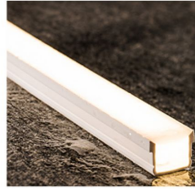
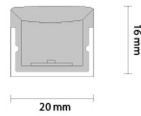


## Konfig BL PROTECTED IP67

Article no.: 169017

### BILTONSTREET

The new **BILTONSTREET** series based on a BILTON LED module integrated in a polyurethane tube. As adaptable as waves, the BILTON Street series adapts perfectly to the desired shape of the environment



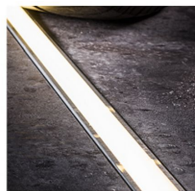
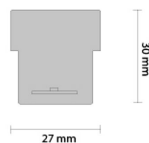
### BILTONSNAKE

The new **BILTONSNAKE** is based on a BILTON LED module integrated into a polyurethane tube. Like a snake, the Snake series adapts to the shape of the environment.



### BILTONEXTREM

The new **BILTONEXTREM** Series is based on a BILTON LED module integrated into a polyurethane tube. Designed for 'drive over' applications with a load of up to two tonnes.



## TENDER TEXT

Customized goods can not be returned! Any amendments after order confirmation! The BL PROTECTED series has been developed by BL to ensure full flexibility in project design for the customer. BL produces customised LED modules in a polyurethane encapsulation for high protection ratings. Customised lighting systems: various parameters are available that can be freely selected, e.g. BL LED module, version, connection cable, optics and much more. Developed and tested by BILTON in Austria. IP67 (Standard): The LED module is glued and encapsulated into the profile (Standard). Application: linear outdoor application IP68: Fully encapsulated LED module, flexible application: flexible outdoor APPLICATION IP68 PLUS: Double encapsulation (encapsulation compound above and below the LED module); application: under water IP68C: double encapsulation with special encapsulation material application: specially resistant to chlorine - swimming pool

## TOP-FEATURES

//\_\_ Rigid and flexible version with illumination from above or side

//\_\_ Various levels of protection available: IP67, IP68, IP68+, IP68C

//\_\_ Free choice of versions, light colours, lumen classes, optics etc.

//\_\_ A LED module that is so waterproof and stable, that it can withstand a load of 2 tons

PACKAGING INFORMATION

Article no.	169017
Customs tariff number	94054039
State of origin	DE

SAFETY INFORMATION: Read the safety and installation instructions carefully and completely before commissioning. The operating instructions can be found at: [www.biltongroup.com](http://www.biltongroup.com)

DISCLAIMER OF WARRANTY: The technical information corresponds to the status at the time of printing and have been worked out to the best of our knowledge. However, errors and printing errors are reserved. Make sure that you always use the latest version of the data sheets. The latest data sheet can be found at: [www.biltongroup.com](http://www.biltongroup.com)

# PROJECT CHECKLIST

**BILTON LEDON**  
TECHNOLOGY

Please mark or fill in as appropriate – Definitions in the declaration page 2–4

Sales manager: \_\_\_\_\_  
Sales manager telephone number: \_\_\_\_\_  
Sales manager Email address: \_\_\_\_\_

Project name: \_\_\_\_\_  
Project location: \_\_\_\_\_  
Project number: \_\_\_\_\_

**1. Type of profile** (for flex profiles, please pay attention to the bending direction, see explanation)

<input type="checkbox"/> BL-Street 20 x 15 mm	<input type="checkbox"/> BL-Snake 10 x 20 mm	<input type="checkbox"/> BL-XTREME 27 x 30 mm	<input type="checkbox"/> BL aluminum profile TYP	<input type="checkbox"/> Special profile information on separate sheet
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**2. Degree of protection**

<input type="checkbox"/> IP54	<input type="checkbox"/> IP67	<input type="checkbox"/> IP68	<input type="checkbox"/> IP68+	<input type="checkbox"/> IP68+C	<input type="checkbox"/> IP69K
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**3. Surface**

<input type="checkbox"/> Transparent	<input type="checkbox"/> Satin finish	<input type="checkbox"/> Flexible	<input type="checkbox"/> Walkable	<input type="checkbox"/> Passable	<input type="checkbox"/> Pool enclosure	<input type="checkbox"/> Profile cover
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**4. Cable outlet** (See cable outlet drawing in the explanation)

<input type="checkbox"/> Frontal	<input type="checkbox"/> Bottom	<input type="checkbox"/> Lateral right	<input type="checkbox"/> Side left	<input type="checkbox"/> Multi	<input type="checkbox"/> Special solution	<input type="checkbox"/> Attach info
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**5. LED TYPE**

<input type="checkbox"/> White	<input type="checkbox"/> Coloured	<input type="checkbox"/> TW	<input type="checkbox"/> RGB	<input type="checkbox"/> RGBW	<input type="checkbox"/> Other
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**6. Desired light color after casting** – white LED(Please allow for tolerances, see explanation)

**7. Profile ends** without LED, due to LED segment length – are dark spots OK?

<input type="checkbox"/> Dark spots are OK	<input type="checkbox"/> No dark spots in certain places (attach drawing or sketch)
--	--

**8. Cable type**

<input type="checkbox"/> Colored single cores without	<input type="checkbox"/> Cable with sheath	<input type="checkbox"/> Cable for water and chlorine	<input type="checkbox"/> Cable from BILTON LEDON Tech.
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**9. Durability and other requirements**

<input type="checkbox"/> UV	<input type="checkbox"/> Water	<input type="checkbox"/> Temperature	<input type="checkbox"/> Chlorine	<input type="checkbox"/> Other chemicals or cleaners (please specify)
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**10. Mounting Type** – Quantities and Lengthsplease enter or attach separately for large quantities

<input type="checkbox"/> Adhere	<input type="checkbox"/> Brackets	<input type="checkbox"/> Holding profiles	<input type="checkbox"/> Built-in housing
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**11. LED profile lengths** – Please enter total profile length, LED strip length and cable length. For larger quantities, attach table with dimensions.

**12. LED module** – please provide LED strip hereenter with light color, lumen, watt/m

**13. Is the profile made with end caps?**

<input type="checkbox"/> yes	<input type="checkbox"/> no
------------------------------	-----------------------------

**14. If this project is an addendum or an extension to an already delivered** project, please include this oneEnter project here. In this way we can rule out light color and other deviations.

**15. If there is a deadline** please enter the date: \_\_\_\_\_

**16. Please attach detailed drawings, sketches, pictures** and plans separately.

**17. Please enter special features here**, draw them in or attach them separately.

# PROJECT CHECKLIST 2.0

## BL PROTECTED

With this new PROJECT CHECKLIST including basic knowledge, we would like to do the work for you facilitate and reduce queries. The aim is that after working through the basic knowledge on pages 2–4 you will be able to complete the actual checklist on page 1 with ease. So you only have to fill out one page. This Checklist grows with YOUR requirements and is updated, so we are always happy to receive suggestions for optimization, which we will then enter after consultation.

PS: Product news can be found on page 2.

### BILTON LEDON Technology BL PROTECTED

The perfect solution for demanding, customized linear LED applications with a high degree of protection.

Regardless of whether it is a damp interior, direct weather or under water, the encapsulated LED modules from BILTON LEDON Technology Protected are not only a „door opener“ for special projects, but also a real highlight in professional quality.

Available as flexible and rigid LED modules in some standard formats and in many other special dimensions on request. The casting of BILTON LEDON Technology aluminum profiles is also possible.

Areas of application: facades, handrails, fountains, ships, bridges, floors, saunas, baths, ponds, pools, machines and many more.

If you are unsure which solution is the right one for your project or which information is required, please send an email to [office@bltechnology.at](mailto:office@bltechnology.at). We're here to help.

We are always open to suggestions for improvement in the course of the project or for general cooperation with BILTON LEDON Technology.

products with different values on request.

### PRODUCTNEWS

Since we are constantly improving products and production options, we will be happy to inform you as soon as innovations are available and note this in this checklist under the „Productnews“ item.

This will be the case for some systems from 2023. For example, a production length of up to 10 m in one piece may be possible.

From now on, we can also offer you to print your LED modules with technical data, installation information, logos or QR codes, etc. as required.

Potting with integrated optics for the realization of wallwashers is also possible

### Information on BILTON LEDON Technology Protected standard products

BL STREET / 20 x 15 mm / bending direction Topwave / IP67 / length max. 5 m + approx. 2 cm casting overhang

BL SNAKE / 10 x 20 mm / sidecurve bending direction / IP67 / Length max. 5 m + approx. 2 cm overhang of casting

BL EXTREM / 27 x 30 mm / rigid in aluminum profile / IP68 / length max. 2 m

Retaining clamps and retaining profiles are available as accessories for BL STREET and SNAKE.

Other accessories on request.

### IMPORTANT INFORMATION about BILTON LEDON Technology Protected products:

If you know the following information, filling out the checklist will be very easy in the future and in most cases can be done in a few minutes.

#### Degrees of protection:

In order to rule out misunderstandings and complaints, we have defined our own protection classes. Each variant is therefore manufactured differently in order to meet the requirements.

So we are currently releasing our encapsulated modules as follows.

- |               |  |
|---------------|--|
| <b>IP54</b>   | Dry interior: LED tape in the cavity   |
| <b>IP67</b>   | Covered outdoor area and humid indoor area without direct sunlight: LED strip glued and encapsulated in the profile base   |
| <b>IP68</b>   | Free outdoor area or direct weather if the water can run off: LED strip fully encapsulated   |
| <b>IP68+</b>  | Permanently underwater (pure water + salt water) or applications where the water can stand still – Up to 25 m length Rigid LED strip encased with wet-in-wet casting – module from a single source |
| <b>IP68+C</b> | Permanently under water (swimming pool water containing chlorine) – Up to 25 m in length Rigid: LED strip encapsulated in a special housing)   |

#### Bending direction: (FLEX MODULES)

Due to the nature of the LED strips, there are 2 different bending directions.

If the LED strip is in the profile base, wavy shapes can be created. We call this bending direction „Topwave“. (BL STREET)

If the LED strip is installed on the side of the profile, snake-like shapes can be created. We call this bending direction „side curve“. (BL SNAKE)

To protect the components are the LED modules additionally glued to a metal stabilizer.

This makes bending in the wrong direction more difficult.

On request, it is possible to produce LED modules for a few light colors that can be bent in all directions. This is what we currently refer to as “3D”

Drawings are added here for the bending direction for easier understanding.

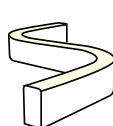
TOP-WAVE



3D



SIDE-CURVE



#### Bending radius: (FLEX MODULES)

The more solid the LED modules are encapsulated, the smaller the bending radius, since the material is compressed on the inside and pulled apart on the outside. For example, the possible minimum radius for a 10mm wide BL SNAKE (200 mm radius) is less than for a 15 mm high BL STREET (300 mm radius). Above all, however, since the encapsulated LED strip must not be damaged.

#### Processing temperatures: (FLEX MODULES)

Since plastics become more flexible when it is hot and more rigid when it is cold, it is important to point out to fitters before installation, especially during the cold season LED modules are stored at room temperature before assembly in order not to damage the sensitive components and LEDs. LED modules should therefore neither be unrolled when cold nor should they hang down when cold in the opposite direction to the bending direction. This can damage the sensitive components.

#### Module lengths:

Due to the different expansion of materials and the different requirements as well as mechanical loads, we currently manufacture standard flex modules (BL STREET & BL SNAKE) up to 5m and floor profiles (BL XTREM) up to 2 m module length. We would limit LED modules for underwater applications to a maximum length of 2.5m as a rigid profile without further consultation. Please note that the encapsulation overhang must be added to the LED strip length. This can mean that the LED modules are 2–3 cm longer, depending on the variant. Other module lengths on request.

#### Potting surfaces:

The surfaces can be cast transparent for minimal loss of brightness and opaque for a homogeneous light image. In the case of cloudy casting, we usually cast in several layers, i.e. transparent + cloudy top layer. If the casting is cloudy, please also take into account the loss of brightness, which can be –20% to –60% depending on the layer thickness. These types of casting are available in both soft and hard versions for surfaces that can be walked on and driven on.

#### End caps:

When specifying the dimensions, please take into account whether end caps are included. Or whether end caps are desired and at which profile ends. Without end caps, there may be additional costs, since we sometimes have to seal the profile ends, which is laborious.

#### Connection cable:

Cable ends have an open cable end as standard. If there is another solution such as a plug is required, please enter this under „Special features“.

#### Underwater:

Special cables with optimized strain relief must be used for underwater applications. In this case please IP68+ for underwater or IP68+C for chlorinated water.

#### Color Shifts:

The encapsulation can lead to larger color shifts in the direction of cooler light color, especially with white LEDs. We ask you to take this into account when planning and providing material. We would measure these values again shortly so that you know exactly which light color you need to plan in order to achieve the desired light color. We then enter the measured values in the checklist. We should define these values in the short term, this makes it much easier for you to select the LEDs.

#### Casting protrusions, segment lengths and shadow formation:

Due to the space required for cable outlets and the specified segment lengths of the LED modules, profiles may be longer as LED modules, which can lead to shadow formation. If shadows should not be visible, we ask that you mark this explicitly so that we can find the best solution for this. Otherwise, it can be assumed that about 1–1.5 cm potting overhang per side must be added to the segment length. If there must be no dark spots because profiles are bumped at certain points, the LED module length may have to be adjusted to the segment length. In any case, a drawing or sketch must be supplied in this case.

#### Selection of LED strip:

When selecting the LED strip, please ensure that there is sufficient space all around to encapsulate the strip if necessary. If the LED strip is fully encapsulated or insulated, we recommend limiting the power to around 15W/m. We also ask you to ensure that the LED distances are as small as possible if the light pattern has to be homogeneous. Information on the LED strip Please in the Enter checklist.

#### Resistance:

In order to be able to select the right product, we need to know which external influences the LED module is exposed to, so please tick the relevant points or enter the appropriate information.

#### Temperatures:

Standard products are resistant from –20° to + 80°. Systems for other temperatures on request, for example cold rooms or saunas

#### Area of application / installation situation:

If available or possible, please attach sketches, pictures or drawings.

#### Mounting type:

For profiles from BILTON LEDON Technology, please indicate whether retaining clips, retaining profiles or installation housings are required. With length and quantity.

### Material provided:

Please enter clearly visible if special profiles or LED strips are to be supplied by us.

### Cable output:

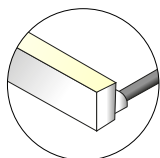
There are various ways of leading the connection cable into the LED module.

Here you can choose in the standard between at the end of the profile „right side“, „left side“, at the front through the end cap and through the profile base.

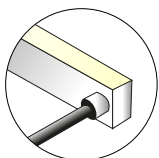
In addition, with some modules there is the possibility to produce multifunctional cable outlets, where the cables can be laid in all directions. This is e.g. possible with the BL SNAKE.

With BL EXTREM and BL STREET, you can choose between cable outlet on the front and through the profile base.

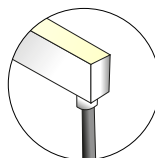
Select the item „Special solution“ if you want a cable outlet at several points or at a specific point in the middle of the profile. Please attach detailed information on this.



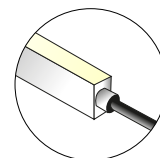
Cable outlet to the side: right



Cable outlet to the side: left



Cable outlet on the bottom side



Cable outlet on the face side

### Potting height:

By default, flush casting is carried out up to the upper edge of the profile.

If something else is desired here, please enter this under the item special features.

It can be the case here, for example, that casting is only carried out up to a certain height in order to still be able to press in covers.

### Deadline

If there is a deadline that must be met for a project due to inaugurations or similar, then we ask you to enter this with the date.

Of course, there are agreed delivery dates, but this information can be very helpful in planning in an emergency, for example if material is still missing or has to be reordered due to a defect. (e.g. LED strips or profiles)

### Particularities:

In the special features field, please enter everything else that is important or deviates from the checklist.

E.g. desired mitres, connectors, additional cable outlets or production as a chain, other beam angles via optics, walkable and curved, printed or labeled.

Cable outlets at a very specific point.

When profiles are bumped and there must be no dark spots there. Then attach drawings and measurements.

If the grout height above the profile must go out.

Etc...

### **GOOD TO KNOW:**

#### Assembly information

Make sure that the modules are mounted in such a way that they can be replaced without great effort – e.g. cables in empty pipes.

Install the power packs at a suitable distance in a dry installation location. If not possible, advise the installer to use a suitable outdoor housing.

Caution: When installing LED modules, do not install them against their bending direction and below the specified installation temperature, otherwise the LED modules may be damaged.

Make sure that cables are not kinked and are not exposed to chemical or mechanical stress.