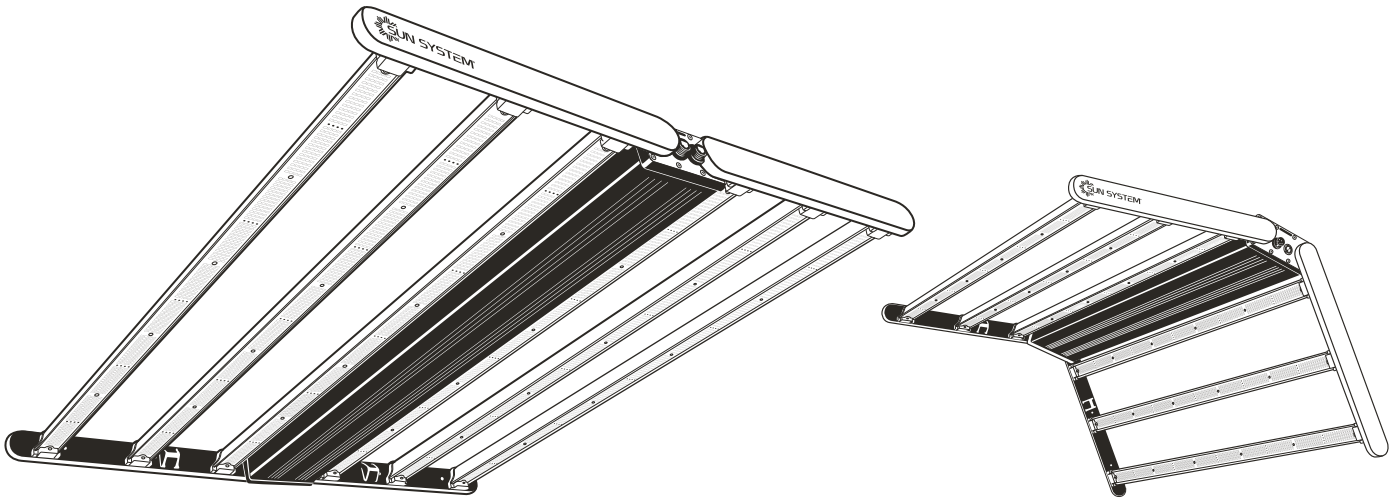




# SUN SYSTEM® RS 1850 LED EU

## 6 RAIL, FOLDABLE LED FIXTURE - 240 Volt













### INSTALLATION AND OPERATING INSTRUCTIONS

#### 1 Introduction

Thank you for purchasing the Sun System RS 1850 LED 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 is an internationally recognized symbol used to designate recyclable materials.
-  With this symbol Gavita declares that this product complies with European requirements.
-  With this symbol Gavita declares that this product complies with the requirements of the United Kingdom.
-  The symbol on the material, accessories or packaging indicates that this product may not be discarded as household waste. By properly disposing the equipment, 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 old electronics and electrical appliances via household waste.
-  This symbol indicates the minimum distance (B) between the LED fixture (A) 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. There are no serviceable parts inside the luminaire.

## 2 Product description

The Sun System RS 1850 LED EU is an solid state horticultural LED fixture. It drives six LED rails. The Sun System RS 1850 LED EU is intended to be used in greenhouses or in climate rooms. In this manual, the Sun System RS 1850 LED EU will be referred to as: "the LED fixture".

## 3 Product information and specifications

### 3.1 General product information

Product name	Sun System RS 1850 LED EU				
Manufacturer	Hawthorne Hydroponics				
Version	EU	UK	CH	ZA	IL
Part number	HGC906145	HGC906726	HGC906725	HGC906145	HGC906728
EAN Code	8718403057010	8718403057034	8718403057027	8718403057041	8718403057058
Plug type	EU plug 230 V	UK plug 240 V	CH plug 230 V	ZA plug 240 V	IL Plug 240V

### 3.2 Technical specifications

Version	Sun System RS 1850 LED EU
Input voltage	240 V +/- 10%
Input current typical	3 A
Input power typical	720 Watt
Power factor	> 0.95
Total Harmonic Distortion	< 15%
Frequency	50 / 60 Hz
Inrush current	14.2ms @ 240 VAC
Earth leakage current	<1 mA
Product weight	12 kg / 26.5 lbs
Dimensions (L*W*H)	74.9 x 30 x 10 cm / 29.5" x 11.8" x 3.9"
Temperature case	<75° C
Certification	IP 65
Temperature ambient	0 - 55° C
Relative humidity	< 70% (not condensating)
Power inlet	Wieland RST20I3F S2 M01V GN connector
Insulation	Class I - requires an earth connection

### 3.3 Compatible products and accessories

Product	Product name	Gavita part number
Controllers	Gavita Master Controller EL1 EU/UK	HGC990786
	Gavita Master Controller EL2 EU/UK	HGC990789
Power cords	RST Mains cable DCA 0.6m	CB6873121
	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 AUS, 5 meter	PC6852021
Power Cord IL, 5 meter	PC6852022	



### 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 optimal when the ambient temperature is between 20 ~ 35 °C.

**⚠ Warning! Ambient temperatures may not exceed 55°C. Exposure to temperatures above 55 °C will shorten the lifetime and increase the chance of failures.**

### 3.5 Legal

Approval according to: EN 60598-2-1:1989; EN 605898-1:2015+A1:2018; IEC62031:2020; IEC TR 62778:2014; EN 61347-2-11:2001+A1:2019 used in conjunction with EN 61347-1:2015; EN 62493:2015

Approval for IP rating according to: IEC 60529:1989+A1:1999+A2:2013

## 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 fixture.
- The light source contained in this luminaire shall only be replaced by the manufacturer or his service agent or a similar qualified person.
- 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 fixture when either its coating, heatsink or 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 fixture 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 fixture.
- Always disconnect the fixture from mains before performing any maintenance.
- Always allow for a cool down period of at least 30 minutes before touching the LED-panel and the fixture. Touching the LED-panel or the fixture when the lamp is lit or immediately afterwards will result in severe burns!
- Do not use the fixture near, or above flammable, explosive or reactive substances. The LED-panel and the fixture reach temperatures up to 85 °Celsius.
- Do not use sulfur vaporizers or water misters. Sulfur and calcium deposits on the optics will decrease its efficiency.
- The installation and use of the fixture is the responsibility of the end user. Incorrect use or installation can lead to failure and damage to the fixture. Damage to the fixture and electronic circuitry as a result of incorrect installation and use revokes the warranty.

## 5 Photobiological Safety

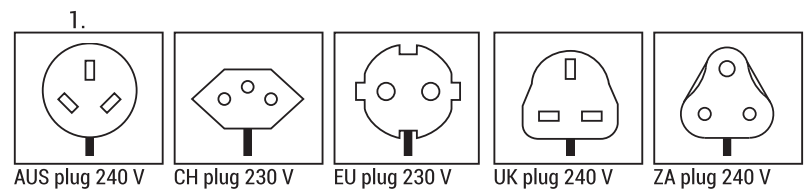
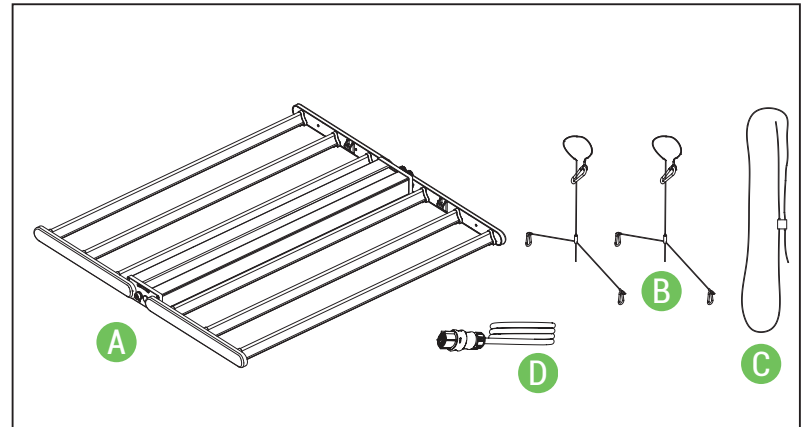
**⚠ Warning! Possible hazardous optical radiation emitted from this product.**

**Photobiological Safety Assessment: Risk Group 2**

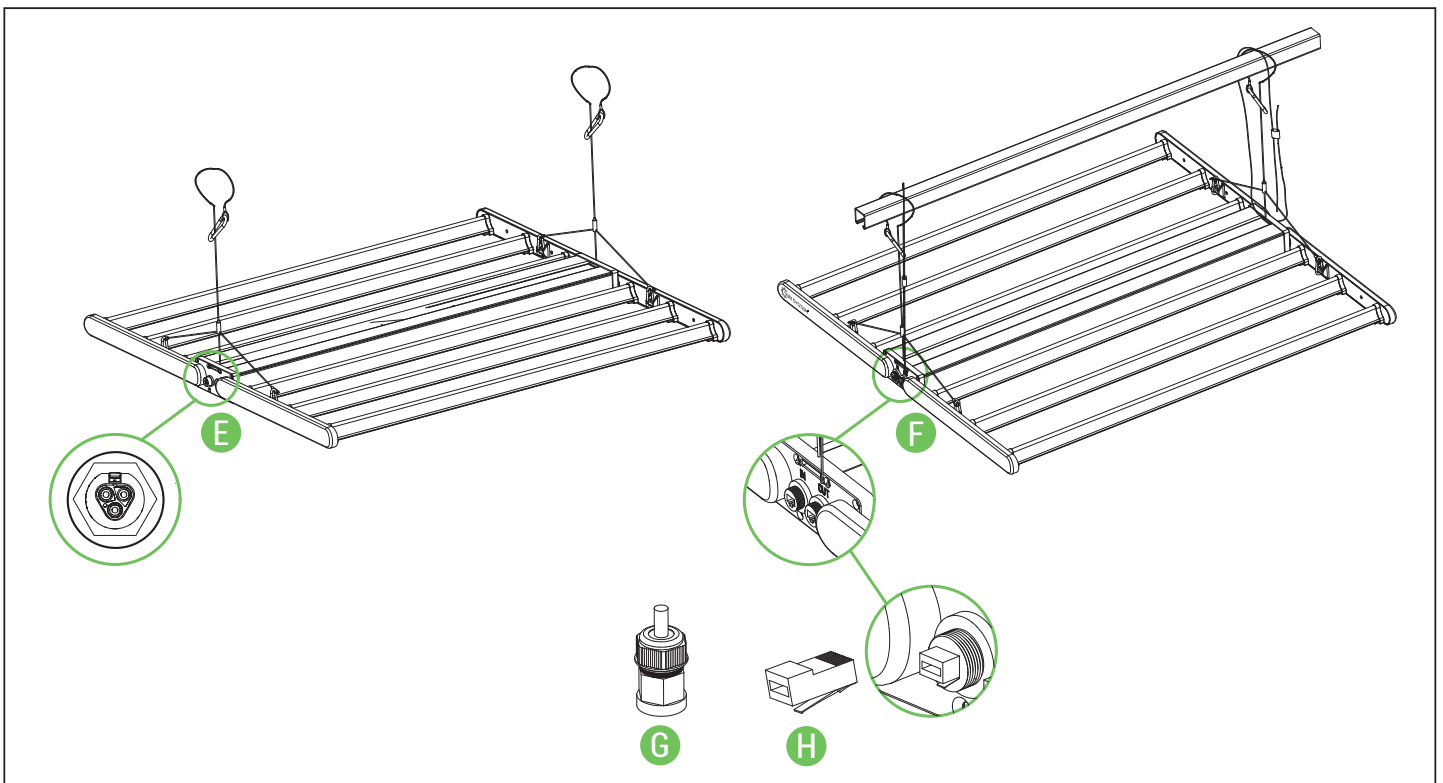
These photobiological safety markings are based on testing of the light output characteristic of a single horticultural luminaire. Increased exposure risk to facility personnel may be present depending upon the number of horticulture luminaires and their placement and/or positioning within the plant growth facility. It is the responsibility of the plant growth facility to address these risks at the facility level and to ensure that people entering the plant growth areas while the lights are on, are aware of the risks and that appropriate safeguards are in place.

## 6 Contents (fig. 1)

- A. Sun System RS 1850 LED EU
- B. 3-Point Mounting Wires [x2]
- C. Safety Wire
- D. 5M Power cord with Wieland RST 20i3 female connector



## 6. CONTROLS, CONNECTIONS AND INDICATIONS



2.

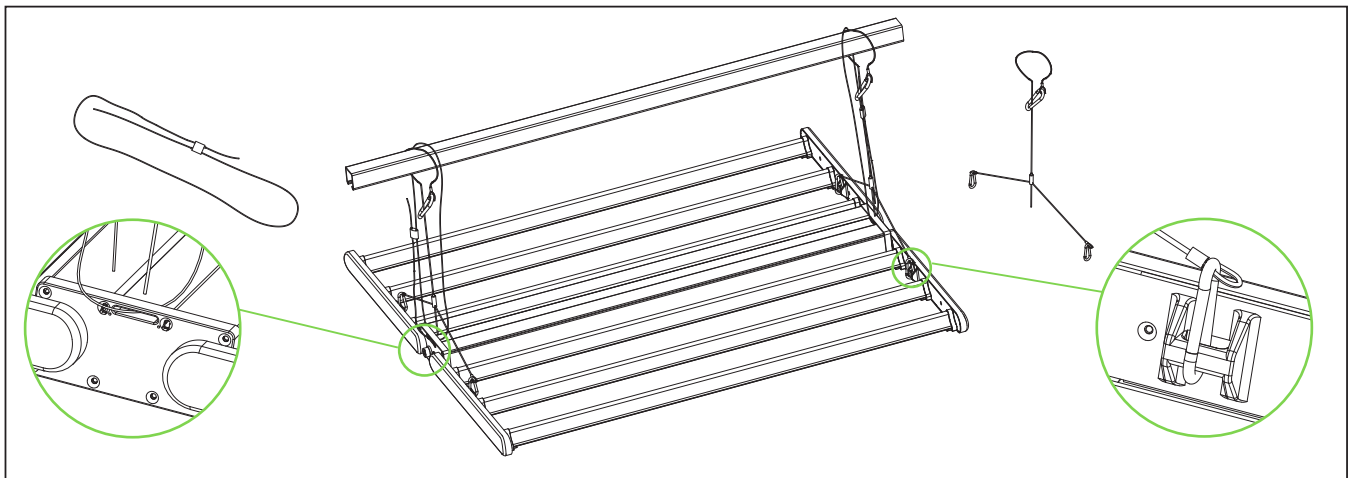
- E. Wieland RST20i3 Male Connector
- F. RJ45 Connector [x2]
  - 1. RJ IN
  - 2. RJ OUT
- G. Assembled Cable Glands
- H. Dummy Plug

## 7 Installation

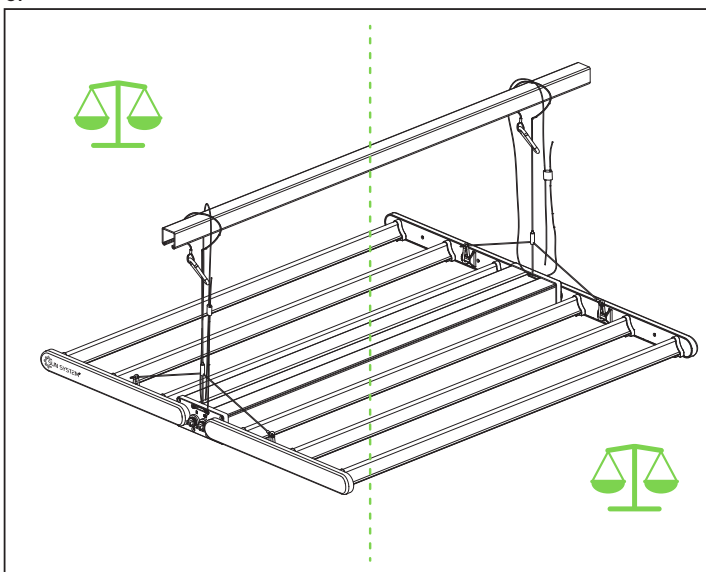
- ▲ **Warning!** Mounting and installing of the fixture may only be executed by certified service personnel, in accordance with the applicable local laws and regulations.
- ▲ **Warning!** The fitter is responsible for correct and safe installation.
- ▲ **Warning!** Ensure the local cabling can support the voltage and current requirements of the fixture.
- ▲ **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.

### 7.1 Installation preparations

- ▲ **Warning!** Mount the system to something that can hold the weight of the LED fixture.
  - Switch off mains power.
  - Install the 3-Point Mounting Safety Wire (2x) (fig. 2)
  - Hang the fixture level with the supplied mounting wires (fig. 3)
  - Make sure power cords:
    - 1) Are not concealed or extended through a wall, floor, ceiling, or other parts of the building structures
    - 2) Are not located above a suspended ceiling or dropped ceiling.
    - 3) Are not permanently affixed to the building structure.
    - 4) Are routed so that they are not subject to strain and are protected from physical damage.
    - 5) Are visible over their entire length.
    - 6) Are used within their rated ampacity as determined for the maximum temperature of the installed environment specified in the instructions.



3.



4.

5

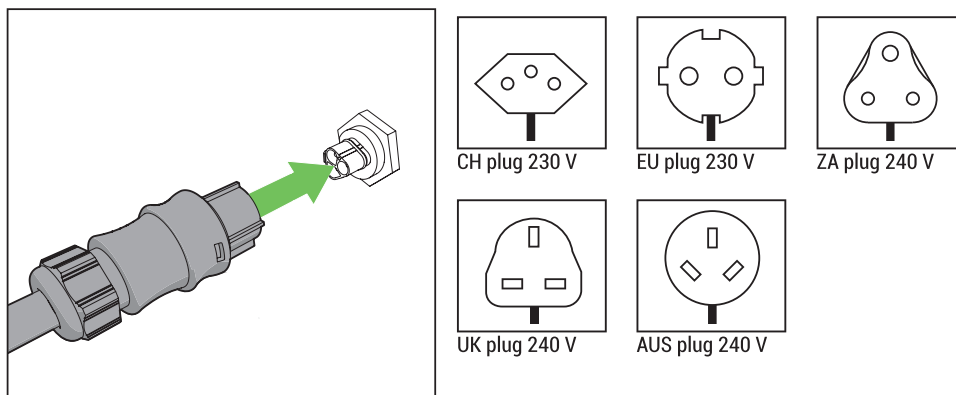
## 7.2 Connecting the LED fixture to the mains

- ⚠ **Warning!** Make sure mains power is switched off.
- ⚠ **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!** Ensure external switching gear can cope with the inrush current of the LED fixture. Always use a double pole contactor suitable for switching a capacitive load. Never use household timers to switch the LED fixture!
- ⚠ **Warning!** Do not connect or disconnect the power cable to the LED fixture while under load.

- Connect the Wieland RST 20i3 female connector on the power cable to the Wieland RST20i3 male connector on the LED fixture (fig. 4).
- Connect the power cable to the mains.
- Switch on mains power.

Cable description Sun System RS 1850 LED EU:

Wire	230-240 V
Brown	Phase (L)
Blue	Neutral (N)
Yellow/Green	Ground (⊕)



5.

## 8 Controlling the Fixture:

- ⚠ **Warning!** The fitter is responsible for correct and safe installation.
- ⚠ **Warning!** Avoid coiled cords and keep mains leads separated. This prevents electromagnetic interference.
- ⚠ **Warning!** Power cord and interconnect cables must not touch the LED rails.

### 8.1 Manual Mode (Digital Dimming Button Operated)

Scenario: The LED has input voltage, but no input control signal, i.e, no external control source or dummy plug.

- If the dimming button is pressed and the LED fixture has power, the fixture will turn on at 100% and the button will be briefly flash green.
- Levels of Control: 100%, 75%, 50%, and OFF.
- To turn off the fixture, the operator must repeatedly press the digital dimming button until the unit turns off.

### 8.2 External Control (External Controller || Dummy Plug Operated)

- ⚠ **Warning!** Do not insert an external control signal or dummy plug into the RJ45 "OUT" port. The LED fixture will not operate in this mode

Scenario: External control signal or dummy plug is inserted in the RJ45 "IN" port.

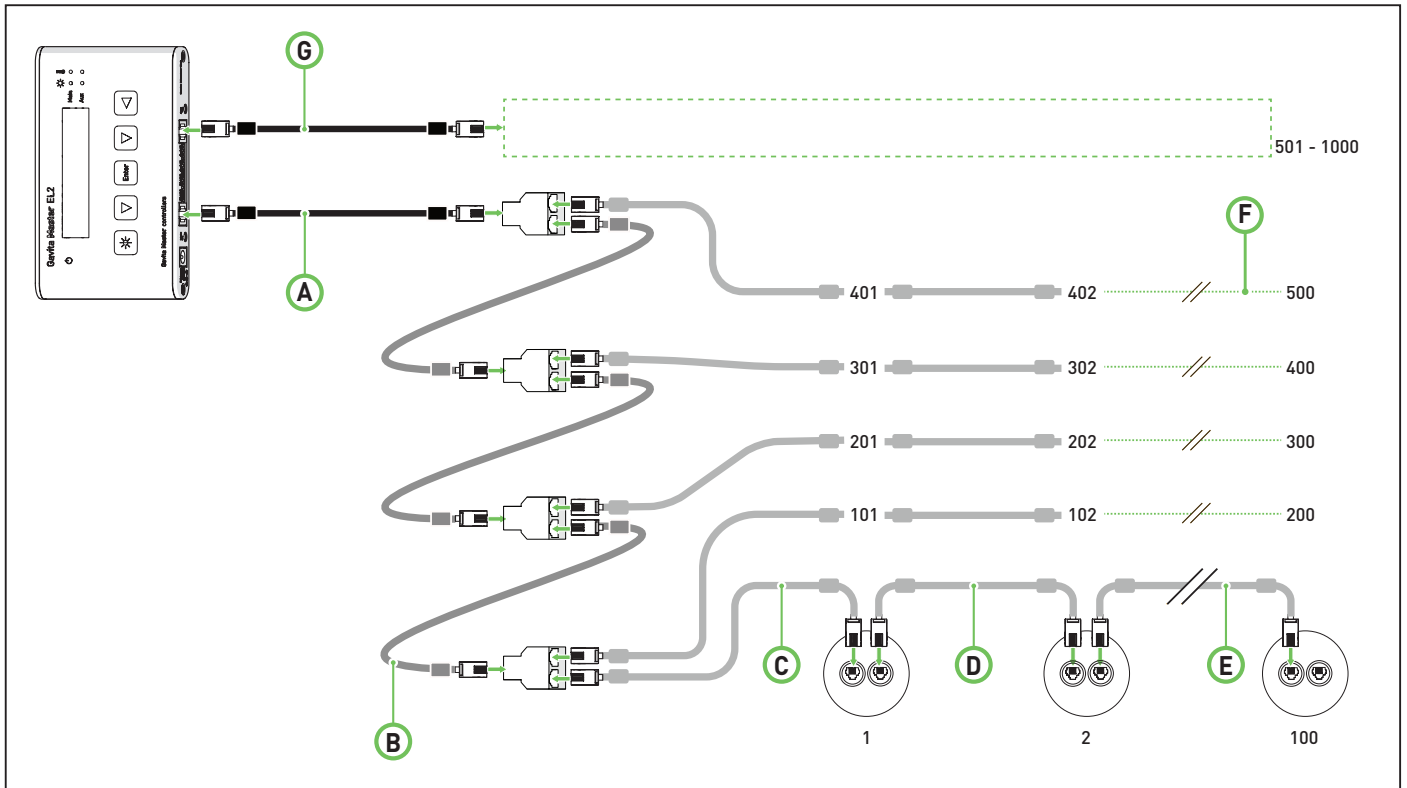
External control signal or dummy plug overrides the dimming button. The external controller or dummy plug will have full control of the fixture. The RJ45 "OUT" port is only activated when there is an external control signal or dummy plug connected to the RJ45 "IN" port. If this mode is utilized, up to 1,000 fixtures can be operated if connected in series.

### 8.3 Connecting up to 500 or 1000 fixtures

Using a setup with daisy chained splitters, up to 500 fixtures on EL1 and 1000 fixtures on EL2 (over two channels) can be connected as shown in fig. 6.

- Use the controller cable (RJ9 - RJ45, item comes with the controller) to connect the primary channel of the controller to the input port of the first splitter (6A).
- Remove the dummy from the input port of the fixtures .
- ! **Note: Keep the dummy in a safe place! The dummy is necessary to operate the fixture in standalone mode.**
  - Use the interconnect (RJ45 - RJ45) cable supplied to connect the output port of the splitter to the input port of the first fixture (6C).
  - Use the supplied interconnect cable to connect the output port of the first fixture to the input port of the second (6D).
  - Repeat these steps to connect up to 100 fixtures per splitter output port (6E). Up to 500 fixtures can be connected to the primary channel.
  - Snap-on two ferrite cores on the interconnect cable close to the plugs.
  - Use the interconnect cables to connect the outport of a splitter to the inport of the next (6B).
  - Use the black secondary channel (item comes with controller) (6G) to connect another 500 fixtures, in the same way the fixtures are connected to the primary channel.

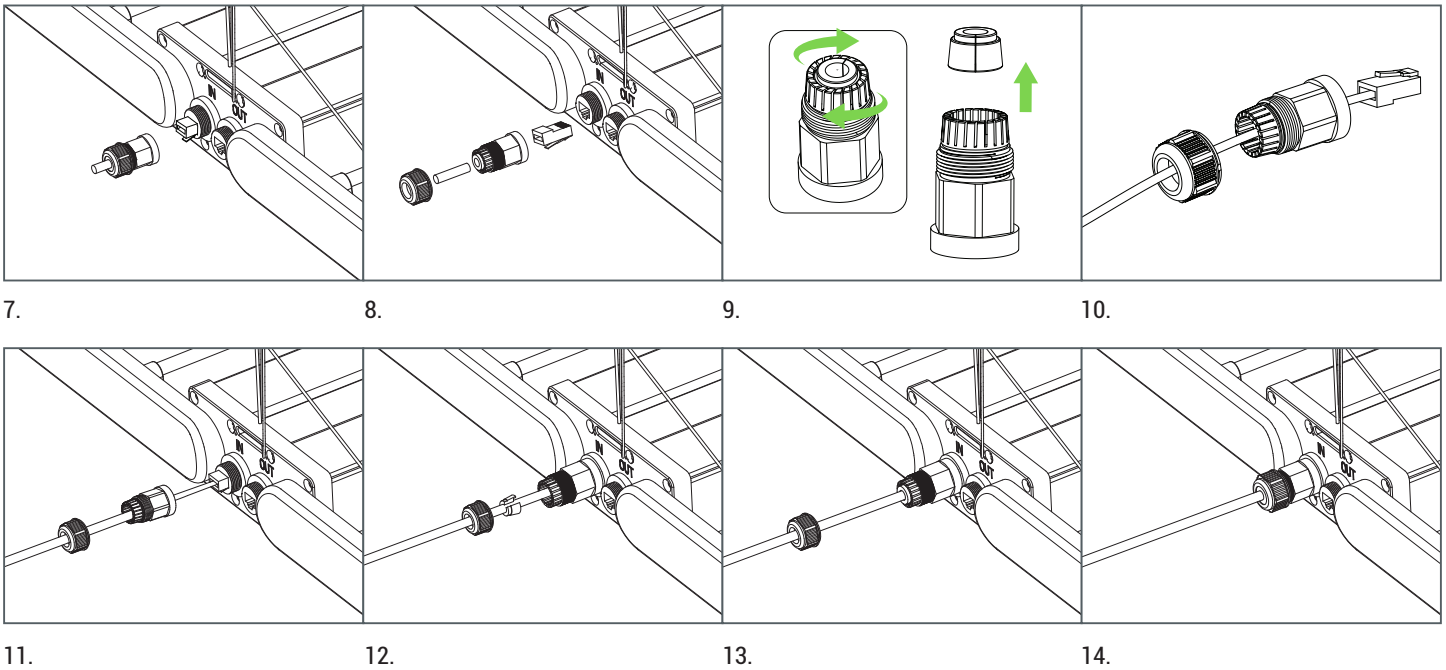
- ⚠ **Warning! Distribute number of fixtures evenly over daisy chains.**
- ⚠ **Warning! Ensure the ambedded adapter connections are integrated in a correctly set up installation for best results.**
- ⚠ **Warning! Boosters should never be used to expand.**
- ⚠ **Warning! The maximum cable length per splitter is 250m (100 interconnect cables).**



6.

#### 8.4 Daisy Chaining - Watertight Interconnections

- Remove the protective cable gland from the RJ45 "IN" port (fig. 7).
- Remove dummy plug from RJ45 "IN" port (fig. 8).
- Undo the rear nut of the protective cable gland and pull out the rubber seal (fig. 9).
- Slide cable through the securing nut and the gland covering (fig. 10).
- Plug the interconnect cable into the RJ45 "IN" port (fig. 11).
- Place the rubber seal on the wire between the securing nut and gland covering, then press into the protective gland (fig. 12).
- Tighten the securing nut onto the gland cover to create a watertight seal (fig. 13 & 14).
- Repeat steps above for all IO ports in the daisy chain.



#### 8.5 Utilizing a 3rd Party Controller\*

Follow the sample steps in section 8.3

For configuration of interconnect cables, see section 9.4.

\*This fixture is intended to be used with the Gavita e-Series controller platform. Compatibility with third party controllers is not guaranteed.

#### 8.6 Troubleshooting: Removal of External Control (Controller || Dummy Plug Failure)

Scenario: External controller or dummy plug malfunctions or is removed from the RJ45 "IN" port.

- The LED fixture will default to OFF. This will prevent the fixture from accidentally turning on due to a wiring issue or system failure.
- The LED fixture can be turned back on by the dimming button when there is no external control.

#### 8.7 Troubleshooting: Breaker || Contactor Panel Control

Scenario: Customer utilizes a breaker or contactor panel for line voltage operation.

- Dummy plug or external control must be connected to RJ45 "IN" port on the first fixture.
- If there is no external controller or dummy plug connected to the RJ45 "IN" port, then the LED must manually be turned on after powering the unit.



## 9 Precautions when using the LED fixture

▲ **Warning! Always wait 20 - 30 minutes for the LED fixture to cool down!**

## 10 Inspection, maintenance and repair

▲ **Warning! Disconnect the LED fixture from mains before performing any maintenance.**

▲ **Warning! Do not connect or disconnect the LED fixture under load.**

▲ **Warning! Do not open or disassemble the LED fixture, they contain no serviceable parts inside. Opening the LED fixture can be dangerous and will void the warranty.**

▲ **Warning! Always allow for a cool down period of at least 30 minutes before touching the LED fixture.**

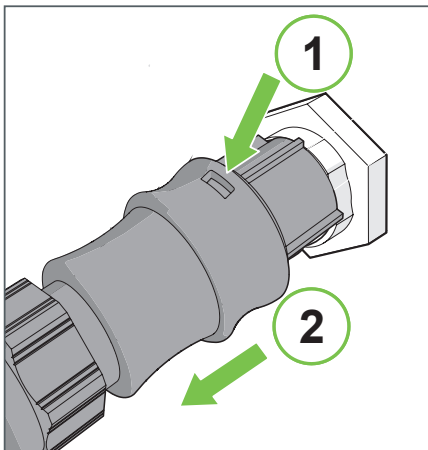
▲ **Caution! Do not clean the LED fixture with detergents, abrasives or other aggressive substances.**

- Regularly check the LED fixture for dust or dirt buildup. Clean if necessary. Contamination may cause overheating and decreased performance. Clean the outside of the LED fixture using a dry or damp cloth.
- Regularly check the cables of the LED fixture to ensure they are undamaged.

### 10.1 How to disconnect the Wieland RST20i3 plug

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

- Switch off mains power.
- Press the pin on the Wieland RST20i3 male connection downwards and pull the Wieland RST20i3 female connection from the fixture (fig. 15)



15.

## 11 Storage and disposal

- Store the LED fixture in a dry and clean environment, with an ambient temperature of -20~85° C.
- 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.

## 12 Warranty service

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 Sun System RS 1850 LED fixture to your shop with the original sales receipt.

*PLEASE NOTE: greater than 15% of the diodes must be non-functional before the unit can be considered defective.*

See [sunsystemlights.eu/warranty](http://sunsystemlights.eu/warranty) for more information

Manual: Sun System RS 1850 LED EU  
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