

**Electrical and Optical Specifications\***

LED Module Part Number	Color Temperature	Max Input Current	Forward Voltage	Rated Power	Luminous Flux Nominal ±1%	Efficiency	Beam Angle	CRI	Dimmable
TM05SQ4027-001	2700K	350 mA	50 VDC	17.5 W	1175 lumens	67 lm/W	120°	>80	✓
TM05SQ4030-001	3000K	350 mA	50 VDC	17.5 W	1250 lumens	71 lm/W	120°	>80	✓
TM05SQ4035-001	3500K	350 mA	50 VDC	17.5 W	1250 lumens	71 lm/W	120°	>80	✓
TM05SQ4040-001	4000K	350 mA	50 VDC	17.5 W	1400 lumens	80 lm/W	120°	>80	✓
TM05SQ4050-001	5000K	350 mA	50 VDC	17.5 W	1400 lumens	80 lm/W	120°	>80	✓
TM05SQ4065-001	6500K	350 mA	50 VDC	17.5 W	1400 lumens	80 lm/W	120°	>80	✓

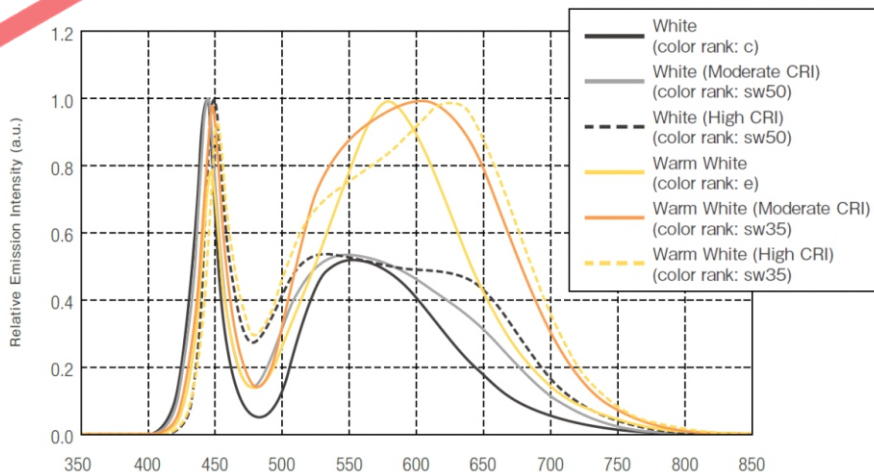
\* Performance based on 25°C ambient temperature.  
Note: Specifications are subject to change without notice.

**Color and Binning**



Ref. Nichia Chromaticity Diagram for ANSI bins

**Optical Spectrum \*\***



Ref. Nichia LED Catalogue 2013

\*\* Value varies depending on product type and color rank

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**Due to a program of continuous improvement, Fulham reserves the right to make modifications or variations in design or construction to the equipment described.**

## Mechanical Specifications

Part Number * **	Board Material & Dimensions	Module Weight	Connection	Attachment	Conformal Coating	Standard	Optional
TM05SQ40xx-001	Aluminum Clad 47x47x1.6 mm 1.85x1.85x0.063" (+/- 10%)	15 g	Stranded Wire Leads / 22 AWG	#6 or M3 Pan Head screw	-	✓	
TM05SQ40xx-101	Aluminum Clad 47x47x1.6 mm 1.85x1.85x0.063" (+/- 10%)		Single Wire Connector	#6 or M3 Pan Head screw	-		✓
TM05SQ40xx-301	Aluminum Clad 47x47x1.6 mm 1.85x1.85x0.063" (+/- 10%)		Dual Wire Connector	#6 or M3 Pan Head screw	-		✓
TM05SQ40xx-y01T	Aluminum Clad 47x47x1.6 mm 1.85x1.85x0.063" (+/- 10%)		Leads or Connectors	3M Double-Sided Tape	-		✓
TM05SQ40xx-y01C	Aluminum Clad 47x47x1.6 mm 1.85x1.85x0.063" (+/- 10%)		Leads or Connectors	#6 or M3 Pan Head screw	Environment and Moisture Protection per IPC-CC-830		✓
TM05SQ40xx-y01B	Aluminum Clad 47x47x1.6 mm 1.85x1.85x0.063" (+/- 10%)		Leads or Connectors	3M Double-Sided Tape	Environment and Moisture Protection per IPC-CC-830		✓

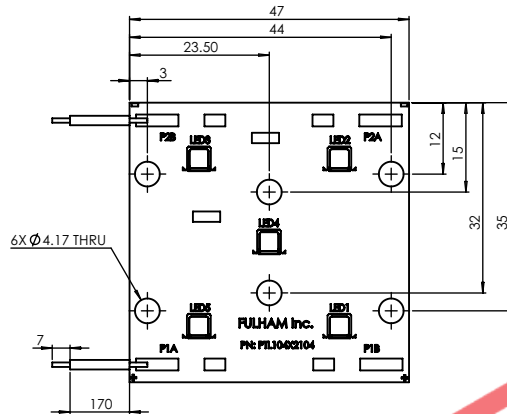
\* xx = 27, 30, 35, 40, 50, or 65 for respective color temperature  
 \*\* y = 0, 1, or 2 for respective connection method

## Mounting Methods

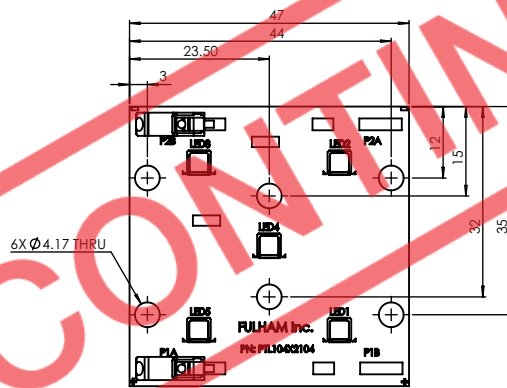
1. If mounting by screw hole, use any screw with diameter less than 4.17mm. Use all available screw holes to ensure good contact between back side of module and mounting surface.
2. If mounting using double-sided tape, peel backing and place LED module on mounting surface. Firmly press down on the module to ensure good adherence. Follow the double-side tape manufacturer's installation instructions.
3. If connectors are used, use solid wire size 24 – 18 AWG, rated at a minimum 50V, minimum 105°C, and stripped to length between 6-7 mm (0.24-0.28 inches). Push button for insertion of conductor and for easy removal of wires.

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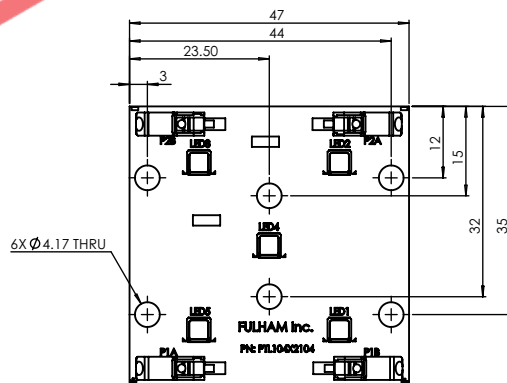
**Mechanical Drawings**



**Figure 1: TM05SQ40xx-001 with Wire Leads**



**Figure 2: TM05SQ40xx-101 with 2 Single Wire Connectors**



**Figure 3: TM05SQ40xx-301 with 4 Single Wire Connectors**

**NOTE:**

Modules are polarity sensitive. Ensure that "positive" from LED driver is connected to "positive" of LED modules and that "negative" from LED driver is connected to "negative" of LED modules. Polarities of modules are marked with "+" for positive and "-" for negative.

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### Reliability and Life Specifications

Lumen Maintenance	L70 > 36,000 Hrs based on LM80 Data at Case Temperature of 55°C and 400mA Driver Current
Color Consistency	Binning per ANSI C78.377-2008; 7 SDCM
Energy Star for Luminaires Compliant	Indoor Fixture types for $T_s \leq 105^\circ\text{C}$ ; Outdoor Fixtures for $T_s \leq 85^\circ\text{C}$
DLC Compliant	Categories 11-16 for $T_s \leq 85^\circ\text{C}$
Certifications	cURus, Class 2 Lighting Systems, RoHS
UL Part Number	PTL104X2104 (File # E351548)
Fulham Warranty	3 Years

### Environmental Rating

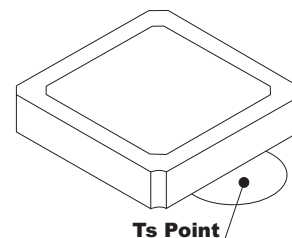
Modules are rated for dry locations, unless option for conformal coating is requested.

### Electrostatic Sensitive Product (ESD)

Fulham LED products should be handled with proper measures to protect against any potential ESD damage. When servicing, personnel should be ground and direct contact with LED should be avoided.

### Thermal Specifications

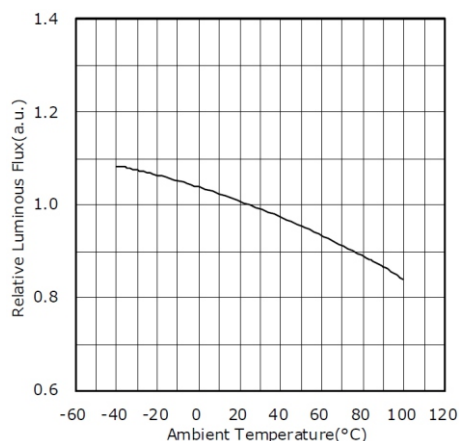
	With Connectors	Without Connectors
Maximum Storage Temperature	-35 to 100°C	-40 to 100°C
Maximum Operating Ambient Temperature	-35 to 100°C	-40 to 100°C
Maximum Solder Pad Temperature	94°C	94°C
Thermal Pad Recommended	Yes	Yes



### Thermal Management

Proper thermal management should be employed to ensure life and reliability of product. Use thermal grease, paste, pad, or other material interface is highly recommended.

### Thermal De-Rating



Ref. Nichia  
NS9L(W)153AM-H3 Spec Sheet  
I = 120 mA

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