

VMU200100HS7xxA

2.76" SQUARE DC MODULE, 2000mA MAX CURRENT

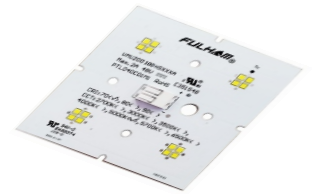
- Up to 100W, high lumen output, high efficacy
- Compact and symmetric form factor, ease of system design
- Suitable for High bay, Road, Flood and Area lighting application
- Compatible with 3rd party (2x2MX) optical lens
- For use in UL Class 2 lighting systems
- Suitable for DLC applications: L70 >72,000hrs / L90 =39,000hrs
- Meets UL8750 recognized
- RoHS compliant

General Specifications

Input Voltage ^①	44.7VDC	46.2VDC	48.6VDC	50.9VDC
Input Current ^①	700mA	1000mA	1500mA	2000mA (max.)
Input Power ^①	31.3W	46.2W	72.9W	101.8W
Initial Lumens @5000K / 70CRI	5,092 lumens	7,017 lumens	9,967 lumens	12,662 lumens
Initial Lm/W	163 lm/W	152 lm/W	137 lm/W	124 lm/W
Beam Angle	120°			
CRI	70CRI standard; 80CRI, 90CRI 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) ^②	L70: Tc max 105°C / L90: Tc max 105°C			
Estimated Lumen Maintenance ^②	L70: >72,000Hrs / L90: 39,000Hrs @1050mA Max.			
Color Consistency	Binning per ANSI C78.377-2015 @ 85°C; 3 SDCM,			
Overall Size	2.756" L x 2.756" W x 0.24" H (70mm x 70mm x 6.1mm)			
PCB Material / Thermal Conductivity	MCPCB / 2.0W/mK			
LED Quantity	16pcs. High power CSP			
Module Weight	21g / 0.046lb.			
PCB Part Number	PTL040C01M1			
Maximum Screw Installation Torque	25 inch - ounces			
Connector Type	WAGO #2060-452 / 998-404			
Packaging: Master Carton	100pcs			
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			

^① Nominal ratings. Performance based on Tc mod = 85°C. See thermal de-rating chart (pg. 3) for other temperature operation

^② TM-21 Reported Numbers



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Electrical and Optical Specifications

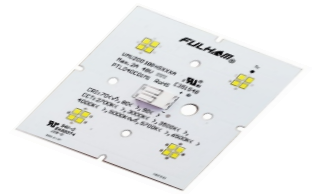
LED Module Part Number	Number of LED	Input Current	Nom. Forward Voltage	Nom. Rated Power	Max. Fwd. Voltage	Max. Rated Power	Nom. Lum. Flux @5000K/70 CRI	Nom. Efficacy @5000K/70 CRI
VMU200100HS7xxA	16	100 mA	41.1 V	4.1 W	44 V	4 W	813 lm	198 lm/W
		200 mA	41.8 V	8.4 W	45 V	9 W	1570 lm	188 lm/W
		300 mA	42.4 V	12.7 W	45 V	14 W	2308 lm	182 lm/W
		400 mA	43.0 V	17.2 W	46 V	18 W	3029 lm	176 lm/W
		500 mA	43.6 V	21.8 W	47 V	24 W	3733 lm	171 lm/W
		600 mA	44.2 V	26.5 W	47 V	28 W	4420 lm	167 lm/W
		700 mA	44.7 V	31.3 W	48 V	34 W	5092 lm	163 lm/W
		800 mA	45.2 V	36.2 W	48 V	38 W	5748 lm	159 lm/W
		900 mA	45.7 V	41.2 W	49 V	44 W	6389 lm	155 lm/W
		1000 mA	46.2 V	46.2 W	49 V	49 W	7017 lm	152 lm/W
		1100 mA	46.7 V	51.4 W	50 V	55 W	7631 lm	148 lm/W
		1200 mA	47.2 V	56.7 W	51 V	61 W	8233 lm	145 lm/W
		1300 mA	47.7 V	62.0 W	51 V	66 W	8822 lm	142 lm/W
		1400 mA	48.1 V	67.4 W	52 V	73 W	9400 lm	139 lm/W
		1500 mA	48.6 V	72.9 W	52 V	78 W	9967 lm	137 lm/W
		1600 mA	49.1 V	78.5 W	52 V	83 W	10524 lm	134 lm/W
		1700 mA	49.5 V	84.2 W	53 V	90 W	11071 lm	132 lm/W
		1800 mA	50.0 V	89.9 W	53 V	95 W	11609 lm	129 lm/W
		1900 mA	50.4 V	95.8 W	54 V	103 W	12139 lm	127 lm/W
		2000 mA*	50.9 V	101.8 W	54 V	108 W	12662 lm	124 lm/W

Luminous Flux De-Rating: CCT and CRI Multipliers

	2700K	3000K	3500K	4000K	5000K	5700K	6500K
CRI 70	0.879	0.879	0.939	1.000	1.000	1.000	1.000
CRI 80(R9> 0)	0.818	0.818	0.879	0.879	0.939	0.939	/
CRI 90(R9>50)	0.636	0.636	0.697	0.697	/	/	/

NOTES:

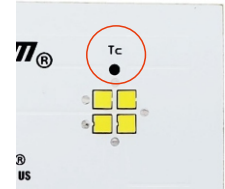
- 1) Performance based on Tc mod = 85°C. See thermal de-rating chart (pg. 3) for higher temperature operation.
- 2) Standard lumen output and efficacy is calculated for standard options. Reference CCT & CRI vs Luminous Flux chart for lumen ratio calculation.
- 3) Specifications are subject to change 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.



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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
5°C	1.040	1.120
10°C	1.038	1.113
15°C	1.035	1.105
20°C	1.033	1.098
25°C	1.030	1.090
30°C	1.028	1.083
35°C	1.025	1.075
40°C	1.022	1.068
45°C	1.020	1.060
50°C	1.018	1.053
55°C	1.015	1.045
60°C	1.013	1.038
65°C	1.010	1.030
70°C	1.008	1.023
75°C	1.005	1.015
80°C	1.003	1.008
85°C	1.000	1.000
90°C	0.997	0.992
95°C	0.995	0.985
100°C	0.992	0.977
105°C	0.990	0.970

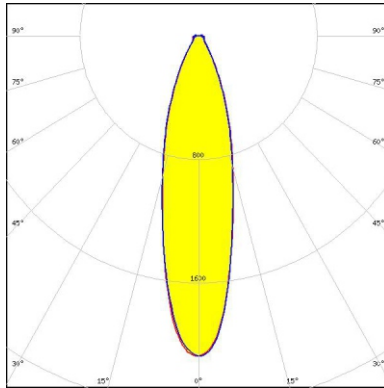
NOTES:

- 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.

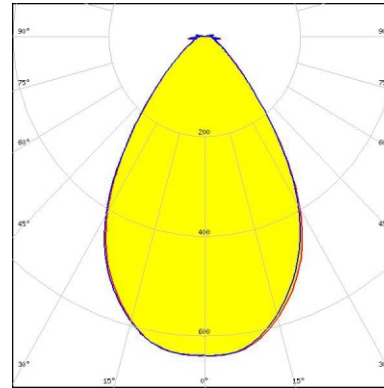
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Light Distribution with third party lenses

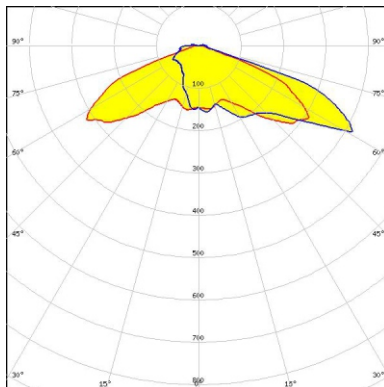
LEDiL CS15767_HB-2X2MX-8-M



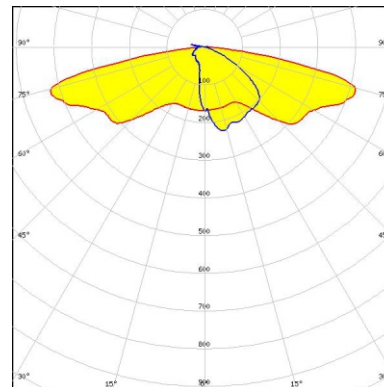
LEDiL CS15765_HB-2X2MX-8-WWW



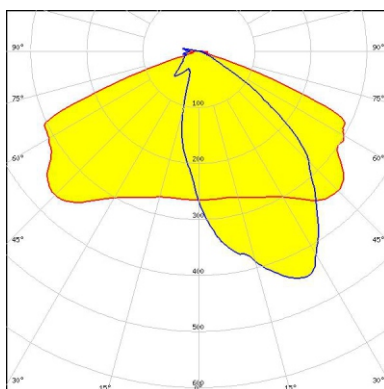
LEDiL CS15750_STRADA-2X2MX-8-T4-B



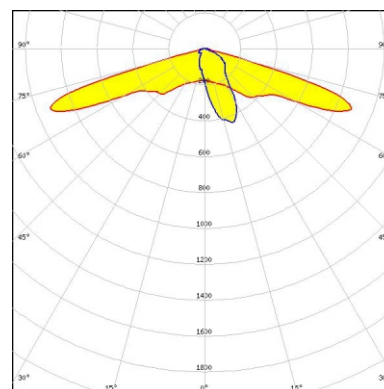
LEDiL CS15761_STRADA-2X2MX-8-SCL



LEDiL CS15769_STRADA-2X2MX-8-T2-S

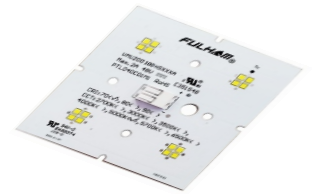


LEDiL CS15771_STRADA-2X2MX-8-T2



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

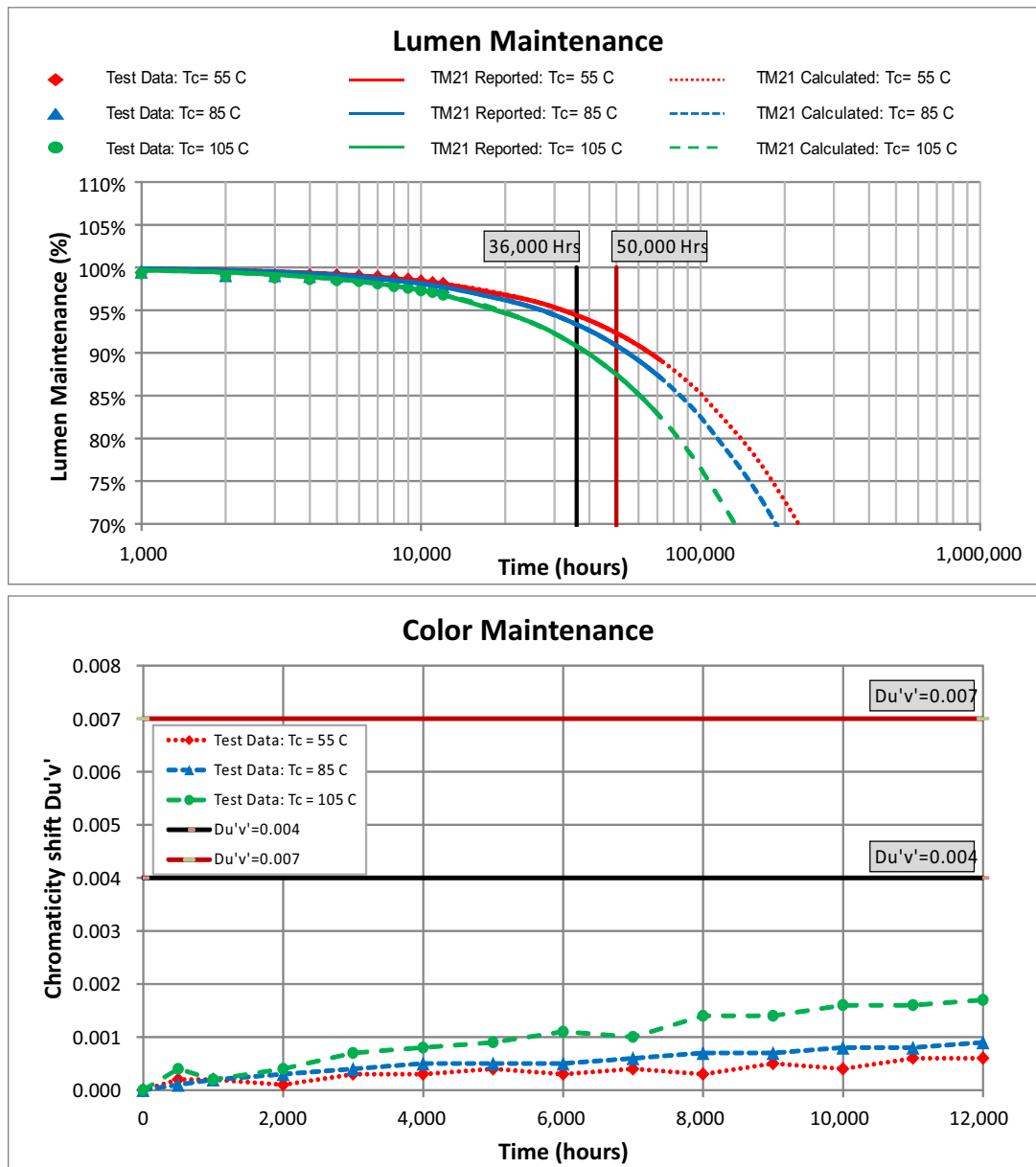
Model	VMU200100HS7xxA
Classification	
RoHS COMPLIANT	YES
cRUUS	YES
Energy Efficiency Label (EEI-Label)	A++
Class 2 Lighting System	YES

Energy Star™ TM-21 Calculator Data @ Max. 1050mA

Tc Module	Reported L70	Reported L90
55°C	>72,000 Hrs	66,000 Hrs
85°C	>72,000 Hrs	55,000 Hrs
105°C	>72,000 Hrs	39,000 Hrs

Tc Module	Calculated L70	Calculated L90
55°C	223,000 Hrs	66,000 Hrs
85°C	185,000 Hrs	55,000 Hrs
105°C	133,000 Hrs	39,000 Hrs

LED Lumen & Color Maintenance Data per LM-80 report and TM-21 Calculator



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Mechanical Drawings

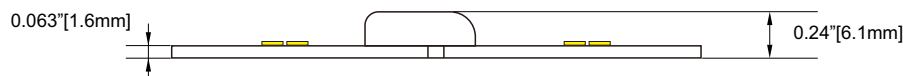
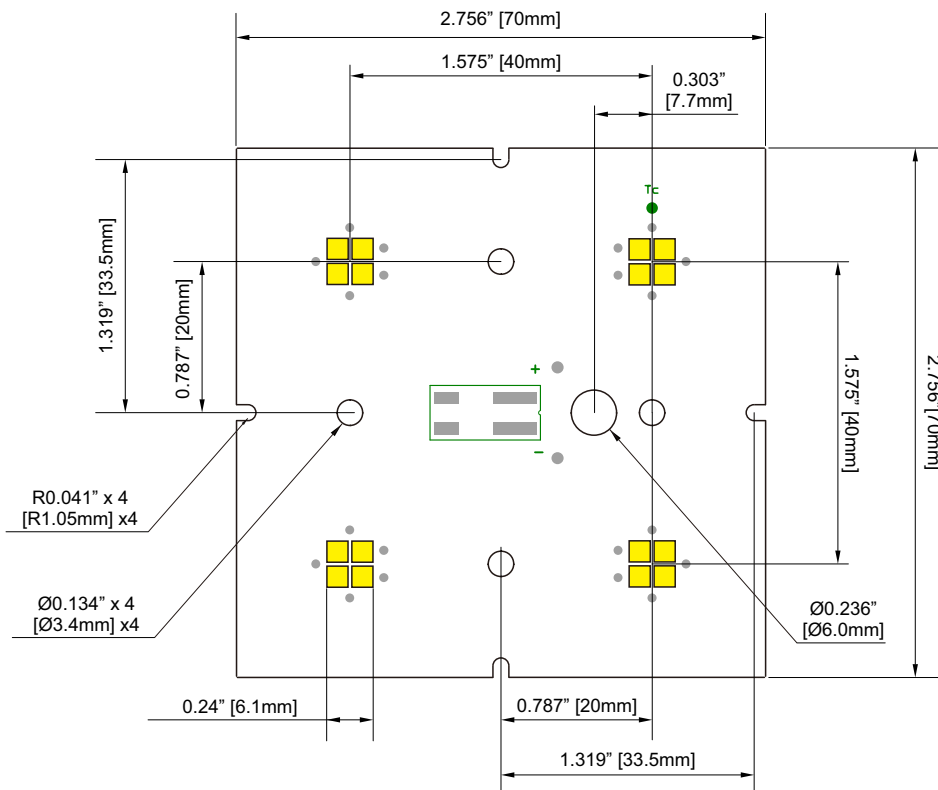
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2.756" SQUARE

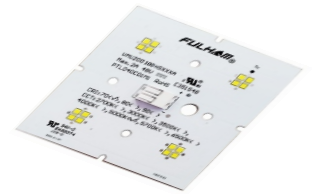
[70mm]

Overall Dimensions

Length	2.756" [70mm]
Width	2.756" [70mm]
Height	0.24" [6.1mm]



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Guidelines

Termination Notes

- Connector Type: WAGO #2060-452 / 998-404 (2 pin push wire connector)
 - AWG: 24...18 solid wire
 - Strip length: 7...9mm / 0.28...0.35in
 - Connector Max amp. rating: 9 Amps.



For more detail information, please visit Wago's website: <http://www.wago.com/infomaterial/pdf/51300133.pdf>

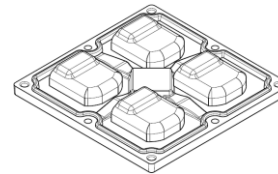
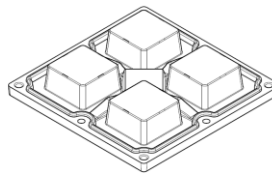
Fastening Notes

- If fastening by screw hole a recommended screw size: M3 or 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.

Environmental Rating / Conformal Coating

- The 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.
- Compatible with 3rd party IP67 lenses (2x2 MX) for wet location application. Additional evaluation should be taken for lead wire exit on heatsink.
- Recommended Lenses:

LEDiL STRADA-2X2MX Family
LEDiL HB-2X2MX Family



- 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)

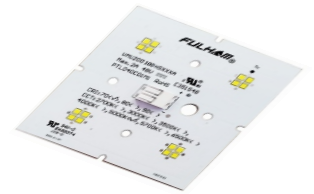
- Fulham LED products should be handled with proper measures to protect against any potential ESD damage.
- When servicing, personnel should be ground and direct contact with LED should be avoided.

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.

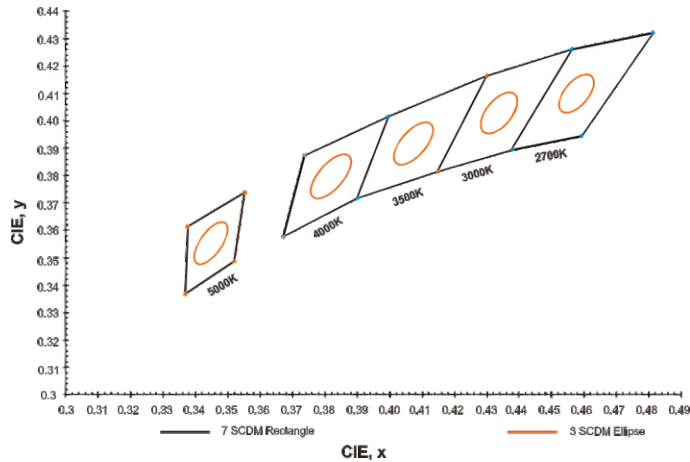
Polarity Notes

- 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.

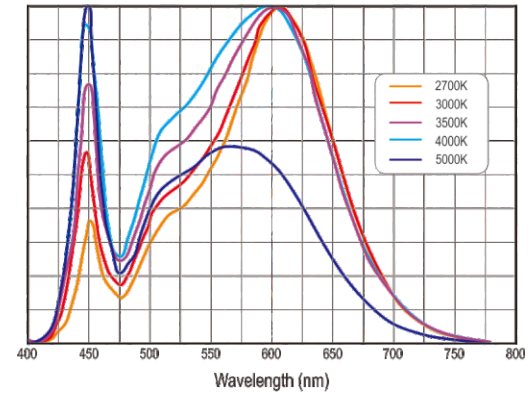


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Color and Binning



Optical Spectrum



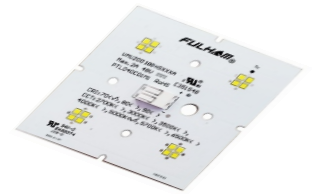
Compatible Fulham Drivers

(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:

- The Color and Binning and Optical Spectrum charts are for reference only. For more detailed info, contact factory.
- Reference Samsung Chromaticity Diagram for Color and Binning. Binning per ANSI C78.377-2015 @ 25°C; Typ. 3 SDCM, Max 5 SDCM.
- The Optical Spectrum values vary depending on product type and color rank.
- Driver not included.
- 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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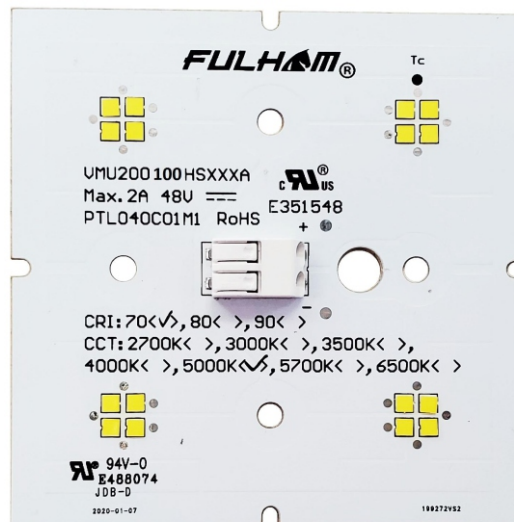
Part Number Matrix

V M U 200 100 HS 7 xx A

Product Line	Type	Control Type	Max. Input Current	Max. Power	Design	CRI [Ⓢ]	Color Temperature	Option
V = Vizion	M = Module (UL Class 2)	U = None	200 = 2000mA	100 = 100W	HS = High Output Square	7 = 70 8 = 80 9 = 90	27 = 2700K 30 = 3000K 35 = 3500K 40 = 4000K 50 = 5000K 57 = 5700K 65 = 6500K	A = Standard

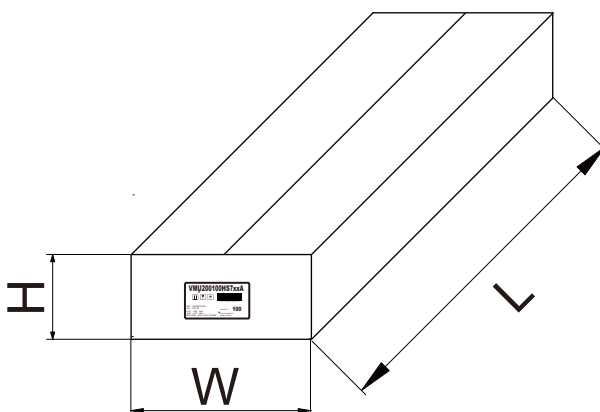
[Ⓢ]All CCT, CRI options are made to order with MOQ and lead time

Product Image:



Packaging - VMU200100HS7xxA

Master Carton



OUTER DIMENSION		
L	W	H
12.2"(310mm)	12.2"(310mm)	11.81"(300mm)
Net Weight	Gross Weight	QUANTITY
4.6lbs. (2.09 kg)	10.86lbs. (4.92kg)	100pc.