



# VMU140052RT7xxA



## 5.71" x 1.71" RECTANGULAR DC MODULE, 1400mA MAX CURRENT

- Up to 50W, high lumen output, high efficacy
- Compact and symmetric form factor, ease of system design
- Suitable for High bay, Road, Flood and Area lighting application
- Compatible with 3rd party (IP 2x6) optical lens
- For use in UL Class 2 lighting systems
- Suitable for DLC applications: L70 >60,000hrs
- Meets UL8750 recognized
- RoHS compliant

### General Specifications

Input Voltage <sup>①</sup>	33.6VDC	34.4VDC	35.6VDC	37.0VDC
Input Current <sup>①</sup>	500mA	700mA	1000mA	1400mA (Max.)
Input Power <sup>①</sup>	16.8W	24.1W	35.6W	51.8W
Initial Lumens @4000K / 70CRI	3,364 lumens	4,616 lumens	6,409 lumens	8,638 lumens
Initial Lm/W @4000K / 70CRI	200 lm/W	191 lm/W	180 lm/W	167 lm/W
Beam Angle	120°			
CRI	70CRI standard, 80CRI available			
Storage Temperature Range	-40°C to +70°C / -40°F to +158°F			
Operating Temperature Range (ta)	-40°C to +55°C / -40°F to +131°F			
Maximum Case Temperature (Tc) <sup>②</sup>	L70: Tc max 105°C			
Estimated Lumen Maintenance <sup>②</sup>	L70: >60,000Hrs			
Color Consistency	Binning per ANSI C78.377-2015 @ 25°C; Typ. 3 SDCM, Max 5 SDCM			
Overall Size	5.71" L x 1.71" W x 0.17" H (145mm x 43.5mm x 4.3mm)			
PCB Material / Thermal Conductivity	MC-PCB 1.6mm, 1oz Copper, 2.0W/mK			
LED Quantity	12pcs.			
Module Weight	27g / 0.06lb			
PCB Part Number	VMU140052RTyxx			
Maximum Screw Installation Torque	25 inch - ounces			
Connector Type	BJB Nano 2 pin connector, PN#: 46.142.1001.50			
Packaging: Master Carton	20pcs.			
Safety/Compliance	cURus (File # E351548)			
	Suitable for UL Class 2 Lighting Systems			
	RoHS Compliant			
	Dry and Damp Location			
	SELV			
Energy Efficiency Label (EEI-Label)	A++			
Warranty	5 years @ Max. Tc from the date of manufacture			

<sup>①</sup> Nominal ratings. Performance based on Tc mod = 25°C. See thermal de-rating chart (pg. 3) for higher temperature operation

<sup>②</sup> TM-21 Reported Numbers



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## Electrical and Optical Specifications

LED Module Part Number	Number of LED	Input Current	Nom. Forward Voltage (VDC)	Nom. Rated Power	Max. Fwd. Voltage	Max. Rated Power	Nom. Lum. Flux @4000K/70 CRI	Nom. Efficacy @4000K/70 CRI
VMU140050RT7xxA	12	500mA	33.6V	16.8W	34.2V	17.1W	3364 lm	200 lm/W
		550mA	33.8V	18.6W	34.4V	18.9W	3683 lm	198 lm/W
		600mA	34.0V	20.4W	34.6V	20.8W	4007 lm	196 lm/W
		650mA	34.3V	22.3W	34.9V	22.7W	4314 lm	194 lm/W
		700mA	34.4V	24.1W	35.0V	24.5W	4616 lm	191 lm/W
		750mA	34.7V	26.0W	35.3V	26.5W	4918 lm	189 lm/W
		800mA	34.9V	27.9W	35.5V	28.4W	5218 lm	187 lm/W
		850mA	35.0V	29.8W	35.6V	30.3W	5519 lm	185 lm/W
		900mA	35.3V	31.8W	35.9V	32.3W	5819 lm	183 lm/W
		950mA	35.5V	33.7W	36.1V	34.3W	6119 lm	182 lm/W
		1000mA	35.6V	35.6W	36.2V	36.2W	6409 lm	180 lm/W
		1050mA	35.8V	37.6W	36.4V	38.2W	6695 lm	178 lm/W
		1100mA	36.0V	39.6W	36.6V	40.3W	6982 lm	176 lm/W
		1150mA	36.2V	41.6W	36.8V	42.3W	7267 lm	175 lm/W
		1200mA	36.4V	43.6W	37.0V	44.4W	7553 lm	173 lm/W
		1250mA	36.5V	45.7W	37.1V	46.4W	7825 lm	171 lm/W
		1300mA	36.7V	47.7W	37.3V	48.5W	8096 lm	170 lm/W
		1350mA	36.8V	49.7W	37.4V	50.5W	8366 lm	168 lm/W
		1400mA*	37.0V	51.8W	37.6V	52.7W	8638 lm	167 lm/W

## Luminous Flux De-Rating: CCT and CRI Multipliers

	2700K	3000K	3500K	4000K	5000K	5700K	6500K
CRI 70	0.976	0.976	0.952	1.000	1.000	1.000	0.976
CRI 80	0.905	0.976	0.976	1.000	1.000	0.976	0.976

### NOTES:

- 1) Performance based on Tc mod = 25°C. See thermal de-rating chart (pg. 3) for higher temperature operation.
- 2) Standard lumen output and efficacy is calculated for standard options. Reference CCT & CRI vs Luminous Flux chart for lumen ratio calculation.
- 3) Specifications are subject to change without notice.
- 4) The LED DC Module can be configure with different LED chip quantities, series and parallel design configurations to meet a specific design requirement. Contact Fulham for further assistance.
- 5) \* Indicates maximum rated current. Modules may be operated at a current less than or equal to this value, below the Tc rating.
- 6) 90CRI is NOT available.



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## Thermal Specifications

Storage Temperature Range	-40 to +70°C / -40 to +158°F
Operating Ambient Temperature Range (ta)	-40 to +55°C / -40 to +131°F
Maximum Case Temperature (Tc)	L70 = 105°C (221°F) / L90 = 105°C (221°F)

## Thermal De-Rating:

### Tc vs. Luminous Flux vs. Forward Voltage

Module Case Temperature (Tc)	Total Vf Multiplier	Luminous Flux Multiplier
25°C	1.000	1.000
30°C	0.996	0.991
35°C	0.993	0.984
40°C	0.990	0.978
45°C	0.988	0.971
50°C	0.985	0.964
55°C	0.983	0.956
60°C	0.981	0.948
65°C	0.979	0.940
70°C	0.977	0.932
75°C	0.974	0.923
80°C	0.972	0.916
85°C	0.970	0.907
90°C	0.969	0.898
95°C	0.967	0.889
100°C	0.965	0.880
105°C	0.963	0.870

## NOTES:

- 1) Thermal Derating may vary depending on the heat sink and the thermal interface.
- 2) Maximum case temperature is base on the LED LM80 values.

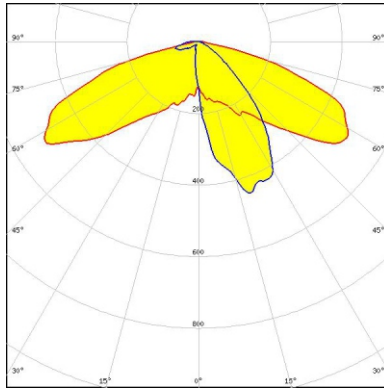
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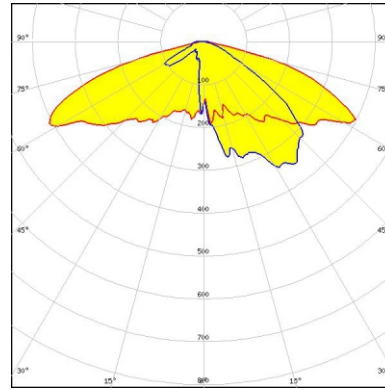
Light Distribution with third party lenses

Compatible lens family - LEDiL STRADA-IP-2X6

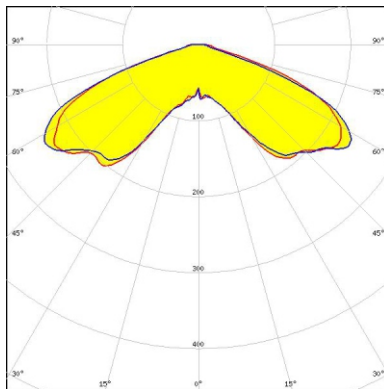
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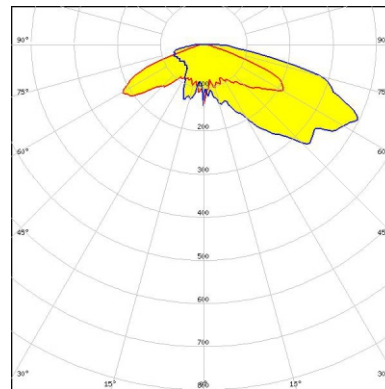
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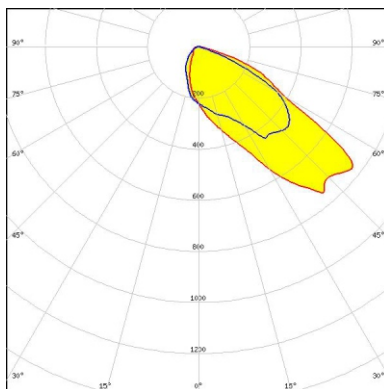
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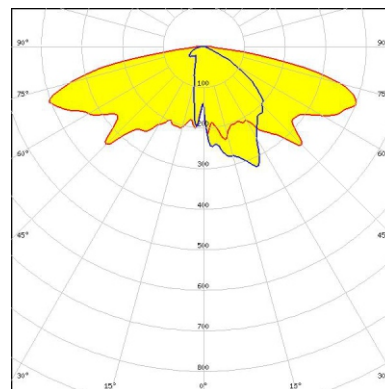
LEDiL CS15158\_STRADA-IP-2X6-T4-B



LEDiL CS16401\_STRADA-IP-2X6-PX



LEDiL CS15418\_STRADA-IP-2X6-SCL



## NOTES:

- 1) Above typical light distributions are from LEDiL website. Results are for reference only.
- 2) The LED Module may compact with other third party lenses, not restrict to the models above.



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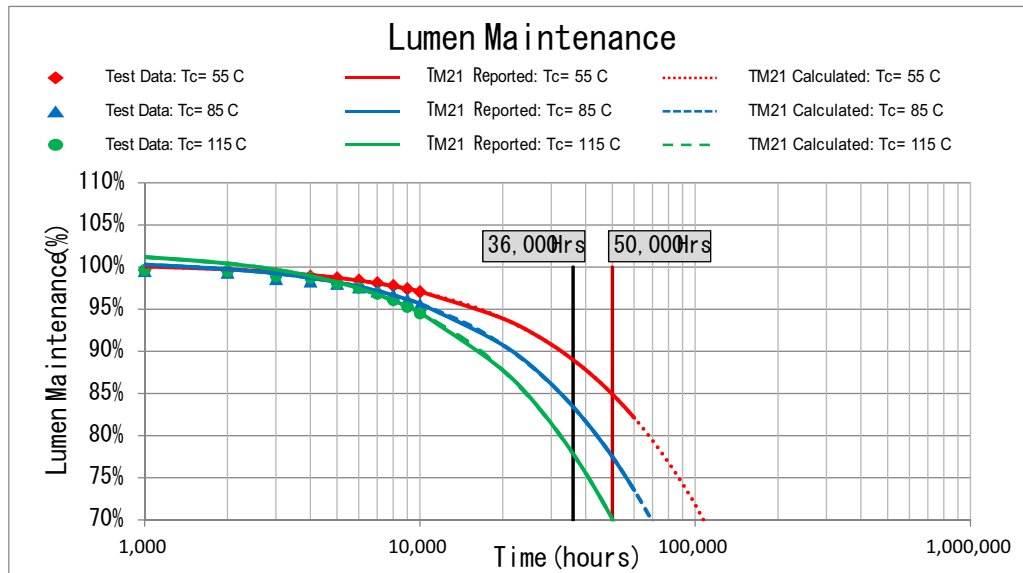
## Certification Chart

Model Classification	VMU140052RT7xxA
<b>RoHS COMPLIANT</b>	YES
<b>cULus</b>	YES
<b>Energy Efficiency Label (EEI-Label)</b>	A++
<b>Class 2 Lighting System</b>	YES

## Energy Star™ TM-21 Calculator Data

Tc Module	Calculated L70	Calculated L90
55°C	>60,000 Hrs	22,000 Hrs
85°C	>60,000 Hrs	22,000 Hrs
105°C	>60,000 Hrs	22,000 Hrs

## LED Lumen & Color Maintenance Data per LM-80 report & TM-21 Calculation





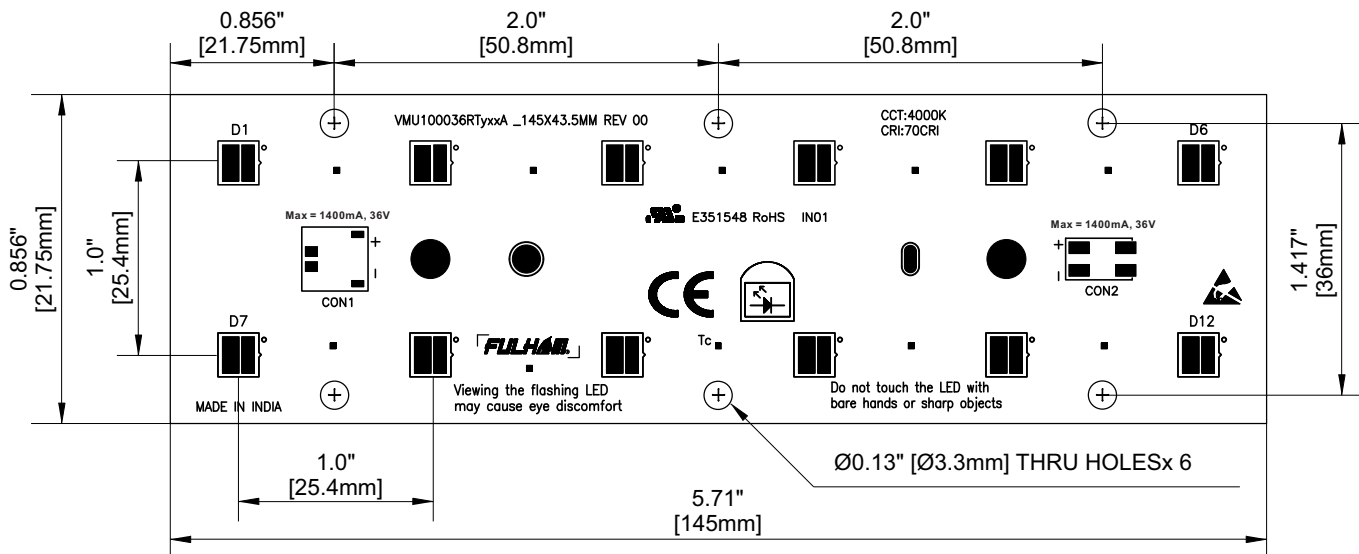
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## Mechanical Drawings

5.71" x 1.71"

Overall Dimensions	
Length	5.71" [145mm]
Width	1.71" [43.5mm]
Height	0.17" [4.3mm]





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## Guidelines

### Termination Notes

- Connector Type: BJB Dual Pole SMD Terminal Block, Part #: 46.142.1001.50
- cURus, ENEC Rating: 3A/320V
- Use solid wire size 24 – 20 AWG, rated at a minimum 50V, minimum 105°C, and stripped to length 7 mm (0.276 inches).



## Fastening Notes

- If fastening by screw hole a recommended screw size: 6-20 x 5/8" flat head drilling screws. Use all available screw holes to ensure good contact between back side of module and mounting surface. Refer to max specified torque for installation.
- If fastening using double-sided tape, start with clean, oil-free and dust-free surface. 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.
- BJB P2F (Push-to-Fix) fixing elements for PCBs can be used to fasten LED modules to mounting surface. Reference BJB's website for ordering information and specific model to use: <http://www.bjb.com/index.php?pid=376706&lid=10>.
- HEYCO HEYClip Snap Rivets is recommended for fast and easy installation with clean and finish look. For more detail information, please visit Heyco website: [https://www.heyco.com/Nylon\\_PVC\\_Hardware/product.cfm?product=Snap-Rivets](https://www.heyco.com/Nylon_PVC_Hardware/product.cfm?product=Snap-Rivets)



Heyco Rivet 9035

## Environmental Rating / Conformal Coating

- The DC Modules have been evaluated for use in dry or damp locations only. If used in wet locations, acceptability and the need for additional evaluation shall be determined in the end product.
- Fulham's DC modules are available with conformal coating; made to order with MOQ and lead time will apply. The conformal coating is a silicone based material which is double sprayed on the module only (LEDs and PCB). Conformal coating is recommended for the following applications: near ocean where salt is present, constant moisture, refrigeration, continuously high humidity, or outdoor applications. An IP rating of IP64 or IP65 is achieved when the conformal coating is used, but other factors should be considered. Fulham still recommends the luminaire also meet an IP64/65 rating.

## 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 Management

- Proper thermal management should be employed to ensure life and reliability of product. Max Tc of module should not be exceeded.
- Use of thermal grease, paste, pad, or other material interface is highly recommended.

## Polarity Notes

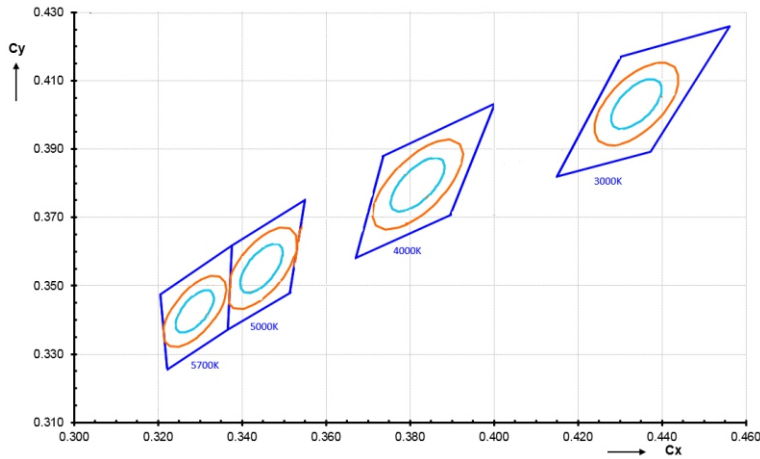
- DC Modules are polarity sensitive.
- Ensure that "positive" from LED Driver is connected to "positive" of LED modules and that "negative" from LED Driver is connected to "negative" of LED modules.
- Polarities of modules are marked with "+" for positive and "-" for negative.



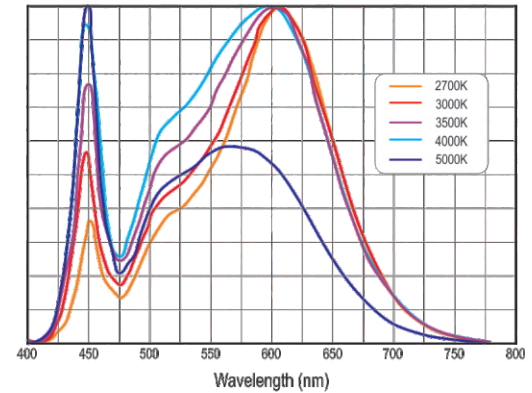
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## Color and Binning



## Optical Spectrum



## Compatible Fulham Drivers

(Please use the links below for a complete list of compatible Fulham drivers and wiring diagrams)

- Fulham's Wiring Diagrams: <https://cdn.fulham.com/PDFs/SpecSheets/DC-Modules-Wiring-Diagrams.pdf>
- Compatible with Fulham Hotspot EM Systems.

### NOTES:

- 1) The Color and Binning and Optical Spectrum charts are for reference only. For more detailed info, contact factory.
- 2) Reference Samsung Chromaticity Diagram for Color and Binning. Binning per ANSI C78.377-2015 @ 25°C; Typ. 3 SDCM, Max 5 SDCM.
- 3) The Optical Spectrum values vary depending on product type and color rank.
- 4) Driver not included.
- 5) Do not connect Modules in parallel (end to end) if the current exceeds the maximum module rated current. This type of wiring would cause the pass-through current on the first module to exceed the rated current. This setup is in reference to wiring diagram #2 per Fulham's wiring diagram (see the link above). If the current is higher than the rated max, it is recommended to use wiring diagram #3.





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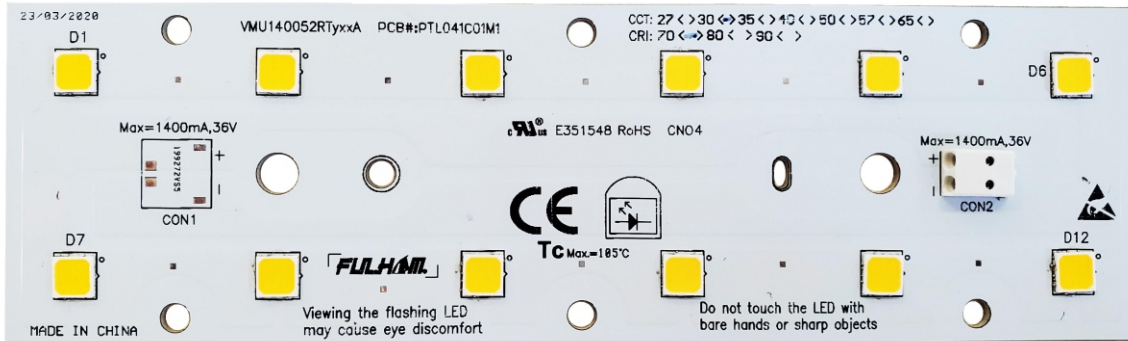
## Part Number Matrix

# V M U 140 052 RT 7 xx A

Product Line	Type	Control Type	Max. Input Current	Max. Power	Design	CRI <sup>Ⓢ</sup>	Color Temperature	Option
V = Vizion	M = Module (UL Class 2)	U = None	140 = 1400mA	052 = 52W	RT = Rectangle Profile	7 = 70 8 = 80	30 = 3000K 40 = 4000K 50 = 5000K 57 = 5700K	A = Standard

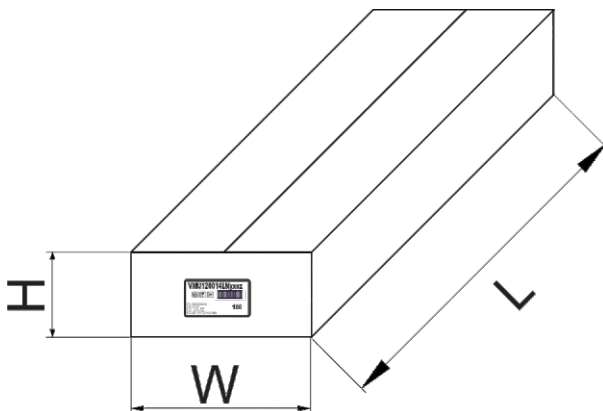
<sup>Ⓢ</sup>All CCT, CRI options are made to order with MOQ and lead time

## Product Image:



## Packaging

### Master Carton



OUTER DIMENSION		
L	W	H
13.19"(335mm)	8.07"(205mm)	2.76"(70mm)
Net Weight	Gross Weight	QUANTITY
1.19 lbs. (0.54 kg)	1.74 lbs. (0.79 kg)	20pc.