

MNWHD2

Description

Thorlabs' MNWHD2 LED on a Metal-Core Printed Circuit Board (MCPCB) is designed to provide high-power output in a compact package and has a correlated color temperature of 4900 K. The minimum emitted output power is 740 mW and the typical emitted power is 880 mW. For more specifications, please see the table below.

Thermal Management

Please note that operation of this LED requires mounting of the LED to an adequate heat sink. For proper thermal management, fix the MCPCB to a heat sink using two screws and use a thermal compound to provide good thermal contact between the MCPCB and the heat sink.

Specifications

Specifications	
Color	Neutral White
Correlated Color Temperature ^a	4900 K
Bandwidth (FWHM)	N/A
Viewing Angle (Full Angle)	150°
Maximum Current (CW)	1225 mA
Electrical Power (Max)	3553 mW
Typical Lifetime	>10 000 h
Chip Size	1 mm x 1 mm
MCPCB Thickness	2.4 mm
Operating Temperature (Non- Condensing)	0 to 40 °C
Storage Temperature	-40 to 70 °C
Risk Group ^b	RG2 - Moderate Risk Group

a. The Color Temperature is a typical value and may deviate in individual units.

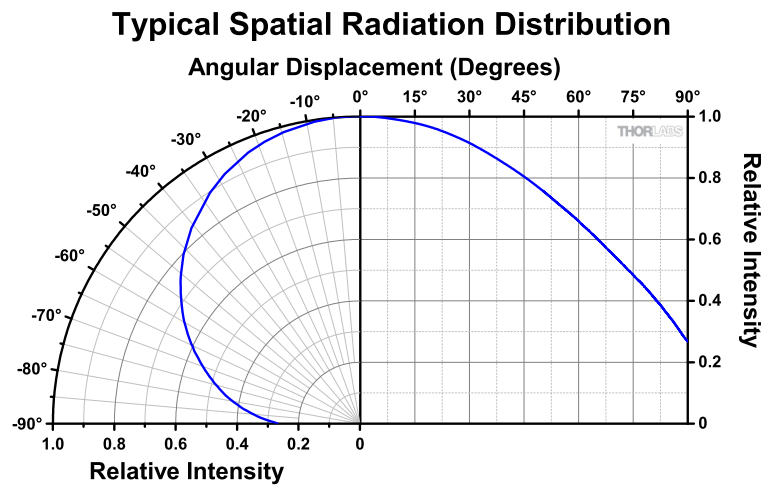
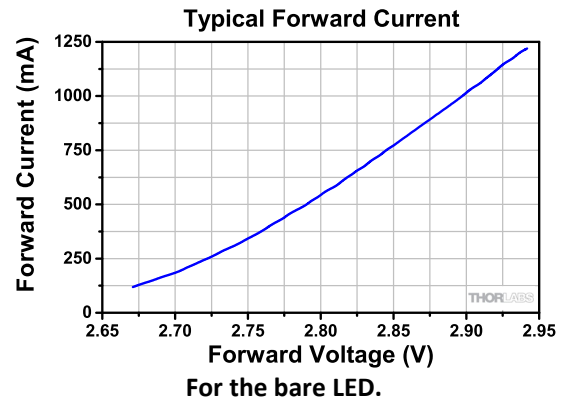
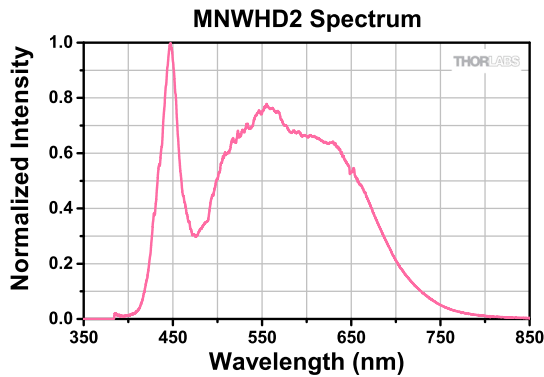
b. According to the Standard IEC 62471:2006, Photobiological Safety of Lamps and Lamp Systems

MNWHD2				
	Symbol	Min	Typical	Max
LED Output Power ^a	P_{out}	740 mW	880 mW	-
Forward Voltage	V_F	-	2.9 V	-
Maximum Irradiance ^b	E_e	-	7.7 $\mu W/mm^2$	-

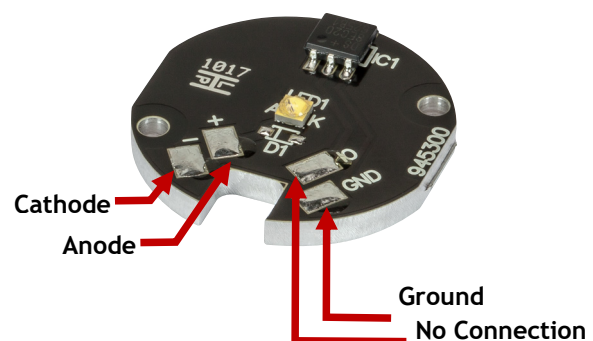
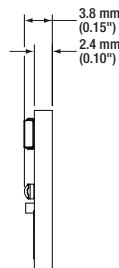
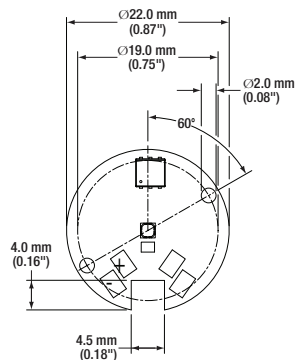
a. When Driven with the Maximum Current

b. Measured at a Distance of 200 mm

Performance Plots



Drawings and Electrical Connections



Power Supply

We recommend using Thorlabs' DC2200 LED current driver to control this LED. The LED can also be driven with the DC4100 or DC4104 driver with the DC4100-HUB for simultaneous control up to 4 LEDs, or the LEDD1B single-LED driver. Please note that the DC4100, DC4014, and LEDD1B have current limits of 1000 mA, 1000 mA, and 1200 mA, respectively, which are below the max drive current for the MNWHL4. As a result, the MNWHL4 will not reach its maximum output power when used with these drivers.

If you decide to use your own DC source, please make sure that the operating current does not exceed the maximum allowed value, sufficient forward voltage is supplied, and that the correct connection is made to Pins 1 and 2.

Maintenance and Service

This LED is not water resistant and must be protected from adverse weather conditions. To avoid damage, do not expose it to spray, liquids, or solvents. The LED does not contain any parts serviceable by the user and does not require regular user maintenance. If a malfunction occurs, contact Thorlabs for return instructions.

Warnings and Safety

Inappropriate use of any LED product may result in permanent eye damage. To prevent injury, use this product in accordance with the International Standard "Photobiological Safety of Lamps & Lamp Systems" IEC 62471. This product falls under Risk Group RG2 - Moderate Risk Group in accordance to the standard IEC 62471:2006.

If using this LED in a microscope application as a replacement for mercury vapor lamp, the same precautions should be taken.

Please note that this product is not suitable for household room illumination.

This LED must not be operated in explosive environments and should only be used with shielded connection cables.

All statements regarding safety of operation and technical data only apply when the unit is operated correctly according to its specifications. The safety of any system incorporating the equipment is the responsibility of the assembler of the system.

Warning Statement

This LED emits intense radiation during operation. Precautions must be taken to prevent looking directly at the light. If viewing the light is necessary, protective glasses must be worn to avoid eye damage. Do not look directly into the light or look through the optical system during operation, as this can be harmful to the eyes, even for brief periods, due to the high intensity of the light.

