

# Gavita Pro 1000e 380-400V

## 1 Introduction

Thank you for purchasing the Gavita Pro 1000e 380-400V DE EU. This manual describes the mounting and installing of the product and also describes how to use the product. Please read and understand this manual completely before using the product. Only use the product as specified in this manual.

### 1.1 Used Symbols



**Warning!** A warning indicates severe damage to the user and/or product may occur when a procedure is not carried out as described.



**Caution!** A caution sign indicates problems may occur if a procedure is not carried out as described. It may also serve as a reminder to the user.



**Note:** A note gives additional information, e.g. for a procedure.



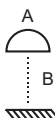
This symbol indicates that the reflector and lamp can reach very high temperatures (>85 °Celsius). Observe a cool down period before performing maintenance.



With this symbol Gavita declares that this product complies with European requirements.



The symbol on the material, accessories or packaging indicates that this product may not be discarded as household waste. By disposing of the equipment in the proper way, you will be helping to prevent possible risks to the environment and public health, which might otherwise be caused by improper handling of the discarded equipment. Recycling of materials contributes to the conservation of natural resources. Therefore, please do not dispose of your old electronics and electrical appliances via household waste.



This symbol indicates the minimum distance (B) between the luminaire (A) and the lit surface.

## 2 Product description

The Gavita Pro 1000e 380-400V DE EU is an adjustable horticultural luminaire. The Gavita Pro 1000e 380-400V DE EU can be used to drive a double ended 380-400V high frequency (electronic) high pressure sodium lamp.

The Gavita Pro 1000e 380-400V DE EU is an e-series product. It can be remotely switched and adjusted by a Gavita Master controller. The controller can automatically switch the luminaire on and off during a 24 hour cycle.

The controller also offers a temperature safety feature: auto-dimming or switching off connected luminaires when the temperature in a climate room becomes too high.

The product can also be controlled by conventional timers in combination with a contactor. Make sure the dummy RJ plug sits in the IN port. If not, the luminaire will not operate.

In this manual, the Gavita Pro 1000e 380-400V DE EU will be referred to as: "the luminaire".

### 3 Product information and specifications

#### 3.1 General product information

Product name	Gavita Pro 1000e 380-400V DE EU	
Manufacturer	Gavita International BV	
Version	HR96	W150
EAN Code	8718692232594	8718692232617
Part number	HGC906201	HGC906301

#### 3.2 Technical specifications

Version	Gavita Pro 1000e 380-400V DE EU
Product weight	3.8 kg
Dimensions (L*W*H)	56.5 x 24.5 x 19.5 cm
Temperature case	< 70 °Celsius
Temperature ambient	0 - 35 °Celsius
Input voltage	380 - 400 V AC -10% / +8%
Input current typical	2.8 - 2.7 Amps
Input power typical	1050 Watt
Power factor	> 0.98
Total Harmonic Distortion	< 10%
Frequency	50 - 60 Hz
Certification	EN 60598-1, EN 55015-2015
Insulation	Class 1 - requires an earth connection
Power inlet	Wieland RST20i3 connector
Inrush current	≤ 40 A, 1.8 ms
Earth leakage current	≤ 1 mA

### 3.3 Compatible products and accessories

	Product name	Gavita part number
Compatible controllers	Gavita Master Controller EL1 EU Gen2	HGC990786
	Gavita Master Controller EL2 EU Gen2	HGC990786
	Gavita Master Controller EL1F EU Gen2	HGC990792
	Gavita Master Controller EL2F EU Gen2	HGC990794
Replacement reflector	Gavita HR96 DE	S9021200
	Gavita MD 135 DE HC	S7012101
	Gavita W 150 DE	S7013101
Compatible lamps	Gavita Pro Plus 1000 W EL DE HPS	LP8011816
Compatible power cord	Wieland RST20i3 0,6 m mains cable	CB6873121
Compatible interconnect cable	Interconnect cable RJ	CB6633621
	Repeater bus connection kit	HGC906170

### 3.4 Environment

The product is intended to be used in greenhouses and climate rooms. The product can be used in damp environments. The product may not be used in wet environments or outdoors. The lamps function optimally when the ambient temperature is between 20 ~ 30 °C.

### 3.5 Legal

CE LVD approval according to: EN 60598-1: 2008 + A11: 2009.

CE EMC approval according to: EN 55015 (2013).

## 4 Safety recommendations and warnings

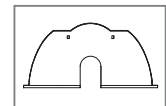
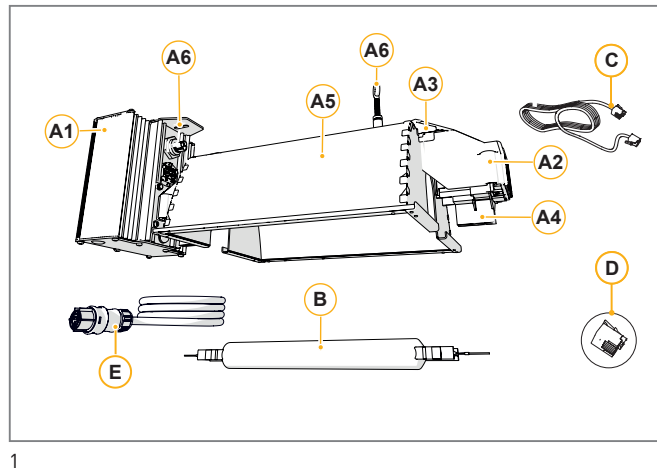
**⚠ Warning!** Carefully read the warnings below before using or working with the product!

- Always adhere to the local rules and regulations when installing or using the luminaire.
- Do not open or disassemble the luminaire, it contains no servicable parts inside. Opening the luminaire can be dangerous and will void the warranty.
- This product may cause interference to radio equipment and should not be installed near maritime safety communications equipment or other critical navigation or communication equipment operating between 0.45 - 30 MHz.
- Do not use the luminaire when either its lamp or its power cord are damaged. Replace the power cord only with original certified cords. Replace the lamp only with lamps specified by Gavita (see paragraph 3.3).
- The use of other lamps may damage the product and lamp and will void the warranty.
- Modifications to the cords can lead to unwanted electromagnetic effects, which makes the product not comply with legal requirements.
- Do not expose the luminaire to:
  - condensing humidity, heavy mist, fog or direct spray;
  - (ambient) temperatures outside the specified range;
  - dust and contamination;
  - direct sunlight during use or HID light that could heat up the ballast.
- Always disconnect the luminaire from mains before performing any maintenance.
- Always allow for a cool down period of at least 30 minutes before touching the lamp or reflector. Touching the lamp or the reflector when the lamp is lit or immediately afterwards will result in severe burns!
- Never touch the lamp with bare hands as this will cause damage to the lamp.
- Do not use the luminaire near or above flammable, explosive or reactive substances. The lamp and the reflector of the luminaire reach temperatures of > 85 °Celsius.

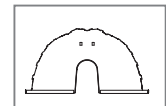
- Do not use sulfur vaporizers or water misters. Sulfur and calcium deposits on your reflector will decrease its efficiency.
- The installation and use of the luminaire is the responsibility of the end user. Incorrect use or installation can lead to failure and damage to the luminaire. Damage to the luminaire and electronic circuitry as a result of incorrect installation and use revokes the warrant.

## 5 Contents (1)

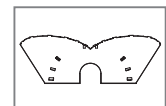
- A. Gavita Pro 1000e 380-400V DE EU
1. Electronic ballast
  2. Lamp bracket
  3. Lever to unlatch reflector
  4. Lamp sockets
  5. Reflector Gavita HR9% DE\*
  6. Mounting points
- \*The reflector is delivery dependent, it may differ from the image.
- B. Gavita Pro Plus 1000W EL DE
- C. Interconnect cable 6PC6 modular jack (delivered separately)
- D. Dummy
- E. Wieland RST20i3 female connector with open end cable (delivered separately)



Gavita HR 9%



Gavita W 150

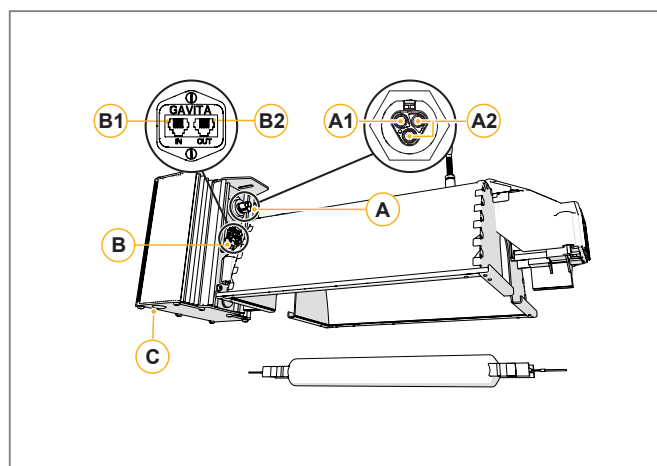


Gavita MD 135

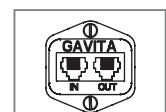
1

## 6 Controls, connections and indications (2)

- A. Wieland RST20i3 male connector
1. Ground connection
  2. Phase / neutral connections
- B. Gavita 2xRJ connector
1. RJ IN
  2. RJ OUT
- C. Status LED



Wieland RST20i3

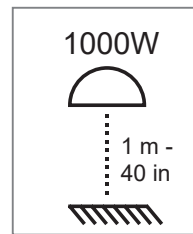


Gavita 2xRJ

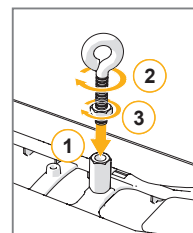
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## 7 Installation

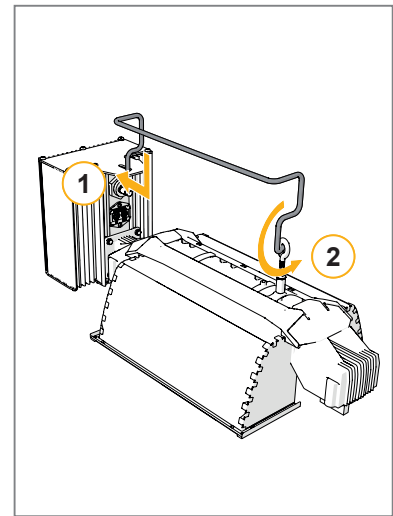
- ⚠ **Warning!** Mounting and installing of the fixture may only be executed by certified service personnel, in accordance with the applicable local laws and regulations.
- ⚠ **Warning!** The fitter is responsible for correct and safe installation.
- ⚠ **Warning!** Ensure the local cabling can support the voltage and current requirements of the luminaire.
- ⚠ **Warning!** Avoid coiled cords and keep mains leads separated. This prevents electromagnetic interference.
- ⚠ **Warning!** Do not connect or disconnect the Wieland RST20i3 plug under load.



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### 7.1 Preparing the luminaire for use

1. Switch off mains power.
2. Read the Gavita light distribution plan.
3. If not pre-installed, install the lamp in the fixture (see paragraph 10.2).
4. If not pre-installed, screw the mounting point into the luminaire [5].

### 7.2 Installing the luminaire.

1. Mount the suspension bracket\* according to the light distribution plan.
2. Hang the fixture by its two mounting points onto the suspension bracket (4). The two mounting points are spaced 30 - 32 cm apart.

⚠ **Caution!** Always hang the fixture horizontally. If necessary adjustments can be made by screwing the mounting point in or out.

To install other fixtures, repeat the steps from paragraph 7.1 and 7.2.

\* The suspension bracket is delivery dependent, it may differ from the image.

### 7.3 Repeater bus connection kit (optional)

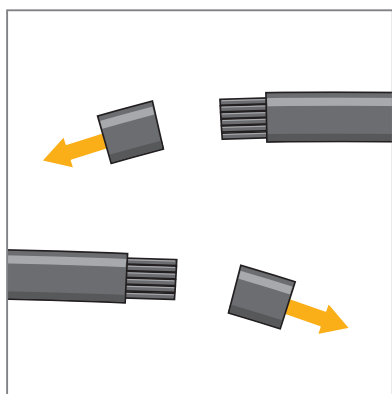
The repeater bus connection kit contains the following items:

- A 2 x EMC ferrite snap-on black bag (13x12x5x25.5x2.4)
- B 4 x Gavita splitter 1 to 2 6P6C grey RJ25 (in bag)
- C 8 x grey modular jack interconnect cable 6P6C RJ25 (in bag)
- D 8 x SNAP-ON ferrite core grey (in bag)
- E Interconnect cable 6p 25 meter grey (in bag)

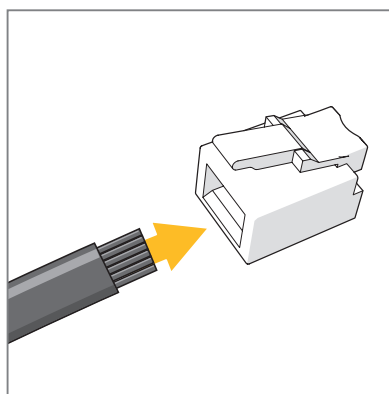
#### 7.4 Preparation for use with a controller

Using a daisy chain setup, a maximum of 100 luminaires can be connected to one controller. Up to 500 luminaires per daisy chain can be connected when using splitters. See section 7.5 and 7.6 of this manual and the manual of the controller.

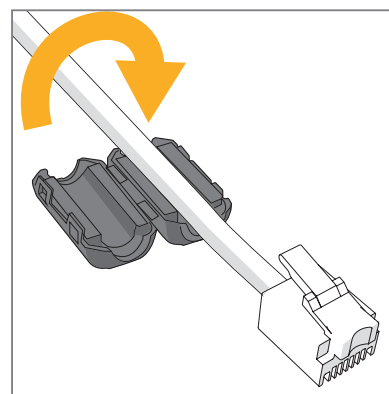
1. Take the unstripped black interconnect cable.
2. Cut the cable (supplied with controller) to the desired length and strip both ends using a crimp tool (6).
3. Insert the cable end in the RJ25 connectors (7) and use the crimp tool to finish the assembly.
4. Mount ferrite cores (item A mentioned in 7.3) to both cable ends close to the RJ25 connectors (8).



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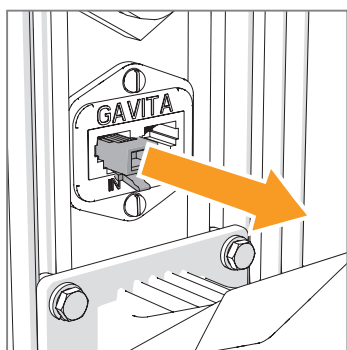
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#### 7.5 Connecting up to 100 luminaires

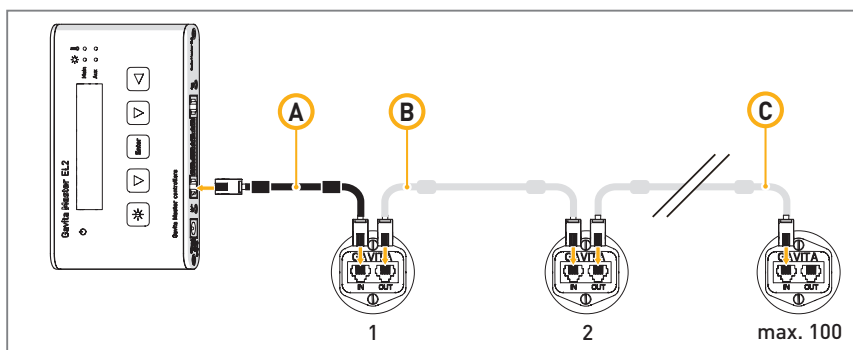
Using a setup with daisy chained splitters, up to 100 luminaires on RS1, EL1 or EL2 can be connected as shown in fig. 10.

1. Remove the dummy from the input port on the first luminaire (9).
- 1 **Note:** Keep the dummy in a safe place! The dummy is necessary to operate the luminaire in standalone mode.
2. Use the black controller cable (item is supplied with controller) to connect the controller input port on the first luminaire (10A).
3. Remove the dummy from the input port on the second luminaire.
4. Use a grey 6P6C modular jack interconnect cable (item C) with integrated ferrite cores to connect the output port of the first luminaire to the input port of the second luminaire (10B). The indicator light will blink when the connection is successful.
5. Repeat these steps to connect up to 100 luminaires (10C).

**Warning!** Ensure the power cord and the controller cables do not touch any of the reflectors.



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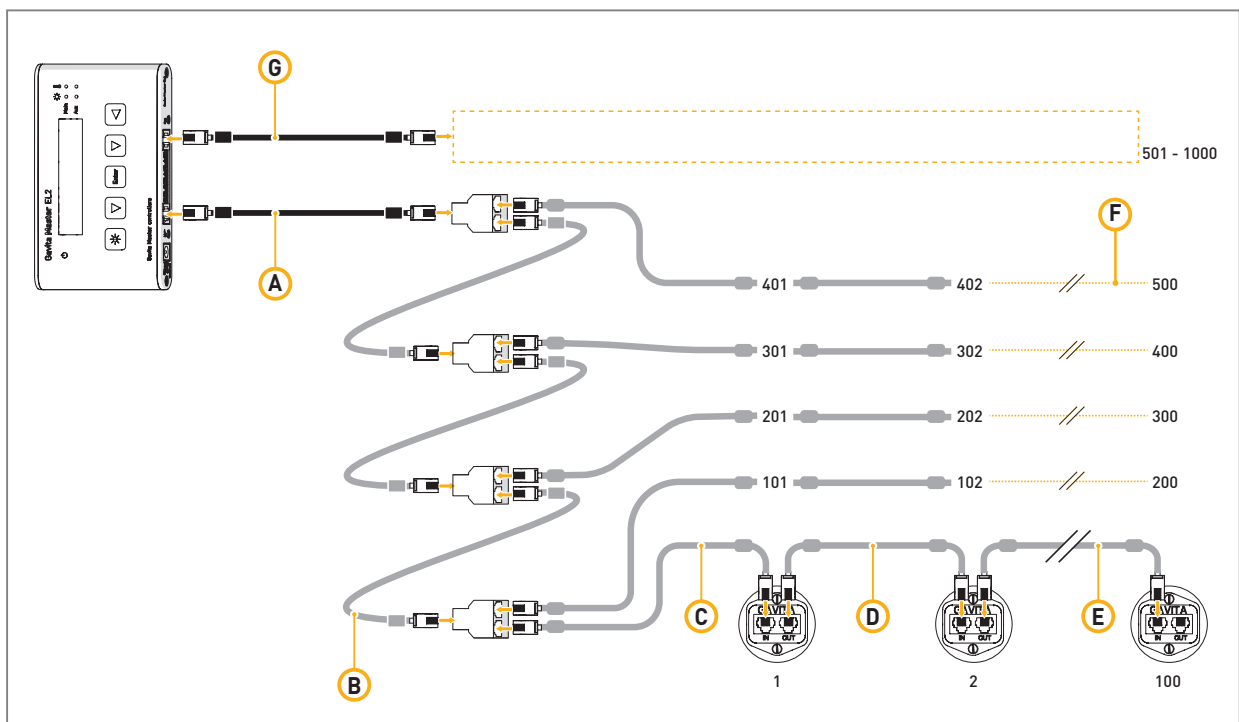
#### 7.6 Connecting up to 500 or 1000 luminaires

Using a setup with daisy chained splitters, up to 500 luminaires on RS1 or EL1 and 1000 luminaires on EL2 (over two channels) can be connected as shown in fig. 11.

1. Use the black controller cable (item comes with the controller) to connect the primary channel of the controller to the input port of the first splitter (11A).
2. Remove the dummy from the input port of the luminaires (9).
- 1 **Note:** Keep the dummy in a safe place! The dummy is necessary to operate the luminaire in standalone mode.
3. Use a grey 6PC6 modular jack interconnect cable (item C) to connect the output port of the splitter to the input port of the first luminaire (11C).

4. Use a grey 6PC6 modular jack interconnect cable (item C) to connect the output port of the first luminaire to the input port of the second (11D).
5. Repeat these steps to connect up to 100 luminaires per splitter output port (11E). Up to 500 luminaires can be connected to the primary channel.
6. Snap-on two grey ferrite cores (item D) on the grey interconnect cable (item C) close to the 6P6C plugs.
7. Use the grey 6PC6 modular jack interconnect cables (item C) to connect the outport of a splitter to the inport of the next (11B).
8. Use the black secondary channel (item comes with controller) (10G) to connect another 500 luminaires, in the same way the luminaires are connected to the primary channel.

- ⚠ Warning!** Ensure the power cord and the controller cables do not touch any of the reflectors.
- ⚠ Warning!** Distribute number of luminaires evenly over daisy chains.
- ⚠ Warning!** Ensure the repeater bus connections are integrated in a correctly set up installation for best results.
- ⚠ Warning!** Boosters should never be used to expand.
- ⚠ Warning!** The maximum cable length per splitter is 250m (100 interconnect cables).



## 7.7 Connecting the luminaire to the mains

- ⚠ **Warning!** Make sure mains power is switched off.
- ⚠ **Warning!** Always install the lamp before connecting the luminaire to the mains.
- ⚠ **Warning!** Ensure the cord is not coiled and does not touch any hot surfaces.
- ⚠ **Warning!** Connect the cables according to local rules, safety regulations and electrical code.
- ⚠ **Warning!** If external switching gear is used to switch the luminaire, ensure it can cope with the inrush current of the luminaire (see paragraph 3.2). Always use a double pole contactor suitable of switching a capacitive load. Never use household timers to switch the luminaire!

1. Plug the Wieland RST20i3 female connection onto the Wieland RST20i3 male connection on the luminaire (12).
2. Switch on mains power.

⚠ **Warning!** Do not connect or disconnect the Wieland RST20i3 plug under load.

To install a new power cord:

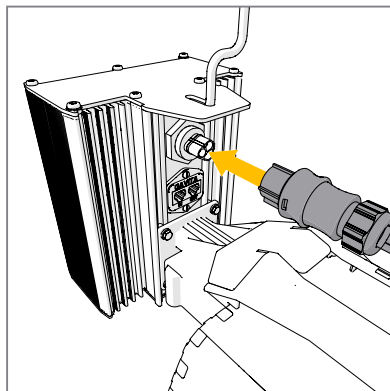
1. Remove the top part of Wieland RST 20i3 female connector from the bottom part (13).
2. Pull the mains cable through the bottom part (14).
3. Strip the wiring (15).  
The insulation strip length is 8 mm and the dismantling length is 32 mm.
4. Connect the wiring to the top part connections (16).

Cable description:

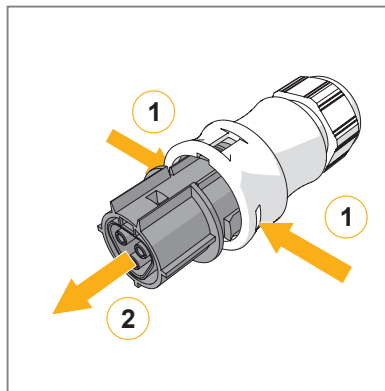
Wire	380-400V
Blue	Phase (L)
Brown	Phase (L)
Green/Yellow	Ground

5. Slide the top part into the bottom part and tighten the gland nut (17).

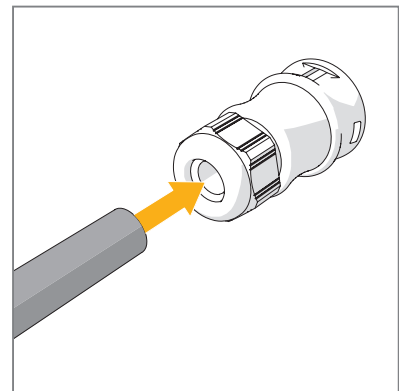
ⓘ **Note:** When the parts connect correctly, you will hear a 'CLICK' sound.



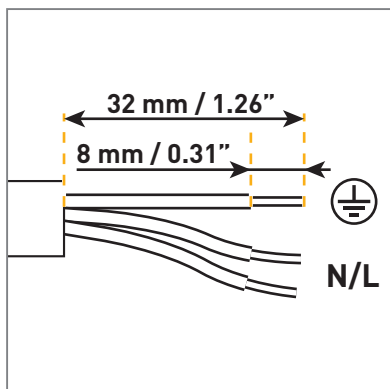
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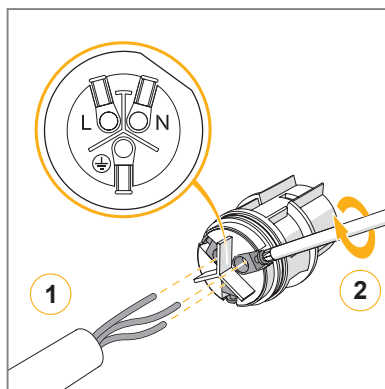
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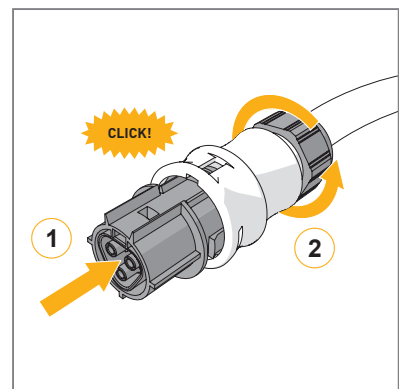
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## 8 Product use





- ⚠ Warning!** Never use the luminaire without a lamp or reflector!
- ⚠ Warning!** Always wait 20 - 30 minutes for the reflector to cool down!
- ⚠ Caution!** Before you dim or boost your HPS lamp, make sure that you run it at nominal value (100%) for at least 100 hours to stabilize the lamp. Failing to do so may lead to sub-optimal light levels and premature end of life failure of your lamp.

## 9 Troubleshooting using the status LED








The multi colour status LED provides information on the condition of the controller and the lamp. Consult chapters 9.1 and 9.2 to interpret the status LED. LED signals are represented by colored dots.

- All operating modes include GREEN;
- All warning codes include RED;
- All history codes (except the ignition code) include ORANGE;
- WARNINGS and history codes overrule operating mode display.

### 9.1 Status indications

Status LED message	Status luminaire	Description	Action / Solution
	No power / off	The luminaire is not connected to the mains or the power is off	Check power
	Ballast stand-by	Luminaire is connected to the mains and to a controller. Output of ballast is off.	
	Ballast on	Luminaire is connected to the mains and to a controller. Output of ballast is on	
	Luminaire is igniting the lamp	Luminaire is trying to restart the lamp	No action required. When lamp doesn't start: lamp too hot, defect or not properly connected (remote). Disconnect, check power cord and connections.

## 9.2 Error or warning indications

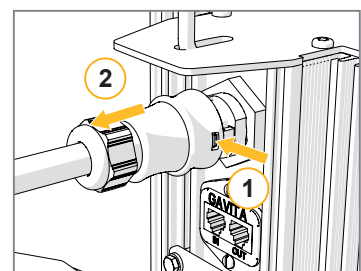
Status LED message	Status luminaire	Description	Action / Solution
	Too low voltage	Input voltage is too low	Check mains voltage
	Too low voltage occurred in past		See above, reset
	Too high voltage	Input voltage is too high	Check input voltage, check wiring and connection, check neutral in 3 phase systems
	Too high voltage occurred in past		See above, reset
	Too high temperature	Electronics temperature is too high (max. 115 °Celsius )	Disconnect from mains. Check installation, clean ballast, check environment temperature (max 35 °Celsius). Make sure the luminaire is not heated by HPS lamp light. Wait until the lamp is cooled down, then reconnect to the mains.
	Too high temperature occurred in past		See above, reset
	No signal from controller	Luminaire is connected to the mains and set to EXT but there is no signal on the control input.	If a controller is connected, search for loose connections, defect contacts or short-circuits.

## 10 Inspection, maintenance and repair

- ⚠ Warning!** Disconnect the product from mains before performing any maintenance or repairs.
- ⚠ Warning!** Do not connect or disconnect the Wieland RST20i3 plug under load.
- ⚠ Warning!** Do not open or disassemble the luminaire, it contains no servicable parts inside. Opening the luminaire can be dangerous and will void the warranty.
- ⚠ Warning!** Always allow for a cool down period of at least 30 minutes before touching the lamp or reflector.
- ⚠ Caution!** Do not clean the luminaire with detergents, abrasives or other aggressive substances.
- ⚠ Caution!** Do not touch the inside of the reflector during installation and do not use water, abrasives or detergents to clean it. This will damage the reflective surface.
- ⓘ Note:** Gavita recommends to measure the lamp and reflector for aging every year. Replace the lamp and/or reflector when they are aged.
  - Regularly check the luminaire for dust or dirt buildup. Clean if necessary. Contamination may cause overheating and decreased performance.
    - Clean the inside of the reflector only with a soft, dry cloth;
    - Clean the electronic ballast and the outside of the luminaire using a dry or damp cloth.
  - Check the lamp monthly for discolorations or black markings. Always replace a damaged lamp.
- ⚠ Note:** Before initial use, the lamp could have black markings. This will disappear when the lamp runs on full power. If not, replace the lamp.
  - Regularly check the wiring of the product to ensure it is undamaged.

### 10.1 How to disconnect the Wieland RST20i3 plug

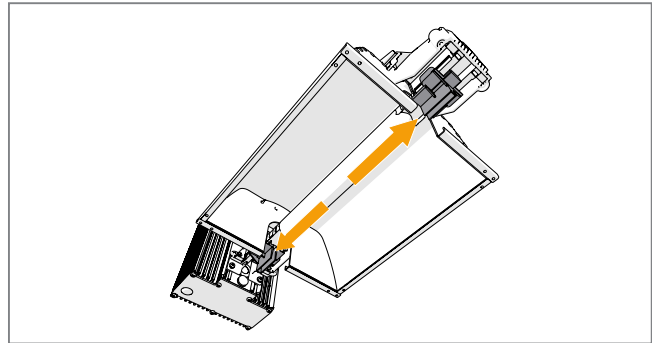
- ⚠ Warning!** Do not connect or disconnect the Wieland RST20i3 plug under load.
- 1. Switch off mains power.
- 2. Press the pin on the Wieland RST20i3 male connection inwards and pull the Wieland RST20i3 female connection from the luminaire [18].



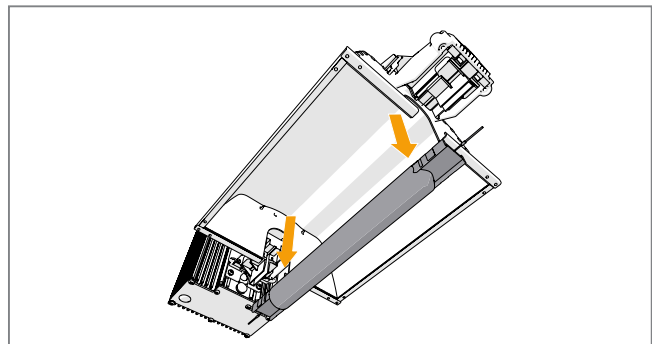
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## 10.2 Placement and replacement of the lamp

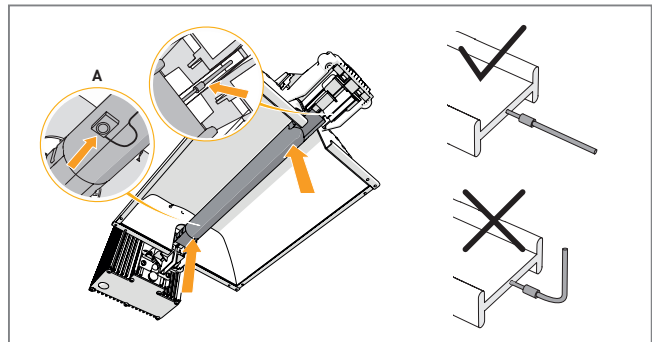
- ⚠ **Warning!** Always allow for a cool down period of at least 30 minutes before touching the lamp or reflector.
  - ⚠ **Caution!** Do not touch the lamp with bare hands as this will damage the lamp. Always use a fabric glove to handle the lamp.
  - ⚠ **Caution!** Only use lamps specified by Gavita (see paragraph 3.3).
  - ① **Note:** The lamp must be replaced every year or after 5000 lighting hours, whichever one comes first.
1. Switch off mains power.
  2. Hold the lamp with a fabric glove to prevent it from falling. Use a protective glove if the lamp is damaged.
  3. Open the lamp holders by sliding them outwards (19).
  4. Carefully take the lamp out of the luminaire (20).
  5. Install the new lamp with the getter near the ballast (21), with the glass vacuum seal pointed downwards (Philips lamps) or sideways (Gavita lamps).
- Both lamp wires need to be placed straight into the lamp holder and need to touch the metal part of the lamp holder.
6. Close the lamp holders by sliding them inwards (22).
  7. Switch on mains power.



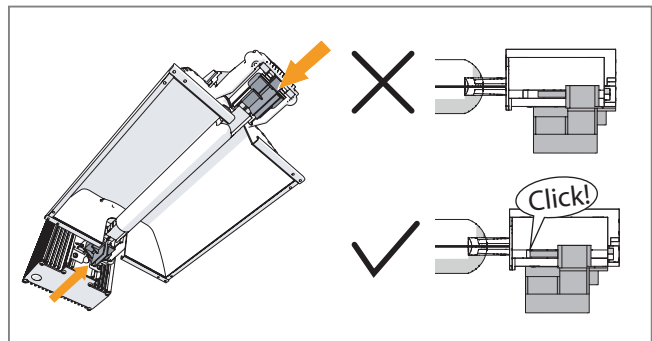
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### 10.3 Placement and replacement of the reflector

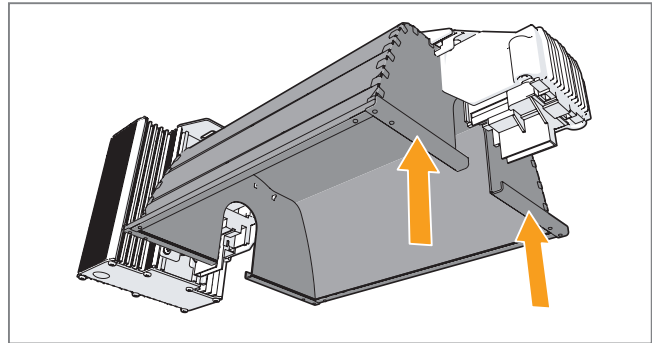
**⚠ Warning!** Always allow for a cool down period of at least 30 minutes before touching the lamp or reflector.

① **Note:** Gavita recommends replacing the reflector\* after 5000 lighting hours.

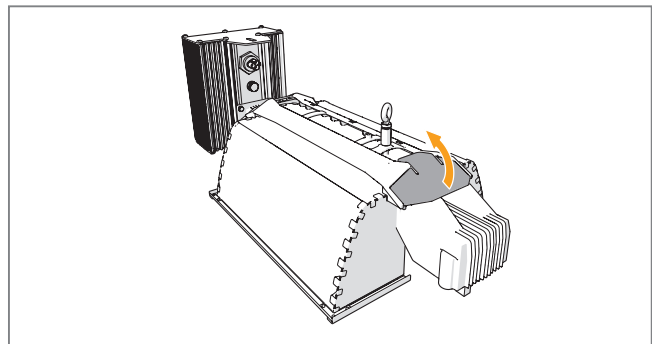
Depending on the environment and contamination levels the reflector will degrade. The Vega Miro™ aluminum can not be cleaned without damage. Therefore we recommend to change the reflector once every year. Also replace the lamp when replacing the reflector.

\* The reflector is delivery dependent, it may differ from the image.

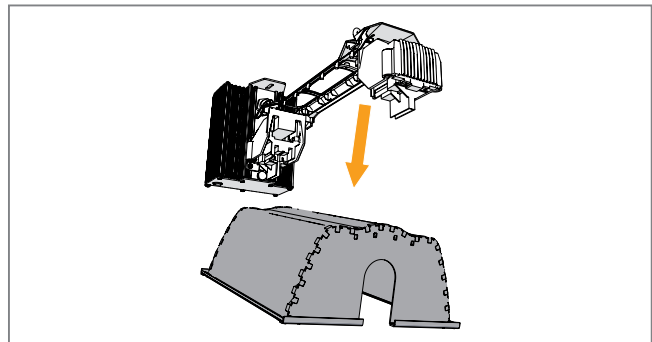
1. Switch off mains power.
2. Remove the lamp from the luminaire (see paragraph 10.2).
3. Support the reflector on the side of the reflector lever to prevent it from falling (23).
4. Move the reflector lever up to retract the two pins holding the reflector in place (24).
5. Remove the reflector (25).
6. Place the new reflector. Ensure the reflector lever is in the opened position to allow the reflector to pass.
7. Ensure the holes in the reflector are aligned with the pins in the fixture (26).
8. Release the reflector lever so its two pins hold the reflector in place.
9. Insert the lamp in the lamp holder (see paragraph 10.2).
10. Switch on mains power.



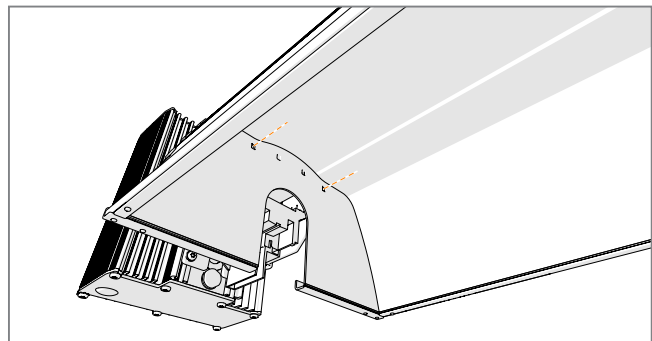
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## 11 Storage and disposal

- Store the luminaire in a dry and clean environment, with an ambient temperature of -20 ~ 85 °Celsius.
- The product must not be discarded as unsorted municipal waste, but must be collected separately for the purpose of treatment, recovery and environmentally sound disposal.

 **Caution!** The lamps are chemical hazardous waste and must be delivered to the designated authorities.

 **Caution!** The lamp contains mercury.

## 12 Warranty

Gavita International bv warrants the mechanical and electronic components of their product to be free of defects in material and workmanship if used under normal operating conditions for a period of three (3) years from the original date of purchase. If the product shows any defects within this period and that defect is not due to user error or improper use Gavita International bv shall, at its discretion, either replace or repair the product using suitable new or reconditioned products or parts. For HPS lamps the warranty period is one (1) year from the original date of purchase. In case Gavita International bv decides to replace the entire product, this limited warranty shall apply to the replacement product for the remaining initial warranty period, i.e. three (3) years from the date of purchase of the original product. For service, return the luminaire to your shop with the original sales receipt.





