Gavita **CT** 2000^e LED EU 230-400V

1 Introduction

Thank you for purchasing the Gavita **CT** 2000^e LED EU 230-400V. This manual describes the mounting and installing of the product and also describes how to use the product. Mounting and installation of the Gavita **CT** 2000^e LED EU 230-400V luminaire may only be executed by certified service personnel. 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.

① **Note:** A note gives additional information, e.g. for a procedure.

♨ This symbol indicates that the Gavita can reach very high temperatures (>75 °Celsius). Observe a cool down period before performing maintenance.

🚮 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 tot the conservation of natural resources. Therefore, please do not dispose of your old electronics and electrical appliances via household waste.

1 m This symbol indicates the minimum distance between the luminaire and the lit surface.

⚠ This symbol indicates that the luminaire contains a bright light source. Do not stare into the light source when switched on.

⚡ This symbol indicates a risk of electric shock. Do not remove the lens. There are no servicable parts inside the luminaire.

2 Product description

The Gavita **CT** 2000^e LED EU 230-400V is an electronic horticultural LED luminaire. The Gavita **CT** 2000^e LED EU 230-400V is intended to be used in greenhouses or in climate rooms (indoor or outdoor).
Reinforced insulation was provided between input circuit and output/ dimming circuit. Basic insulation between output circuit and dimming circuit
In this manual, the Gavita **CT** 2000^e LED EU 230-400V will be referred to as: "the luminaire".

3 Product information and specifications

3.1 General product information

Product name	Gavita **CT** 2000ᵉ LED EU 230-400V					
Manufacturer	Gavita International BV					
Version	EU	UK	CH	ZA	AUS	IL
EAN Code	8718403056938	8718403056952	8718403056945	8718403056969	8718403056976	8718403056983
Part number	HGC906702	HGC906704	HGC906703	HGC906705	HGC906706	HGC906707

3.2 Technical specifications

Version	Gavita **CT** 2000ᵉ LED EU 230-400V	
Product weight	14 kg	
Dimensions in cm (L*W*H)	74.9 x 30 x 10 cm	
Temperature case	< 75 °C	
Temperature ambient	0 - 45 °C	
Degree of protection	IP66	
Input voltage*	230 - 400 VAC	
Current	Max 4.0 A	
Input power typical	780 W	
Power factor	> 0.95	
Total Harmonic Distortion	< 15%	
Frequency	50/60 Hz	
Certification	CE / UKCA / CB	
Insulation	Class I - requires an earth connection	
Power inlet	Wieland RST20I3F S2 M01V GN connector	
Inrush current	230 VAC	400 VAC
	13A peak, 17ms, <0.3A2	17A peak, 17ms, <0.9A2s
Earth leakage current	< 1 mA	

* According to the net quality standard EN 50160 and EN 61000

3.3 Compatible products and accessories

	Product name	Gavita part number
	Product name	Gavita part number
Compatible power cord	Gavita RST Mains cable DCA 0.6m	CB6873121
	Gavita RST Mains cable DCA 1.0m	CB6853431
	Power cord EU, 5 meter	PC6852017
	Power cord UK, 5 meter	PC6852018
	Power cord CH, 5 meter	PC6852019
	Power cord ZA, 5 meter	PC6852020
	Power cord IL, 5 meter	PC6852021
	Power cord IL, 5 meter	PC6852022

3.4 Environment

The product is intended to be used in greenhouses and climate rooms (indoor or outdoor). The lamps function optimally when the ambient temperature is between 20 - 45 °C.

3.5 Legal

Approval according to: IEC 60598-1:2014; IEC 60598-1:2014/AMD1:2017; IEC 60598-2-1:1979; IEC 60598-2-1:1979/AMD1:1987; EN 55015:2013+A1:2015; EN 61547:2009; EN 61000-3-2:2014; EN 61000-3-3:2013

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.
- The light source contained in this luminaire shall only be replaced by the manufacturer or his service agent or a similar qualified person.
- The luminaire should be positioned so that prolonged staring into the luminaire at a distance closer than 6.5 m is not expected.
- 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 optics, LED boards, or its power cord are damaged. Replace the power cord only with original certified cords.
- 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:
    - (ambient) temperatures outside the specified range;
    - 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 luminaire. Touching the luminaire when the luminaire is lit or immediately afterwards will result in severe burns!
- Do not use the luminaire near or above flammable, explosive or reactive substances. Do not use sulfur vaporizers.
- 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.
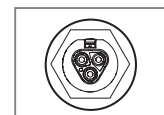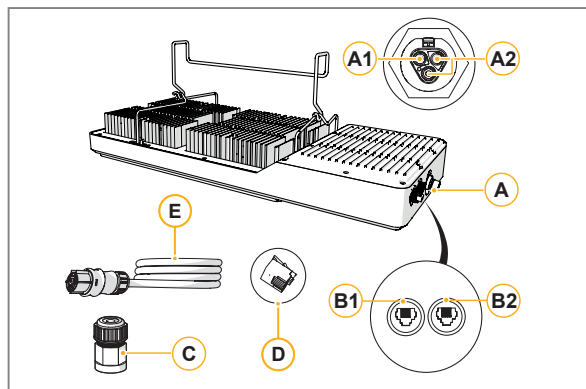
5 Contents (1)

A. Luminaire
B. Mounting brackets (2x)
C. 40x40mm Unistrut Hanger
D. Safety wire
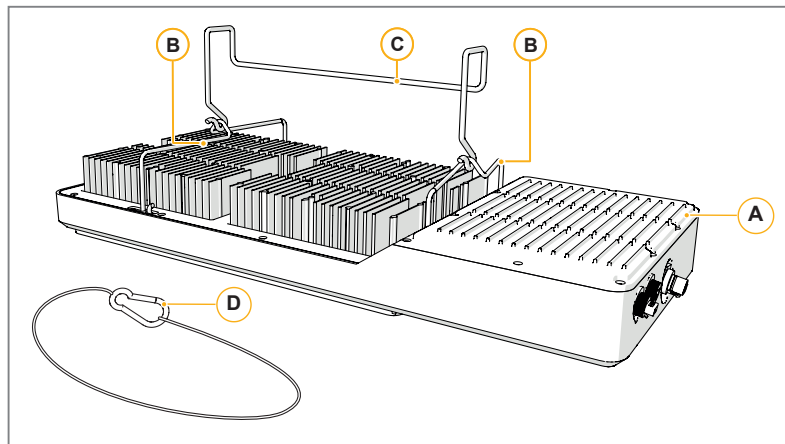
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6 Controls, connections and indications (2)

A. Wieland RST20I3F S2 M01V GN
   connector
   1. Ground connection
   2. Phase / Phase or Neutral
      connections
B. Gavita 2xRJ45 connector
   1. RJ IN
   2. RJ OUT
C. Cable gland assembly
D. Dummy
E. Power cable (RST20I3F B2 M01 H
   GN0)

Wieland
RST20i3

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7 Installation

⚠ **Warning!** Mounting and installing of the luminaire 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. Coiled cords may lead to electromagnetic interference.
⚠ **Warning!** Do not connect or disconnect the Wieland RST20i3 plug under load.

7.1 Installation preparations

1. Switch off mains power.
2. Read the Gavita light distribution plan.
3. Always keep a safe distance between the luminaire and an illuminated surface (3).


1 m
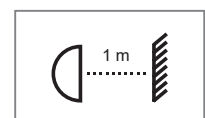
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7.2 Installing the luminaire

⚠ **Warning!** Keep a distance of 10 cm from adjacent lighting equipment.

1. Mount the 40x40mm Unistrut Hanger according to the light distribution plan.

ⓘ **Note:** The center of light is at a distance of 106 mm from the front bracket point (4).

2. Attach the mounting brackets to the luminaire (5).
3. Hang the luminaire with the mounting brackets onto the 40x40mm Unistrut hanger (6).
4. Install the safety wire (7).

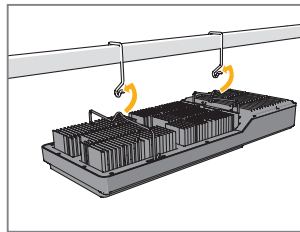To install other luminaires, repeat the steps from paragraph 7.1 and 7.2.

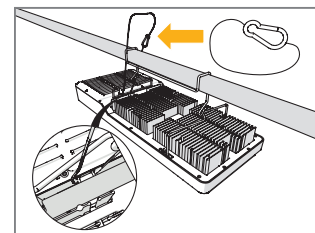* The suspension bracket may differ from the image.

106 mm
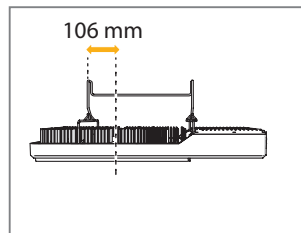
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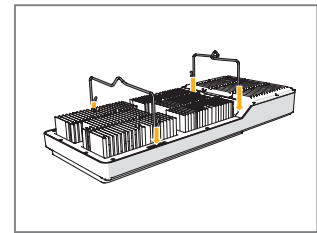

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7.3 Repeater bus connection kit (optional)

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)

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.
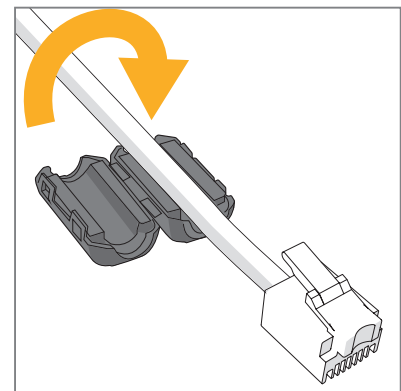
1. Take the unstripped black interconnect cable.
2. Cut the cable (supplied with controller) to the desired length and strip both ends using a crimp tool (8).
3. Insert the cable end in the RJ25 connectors (9) and use the crimp tool to finish the assembly.
4. Mount ferrite cores (item A. mentioned in 7.3) to both cable ends close to the RJ25 connectors (10).
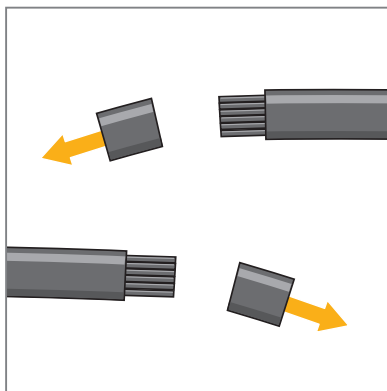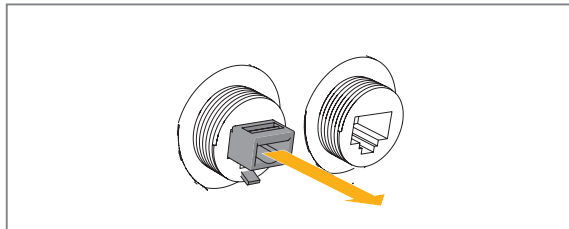

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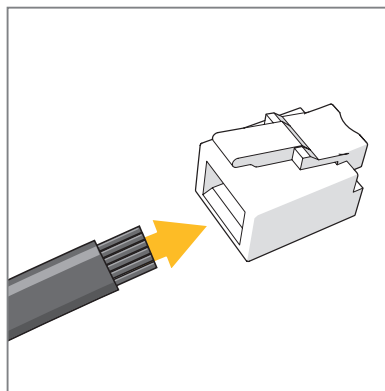
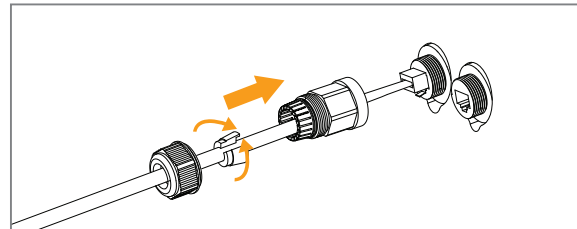9

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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. 13.

1. Remove the dummy from the input port on the first luminaire (11).

ⓘ **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 (13A).

3. Use the black controller cable (item is supplied with controller) to connect the controller input port on the first luminaire (13A). Lock the cable end in place with a cable gland (12).

4. Remove the dummy from the input port on the second luminaire.

5. 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 (13B). The indicator light will blink when the connection is successful.

6. 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 (13B). Lock the cable end in place with a cable gland (12). The indicator light will blink when the connection is successful.

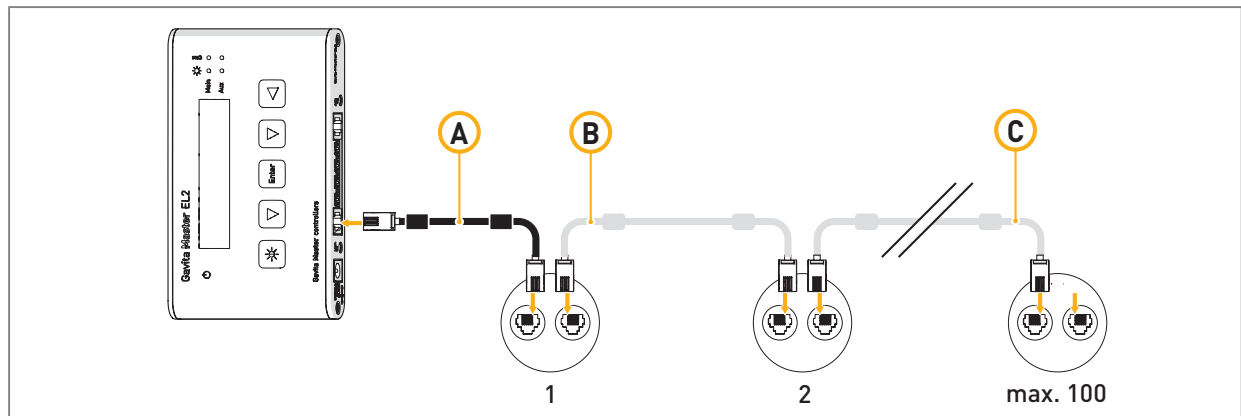7. Repeat these steps to connect up to 100 luminaires (13C).

⚠ **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. 14.

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 (14A).
2. Remove the dummy from the input port of the luminaires (11).

ⓘ **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 (14C).
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 (14D).
5. Repeat these steps to connect up to 100 luminaires per splitter output port (14E). 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 (14B).
8. Use the black secondary channel (item comes with controller) (14G) 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).

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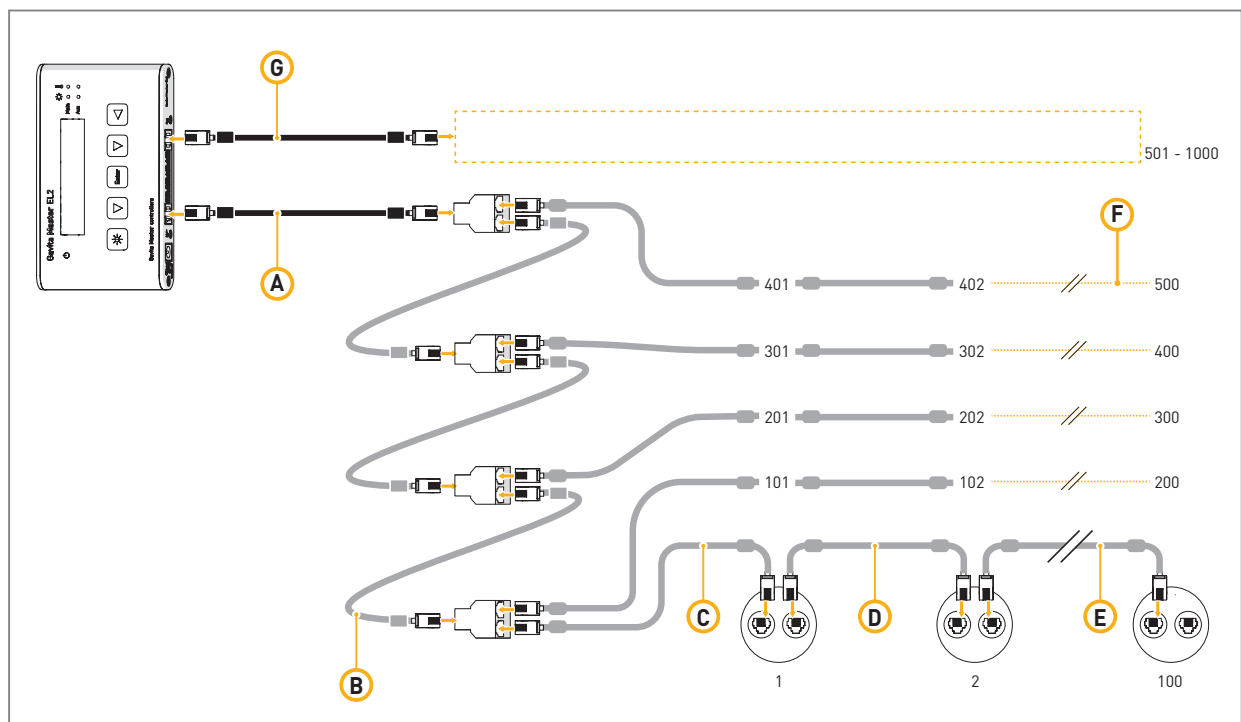
7.7 Connecting the luminaire to the mains

⚠️ **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!

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1. Switch off mains power.
2. Connect the power cable to the mains. The Gavita® CT 2000e LED 240-400 V power cables connect to either a 240V receptacle or an open-end cable. Use the correct cable and connector for your application.
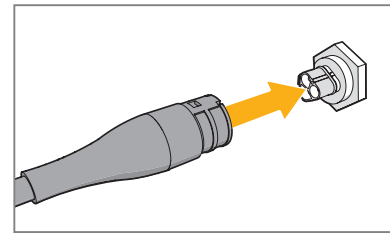
Cable description Gavita CT 2000e LED 240-400 V:

Wire	240V	400V
Blue	Neutral (N)	Phase (L)
Brown	Phase (L)	Phase (L)
Green	Ground	Ground

3. Plug the Wieland RST20i3 female connection onto the Wieland RST20i3 male connection on the luminair (16).
4. If a controller is used, ensure the controller is connected to the luminaire.
5. Switch on mains power.

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

8 Precautions when using the luminaire

⚠ **Warning!** Always wait 20 - 30 minutes for the luminaire to cool down!

9 Inspection, maintenance and repair

⚠ **Warning!** Disconnect the luminaire 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 luminaire.
⚠ **Caution!** Do not clean the luminaire with detergents, abrasives or other agressive substances.
- Regularly check the luminaire for dust or dirt buildup. Clean if necessary. Contamination may couse overheating and decreased performance. Clean the electronic ballast and the outside of the luminaire using a dry or damp cloth.
- Regularly check the cables of the luminaire to ensure it is undamaged.
- Regularly check the wiring of the product to ensure it is undamaged.

9.1 Disconnecting the luminaire from the mains

⚠ **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 (16).
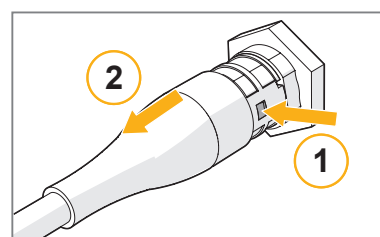
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10 Storage and disposal

- 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.

11 Warranty

Gavita International b.v. 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 five (5) 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 b.v. shall, at its discretion, either replace or repair the product using suitable new or reconditioned products or parts. In case Gavita International b.v. decides to replace the entire product, this limited warranty shall apply to the replacement product for the remaining initial warranty period, i.e. five (5) years from the date of purchase of the original product. For service return the Gavita CT 2000e LED EU luminaire to your shop with the original sales receipt.

ⓘ **Please note:** Greater than 15% of the diodes must be non-functional before the unite can be considered defective.

See gavita.com/warranty for more information.