

VMU240095HB8xxB

13” ROUND DC MODULE, SINGLE CHANNEL INPUT, 2400mA MAX

- Suitable for high output low bay, high bay applications
- Single channel input
- For use in UL Class 2 lighting systems
- High lumen, high efficacy
- Suitable for DLC applications: L70 >60,000hrs/L90 =40,000hrs
- Meets UL8750 recognized
- RoHS compliant

General Specifications

	Min.	Typical	Max.
Input Voltage, per channel ①	34VDC	37.0VDC	41VDC
Input Current, per channel ①	400 mA	2400mA	2400mA
Input Power, total channels ①	13.7W	88.9W	98W
Initial Lumens, total channels @4000K / 80CRI		16,074 lumens	
Initial Efficacy, total channels @4000K / 80CRI		181 lm/W	
Beam Angle	120°		
CRI	80CRI standard, 90CRI available		
Storage Temperature Range	-40°C to 100°C / -40°F to 212°F		
Operating Temperature Range (ta)	-40°C to 55°C / -40°F to 131°F		
Maximum Case Temperature (Tc)	L70: Tc max 105°C / L90: Tc max 105°C		
Estimated Lumen Maintenance ②	L70: >60,000Hrs / L90: 40,000Hrs		
Color Consistency	Binning per ANSI C78.377-2015 @ 25°C; 3 SDCM		
Overall Size	13” Dia. x 0.24” H (330.2mm Dia. x 6.1mm H)		
PCB Material / Thermal Conductivity	MCPCB (Aluminum Clad), 1.6mm thickness, 2oz copper, 1.5W/mK		
LED Quantity	312pcs, Mid power 2835 0.5W		
Module Weight	350g / 0.77lb		
PCB Part Number	PTL048C02M1		
Maximum Screw Installation Torque	25 inch - ounces		
Connector Type	Wago 2060-452 (2 pin connector)		
Packaging: Master Carton	20pcs/carton		
Thermal Feedback	Not Available		
Safety/Compliance	cURus (File # E351548)		
	Suitable for UL Class 2 Lighting Systems		
	RoHS Compliant		
	Dry and Damp Location		
Energy Efficiency Label (EEI-Label)	A++		
Warranty	5 years @ Max. Tc from the date of manufacture		

①Nominal ratings. Performance based on Tc mod = 25°C. See thermal de-rating chart (pg. 4) for higher temperature operation

②TM-21 Reported Numbers

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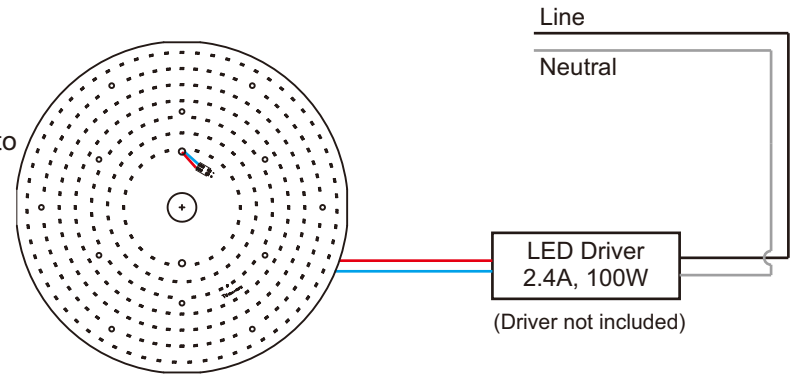
RoHS COMPLIANT

Electrical and Optical Specifications

Wiring Diagram:

Connect with single driver: the driver output connect to the push-wire connector on PCB.

Driver requirement: Max. 2.4A, 100W.



LED Module Part Number	Number of LED	Input Current	Nom. Forward Voltage	Nom. Rated Power	Max. Fwd. Voltage	Max. Rated Power	Nom. Lum. Flux @4000K/80 CRI	Nom. Efficacy @4000K/80 CRI
VMU240095HBxxxB	312	400 mA	34.3 V	13.7 W	38 V	15 W	2862 lm	208 lm/W
		450 mA	34.5 V	15.5 W	38 V	17 W	3216 lm	207 lm/W
		500 mA	34.6 V	17.3 W	38 V	19 W	3570 lm	206 lm/W
		550 mA	34.7 V	19.1 W	38 V	21 W	3923 lm	205 lm/W
		600 mA	34.9 V	20.9 W	38 V	23 W	4274 lm	204 lm/W
		650 mA	35.0 V	22.7 W	38 V	25 W	4625 lm	204 lm/W
		700 mA	35.0 V	24.5 W	39 V	27 W	4975 lm	203 lm/W
		750 mA	35.1 V	26.3 W	39 V	29 W	5324 lm	202 lm/W
		800 mA	35.2 V	28.2 W	39 V	31 W	5672 lm	201 lm/W
		850 mA	35.3 V	30.0 W	39 V	33 W	6019 lm	201 lm/W
		900 mA	35.4 V	31.8 W	39 V	35 W	6365 lm	200 lm/W
		950 mA	35.4 V	33.7 W	39 V	37 W	6710 lm	199 lm/W
		1000 mA	35.5 V	35.5 W	39 V	39 W	7054 lm	199 lm/W
		1050 mA	35.6 V	37.3 W	39 V	41 W	7396 lm	198 lm/W
		1100 mA	35.6 V	39.2 W	39 V	43 W	7737 lm	197 lm/W
		1150 mA	35.7 V	41.1 W	39 V	45 W	8078 lm	197 lm/W
		1200 mA	35.8 V	42.9 W	39 V	47 W	8416 lm	196 lm/W
		1250 mA	35.8 V	44.8 W	39 V	49 W	8754 lm	196 lm/W
		1300 mA	35.9 V	46.6 W	39 V	51 W	9090 lm	195 lm/W
		1350 mA	35.9 V	48.5 W	40 V	54 W	9425 lm	194 lm/W
		1400 mA	36.0 V	50.4 W	40 V	56 W	9758 lm	194 lm/W
		1450 mA	36.0 V	52.3 W	40 V	58 W	10090 lm	193 lm/W
		1500 mA	36.1 V	54.2 W	40 V	60 W	10421 lm	192 lm/W
		1550 mA	36.2 V	56.0 W	40 V	62 W	10749 lm	192 lm/W
		1600 mA	36.2 V	57.9 W	40 V	64 W	11077 lm	191 lm/W
		1650 mA	36.3 V	59.8 W	40 V	66 W	11403 lm	191 lm/W
		1700 mA	36.3 V	61.7 W	40 V	68 W	11727 lm	190 lm/W
		1750 mA	36.4 V	63.7 W	40 V	70 W	12049 lm	189 lm/W
		1800 mA	36.4 V	65.6 W	40 V	72 W	12370 lm	189 lm/W
		1850 mA	36.5 V	67.5 W	40 V	74 W	12689 lm	188 lm/W
		1900 mA	36.5 V	69.4 W	40 V	76 W	13006 lm	187 lm/W
		1950 mA	36.6 V	71.3 W	40 V	78 W	13322 lm	187 lm/W
		2000 mA	36.6 V	73.3 W	40 V	80 W	13636 lm	186 lm/W
		2050 mA	36.7 V	75.2 W	40 V	82 W	13947 lm	185 lm/W
		2100 mA	36.7 V	77.1 W	40 V	84 W	14257 lm	185 lm/W
		2150 mA	36.8 V	79.1 W	40 V	86 W	14565 lm	184 lm/W
		2200 mA	36.8 V	81.0 W	41 V	90 W	14871 lm	183 lm/W
		2250 mA	36.9 V	83.0 W	41 V	92 W	15175 lm	183 lm/W
		2300 mA	36.9 V	85.0 W	41 V	94 W	15477 lm	182 lm/W
		2350 mA	37.0 V	86.9 W	41 V	96 W	15777 lm	181 lm/W
		2400 mA*	37.0 V	88.9 W	41 V	98 W	16074 lm	181 lm/W

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RoHS COMPLIANT

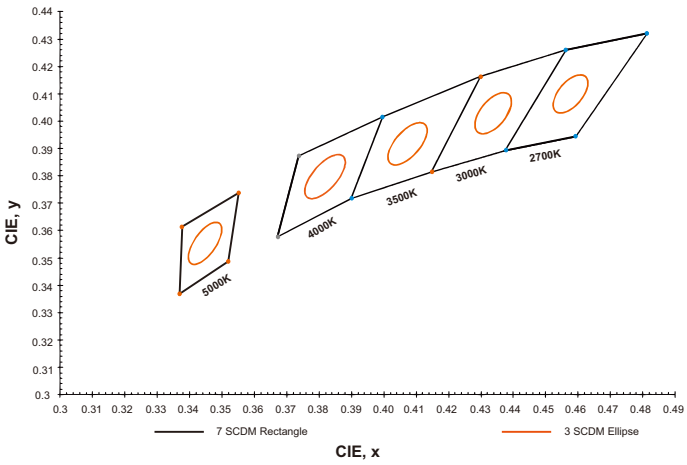
Luminous Flux De-Rating: CCT and CRI Multipliers

	2700K	3000K	3500K	4000K	5000K	5700K	6500K
CRI 80(R9> 0)	0.924	0.951	0.965	1.000	1.014	1.007	1.000
CRI 90(R9>50)	0.774	0.836	0.829	0.850	0.864	0.864	0.850

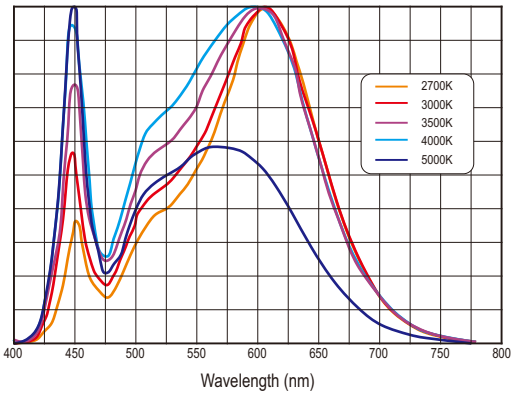
NOTES:

1) Performance data on pg.2 & pg.3 is based on Tc mod = 25°C. See thermal de-rating chart (pg. 4) 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) Modules may be operated at a current less than or equal to the max. rating, below the max. Tc.
6) 70CRI is NOT available.

Color and Binning



Optical Spectrum



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; 3 SDCM.
3) The Optical Spectrum values vary depending on product type and color rank.

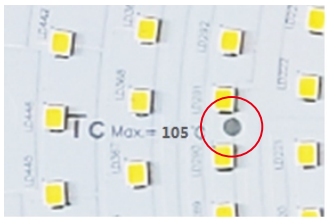
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Thermal Specifications

	DC Module
Storage Temperature Range	-40 to 100°C / -40 to 212°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)

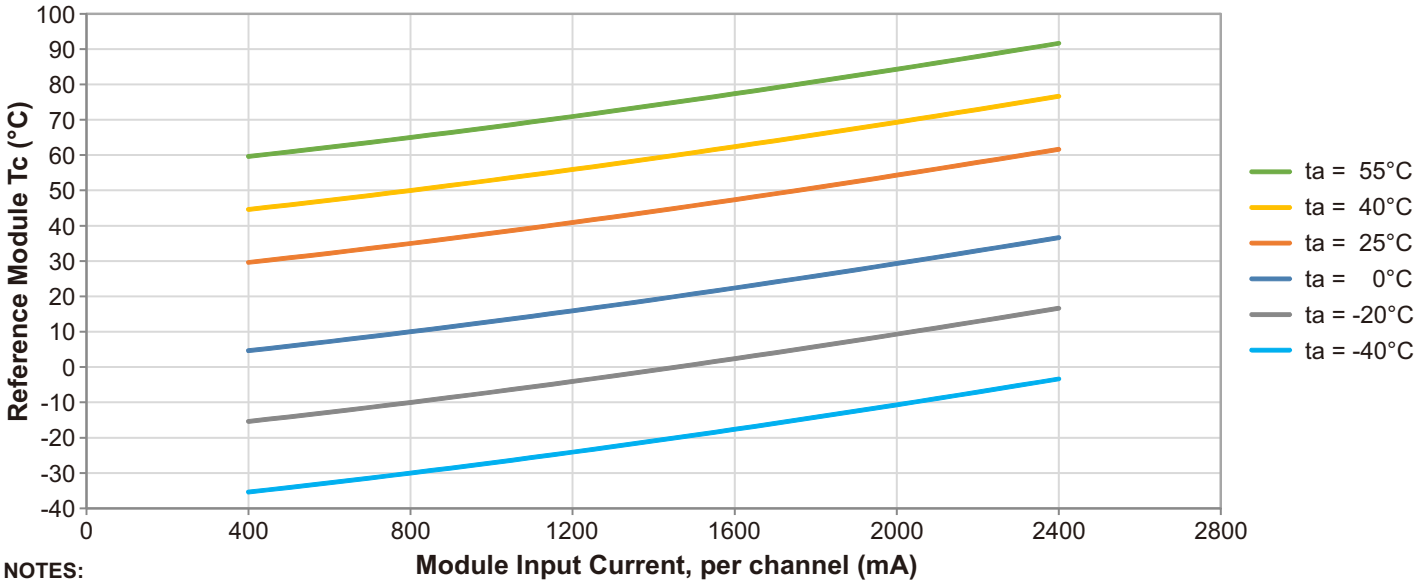


Thermal De-Rating:

Tc vs. Luminous Flux vs. Forward Voltage

Module Case Temperature (Tc)	Total Vf Multiplier	Luminous Flux Multiplier
25ºC	1.000	1.000
30ºC	0.998	0.992
35ºC	0.997	0.983
40ºC	0.995	0.975
45ºC	0.993	0.966
50ºC	0.992	0.958
55ºC	0.990	0.949
60ºC	0.988	0.941
65ºC	0.986	0.932
70ºC	0.985	0.924
75ºC	0.983	0.915
80ºC	0.981	0.907
85ºC	0.980	0.899
90ºC	0.978	0.890
95ºC	0.976	0.882
100ºC	0.975	0.873
105ºC	0.973	0.865

Module Tc vs. Ambient (ta) vs. Module Input Current (mA)



NOTES:

1) Chart "Module Tc vs. Ambient (ta) vs. Module Input Current (mA)" for referance only in an open ambient. The performance with in a luminaire will vary depending on the size and material of luminaire.

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Certification Chart

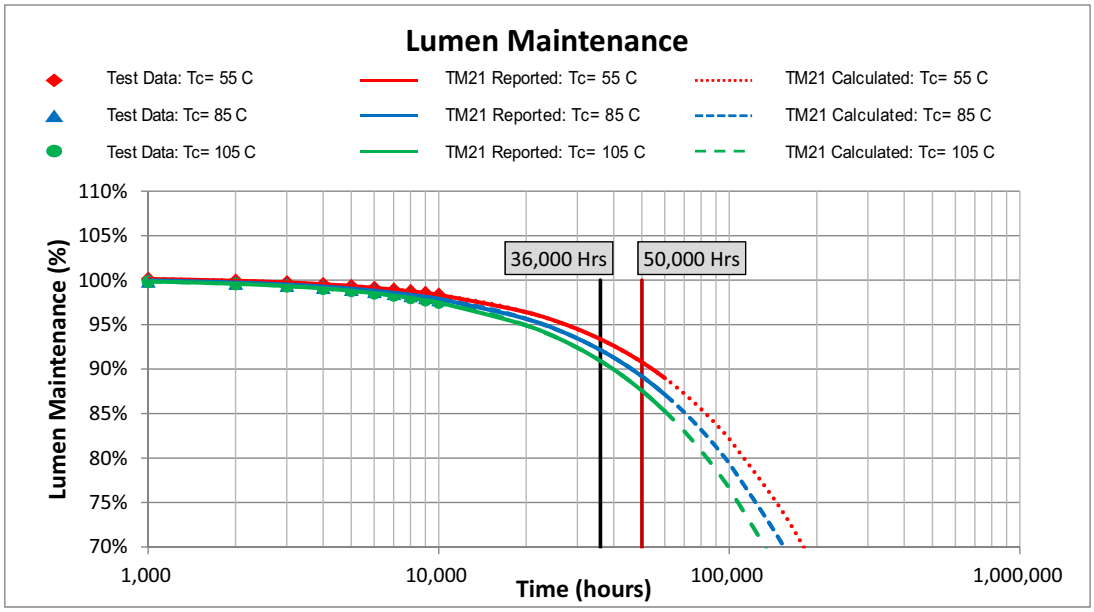
Classification \ Model	VMU240095HB8xxB
RoHS COMPLIANT	YES
c UL us	YES
CE	YES
Energy Efficiency Label (EEI-Label)	A++
Suitable for UL Class 2 Lighting System	YES

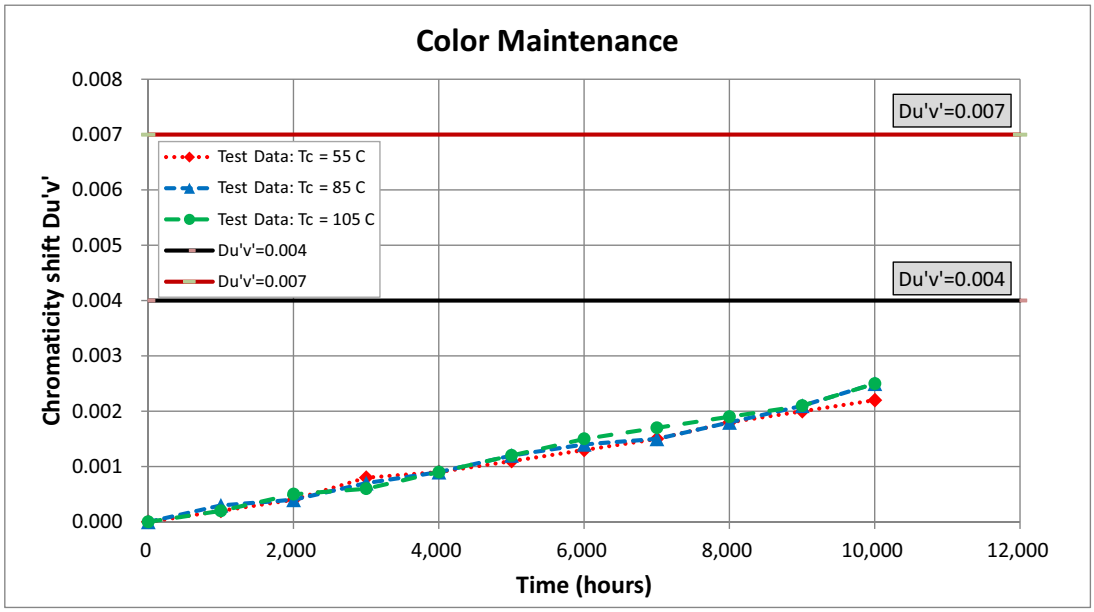
Energy Star™ TM-21 Calculator Data

Tc Module	Reported L70	Reported L90
55°C	>60,000 Hrs	54,000 Hrs
85°C	>60,000 Hrs	46,000 Hrs
105°C	>60,000 Hrs	40,000 Hrs

Tc Module	Calculated L70	Calculated L90
55°C	180,000 Hrs	54,000 Hrs
85°C	154,000 Hrs	46,000 Hrs
105°C	133,000 Hrs	40,000 Hrs

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







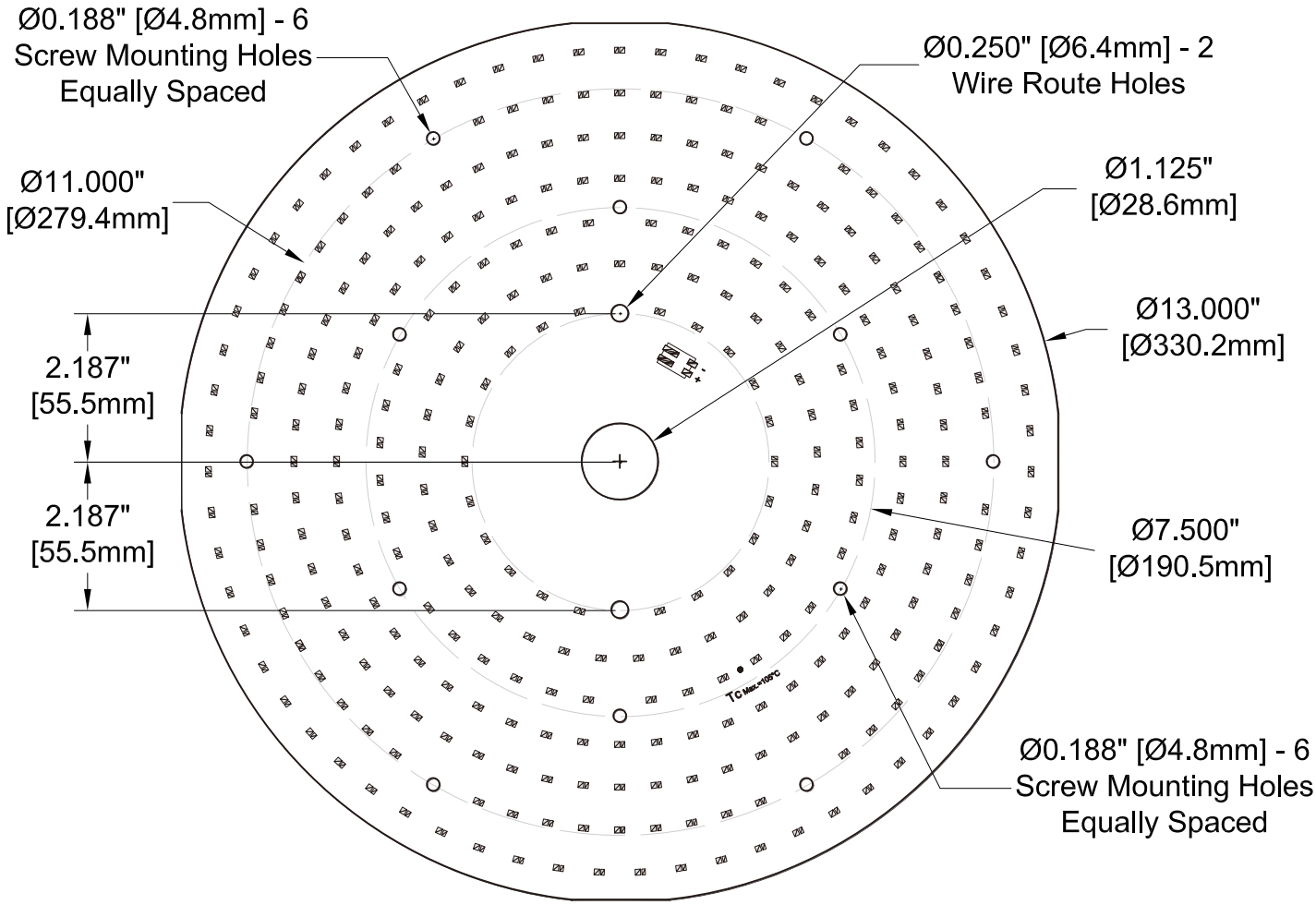
RoHS COMPLIANT

Mechanical Drawings

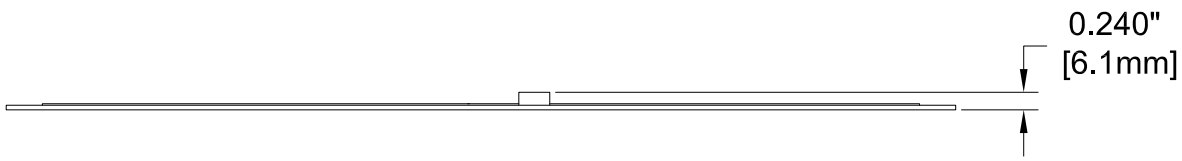
13” Diameter

[330.2mm]

Overall Dimensions	
Diameter	13” [330.2mm]
Height	0.24” [6.1mm]



TOP VIEW



SIDE VIEW



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Luminaire Compatibility

Fulham's VMU240095HBxxxB module is designed to work with SLP Lighting's Highbay and Lowbay luminaires.

CircLED SHROUD

The CircLED™ Shroud is a thermally conductive molded polymer Low Bay with a Shroud, NSF rated for Food Processing. A lighter weight alternative to die cast fixtures with excellent water shedability.

https://www.slplighting.com/circled/



CITADEL ROUND

CITADEL Round™ Combination of the Citadel Enclosure line's best features in a Smaller ROUND unit for tight areas that need LED light. Latches are replaced with the new SLP PinSert™ system giving it a super sleek and clean look.

https://www.slplighting.com/citadel-enclosures/



About SLP Lighting

SLP Lighting has been serving the lighting industry since 1969. A leader in developing and manufacturing a full range of lighting solutions and innovative products. From concept to reality with the customer and end users in mind through the entire process. SLP is known for their high quality lighting components, such as the Citadel Enclosures and are happy to be teaming up with Fulham to provide even more solutions to the lighting market with a new SLP CircLED High Bay Series and Citadel Round Low Bay Enclosure.

SLP LIGHTING

POWERED BY FULHAM



VMU240095HB8xxB

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.



Connector

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: 8-32 x 1/4" 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.
- 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™ Heat Resistant Snap Rivets 9062H is recommended for fast and easy installation with clean and finish look. https://www.heyco.com/Nylon_PVC_Hardware/product.cfm?product=Snap-Rivets



Heyco Rivet 9062H

- SLP Board Retention Clip is a pop-in-place solution to attach LED Modules to a boardtray in a quick easy manner. They are scratch proof and complete with a conductivity inhibitor coating. No tape or screws are needed when utilizing these clips. https://www.slplighting.com/complimentary-lighting-components/





Note:
This SLP Board Retention Clip is compatible with SLP's CITADEL fixtures only, not the CircLED fixtures.



SLP Board Retention Clip

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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RoHS COMPLIANT

Part Number Matrix

V	M	U	240	095	HB	8	XX	B

Product Line	Type	Control	Input Current	Max. Power	Design	CRI	Color Temperature	Option
V = Vizion	**M** = Module (UL Class 2)	**U** = None	**240** = 2400mA Max.	**095** = 95W	**HB** = Highbay	③**8** = 80 **9** = 90	**27** = 2700K ③ **30** = 3000K ③ **35** = 3500K ③ **40** = 4000K ③ **50** = 5000K **57** = 5700K **65** = 6500K	**B =** 312 LEDs

③Standard Product offering (All other options are made to order with MOQ and lead time)

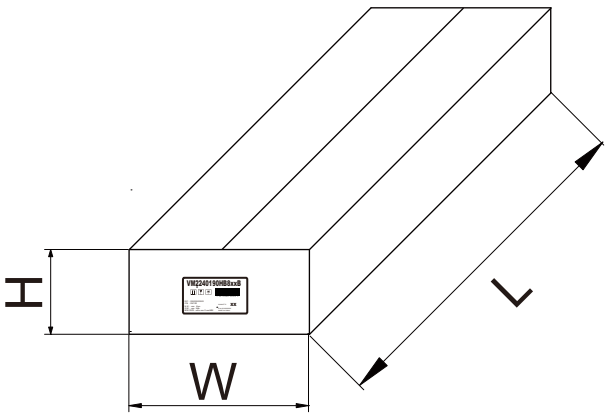
Product Image: Highbay DC Module



TOP VIEW

Packaging

Master Carton



OUTER DIMENSION		
L	W	H
14.96”(380mm)	14.96”(380mm)	9.06”(230mm)

Net Weight	Gross Weight	QUANTITY
18.08 lbs. (8.2 kg)	21.74 lbs. (9.86 kg)	20pc.