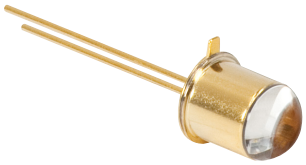
LED with Ball Lens, 405 nm

LED405L



Description

The LED405L is an InGaN LED mounted in a hermetically sealed TO-18 package with a spherical glass lens. It is designed for a relatively narrow viewing angle.

Specifications

Absolute Max Ratings	
Specification	**Max**
Reverse Voltage	5 V
DC Forward Current	30 mA
Pulsed Forward Current[a]	100 mA
Operating Case Temperature	-30 to 85 °C
Storage Temperature	-30 to 100 °C

Specifications[b]			
	Min	**Typical**	**Max**
Operating Current (Continuous)	-	20 mA	30 mA
Forward Voltage at 20 mA	-	3.5 V	4 V
Optical Output Power at 20 mA	-	6 mW	-
Viewing Half Angle	-	17°	-
Peak Wavelength	395 nm	405 nm	415 nm
Bandwidth (FWHM)	-	20 nm	-

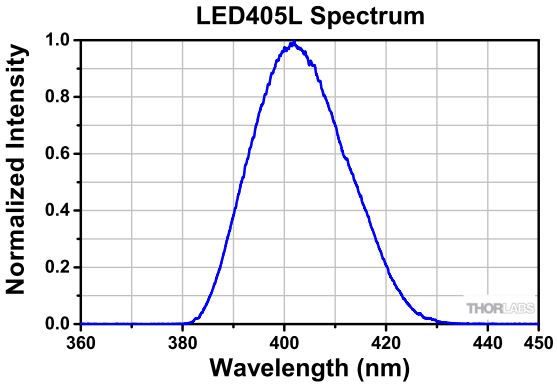
a. Pulsed Forward Current Condition: Duty Cycle = 1% and Pulse Width = 10 µs.

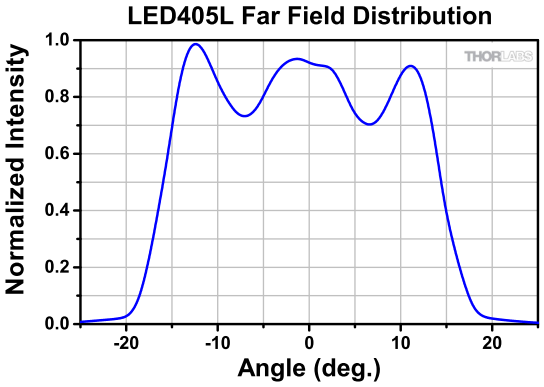
b. Unless otherwise specified, all specifications are for operation at 25 °C.

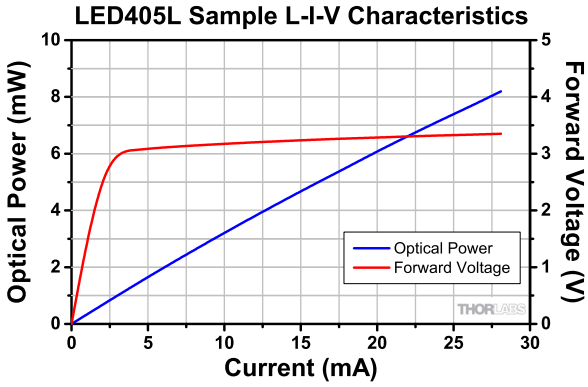
Soldering Specifications	
	Conditions
Dip Soldering	Pre-Heat Backside of PCB at 90 °C Maximum for 60 Seconds or Less; Solder Bath at 260 °C Maximum for 5 Seconds or Less
Hand Soldering	Soldering Iron Tip at 260 °C Maximum for 3 Seconds or Less

Cleaning Solvents						
Solvent	**Ethyl Alcohol**	**Isopropyl Alcohol**	**Propanol**	**Acetone**	**Trichloroethylene**	**MKS**
Approved	Yes	Yes	Yes	Yes	No	No

Typical Performance Plots

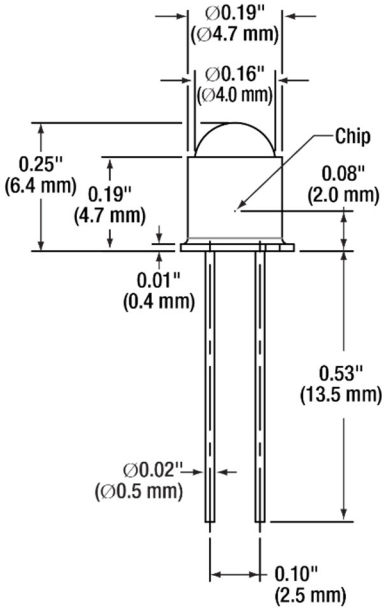


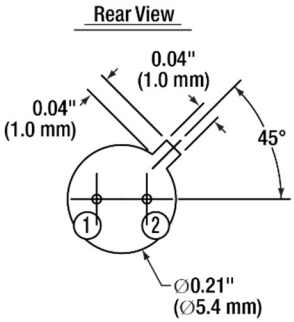


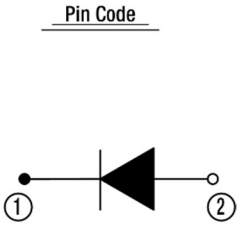


These measurements were taken at a case temperature of 25 °C. The output spectrum and radiation distribution were measured with an operating current of 20 mA.

Drawing







Precautions and Warranty Information

These products are ESD (electro static discharge) sensitive and as a result are not covered under warranty. In order to ensure the proper functioning of an LED care must be given to maintain the highest standards of compliance to the maximum electrical specifications when handling such devices. The LEDs are particularly sensitive to any voltage that exceeds the absolute maximum ratings of the product. Any applied voltage in excess of the maximum specification will cause damage and possible complete failure to the product. The user must use handling procedures that prevent any electro static discharges or other voltage surges when handling or using these devices.

During operation, the LED emits high intensity ultraviolet (UV) light, which is harmful to skin and eyes. UV light is hazardous to skin and may cause cancer. Avoid exposure to UV light when LED is operational. Precautions must be taken to avoid looking directly at the UV light without the use of UV light protective glasses. Do not look directly at the front of the LED or at the LED's lens when LED is operational.

Thorlabs, Inc. Life Support and Military Use Application Policy is stated below:

THORLABS' PRODUCTS ARE NOT AUTHORIZED FOR USE AS CRITICAL COMPONENTS IN LIFE SUPPORT DEVICES OR SYSTEMS OR IN ANY MILITARY APPLICATION WITHOUT THE EXPRESS WRITTEN APPROVAL OF THE PRESIDENT OF THORLABS, INC. As used herein:

1. Life support devices or systems are devices or systems which, (a) are intended for surgical implant into the body, or (b) support or sustain life, and whose failure to perform, when properly used in accordance with instructions for use provided in the labeling, can be reasonably expected to result in a significant injury to the user.

2. A critical component is any component in a life support device or system whose failure to perform can be reasonably expected to cause the failure of the life support device or system or to affect its safety or effectiveness.

3. The Thorlabs products described in this document are not intended nor warranted for usage in Military Applications.