



# StarGuide Mini

350mA, without stepdown

Order code: 10640

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## Picture

### 1.1 General



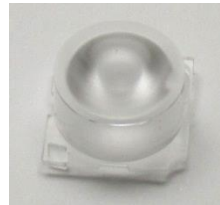
### 1.2 Range of lenses



smooth spot 15°



medium 24°



wide 31°



oval (linear direction)  
43°x16°

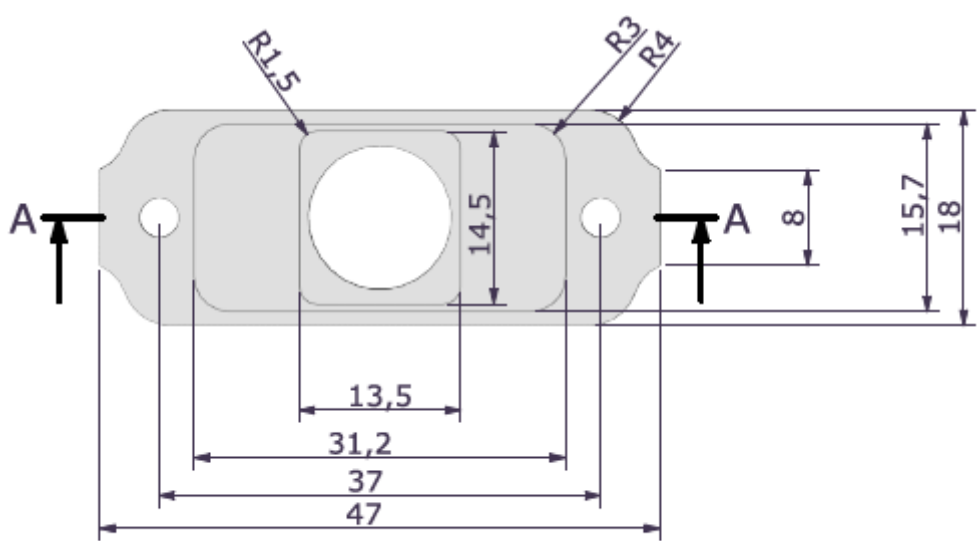
### 1.3 Optional

- Anti-theft screws

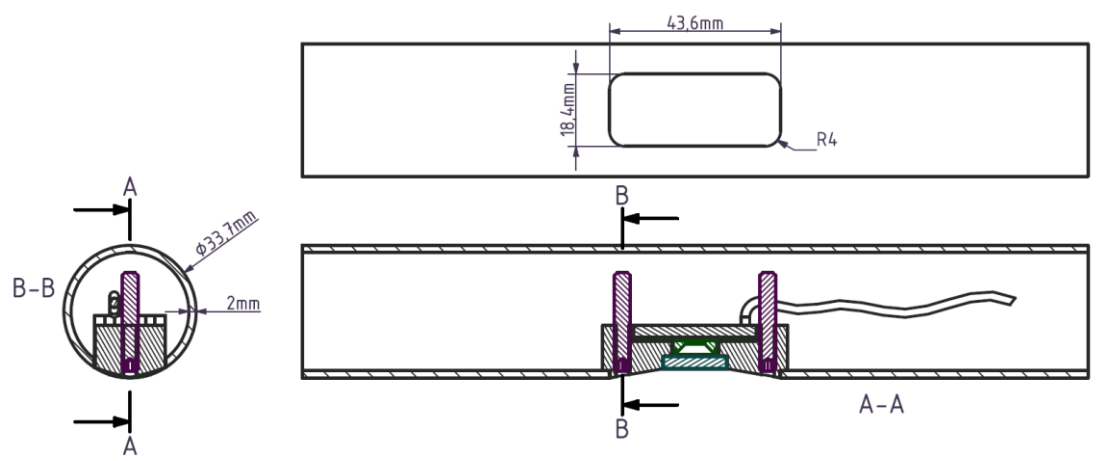
# 2

## Dimensions

### 2.1 Led-unit



### 2.2 Cut-out of the tube



## Safety information

Before installing, powering up, or servicing the StarGuide Mini led-unit, it is highly recommended that you read this manual and insure yourself that you completely understand its content. Observe the safety precautions in this manual. Install and operate the led-unit only as described in this manual, and in conformity with local regulations. If you have any questions how to operate this product safely, please contact your point of sale.

### 3.1 Symbols

Following symbols are used to identify important safety information on the product and in this manual.



**DANGER!**  
Safety hazard. Risk of severe injury or death.



**Warning!**  
Hazardous voltage. Risk of lethal or severe electric shock.



**Warning!**  
LED light emission. Risk of eye injury.



**Warning!**  
Burn hazard. Hot surface. Do not touch



**Warning!**  
Refer to user manual.

### 3.2 Protection from electric shock



Although this device itself does not operate with dangerous voltages, the installation in which is intended to be used, can contain dangerous voltages.

Shut down the power of the complete installation before carrying out any installation, or maintenance work.

Use only AC to DC current controlled 350 mA power sources, suitable for the application, and conform to local regulations. Please ensure yourself that the AC to DC current controlled power supply is able to deliver the rated requirements of the complete installation.

If any cable, seal or housing is damaged, cracked, or reformed, disconnect the power of the installation immediately.

For any additional servicing, not described in this manual, please contact your point of sale.

### 3.3 Protections from fire and burns



Do not operate this led-unit if ambient temperature is over 45 °C (113 °F). It might be necessary to allow the led-unit to cool down for 5 minutes, before servicing.

Do not modify the led-fixture, in a way, not described in this manual.

### 3.4 Protection from injury



Ensure yourself that all components, covers are securely fastened. Verify that the led-unit is firmly fixed to its supporting railing. Ensure yourself that the vibration, will not loosen the screws, which hold the module. Take precautions if necessary by applying a low grade locking glue (Loctite® 222).

### 3.5 Disposing of this product



This LED lighting device is manufactured in compliance with directive of the European community: waste of electrical and electronically equipment. Please help to preserve our environment, and ensure that this product will be recycled properly at the end of its life.

# 4



## Physical installation

Thank you for selecting this StarGuide Mini led-unit as best solution in your setup.

Warning! Read the safety precautions in this manual before integrating this card into your installation.

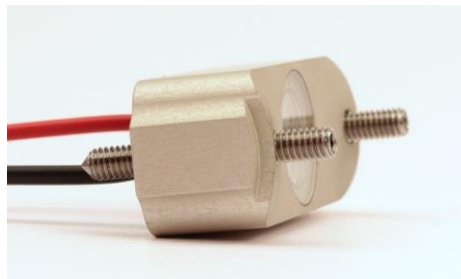
Installation must be carried out by qualified professionals only.

### 4.1 Unpacking

The StarGuide modules are only sold in sets, together with their dedicated power supply and all accessories.

The following items are included in your set:

- A number of StarGuide Mini led-units each with its two Allen key bolts / Allen Key N°2:



- A number of push seal connectors (named further in this document: Scotchlok™)



- A tube, or flacon with thread locking glue.



- A dedicated led-driver:



Sets are delivered in a cardboard box and protective antistatic packaging, with manual.



## 4.2 Location and orientation

This StarGuide Mini led-unit itself can be used in all different directions and orientations.

## 4.3 Mounting

The StarGuide Mini led-unit is designed to be used on a stainless steel tube of 33.7 mm diameter, wall-thickness of 2 mm or on request it can be tailor made for other tube dimensions. Due to the unique concept of fixation, installation can be done easily, with the help of a small Allen Key.

In case of problems, or doubts, please contact your point of sale.

## 4.4 Cut-out of the tube

Cut-out dimensions: see 2.2 Cut-out of the tube



## External connections

### 5.1 DC power input

#### Safety precautions

Never connect the live power on the input terminals of the StarGuide Mini led-unit!

In case of doubts, contact your point of sale.

#### Polarity

The StarGuide Mini led-unit is polarity sensitive. So observe polarity and colour cabling:

- Red = positive
- Black = negative

#### Power supply: Rated current

The rated input current of the railing module is 350 mA DC.

Verify that your power supply has a current controlled output. If you are not sure do not connect the power supply! In case of doubt, please contact your point of sale.

#### Power supply: Rated current

A StarGuide Mini led-unit consumes approximately 1 Watt power, which results at 350 mA at a forward voltage of  $\pm 2.8$  to 3.2 Volt.



## EMC and safety requirements

The StarGuide Mini led-unit is fully compliant to the LVD and EMC directive of the European council, if used in a properly designed setup.

The StarGuide MAXI led-unit is only intended to be used in lighting applications, and as such, the complete assembly of led unit and power supply needs to be fully compliant with following harmonized standards:

### LVD requirements of the power supply:

- EN 60598: general requirements of lighting equipment.

### EMC requirements of the power supply:

Immunity according to:

- EN 61547:2009 (General EMC immunity requirements lighting eq.)
- EN 61000-4-1:2006 (General immunity testing techniques)
- EN 61000-4-2:2008 (ESD immunity test)
- EN 61000-4-3:2006 + A1:2007 (Radiated immunity test)
- EN 61000-4-4:2004 (Fast transients and burst immunity)
- EN 61000-4-5:2005 (Surge immunity test)
- EN 61000-4-6:2008 (Conducted immunity test)
- EN 61000-4-8:1993 (Magnetic field immunity test)
- EN 61000-4-11:2004 (Voltage variations immunity test)
- EN 61000-6-1:2005 (Generic standards for immunity)

Emission according to:

- EN 61000-3-2:2005+A1:2008+A2:2009 (Harmonics emission test < 16A)
- EN 61000-3-3:2008 (Flicker+ voltage changes limits < 16A)
- EN 55015:2006+A2:2009 (Conducted + radiated emission lighting equipment)

To achieve this compliance, a proper power supply must be supplied. In case of doubts, contact your point of sale.

The unit can be categorized according to EN 60598 as following:

- Power supply-cord type Z, no removal, without permanent damage to the unit.
- IP 67 for the StarGuide Mini led-unit.
- IK 06 for the StarGuide Mini led-unit.

Please note that although the unit seems to be SELV, the complete installation is not SELV (If >14 modules), and the railing needs a proper safety earth connection!



## Installation setup

### 7.1 Specification

The StarGuide Mini led-unit is a small and efficient solution which can be easily integrated in a circular railing tube Ø33,7mm, or on request another tube dimension.

It uses a current controlled power supply and all modules are connected in series. Up to 14 units connected, the series will be SELV.

Up to 100 modules can be connected, depending on the power supply used.

**Please note that dangerous voltages are used.** Always disconnect the main power of the complete installation, before executing any works on the installation.

- Power consumption each StarGuide Mini led-unit: 1,2 W
- Rated current input: 350 mA
- Forward voltage over the led: ±2.8 to 3.2 volt depending on binning and color
- Body material: 15 µM anodized aluminum
- Resin is epoxy based and heat conductive
- Ingress protection: IP 67
- Impact protection: IK 06
- Weight: 32 gr
- Available lenses: smooth spot 15°, medium 24°, wide 31°, oval (linear direction) 43°x16°
- Available color temperatures: 2700K, 3000K, 4000K, 6500K
- Transparent glass cover

The led-unit is equipped with a 'anti-fuse', so in case of failure of one unit in a series string, all other modules remain fully functional.

Standard cable length is 1200 mm for positive polarity, and 200 mm for negative polarity, so maximum pitch is approx 1000 mm between the units.

Connections are done by using Scotchlok™ connectors, supplied together with the StarGuide Mini led-unit.



## 7.2 Installation

### Tools

The installation of the StarGuide Mini led-unit is straightforward, and needs mainly two tools:

- Allen key N° 2:



- Universal Pliers:

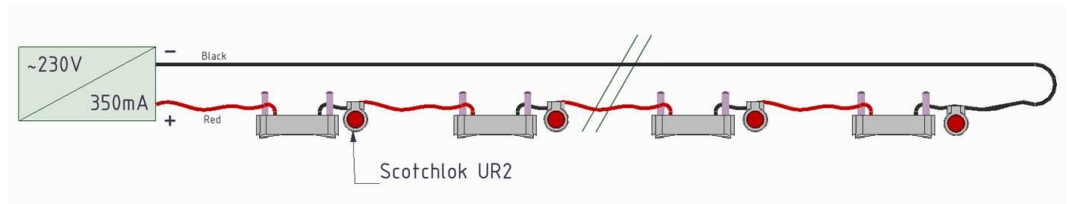


Or another specific tool:

A dedicated crimping tool is handy to squeeze the Scotchlok™ connectors. In case of a bigger installation, it might be useful to have this in your tool set. This tool is available at your point of sale.



## Wiring scheme



The units are connected in series in one string of elements. A 'retour line' closes the loop with the power supply.

Each red wire is connected with the black wire\*, coming from its neighbor. The electrical connection is made with the supplied Scotchlok™ connectors.

\* the outmost unit in the string excepted – see step 2

### STEP 1:

Insert a black cable at the last cut-out, direction towards the led-driver side. So the cable is from end to begin of the railing, and has enough cable length to be connected to the led-driver.



The result will be like this:

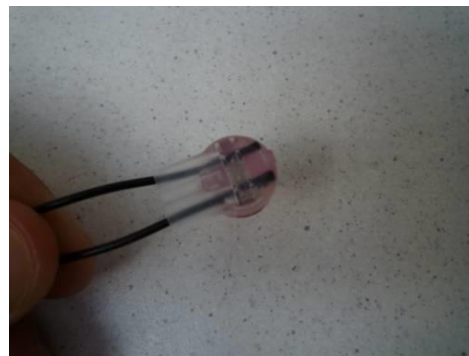


At the side of the outmost unit, leave approximately 20 cm cable out of the tube cut-out, and secure it to the tube outside to prevent it getting lost in the tube.

## STEP 2:

Start the installation at the last unit in the series, by connecting the black cable on the unit, with the black 'loop-back cable' by using the Scotchlok™ connector.

Please note: this is the only place, where a black cable is connected with another black cable.



Insert the trimmed wire ends into the Scotchlok™ connector. Do not strip the wires. Make sure all wires are inserted fully to the end of the tunnels, past the metal connector element.

Take a pliers, and put the Scotchlok™ connector between the jaws.

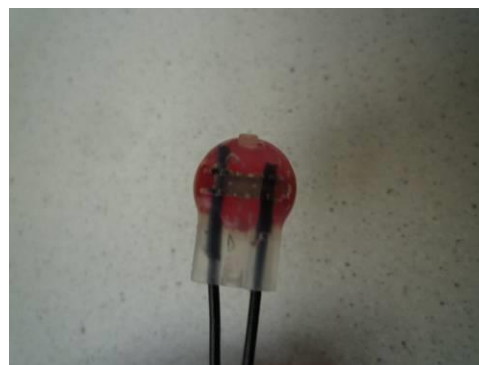


Make sure the two wires remain fully inserted in the connector.

Squeeze the handles of the pliers as far as the red cap getting flush with the rim of the connector body.

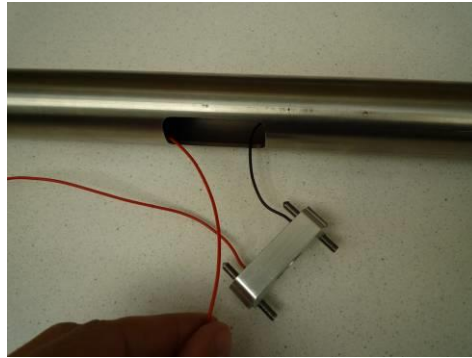
You will notice the gel, which is located in the red cap, being injected in the cable insertions.

After verifying that the cable is still in good position, you can put the Scotchlok™ connector in the tube.



### STEP 3:

Insert the red cable of the unit in the tube cut-out, and forward it in to the next one.



### STEP 4:

Make sure both screws are as shown on following picture and apply some thread locking glue to both screws.



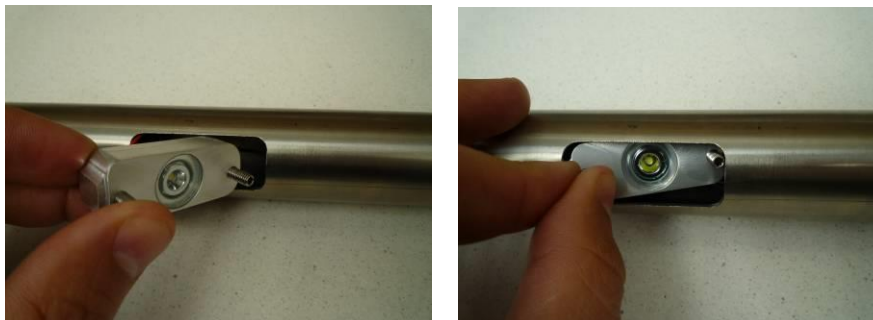
After applying glue, turn the screws back to approximately this situation:





### STEP 5:

Insert the unit into the tube cut-out.  
The screw has to be approximately 10 mm visible from the front.



### STEP 6:

Drive both screws in to the end.

*Note:* The installer has to be sure that the screws don't perforate any of the cabling located in the railing tube! Therefore use manual tools and **never** use an electrical fastener to drive the screws of the led-unit.



The result should be good looking like this:



### STEP 7:

Proceed with next unit in a similar way starting from step 2.

### STEP 8:

Finally in the setup, you will have the black loop-back cable, and a red cable, coming from the closest unit. Both cables need to be connected, as shown in the wiring scheme, to the power supply delivered together with your setup package.

### 7.3 Choice of power supply

Since this led-unit is current driven, the voltage that the power supply has to deliver, is dependent on the number of modules that are connected in series.

The voltage drop per led-unit is approximately 3 volt. So in case of 12 units, the current in the circuit will be 350 mA, and the voltage drop over the complete circuit will be:

12 led-units x 3 volt per unit = 36 volt.

It is important to understand that not all current sources are capable of producing a current of 350 mA at 36 volt.

In this example, the power generated by the power supply is:

0,350 (A) x 36 (volt) = 12,6 watt.

We specify these power supplies, depending on the number of units connected in series.

Number of modules	Current in circuit	Min voltage	Max voltage	Power supply mfr.	Power supply type
1 to 4	350 mA	2 V	14 V	Lightech	LED-4W 350mA
4 to 19	350 mA	12 V	58 V	Lightech	LED-18W DC350mA
20 to 50	350 mA	60 V	210 V	Philips Advance	LEDINTA 350C210DHO*
51 to 100	350 mA	120 V	425 V	Phillips Advance	LEDINTA 0350C425FO

\* *LEDINTA 350C210 DHO also has a 1-10 volt dim-input. If your setup needs no dimming, it can stay unconnected.*

Manuals of the led-drivers are supplied with your setup.



## Service and maintenance

### 8.1 Safety precautions

Read carefully the safety information in this manual. Lock out the power on the entire system and allow all electronic devices to discharge, and cool down, before executing any service or maintenance.

### 8.2 Cleaning

#### **The StarGuide Mini Led-unit itself**

Extensive dirt, and particle build-up degrades performance, may cause overheating can result in damaged led-unit, and power supplies. Damage by inadequate cleaning or maintenance is not covered by the product warranty.

Never use solvents to clean the outer housing of the unit.

## Warranty

### 9.1 Application of warranty

#### Warranty period

Warranty service is valid for one year from the date of purchase by the consumer, as evidenced by invoice date given out by your point of sale.

#### Warranty service

Service under warranty can only be done by Lux Lumen.

Coordinates:

Lux Lumen  
Kernenergiestraat 53 A  
2610 Wilrijk  
Belgium

Any cost of secure transportation of the product to and from Lux Lumen service department, will be borne by the customer.

#### Limitations

Lux Lumen will not warrant the following:

- Periodic check-ups, maintenance and repair or replacement of parts due to normal wear and tear.
- Consumables
- Any software
- Defects caused by modifications carried out without Lux Lumen's approval.
- Damage resulting from the fact that a product is not conforming to country specific standards or specifications in another country than the country of purchase.

Costs incurred by Lux Lumen's service center in making any adoptions or modifications of a product necessary for country specific technical or safety standards or specifications, or any other cost to adjust the product as a result of any specifications which have changed since the delivery of the product.

**Warranty service is excluded if damage or defects have been caused by:**

Improper use, extensive use, handling or operation of the product as referred to in the user manual or operator manual and/or relevant user documents, including without limitation, incorrect storage, dropping, excessive shocks, corrosions, dirt, water, or sand damage, if the product is not rated to be used in severe conditions, indicated by its IP and IK degree, mentioned in the product specifications in this manual.

Repairs, modifications or cleaning carried out by a non Lux Lumen service centre.

Use of spare parts, software or consumables, which are not compatible with the product.

Connecting the product to equipment not intended to be used with this product.

Defects caused by improper condition of the power supply network.

Inadequate packaging of the product when returning it under the RMA procedure.

Accidents or disasters or any cause beyond the control of Lux Lumen, including but not limited to lightning, water, fire, public disturbances, improper ventilation, and acts of God.

**Others**

It is the responsibility of the customer to backup and save any software files and programs before repair and to restore the same after such repair.

This warranty does not affect the consumer's statutory rights under applicable national legislation in force, nor the consumer's rights against the retailer arising from the sales/purchase contract. In the absence of applicable national legislation, this warranty will be the consumer's sole and exclusive remedy, and Lux Lumen cannot be liable for any incidental or consequential damages for breach of any express or implied warranty of this product.

For full details of the warranty offered on this product, please contact Lux Lumen's service center.

## 9.2 RMA procedure

To send material back to Lux Lumen, you need a RMA (Return Material Authorization) document that you will receive from Lux Lumen.

Without the RMA document, we cannot accept the material.

The procedure to obtain a RMA:

### **Step 1:**

Customer contacts Lux Lumen about warranty, defects if material has to be returned.

### **Step 2:**

Lux Lumen sends the customer a filled out RMA document (using a unique RMA number)

### **Step 3:**

Customer sends material (include a copy of the RMA document with the material)

### **Step 4:**

Lux Lumen evaluates and informs the client if repair is under warranty or – if not - makes an offer for repair to the client.

## List of used abbreviations

- AC: Alternating current
- DC: Direct current
- LED: Light Emitting Diode
- SELV: Safety extra low voltage
- PMMA: PolyMethylMethAcrylate
- LVD: Low Voltage Directive
- EMC: Electro Magnetic Compatibility
- RMA: Return Material Authorization
- ESD: Electro Static Discharge
- IP: Ingress Protection
- IK: International Mechanical Protection