

8 HEAT SINKING RECOMMENDATIONS

The Color Tuning Module requires an external heat sink in order to ensure proper operating temperature of the LEDs. The CTM2 has a conductive aluminum case and an efficient thermal path to the LED array. These features promote efficient thermal management and allow for a simple heat sink design in most applications.

Examples of heat sinking methods are cast or extruded heat sinks. Both carbon and stainless steel are much less efficient at transferring heat than aluminum and therefore are not recommended as heat sink materials. The heat sink mounting surface should be flat and smooth. Metal-to-metal contact surfaces will result in best performance; anodized or unfinished mounting surfaces are recommended. Mounting the CTM2 on a painted aluminum surface will reduce the performance of the heat sink material.

8.1 Compatible Heat Sinks

The following tables list heat sinks models that have compatible form factors and thermal resistance characteristics for use with the CTM2. The thermal resistances assume an approximate ambient temperature of 25°C. The heat sinks listed here are suggestions only.

MechaTronix (round)

Part Number	Dia. (mm)	Height (mm)	Thermal Resistance (°C/W)
LSB9950	99	50	1.3–1.5
LSB9980	99	80	1.2–1.4
Nano 7080	70	80	1.8
Micro 8630	86	30	1.8
Micro 8650	86	50	1.5
Micro 8680	86	80	1.2
Modular 9980	99	80	1.02
Modular 9950	99	50	1.34

IMPORTANT: These heat sinks are qualified in “free air”. If the CTM is installed in an insulated can fixture (IC Can), the module may exceed the recommended operating temperature. The heat sink must be evaluated and temperature tested in the fixture at applicable ambient temperatures for the desired application.

Additional product information at www.led-heatsink.com

These heatsinks are suggested for use as a starting point in free air at an ambient of 25°C, but cannot be guaranteed as the Tc will vary depending on the thermal design of the fixture.

NOTE: In many fixtures, the air flow to the heat sinks is obstructed or the heat sink is in an enclosed container with no path to reject heat. The thermal design of the fixture must be optimized so that the maximum temperature is less than the Tc_{max} (maximum case temperature) as indicated in the following drawings. If the Tc_{max} is exceeded in the application, the junction temperature of the LEDs will be higher than that required to meet the L70 life, and the Lumenix warranty will be void.