NOTE

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

1. INTRODUCTION

This specification covers the requirements for application of High–Power LED Light Socket for AMP LIGHT GUIDES light pipes for use in direct lighting applications (such as office, automotive, communications, and architectural). The light socket is designed to house and provide electrical interconnection and thermal solution for a high–power LED star printed circuit (pc) board light source. The light socket consists of a locking ring, contact carrier subassembly, and heat sink. A thermally–conductive pad (available separately) or thermal grease must be used for assembly. The light socket only accepts AMP LIGHT GUIDES 10–mm light pipe (available separately). The locking ring has an orientation notch, the contact carrier assembly has a square detent, and the heat sink has orientation latches and a square pin — these features ensure proper orientation for assembly.

The light socket is capable of two–contact loading for single–color LEDs and three– or four–contact loading for full–color (RGB) LEDs (common anode or common cathode). Soldering or thermally–conductive adhesive is not required for assembly. This light socket is designed to be used with an Underwriters Laboratories Inc. (UL) Class 2 power supply.

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.

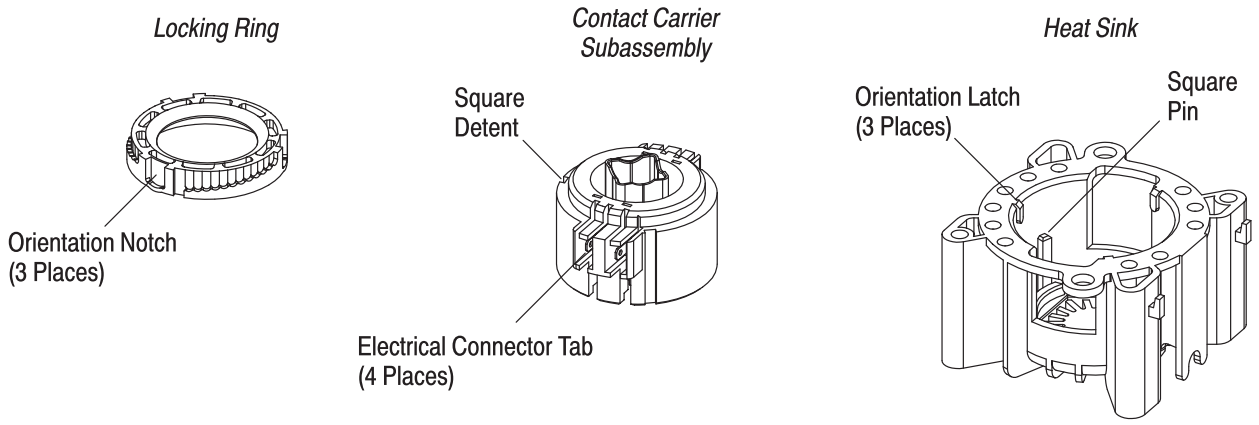

Figure 1

2. REFERENCE MATERIAL

2.1. Revision Summary

Revisions to this application specification include:

- Changed “guide” to “pipe”
- Removed 5–mm light pipe from Section 1
- Added instruction sheet references to Paragraph 2.5
- Changed 3 watts to 4 watts in Paragraph 3.5
- Added C to Paragraph 3.6

2.2. Customer Assistance

Reference Product Base Part Number 2008639 and Product Code L012 are representative of High–Power LED Light Socket for AMP LIGHT GUIDES light pipes. Use of these numbers will identify the product line and expedite your inquiries through a service network established to help you obtain product and tooling information. Such information can be obtained through a local Representative or, after purchase, by calling PRODUCT INFORMATION at the number at the bottom of page 1.

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, call PRODUCT INFORMATION at the number at the bottom of page 1.

2.4. Specifications

Product Specification 108–2348 provides product performance and test information.

2.5. Instructional Material

Instruction Sheets (408–series) provide product assembly instructions or tool setup and operation procedures. Documents available which pertain to this product are:

408–10278 High–Power LED Light Sockets 2008639–[ ] for AMP LIGHT GUIDES Light Pipes
408–10297 AMP LIGHT GUIDES Light Pipes 2058295–[ ] and 2058296–[ ]

3. REQUIREMENTS

3.1. Material

The contact carrier assembly and locking ring are made of polybutylene terephthalate (PBT). The contacts are made of copper alloy plated with tin. The heat sink is made of cast aluminum.

3.2. Safety

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

3.3. Limitations

The light socket is designed to operate in a temperature range of –40° to 85°C [–40° to 185°F].

3.4. Storage

A. Shelf Life

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

B. Chemical Exposure

Do not store the light socket near any chemical listed below as they may cause stress corrosion cracking in the contacts.

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

3.5. Thermal Performance

The thermal performance of the overall system is paramount to the life of the LED. The light socket supports 1 to 4 watts of input to the LED without using forced air cooling or additional heat sink. IT IS IMPORTANT that the thermal management is adequate for the specific LED and lighting fixture used. LEDs with higher wattage rating can be used if forced air cooling or additional heat sink is employed.

3.6. Customer Supplied Components

A. LED

The light socket is compatible with hexagonal “star board” high–power LEDs measuring 19.9 [.783] across the hexagonal flats and having a thickness range of 1 to 2.5 [.040 to .01]. A sample reference star board pattern is shown in Figure 2.

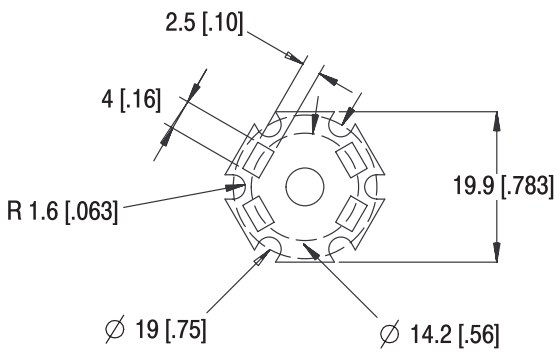

Figure 2

B. Connections

The electrical connector tabs of the light socket accept Ultra–Fast Series 110 fully–insulated FASTON* cable assemblies.

C. Thermally–Conductive Pad or Thermal Grease

A thermally–conductive pad or thermal grease must be used for assembly.

3.7. Assembly

The light socket must be assembled using the following requirements:

1. A thermally–conductive pad or thermal grease must be placed into the hexagonal inset of the heat sink.
2. The star board LED must be installed over the thermally–conductive pad or thermal grease.
3. The contact carrier assembly must be inserted into the heat sink. The square detent of the contact carrier assembly must engage the square pin of the heat sink.
4. The locking ring must be inserted into the heat sink. The orientation notches of the locking ring must engage the orientation latches of the heat sink; then, the locking ring must be rotated using a long–nosed pliers or large snap ring tool with right–angle tips so that it secures the contact carrier assembly.
5. The light pipe must be installed onto the contact carrier assembly. Make sure that the reflector strip is oriented properly (the light is emitted from the side opposite the reflector strip).
6. The receptacles of the cable assemblies must be connected to the electrical connector tabs.

Refer to Figure 3.

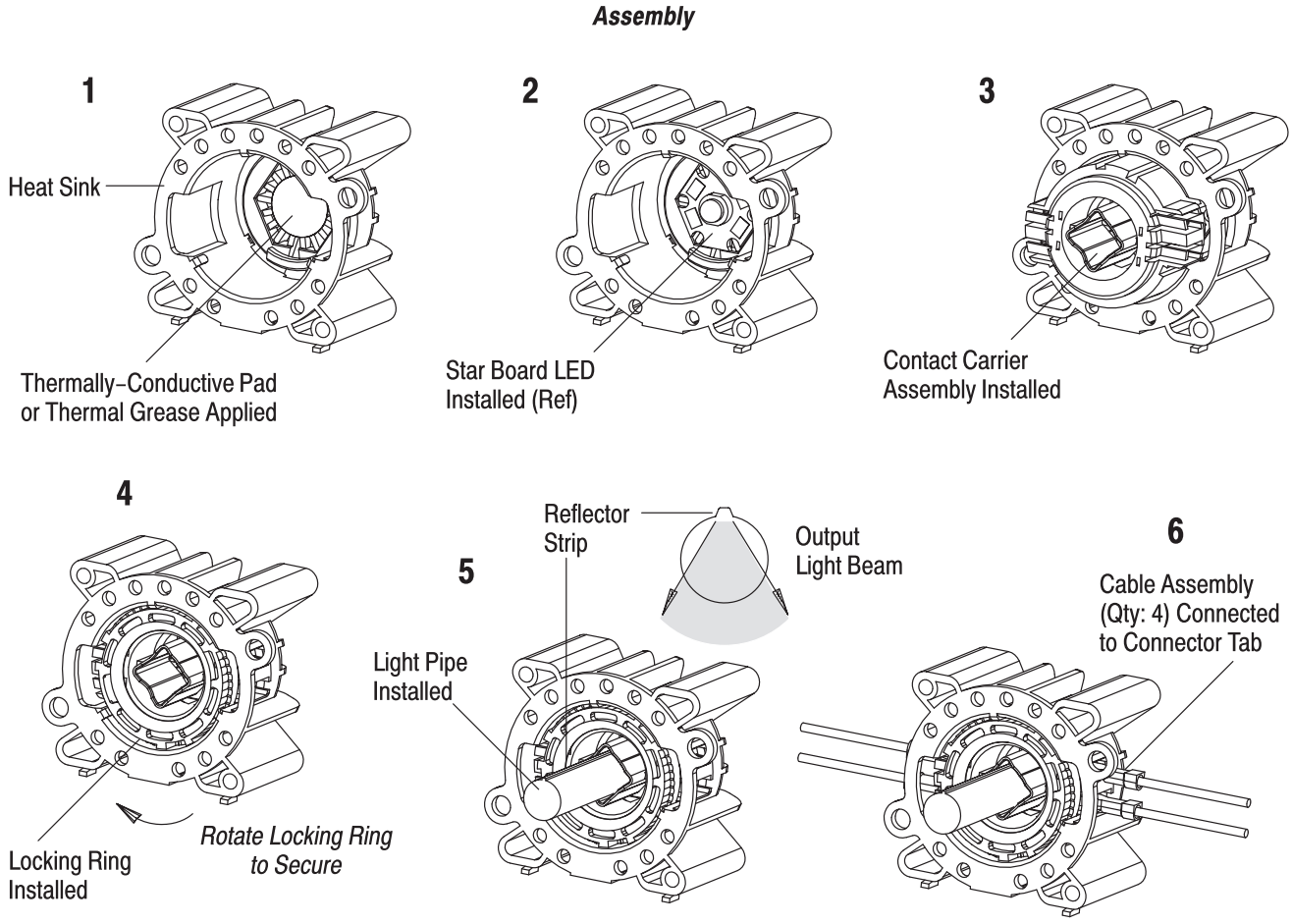

Figure 3

3.8. Replacement and Repair

The light socket is not repairable. Damaged or defective components MUST NOT be used.

4. QUALIFICATION

No qualifying support for High–Power LED Light Socket for AMP LIGHT GUIDES light pipes was defined at the time of publication of this document.

5. TOOLING

A long–nosed pliers or a large snap ring tool with right–angle tips to install the locking ring.

6. VISUAL AID

The illustration below shows a typical application of High–Power LED Light Socket for AMP LIGHT GUIDES light pipes. 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.

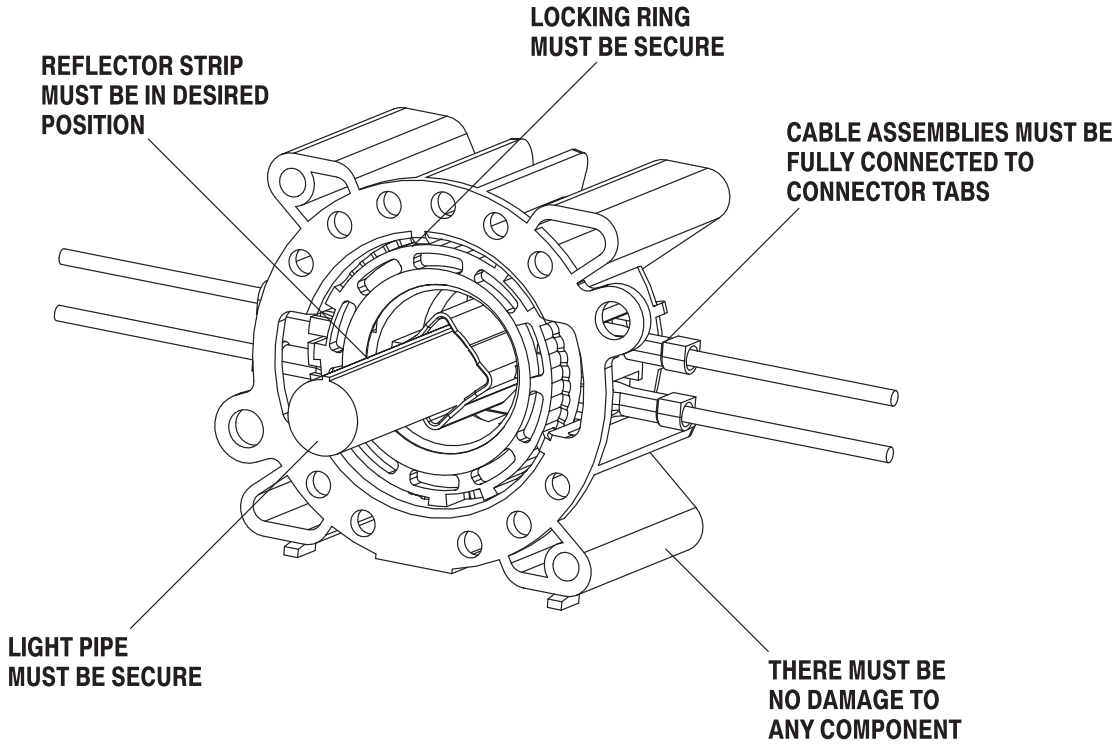

FIGURE 4. VISUAL AID