



**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  $\pm 0.13$  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 LUMAWISE Z50 high-performance LED holder. The LED holder allows direct attachment of the LED to a cooling device using two customer-supplied mounting screws and provides poke-in termination to electrically connect the LED. The LED holder is available in two types, differentiated by the size of the LED clamping area: 2828 (28x27.60) and 2727 (27.35x26.95).

Each LED holder features an LED clamping area with two LED clamping springs, two wire entrance holes, two poke-in contacts (one per wire entrance hole), and two screw holes that each accept a screw for mounting the holder. The screw holes allow countersunk screws to provide a flat optic landing zone on the LED holder. The clamping area accepts the LED, and embossed LED minus (-) and positive (+) polarity indicators on the top and bottom of the LED holder indicate orientation of the LED. A wire strip length guide embossed on the bottom of the LED holder can be used to measure the strip length of the wire.

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

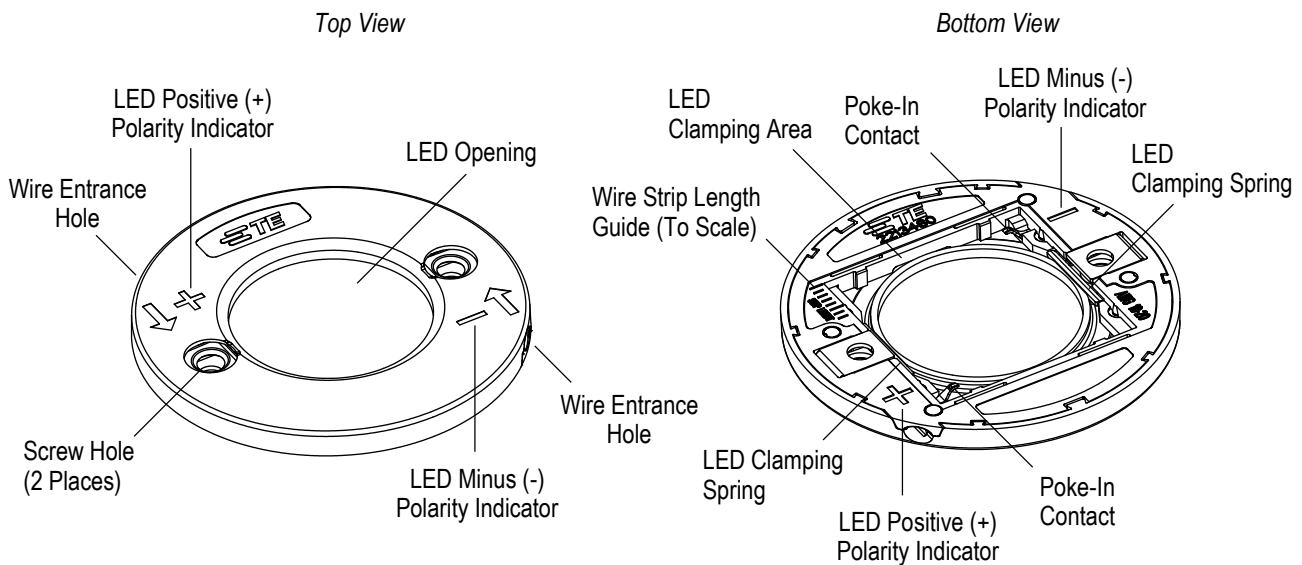


Figure 1

**2. REFERENCE MATERIAL**

**2.1. Revision Summary**

Initial release of application specification

**2.2. Customer Assistance**

Reference Product Base Part Number 2213480 and Product Code L836 are representative of LUMAWISE Z50 high-performance LED holder. 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.

### 2.3. Drawings

Customer Drawings for product part numbers are available from [www.te.com](http://www.te.com). If there is a conflict between the information contained in the Customer Drawings and this specification or with any other technical documentation supplied, call PRODUCT INFORMATION at the number at the bottom of page 1.

### 2.4. Specifications

Product Specification [108-133018](#) provides expected product performance and test information.

### 2.5. Instructional Material

Instruction Sheets (408-series) provide product assembly instructions. There are no instruction sheets available that pertain to this product.

## 3. REQUIREMENTS

### 3.1. Safety

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

It is recommended using the LED holder (in combination with the LED) with low-voltage low energy circuits supplied from a class 2 or low-voltage limited energy (LVLE) power source.

### 3.2. Storage

The LED holders should remain in the shipping containers until ready for use to prevent deformation to the contacts. The LED holders should be used on a first in, first out basis to avoid storage contamination that could adversely affect performance.

### 3.3. Wire Selection and Preparation

The LED holder accepts solid wire sizes 20 and 18 AWG with a maximum insulation diameter of 2.3. It is recommended to use Underwriters Laboratories Inc. (UL) Appliance Wiring Material (AWM) Style 1007 or 1061. The wire must be stripped within the dimensions provided in Figure 2.



**CAUTION**

*The wire conductor must not be nicked, cut, or scrapped during or after the stripping operation.*

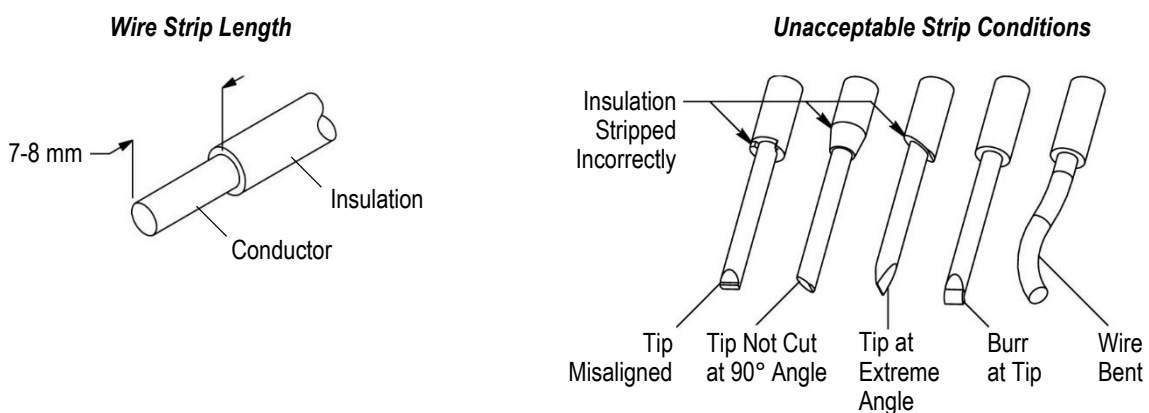


Figure 2

### 3.4. Customer-Supplied Mounting Screws

The mounting screws must be a minimum size of M3 or No. 4-40 with a minimum length of 6. It is recommended using screws having a head shape as the ones given in Figure 4.



**NOTE**

In order to create a flat optic landing zone on the LED holder, countersunk screws must be used.

#### Acceptable Mounting Screws

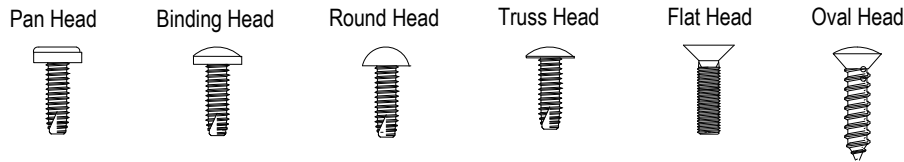


Figure 3

### 3.5. LED

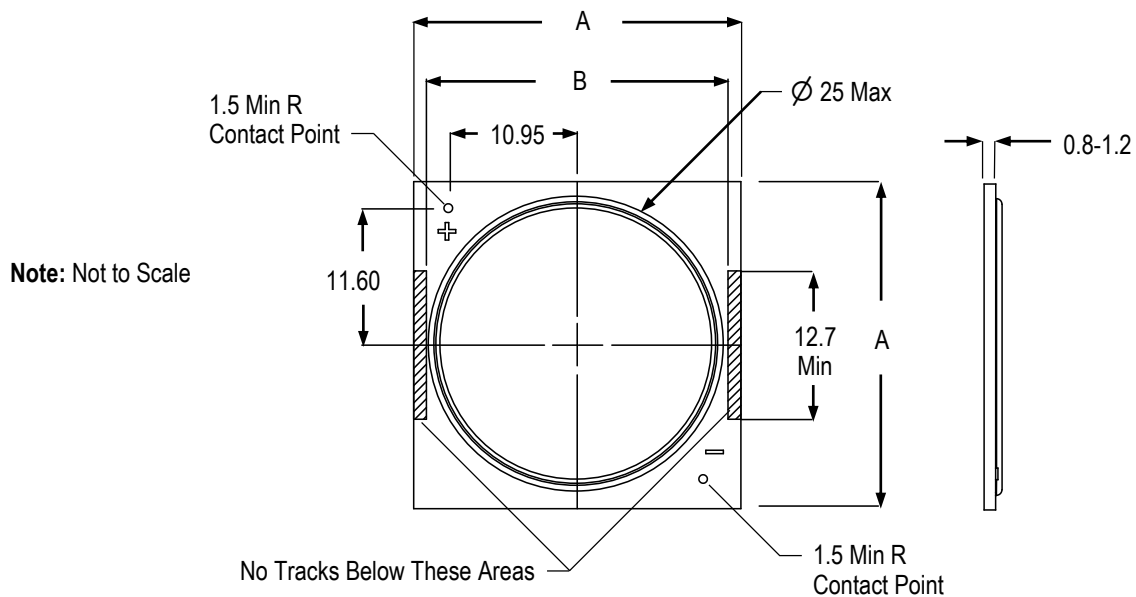
The LED holder will accept an LED with nominal dimensions given in Figure 4.



**NOTE**

For technical details about a match for a specific LED chips on board (COB) array, call *PRODUCT INFORMATION* at the number at the bottom of page 1.

#### LED Nominal Dimensions



Note: Not to Scale

LED HOLDER TYPE	DIMENSION	
	A	B
2828	27.7-28.3	25.8 Min
2727	27.15-27.55	27.5-28.00 Nominal

Figure 4

### 3.6. Cooling Device

The cooling device must be clean and flat with no crowns or peaks in the mounting area. The recommended mounting hole pattern is given in Figure 4.

After the holes are drilled and tapped, the surface must be cleaned with isopropyl alcohol. It is recommended to install a thermal interface material (TIM) onto the LED area of the cooling device. For optimal selection of the TIM, the physical behavior at extreme temperature, mechanical versus thermal performance, heat sink choice and quality, and thermal requirements from the LED manufacturer must be considered.

#### Recommended Drilling Hole Pattern

Note: Not to Scale

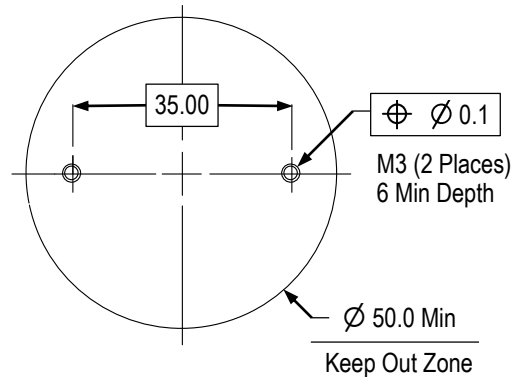


Figure 5

### 3.7. Assembly



#### CAUTION

The LED holder is designed for use in a ventilated environment that allows volatile organic compound (VOC) escaping. To avoid damage to the LED, reflection of LED light from a diffuser directly onto the surface of the LED holder must be prevented as much as possible.

1. The LED must be positioned in the LED clamping area of the LED holder so that the edges are against the LED clamping springs. The LED polarity indicators must be observed when orienting the LED into the clamping area. See Figure 6, Detail A. When inserted, the LED must be held in place by the LED clamping springs. See Figure 6, Detail B.



#### CAUTION

To avoid damage to the LED, the LED must be properly positioned and seated in the LED holder. If not, the LED could crack when mounting the LED holder to the cooling device.

2. The bottom side of the LED holder must be placed on the cooling device so that the screws holes align over the holes in the cooling device. The LED holder must be secured to the cooling device using two customer-supplied mounting screws meeting the requirements given in Paragraph 3.4. See Figure 6, Detail C.

The initial downward force per clamp for each mounting screw must be between 0.3 Nm [2.66 in.-lb.] (> 40 psi [2.81 kg/cm]) and 0.8 Nm [7.08 in.-lb.] (> 120 psi [8.44 kg/cm]).

3. The stripped end of each wire must be inserted into a wire entrance hole of the LED holder until it bottoms. See Figure 6, Detail D. The conductor must not be visible.

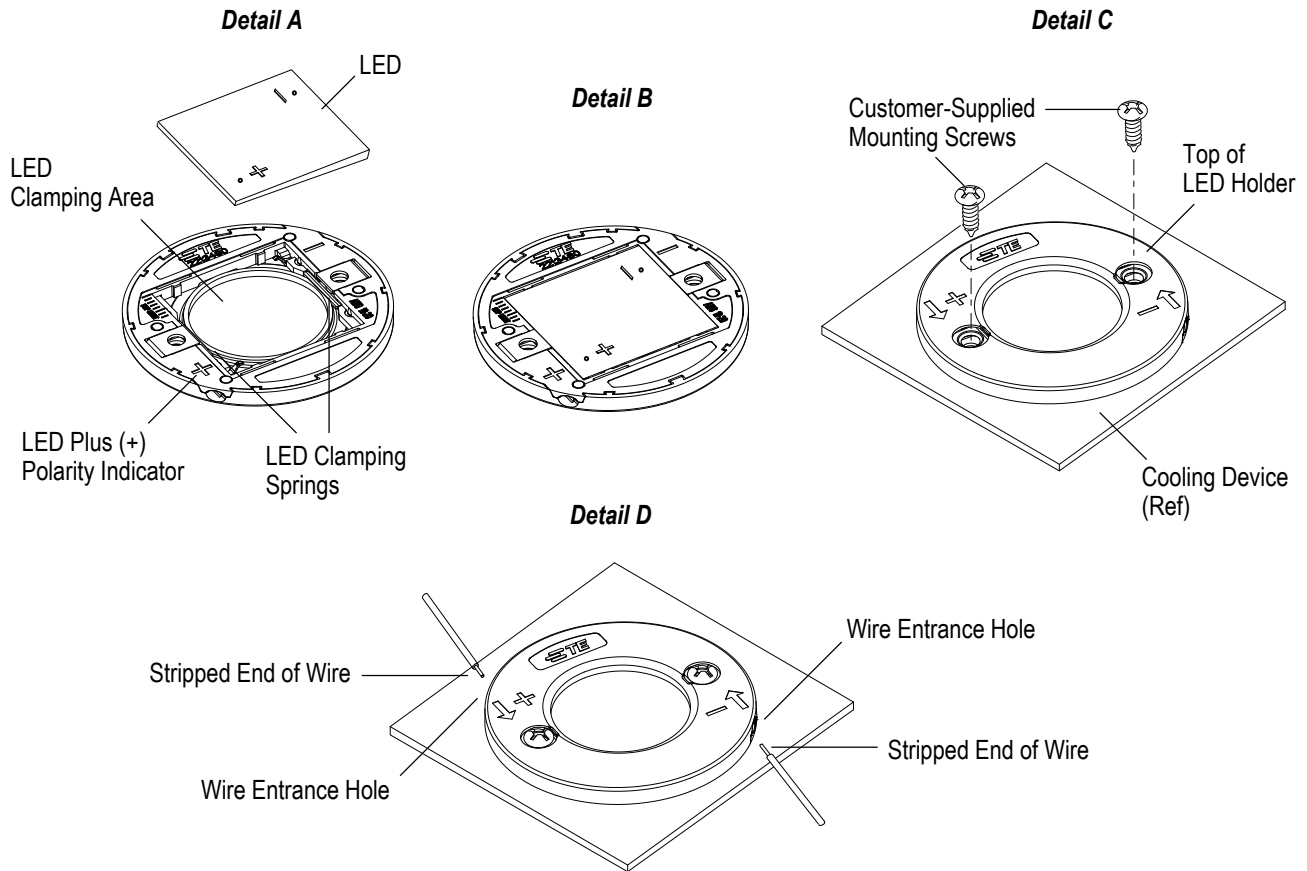


Figure 6

### 3.8. Removal

The LED holder can be removed from the cooling device by removing the customer-supplied mounting screws.

### 3.9. Replacement and Repair

Defective or damaged LED holders must not be used. After the LED is replaced one time, the LED holder must not be used again.

## 4. QUALIFICATION

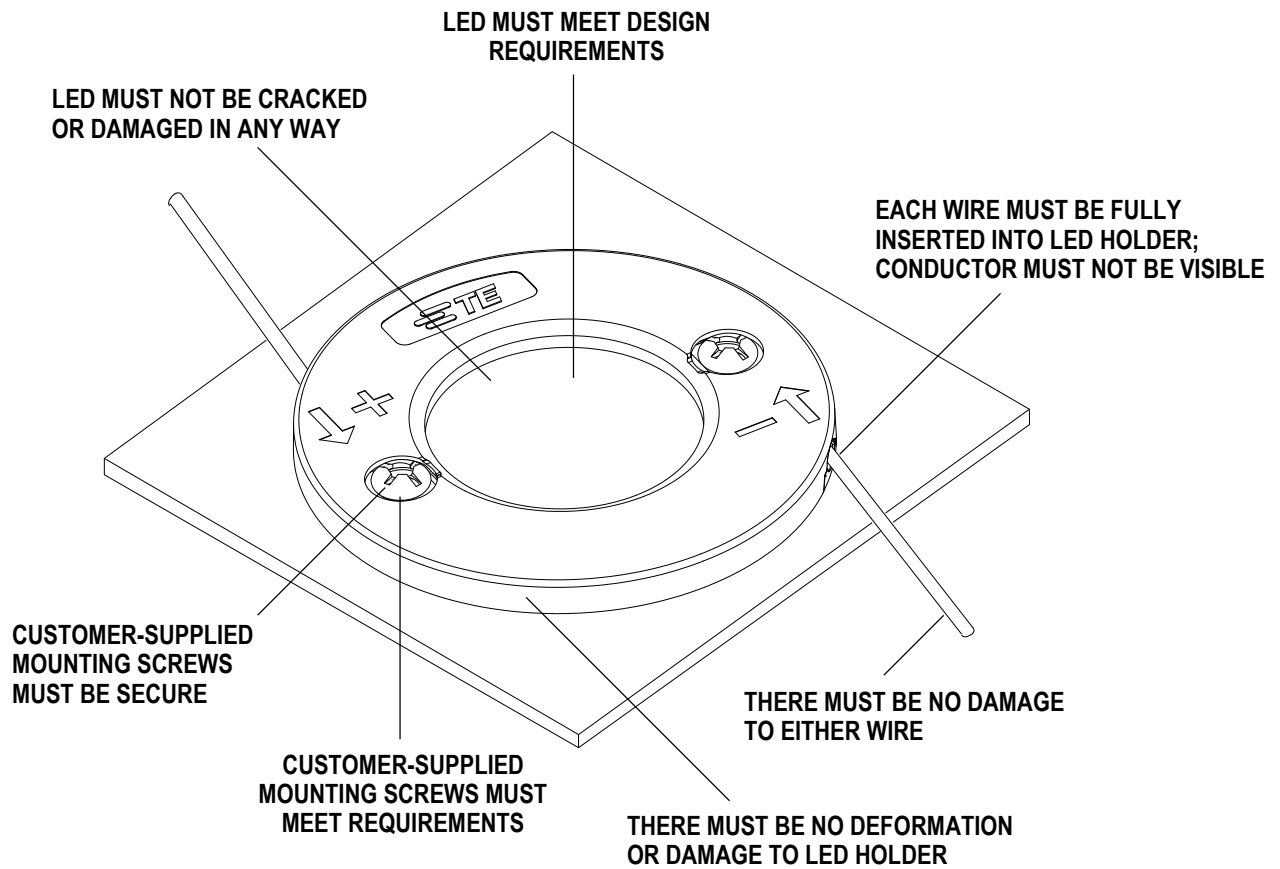
LUMAWISE Z50 high performance LED holder Type 2828 is Recognized by Underwriters Laboratories Inc. (UL) in File E469276.

## 5. TOOLING

A standard screwdriver is required to tighten the customer-supplied mounting screws for mounting the LED holder to the cooling device.

## 6. VISUAL AID

The illustration below shows a typical application of the LUMAWISE Z50 high-performance LED holder. 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 7. VISUAL AID**