



# **LumiStar<sup>®</sup>1000<sup>™</sup> LED**

## **Installation and Operating Instructions**

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## **1.00 Warranty**

L. J. Star warrants its LumiStar1000 LED Luminaires against defects in material and workmanship for a period of eighteen months from the date of shipment. L. J. Star will, at its option, repair or replace those products that fail to perform as specified with the following exceptions.

### **1.10 Exceptions**

Luminaires that have been opened. These luminaires are sealed products and opening of the light housing will void any warranty of the product, expressed or implied.

Luminaires that have been subject to misuse, mishandling, misapplication, neglect (including, but not limited to improper maintenance), accident, or improper installation.

Luminaires that have been modified (including, but not limited to use of unauthorized parts or attachments), adjusted, or repaired by persons not authorized by L. J. Star.

### **1.20 Provisions**

L. J. Star's responsibility hereunder is limited to repairing or replacing the product at its expense. L. J. Star shall not be liable for loss, damage, or expense directly or indirectly related to the installation or use of its products, or from any other cause or for consequential damages. It is expressly understood that L. J. Star is not responsible for damage or injury caused to other products, building, property or persons by reason of the installation or use of its products.

This warranty is in lieu of any other warranty expressed or implied by any party other than L. J. Star. Repairs and/or replacements shall be at the sole discretion of L. J. Star based upon the terms and conditions.

## **2.00 Introduction**

### **2.10 Important Note on Application**

Sight glass luminaires are intended solely for mounting on sight glass fittings. Under no circumstances should these luminaires be used for sealing vessel openings. An appropriate sight glass fitting must be used at all times.

Luminaires must always be installed, connected, and serviced by persons who have been specially trained and authorized to do said work.

### **2.20 General Operating Conditions**

Independent of internal pressure/vacuum in the vessel, LumiStar1000 LED luminaires are approved for use in ambient temperatures from -40°C up to +80°C at the cable entry. For use in non-hazardous areas.

For use in non-hazardous locations only.

### 2.30 Notes Regarding Approvals

LumiStar1000 LED Luminaires can carry ETL listings and/or CE compliance depending on the unit configuration that is purchased:

- ETL listing applies to all lights with standard cable connections. All voltages permitted.
- ETL listing **does not** apply to any lights using an M12 connector and cable.
- CE compliance applies to all 12-24V lights regardless of cable connection style.
- CE compliance **does not** apply to any 110-240V lights.

## 3.00 Mechanical Installation

### 3.10 Sight Glass Types and Sizes Suitable for Mounting

- Circular weld-on sight glass fitting to DIN 28120: size DN 50 (3" view diameter) and larger
- Circular ANSI bolt-on sight window: size 2" and larger
- Visual flow indicators: size 1" and larger
- Circular weld-neck sight glass fitting series MV: size DN 50 and larger  
DN50 and DN65 require flange adapter
- Sanitary clamp connection series MetaClamp: size 1" and larger

### 3.20 Mechanical Installation – USL13

#### 3.21 Mounting using Hinged Bracket

The mounting bracket is supplied with the LumiStar1000 LED USL13 luminaire. Fix bracket to a blind hole drilled and tapped on the cover flange of the sight glass using supplied M6 screw.

#### 3.22 Mounting using Flange Adapter

Flange adapter mounting is required for DIN 11851 units in sizes DN50 and DN65.

Adapter fits under the slotted cover nut of DIN 11851 unit. Place gasket between adapter and glass. Tighten slotted cover nut. Place LumiStar1000 into adapter sleeve. Tighten set screws to secure.

### 3.30 Mechanical Installation – USL33

The LumiStar1000 LED USL33 luminaire is designed for mounting to a circular male upstand on the cover flange of a sight glass. This is commonly achieved using a Metaclamp Type 80 USL33. An O-ring provides a seal to the sight glass.

### 3.31 Assembly to Sight Glass

Verify O-ring is in place on male circular upstand on sight glass. Place LumiStar1000 body (lens side) over upstand. Tighten set screws to secure.

Sight glass assembly to vessel per manufacturer instruction.

## 4.00 Electrical Installation

### 4.10 Supply Requirements

Low Voltage: 12-24V (AC or DC)

High Voltage: 110-220V AC

Power: 12W

### 4.11 Notes

CE compliance is achieved only with use of power supply components pursuant to the EMC directive (2014/30/EU) and, if applicable, the Low Voltage Directive (2014/35/EU).

CE compliance is only applicable to 12-24V lights.

**Recommended** - Electrical Isolation - Connect supply to separate branch circuit to avoid potential interference from adjacent equipment.

### 4.20 Electrical Connection

#### WARNING

**ELECTRICAL CONNECTIONS MUST BE MADE WITH NO POWER SUPPLIED TO LIGHT. FAILURE TO DO SO COULD RESULT IN PERSONAL INJURY AND/OR PROPERTY DAMAGE.**

### 4.21 Standard Electrical Connection - 12-24V

- Equipped with a factory mounted cable gland. Supplied with a 3-meter power cable.
- Connect free wires per guide below (Table 4.1).
- Unit is internally wired ready for operation.

**Table 4.1: Wiring Table for 12-24V Lights with Standard Cable Connection**

	Red	Black	Green/Bare
<b>12-24V AC/DC</b>	+Vin	-Vin	GND

#### 4.22 Standard Electrical Connection - 110-240V

- Equipped with a factory mounted cable gland. Supplied with a 3-meter power cable.
- Connect free wires per guide below (Table 4.2).
- Unit is internally wired ready for operation.

**Table 4.2: Wiring Table for 110-240V Lights with Standard Cable Connection**

	<b>Black</b>	<b>White</b>	<b>Green/Yellow</b>
<b>110-240V AC</b>	Line	Neutral	GND

#### 4.22 M12 Connector Option

- 5-pin M12 connector cable (3-meter length) is supplied with Luminaire. 24V light is supplied with A-type cable. 110-240V light is supplied with B-type cable.
- Connect cable to light. Connect free wires per chart below (Table 4.3).
- Unit is internally wired ready for operation.

**Table 4.3: Wiring Table for M12 Connector Lights**

	<b>Brown</b>	<b>Blue</b>	<b>Gray/Green</b>	<b>Black</b>	<b>White</b>
<b>24V – External Switch</b>	+Vin	-Vin	GND	Ext. Switch	Ext. Switch
<b>24V – No External Switch</b>	+Vin	-Vin	GND	Connect to White	Connect to Black
<b>110-240V – External Switch</b>	Ext. Switch	Ext. Switch	GND	Line	Neutral
<b>110-240V – No External Switch</b>	Connect to Blue	Connect to Brown	GND	Line	Neutral

## **5.00 Operation**

### **5.10 Direct Operation**

The below instructions apply to LED luminaires with cables that are not directly coupled to a switch.

- The LED luminaire will turn on and remain on while power is supplied.
- When power is removed, the LED luminaire will turn off and remain off.
- Control power supplied to light using an external switch.

### **5.20 Button Operation**

The below instructions apply to LED luminaires with a button on the light housing and/or equipped with an M12 connector cable that is connected to an external switch/button. The button controls light operation in the following manner:

- One Button Press: 2-minute on time. Light will turn on for 2 minutes and then turn off. A second button press during the 2-minute time interval will shut the light off.
- Two Rapid Presses: 30 minute on-time. Light will turn on for 30 minutes and then turn off. An additional press during the 30-minute time interval will shut the light off.
- Three Rapid Presses: Activates dimmer mode. The light will dim by 10% for every additional button press until 10% output is reached. When light output reaches 10% of maximum, each press of the button will increase output by 10% until maximum output is reached.
- Press and Hold: Switch becomes momentary. The light will turn on and remain on while the button is pressed. When the button is released, the light will turn off and remain off.

## **6.00 Safety**

- Do not look directly into light source – risk of eyesight damage.
- Use caution when touching housing body as heat is generated during operation.

## **7.00 Maintenance**

- Keep luminaire clean and free of dust.
- Inspect luminaire for damage to glass.
- Inspect luminaire for inadequate sealing, shown by moisture buildup on the interior of the lens.
- Allow luminaire to cool prior to performing washdown procedures. Failure to do so presents a risk of water intrusion due to induced vacuum from sudden cooling of the interior of the luminaire.
- Do not open the luminaire to perform service. In the event of a malfunction, please contact L. J. Star to coordinate service.