected coating (MSP): standard for Performer, option for Core<br>Cabling with over molded connectors can be supplied at project lengths to connect the TubePoint in a lighting system<br>Metal cable gland instead of PA<br>Other RAL & AKZO colors available |
| Luminaire mounting | Ceiling mounting bracket (Stainless steel AISI304)<br>Quick relase bracket 100, 200, 300 mm by 75 mm (for cable tray mounting)<br>Stainless steel AISI304<br>Adjustable Wall mounting bracket 0 to 90° (Stainless steel AISI304)<br>All brackets have galvanic separation (PA spacer) from Luminaire and mounting structure<br>Ready for other customized bracket |
| Certification / Listing | CE, ENEC |

IP66  100Khrs  120 lm/W

# TubeLine

## A new standard for linear lighting in tunnels: miniaturised, cost-effective and high performance

**TunneLogic** system compatible

TubePoint sets the new standard: Wide range of lumen packages, wide range of optics, remote driver solution, flat glass cover for brush cleaning, Plug & Play connectivity (Flying lead cable with plug), through wiring and trunking options, can be connected to TotalTunnel solution package, typical lifetime up to 100k hours (L80B10) and standard warranty: 3 years.
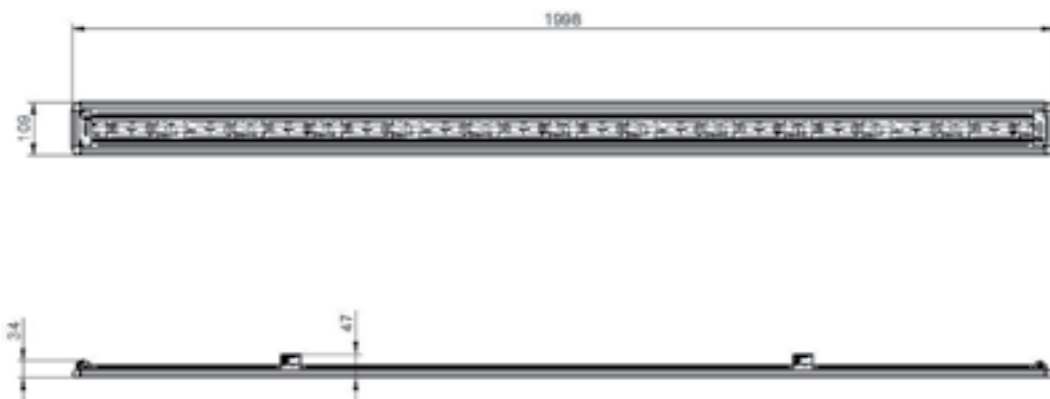
TubeLine extends it to dedicated interior LINEAR lighting solution, 2-meter LED luminaire and optimized for Linear lighting.

### Features and Benefits

- Wide range of optics ensuring high efficient and comfort lighting
- High level of flexibility with easy wiring (Through wiring and trunking option)
- Ease of installation (Brackets, light weight, long modules)
- Excellent combination of efficiency and performance
- Remote driver solutions

### Product size

All dimensions in millimeters



### Technical parameters

| | |
|---|---|
| Type | TubeLine BGP360 |
| Lumen Output | 3, 6, 11.4 and 14.4 kLm per 2 meter LED unit |
| Efficacy | > 120Lm/W |
| Color Temperature (CCT) | Typical CCT: 4000 K (NW) (5700K (CW) (optional through ETO) |
| CRI | CRI > 80% (for 4000K) |
| Lumen Maintenance (*) | 100 000 hours L80B10 |
| Serviceability | LED units not serviceable/openable. Driver units serviceable/openable |
| Light distributions / optics | 6 Tunnels distribution: DTS; DTS-WB; DTS-NB; DTA; DTA-WB; DTA-NB |
| Operating temperature range | –30 to 45℃ |
| Electrical insulation class | Class I or Class II |
| IK | IK08 |
| IP | IP66 |
| System surge protection | Standard over-voltage protection: 6kV. Optional: 10kV (dependant on type of driver used) |
| Luminaire dimensions (l x w x h) | 1999 mm x 110 mm x 34 mm (including gland) |
| Luminaire weight | < 10 kg |
| Material / Finishing | Die-cast parts: aluminum (LM-6 grade), finish: powder coating<br>Backbone profile: aluminum (AlMg Si 0.5) anodize (25um)<br>Body of the LED unit: aluminum (AlMg Si 0.5) anodize (25um)<br>Optics: lenses PC<br>Cover: Temperred flat glass 5 mm |
| Power supply/Drivers | Driver(s) not integrated<br>Multiple LED units can be powered from one driver unit<br>(amount is dependent on driver–LED unit combination) |
| Luminaire installation | External connection by flying lead incl plug<br>Cable: LS0H |
| Options | Marine salt protected coating (MSP)<br>Delivered with 0,25 or 1,25 meter flying lead |
| Mounting | Quick release bracket for cable tray mounting (MBQ)<br>Standard baseplate bracket (same as for backbone system) (BA)<br>Dedicated ceiling mounting bracket (MB)<br>Comment: Brackets fully isolated from LED unit and mounting structure |
| Certification / Listing | CE, ENEC, CB<br>Corrosion resistance test |

# FlowStar

## True LED tunnel entrance and point-source interior lighting

**TunneLogic** system compatible

Customers are looking for a tunnel LED solution for both interior and entrance lighting that delivers benefits, throughout the entire life cycle, in terms of cost, safety and availability. The stainless-steel modular build and dedicated LED design provide a long-lasting and efficient LED alternative to conventional HPS lighting. When used in combination with our controls and services, the best possible performance can be achieved.

LED lighting has now matured to the point that it can be used with confidence for high-quality lighting projects in all applications. There has never been a better time to make the switch to LED! Public authorities are under increasing pressure to meet environmental targets by reducing their energy consumption whilst at the same time complying with lighting norms and standards in tunnels. LED lighting will not only help you to achieve your energy saving targets, it will also ensure you comply with environmental regulations such as the Energy-Using Products (EUP) Directive.

Tunnels and underpasses

### Features and Benefits

- True LED alternative to 400 W HPS for point source interior and entrance lighting
- Design compliant with construction and lighting technology requirements
- Highest rating for performance and longevity
- Lifetime maintenance service concepts ensure reliable and safe tunnel lighting throughout the entire life of the system
- System approach allows seamless integration into our TotalTunnel program and enables best possible performance at system level
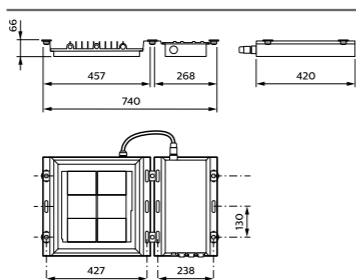
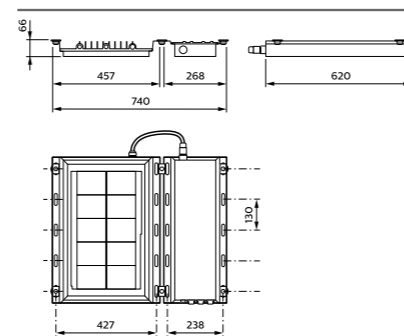### Product size

All dimensions in millimeters

BGB302

457  268  320
740
427  238
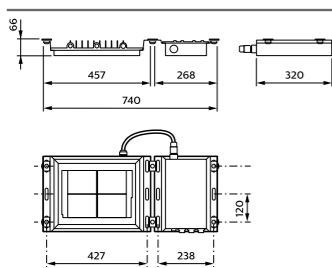
**FlowStar Small**

BGB301

457  268  420
740
427  238

**FlowStar Medium**

BGB300

457  268  620
740
427  238

**FlowStar Large**

IP66    100Khrs    120 lm/W

## Technical parameters

| | |
|---|---|
| Type | FlowStar Small (BGB302) · Medium (BGB301) · Large (BGB300) |
| IP | IP66 |
| IK | IK08 |
| Light source | Sealed separate LED unit |
| Wattage | 36 to 371W depending to LED configuration |
| Luminous flux | 4,400 to 45,000lm depending on LED configuration and version |
| Color Temperature (CCT) | 3000K (Warm White) – 4000K (Neutral White) – 5700K (Cool White) |
| Electrical class | I (class II is optional) |
| Light distributions | Distribution Counterbeam (DTCB, DTXB)<br>Distribution Symmetrical (DTS, DTS-WB, DTS-NB)<br>Distribution Asymmetrical (DTA, DTA-WB, DTA-NB) |
| Optical cover | Toughened flat glass |
| System Efficacy | 95 to 120 lm/W depending on version and LED configuration |
| CRI | 70% |
| Lumen Maintenance (*) | 100,000 hrs L80 @ 25 ℃ |
| Operating temperature range | – 25 ℃ < Ta< 50 ℃ |
| Driver | Sealed Driver unit |
| Fusing | IP68 fuse holder (FU) accessible from the outside (Size 6.3 x 32 mm, 16 A, 250 V AC) |
| Input Voltage | 220-240 V / 50-60 Hz |
| Surge protection | 6 KV minimal |
| Control system input | DALI control (D9), Line Switch (D11) |
| Connection | MDD (2 DALI sockets + mains socket) or MDO (mains socket including DALI) or CFW (flying cable no plug included)<br>LED unit with flying lead and plug connection to driver unit<br>All plug connections IP66/IP68 |
| Accessories | Sealing cap for unused socket connection · Mains connection cable · DALI link cable · Mounting clamps |
| Materials/Finish | Main construction: stainless steel EN 1.4571 (SH), pickled and passivated · Non-structural heatsink: aluminum, 6063, 25 µm anodized · Mounting clamps: stainless steel EN 1.4571 (SH), pickled and passivated · Cover: extra clear, thermally toughened flat glass, 5 mm thick |
| Maintenance | Both the LED unit and the driver unit are sealed · Units can easily be replaced separately thanks to plug connections |
| Installation | Ceiling mounted on C-profiles · Clamps and plastic washers included with the luminaire · Hammer bolts and nuts for C-profile not included |
| Weight | LED unit: max. 17 kg<br>Driver unit: max 10 kg |

FlowLine

# FlowLine

## Better visibility and less disturbance whilst driving

**TunneLogic** system compatible

More and more road authorities are turning to LED linear lighting for their tunnel lighting needs. That's because, compared to point-source lighting, it's more comfortable on the human eye, and is therefore safer.

For example, with LED linear lighting there are no 'hard' shadows – this is especially important in a tunnel situation with vehicles travelling at different speeds, the shadows themselves move in position and in shape according to the relative position of the lamp. Point sources also cause reflective glare on the cars in front, and this glare also moves and flickers. All these dynamics can be distracting for drivers.

With LED linear lighting no such problems exist. LED linear lighting provides a diffuse light, creating smaller and softer-edged shadows. It's also highly uniform so there are no disturbing variations in light intensity and reflections. What's more, LED linear lighting creates clear bright white light, not yellowish, so that objects are illuminated in their true natural colors. This optimizes perception and minimizes the anxiety that can be caused when entering the tunnel.

In total, LED linear lighting offers a more comfortable illuminated environment with increased visibility and less disturbance to the visual driving task – especially in a dynamic environment with moving vehicles. It enables earlier detection of speed changes, and reduces over-reaction. And, thanks to its lower total cost of ownership over the full lifecycle, it is also the preferred choice over fluorescent linear lighting.
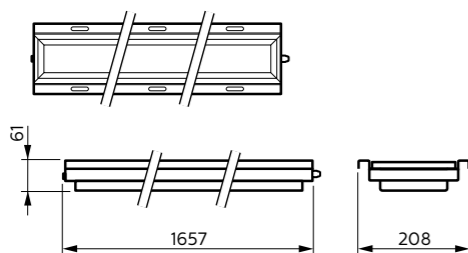
### Features and Benefits

- High-quality LED alternative to fluorescent interior lighting
- Design based on the latest construction and lighting technology
- Highest rating for performance and longevity
- Lifetime maintenance service concepts, providing reliable and safe tunnel lighting solutions over the entire lifetime of the installation
- System-based concept, allowing seamless integration into our TotalTunnel approach and delivering the best possible performance at system level
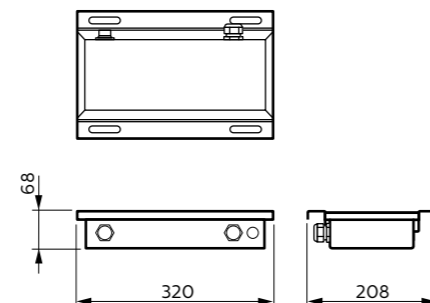
### Technical parameters

| | |
|---|---|
| Type | FlowLine LED unit BGB330<br>FlowLine local single-driver unit EGB330 |
| IP | IP66 |
| IK | IK08 |
| Light source | Sealed separate LED unit |
| Power | 31W, 56W, 95W |
| Luminous flux | 3,000lm, 6,000lm or 11,000lm depending on LED configuration |
| Color Temperature (CCT) | 4000K (neutral white); 5700K (cool white) |
| Electrical class | Class I |
| Light distribution | · DTS Distribution Symmetrical Standard · DTS-WB Distribution Symmetrical Wide<br>· DTS-NB Distribution Symmetrical Narrow · DTA Distribution Asymmetrical Standard<br>· DTA-WB Distribution Asymmetrical Wide · DTA-NB Distribution Asymmetrical Narrow |
| Optical cover | Flat glass: ultra-clear, thermally toughened |
| CRI | 70% |
| Lumen Maintenance (*) | 100,000 hrs L80 @ 25˚C |
| Operating temperature range | –25 °C < Ta< 50 °C |
| Fusing | IP68 fuse holder accessible from the outside (size 6.3 x 32 mm) |
| Mains voltage | 220–240 V / 50–60 Hz |
| Surge protection | 4 kV |
| System input control | DALI control (D9) or 1 step phase DIM (D11) |
| Connection | LED unit with flying lead and plug connection to driver unit<br>All plug connections IP66/IP68 |
| Materials/finish | Main construction: stainless steel EN 1.4571 (SH), pickled and passivated · Non-structural heat sink: aluminum, 6063, 25 µm anodized · Mounting clamps: stainless steel EN 1.4571 (SH), pickled and passivated<br>· Cover: Extra-clear, thermally toughened flat glass, 5 mm thick |
| Maintenance | LED units are sealed. Units can easily be replaced by plug connections<br>Driver unit is sealed. Units can easily be replaced by plug connections |
| Installation | Ceiling mounted on C-profiles. Four clamps and plastic washers included with the luminaire. Hammer bolts and nuts for C-profile not included |
| Weight | LED unit: max. 11 kg<br>Driver unit: max 3,5 kg |

### Product size

All dimensions in millimeters

#### LED-unit BGB330



61

1657    208

#### Driver-unit EGB330



68

320    208