



**NOTE**

All numerical values are in metric units [with U.S. customary units in brackets]. Dimensions are in millimeters. Unless otherwise specified, dimensions have a tolerance of  $\pm 0.13$  [ $\pm .005$ ] and angles have a tolerance of  $\pm 2^\circ$ . Figures and illustrations are for identification only and are not drawn to scale.

## 1. INTRODUCTION

This specification covers the requirements for application of solderless LED socket (type BR). This socket provides a solderless electrical connection and mounting solution for a Bridgelux RS series LED. The LED snaps into the socket and can accept a standard Ledil Britney series reflector. The socket provides poke-in termination and strain relief features to ensure that wire movement does not affect the quality of the connection.

The socket has a keyed opening for aligning and retaining the LED. LED polarity indicators that correspond to each wire entrance hole are embossed on the top of the socket for proper wire connection. Clearance in the socket opening allows for reflector attachment. The socket has screw holes that accommodate No. 4 or M3 customer-supplied screws for mounting the socket to a heat sink and polarization pins for positioning the socket on the heat sink. The two poke-in contacts each accept a wire that can then be dressed through the socket strain relief.

When corresponding with personnel, use the terminology provided in this specification to facilitate your inquiries for information. Basic terms and features of this product are provided in Figure 1.

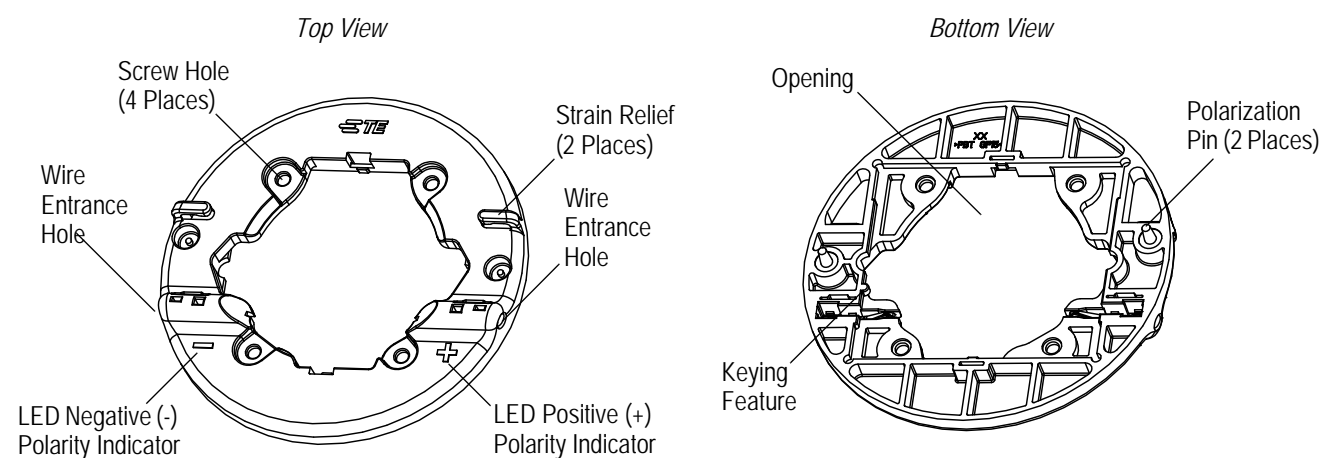


Figure 1

## 2. REFERENCE MATERIAL

### 2.1. Revision Summary

Revisions to this application specification include:

- Added socket features to Section 1 and Figure 1 and chemical list to Paragraph 3.2,B
- Changed illustrations in Figures 1, 4, and 5, and re-arranged order of paragraphs in Section 3
- Replaced information for TIM with reference to Ledil instructions, and added tool to Section 5

### 2.2. Customer Assistance

Reference Product Base Part Number 2154455 and Product Code L836 are representative of solderless LED socket (type BR). Use of these numbers will identify the product line and help you to obtain product and tooling information. Such information can be obtained through a local Representative, by visiting our website at [www.te.com](http://www.te.com), or by calling PRODUCT INFORMATION or the TOOLING ASSISTANCE CENTER at the numbers at the bottom of this page.

Bridgelux is a trademark.

## 2.3. Drawings

Customer Drawings for product part numbers are available from the service network. If there is a conflict between the information contained in the Customer Drawings and this specification or with any other technical documentation supplied, the information contained in the Customer Drawings takes priority.

## 2.4. Specifications

Design Objective 108-2466 provides expected product performance and test information.

## 3. REQUIREMENTS

### 3.1. Safety

Do not stack product shipping containers so high that the containers buckle or deform.

### 3.2. Storage

#### A. Shelf Life

The socket should remain in the shipping containers until ready for use to prevent deformation. The socket should be used on a first in, first out basis to avoid storage contamination.

#### B. Chemical Exposure

Do not store sockets near any chemicals listed below as they may cause stress corrosion cracking.

Alkalies	Ammonia	Citrates	Phosphates	Citrates	Sulfur Compounds
Amines	Carbonates	Nitrites	Sulfur Nitrites		Tartrates

### 3.3. Wire Selection and Preparation

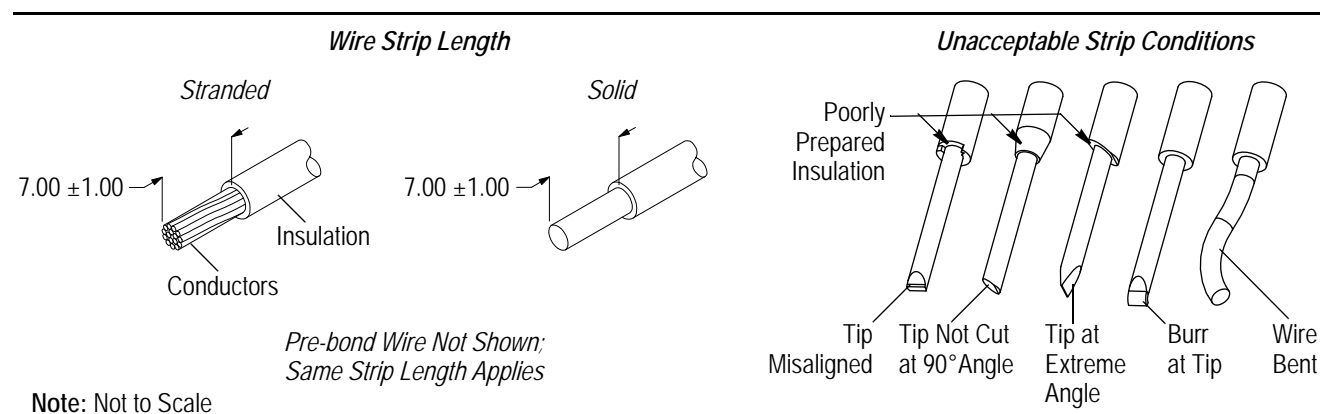
The socket accepts stranded, solid, and pre-bond copper wire sizes given in Figure 2 with a maximum insulation diameter of 2.10. Stranded wire must have 16 strands and pre-bond wire must have 16 strands or less.



#### NOTE

When preparing stranded wire, it is recommended NOT to twist the strands after stripping the insulation. The stranded wire will insert best if the strands are straight (or slightly twisted).

The wire must be stripped within the dimension given in Figure 2.



WIRE SIZE	WIRE TYPE	UNDERWRITERS LABORATORIES (UL) APPLIANCE WIRING MATERIAL (AWM) STYLE
22 AWG	Solid	UL 1007-22
20 AWG	Pre-bond	UL 1007-20 (7)
18 AWG	Solid	UL 1007-18
	Stranded, Pre-bond	UL 1007-18 (16)
0.75 mm <sup>2</sup> , 0.50 mm <sup>2</sup>	Solid	—

Figure 2

### 3.4. Mounting Hole Pattern

The recommended mounting hole pattern for the heat sink is given in Figure 3.



#### NOTE

Transfer Punch Guide Kit 2154454-1 is available for accurately marking mounting hole drill locations. The kit includes a molded guide and transfer punch. The guide should be clamped down to reduce movement during transfer punch striking. All six hole locations should be marked by striking the transfer punch with a hammer. The guide must be removed from the heat sink before drilling the mounting holes. Refer to Figure 3.

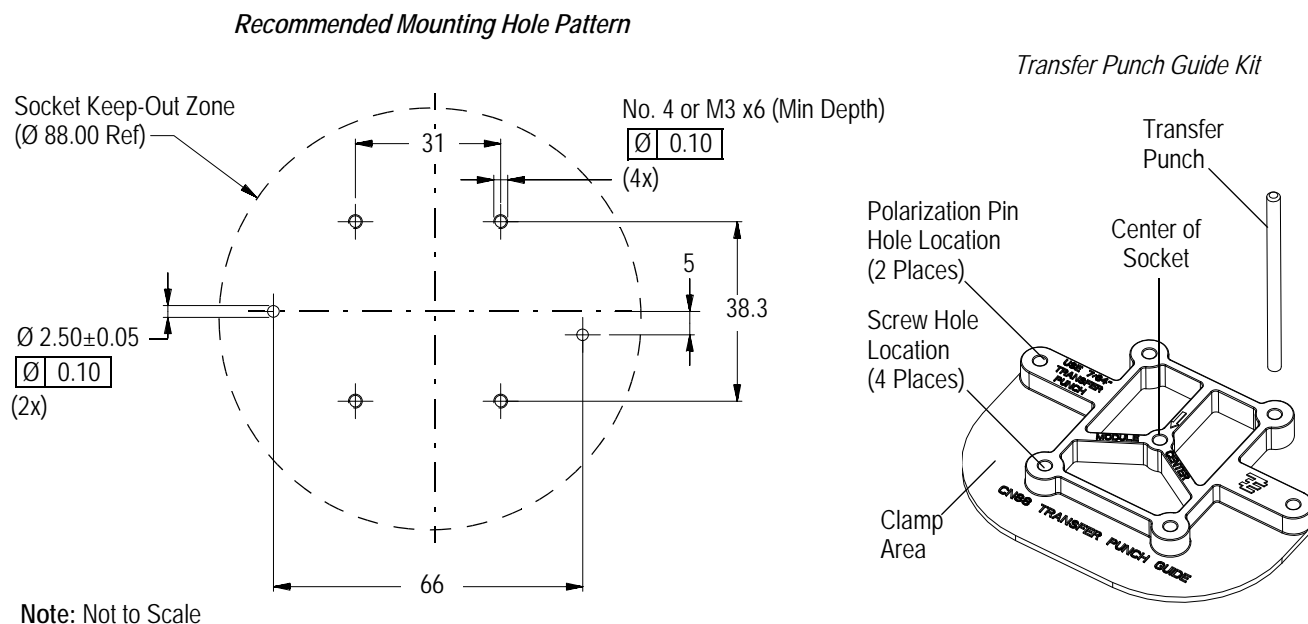


Figure 3

### 3.5. Installation

The LED must be installed onto the socket and the socket must be mounted onto the heat sink according to the following.

1. The keying feature of the LED must be aligned with the keying feature of the socket (located along the inside of the opening), then the LED must be positioned in the socket opening. See Figure 4, Detail A.
2. A thermal interface material (TIM) having a maximum thickness of 0.4 must be applied to the LED according to instructions provided by Ledil.
3. The socket must be placed, bottom side first, onto the heat sink so that the orientation pin and screw holes align with the mounting holes in the heat sink. The socket must be secured to the heat sink using 4 customer-supplied No. 4 or M3 x 6 (minimum length) screws. It is recommended to tighten the screws to a torque from 0.28 to 0.45 Nm [2.5 to 4.0 in.-lb]. See Figure 4, Detail B.



#### CAUTION

To protect against corrosion, screws from ferrous metals (other than stainless steel) should be zinc plated or have an equivalent protective coating. Button head screws are recommended. Flat head screws are NOT recommended.



#### CAUTION

Care must be taken not to damage the LED with the tool used to tighten the screws.

4. The LED polarity indicators must be observed when connecting the wires. Each wire must be pushed firmly inside its wire entrance hole using a maximum angle of 20 degrees until it is bottomed in the socket. After insertion, the wire and socket must meet the following requirements. See Figure 4, Detail C.



#### CAUTION

The socket must not be damaged in any way. The contacts must not be bent. There shall be no broken, bent, or exposed conductor strands.

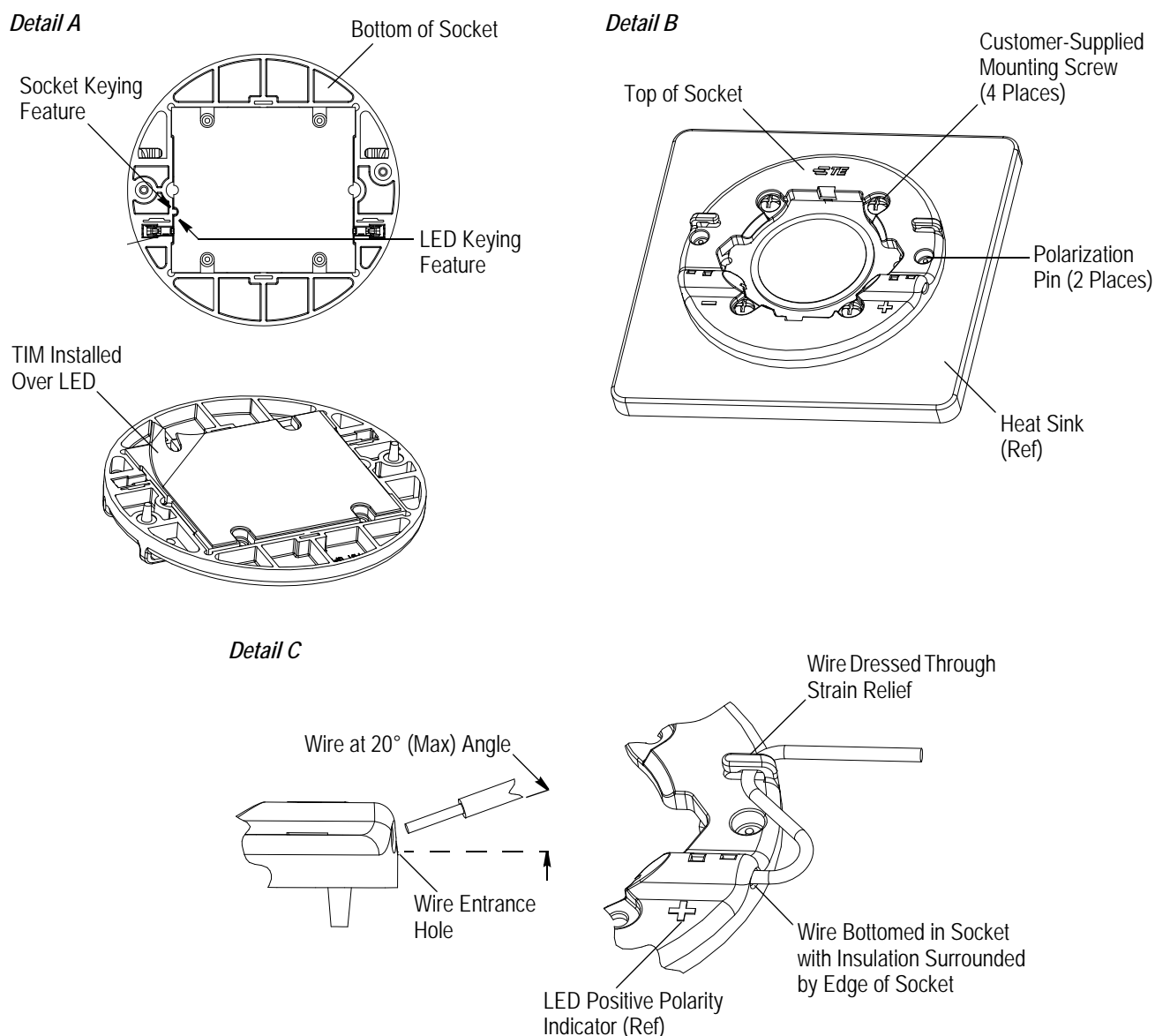


Figure 4

- The wire insulation must be surrounded by the edge of the socket.
- Each wire should be dressed through its strain relief.

5. The reflector can be installed onto the socket according to instructions provided by Ledil.

### 3.6. Replacement and Repair

Damaged or defective product must not be used.

## 4. QUALIFICATIONS

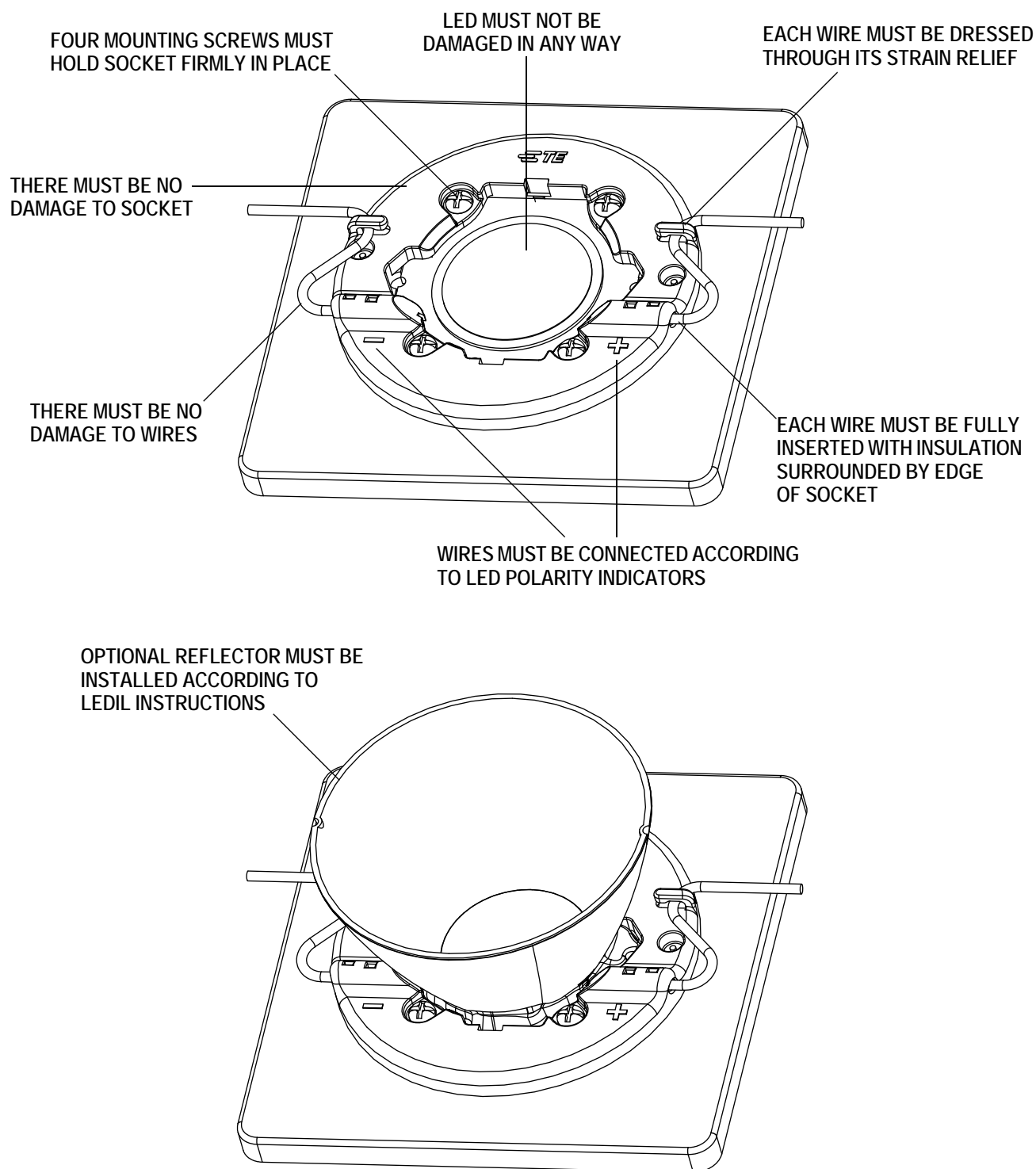
The solderless LED socket (type BR) is International Recognized by Underwriters Laboratories Inc. (UL)/CSA under File E 28476 (Volume 10, Section 13).

## 5. TOOLING

A torque driver must be used to properly tighten the screws that mount the socket to the heat sink.

## 6. VISUAL AID

The illustration below shows a typical application of solderless LED socket (type BR). This illustration should be used by production personnel to ensure a correctly applied product. Applications which DO NOT appear correct should be inspected using the information in the preceding pages of this specification and in the instructional material shipped with the product or tooling.



**FIGURE 5. VISUAL AID**