

VMU192072BR8TWA-44

VMU192072BR9TWA-44



44" LINEAR BAR DC MODULE, 1920mA MAX CURRENT, 6-CCT SELECTABLE

- 3-row LED Linear Bar for commercial and industrial applications
- 6-CCT on board selectable to reduce SKUs: 2700K-5000K
- Work with single channel output drivers
- CRI90 standard, CRI80 optional
- Suitable for open or fully enclosed luminaires
- For use in UL Class 2 lighting systems
- Meets UL8750 recognized
- RoHS compliant

General Specifications

	80CRI						90CRI					
	2700K	3000K	3500K	4000K	4500K	5000K	2700K	3000K	3500K	4000K	4500K	5000K
Input Current	840 mA (Nominal)						840 mA (Nominal)					
Nom. Input Voltage	33.4 VDC						33.4 VDC					
Nom. Input Power	28.1 W						28.1 W					
Nom. Lumen Output	4892 lm	5005 lm	5118 lm	5225 lm	5311 lm	5382 lm	4129 lm	4224 lm	4319 lm	4410 lm	4482 lm	4542 lm
Nom. Efficacy	174 lm/W	178 lm/W	182 lm/W	186 lm/W	189 lm/W	192 lm/W	147 lm/W	150 lm/W	154 lm/W	157 lm/W	160 lm/W	162 lm/W
Input Current	1920 mA (Max.)						1920 mA (Max.)					
Nom. Input Voltage	35.5 VDC						35.5 VDC					
Nom. Input Power	68.2 W						68.2 W					
Nom. Lumen Output	10700 lm	10946 lm	11192 lm	11428 lm	11615 lm	11770 lm	9031 lm	9239 lm	9446 lm	9645 lm	9803 lm	9934 lm
Nom. Efficacy	157 lm/W	161 lm/W	164 lm/W	168 lm/W	170 lm/W	173 lm/W	133 lm/W	136 lm/W	139 lm/W	142 lm/W	144 lm/W	146 lm/W

Beam Angle	120°
Color Rendering Index	CRI >=90 (Standard); CRI>=80 (Optional)
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)	Safety: 105°C(221°F)
	L70(>60Khrs): 105°C(221°F)
	L90(45Khrs): 105°C(221°F)
Estimated Lumen Maintenance ^②	L70= >60,000 hours @ Tc max 105°C
	L90= 45,000 hours @ Tc max 105°C
Color Consistency	Binning per ANSI C78.377-2015 @ 25°C; Typ. 5 SDCM
Overall Size	44" L x 1.5" W x 0.24" H (1117.6mm x 38.1mm x 6.1mm H)
PCB Material	FR4 1.6mm
LED Quantity	144pcs. 2700K + 144pcs. 5000K
Module Weight	TBD
Maximum Screw Installation Torque	25 inch - ounces
Connector Type / Quantity	4pcs single pin SMD connector - BJB, Wago or equivalent
Packaging: Master Carton	TBD
Safety/Compliance	cURus (File # E351548)
	Suitable for UL Class 2 Lighting Systems
	RoHS Compliant
	Dry and Damp Location
Warranty	5 years @ Max. Tc from the date of manufacture

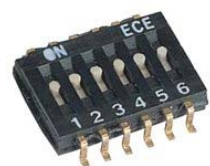
Tolerance for flux data is ±7%

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CCT Selection Indication

1. The VividHorse DC Module is a dual-channel LED product, that allows for CCT selection via the dip switch on the PCB. Available CCTs include 2700K, 3000K, 3500K, 4000K, 4500K and 5000K.
2. A pre-set CCT will come from the factory. Check the product label or packaging to see the pre-set CCT level.
3. Change the dip switch position to “ON” (1~6) to set the desired CCT level.

NOTE: ONLY keep one dip switch in the “ON” position, not doing so may result in an undesired CCT.

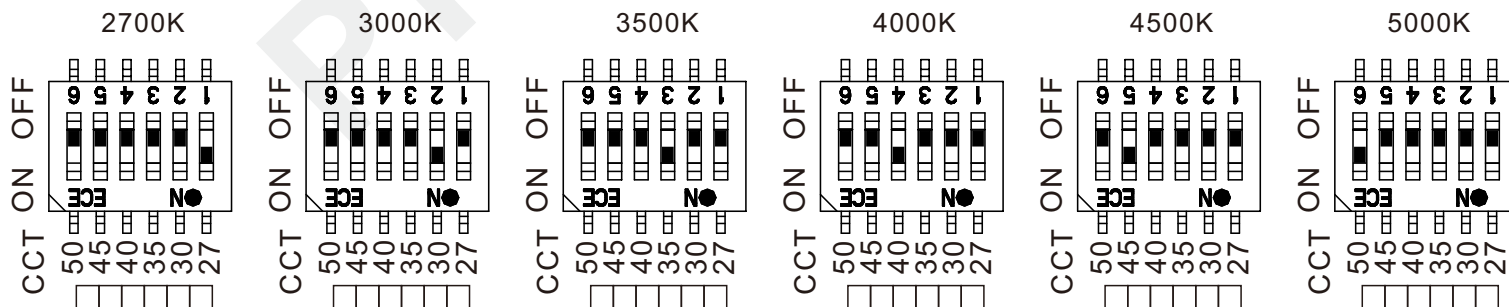


CCT Selection Dip Switch



CCT Indication Table

	1	2	3	4	5	6
2700K	ON	OFF	OFF	OFF	OFF	OFF
3000K	OFF	ON	OFF	OFF	OFF	OFF
3500K	OFF	OFF	ON	OFF	OFF	OFF
4000K	OFF	OFF	OFF	ON	OFF	OFF
4500K	OFF	OFF	OFF	OFF	ON	OFF
5000K	OFF	OFF	OFF	OFF	OFF	ON



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Electrical and Optical Specifications

2700K

LED Module Part Number	Number of LED	Input Current	Nom. Forward Voltage	Nom. Rated Power	Max. Fwd. Voltage	Max. Rated Power	Nom. Lum. Flux @2700K/80 CRI	Nom. Efficacy @2700K/80 CRI
VMU192072BR8TWA-44 (44")	144	240 mA	31.8 VDC	7.6 W	35 VDC	8 W	1405 lm	184 lm/W
		360 mA	32.2 VDC	11.6 W	35 VDC	13 W	2120 lm	183 lm/W
		480 mA	32.5 VDC	15.6 W	36 VDC	17 W	2826 lm	181 lm/W
		600 mA	32.8 VDC	19.7 W	36 VDC	22 W	3523 lm	179 lm/W
		720 mA	33.1 VDC	23.9 W	36 VDC	26 W	4212 lm	177 lm/W
		840 mA	33.4 VDC	28.1 W	37 VDC	31 W	4892 lm	174 lm/W
		960 mA	33.7 VDC	32.3 W	37 VDC	36 W	5565 lm	172 lm/W
		1080 mA	33.9 VDC	36.7 W	37 VDC	40 W	6231 lm	170 lm/W
		1200 mA	34.2 VDC	41.0 W	38 VDC	46 W	6889 lm	168 lm/W
		1320 mA	34.4 VDC	45.4 W	38 VDC	50 W	7540 lm	166 lm/W
		1440 mA	34.6 VDC	49.9 W	38 VDC	55 W	8185 lm	164 lm/W
		1560 mA	34.9 VDC	54.4 W	38 VDC	59 W	8822 lm	162 lm/W
		1680 mA	35.1 VDC	58.9 W	39 VDC	66 W	9454 lm	160 lm/W
		1800 mA	35.3 VDC	63.5 W	39 VDC	70 W	10080 lm	159 lm/W
		1920 mA*	35.5 VDC	68.2 W	39 VDC	75 W	10700 lm	157 lm/W

3000K

LED Module Part Number	Number of LED	Input Current	Nom. Forward Voltage	Nom. Rated Power	Max. Fwd. Voltage	Max. Rated Power	Nom. Lum. Flux @3000K/80 CRI	Nom. Efficacy @3000K/80 CRI
VMU192072BR8TWA-44 (44")	144	240 mA	31.8 VDC	7.6 W	35 VDC	8 W	1437 lm	188 lm/W
		360 mA	32.2 VDC	11.6 W	35 VDC	13 W	2169 lm	187 lm/W
		480 mA	32.5 VDC	15.6 W	36 VDC	17 W	2891 lm	185 lm/W
		600 mA	32.8 VDC	19.7 W	36 VDC	22 W	3604 lm	183 lm/W
		720 mA	33.1 VDC	23.9 W	36 VDC	26 W	4309 lm	181 lm/W
		840 mA	33.4 VDC	28.1 W	37 VDC	31 W	5005 lm	178 lm/W
		960 mA	33.7 VDC	32.3 W	37 VDC	36 W	5693 lm	176 lm/W
		1080 mA	33.9 VDC	36.7 W	37 VDC	40 W	6374 lm	174 lm/W
		1200 mA	34.2 VDC	41.0 W	38 VDC	46 W	7047 lm	172 lm/W
		1320 mA	34.4 VDC	45.4 W	38 VDC	50 W	7714 lm	170 lm/W
		1440 mA	34.6 VDC	49.9 W	38 VDC	55 W	8373 lm	168 lm/W
		1560 mA	34.9 VDC	54.4 W	38 VDC	59 W	9025 lm	166 lm/W
		1680 mA	35.1 VDC	58.9 W	39 VDC	66 W	9672 lm	164 lm/W
		1800 mA	35.3 VDC	63.5 W	39 VDC	70 W	10312 lm	162 lm/W
		1920 mA*	35.5 VDC	68.2 W	39 VDC	75 W	10946 lm	161 lm/W

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Electrical and Optical Specifications

3500K

LED Module Part Number	Number of LED	Input Current	Nom. Forward Voltage	Nom. Rated Power	Max. Fwd. Voltage	Max. Rated Power	Nom. Lum. Flux @3500K/80 CRI	Nom. Efficacy @3500K/80 CRI
VMU192072BR8TWA-44 (44")	144	240 mA	31.8 VDC	7.6 W	35 VDC	8 W	1470 lm	193 lm/W
		360 mA	32.2 VDC	11.6 W	35 VDC	13 W	2217 lm	192 lm/W
		480 mA	32.5 VDC	15.6 W	36 VDC	17 W	2956 lm	189 lm/W
		600 mA	32.8 VDC	19.7 W	36 VDC	22 W	3685 lm	187 lm/W
		720 mA	33.1 VDC	23.9 W	36 VDC	26 W	4405 lm	185 lm/W
		840 mA	33.4 VDC	28.1 W	37 VDC	31 W	5118 lm	182 lm/W
		960 mA	33.7 VDC	32.3 W	37 VDC	36 W	5821 lm	180 lm/W
		1080 mA	33.9 VDC	36.7 W	37 VDC	40 W	6517 lm	178 lm/W
		1200 mA	34.2 VDC	41.0 W	38 VDC	46 W	7206 lm	176 lm/W
		1320 mA	34.4 VDC	45.4 W	38 VDC	50 W	7887 lm	174 lm/W
		1440 mA	34.6 VDC	49.9 W	38 VDC	55 W	8561 lm	172 lm/W
		1560 mA	34.9 VDC	54.4 W	38 VDC	59 W	9228 lm	170 lm/W
		1680 mA	35.1 VDC	58.9 W	39 VDC	66 W	9889 lm	168 lm/W
		1800 mA	35.3 VDC	63.5 W	39 VDC	70 W	10544 lm	166 lm/W
		1920 mA*	35.5 VDC	68.2 W	39 VDC	75 W	11192 lm	164 lm/W

4000K

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
VMU192072BR8TWA-44 (44")	144	240 mA	31.8 VDC	7.6 W	35 VDC	8 W	1501 lm	197 lm/W
		360 mA	32.2 VDC	11.6 W	35 VDC	13 W	2264 lm	196 lm/W
		480 mA	32.5 VDC	15.6 W	36 VDC	17 W	3018 lm	193 lm/W
		600 mA	32.8 VDC	19.7 W	36 VDC	22 W	3762 lm	191 lm/W
		720 mA	33.1 VDC	23.9 W	36 VDC	26 W	4498 lm	189 lm/W
		840 mA	33.4 VDC	28.1 W	37 VDC	31 W	5225 lm	186 lm/W
		960 mA	33.7 VDC	32.3 W	37 VDC	36 W	5944 lm	184 lm/W
		1080 mA	33.9 VDC	36.7 W	37 VDC	40 W	6655 lm	182 lm/W
		1200 mA	34.2 VDC	41.0 W	38 VDC	46 W	7357 lm	179 lm/W
		1320 mA	34.4 VDC	45.4 W	38 VDC	50 W	8053 lm	177 lm/W
		1440 mA	34.6 VDC	49.9 W	38 VDC	55 W	8741 lm	175 lm/W
		1560 mA	34.9 VDC	54.4 W	38 VDC	59 W	9422 lm	173 lm/W
		1680 mA	35.1 VDC	58.9 W	39 VDC	66 W	10097 lm	171 lm/W
		1800 mA	35.3 VDC	63.5 W	39 VDC	70 W	10765 lm	170 lm/W
		1920 mA*	35.5 VDC	68.2 W	39 VDC	75 W	11428 lm	168 lm/W

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Electrical and Optical Specifications

4500K

LED Module Part Number	Number of LED	Input Current	Nom. Forward Voltage	Nom. Rated Power	Max. Fwd. Voltage	Max. Rated Power	Nom. Lum. Flux @4500K/80 CRI	Nom. Efficacy @4500K/80 CRI
VMU192072BR8TWA-44 (44")	144	240 mA	31.8 VDC	7.6 W	35 VDC	8 W	1525 lm	200 lm/W
		360 mA	32.2 VDC	11.6 W	35 VDC	13 W	2301 lm	199 lm/W
		480 mA	32.5 VDC	15.6 W	36 VDC	17 W	3067 lm	197 lm/W
		600 mA	32.8 VDC	19.7 W	36 VDC	22 W	3824 lm	194 lm/W
		720 mA	33.1 VDC	23.9 W	36 VDC	26 W	4572 lm	192 lm/W
		840 mA	33.4 VDC	28.1 W	37 VDC	31 W	5311 lm	189 lm/W
		960 mA	33.7 VDC	32.3 W	37 VDC	36 W	6041 lm	187 lm/W
		1080 mA	33.9 VDC	36.7 W	37 VDC	40 W	6764 lm	185 lm/W
		1200 mA	34.2 VDC	41.0 W	38 VDC	46 W	7478 lm	182 lm/W
		1320 mA	34.4 VDC	45.4 W	38 VDC	50 W	8185 lm	180 lm/W
		1440 mA	34.6 VDC	49.9 W	38 VDC	55 W	8884 lm	178 lm/W
		1560 mA	34.9 VDC	54.4 W	38 VDC	59 W	9577 lm	176 lm/W
		1680 mA	35.1 VDC	58.9 W	39 VDC	66 W	10262 lm	174 lm/W
		1800 mA	35.3 VDC	63.5 W	39 VDC	70 W	10942 lm	172 lm/W
		1920 mA*	35.5 VDC	68.2 W	39 VDC	75 W	11615 lm	170 lm/W

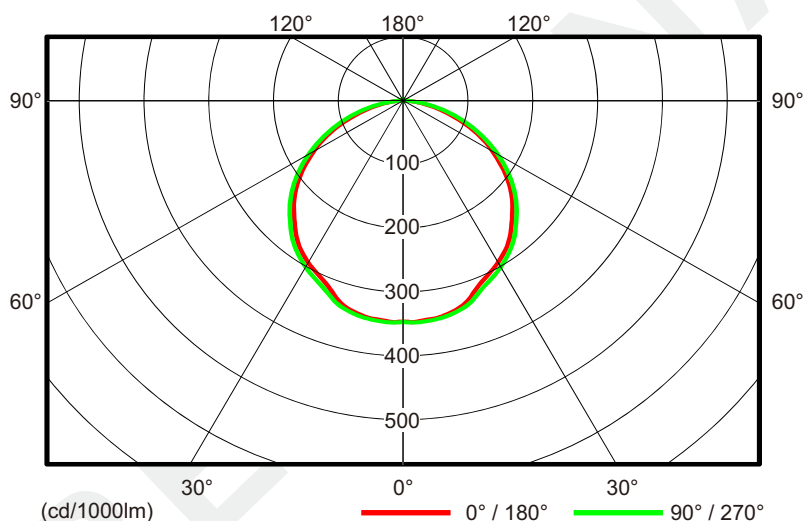
5000K

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/80 CRI	Nom. Efficacy @5000K/80 CRI
VMU192072BR8TWA-44 (44")	144	240 mA	31.8 VDC	7.6 W	35 VDC	8 W	1546 lm	203 lm/W
		360 mA	32.2 VDC	11.6 W	35 VDC	13 W	2332 lm	201 lm/W
		480 mA	32.5 VDC	15.6 W	36 VDC	17 W	3108 lm	199 lm/W
		600 mA	32.8 VDC	19.7 W	36 VDC	22 W	3875 lm	197 lm/W
		720 mA	33.1 VDC	23.9 W	36 VDC	26 W	4633 lm	194 lm/W
		840 mA	33.4 VDC	28.1 W	37 VDC	31 W	5382 lm	192 lm/W
		960 mA	33.7 VDC	32.3 W	37 VDC	36 W	6122 lm	189 lm/W
		1080 mA	33.9 VDC	36.7 W	37 VDC	40 W	6854 lm	187 lm/W
		1200 mA	34.2 VDC	41.0 W	38 VDC	46 W	7578 lm	185 lm/W
		1320 mA	34.4 VDC	45.4 W	38 VDC	50 W	8294 lm	183 lm/W
		1440 mA	34.6 VDC	49.9 W	38 VDC	55 W	9003 lm	181 lm/W
		1560 mA	34.9 VDC	54.4 W	38 VDC	59 W	9705 lm	178 lm/W
		1680 mA	35.1 VDC	58.9 W	39 VDC	66 W	10400 lm	177 lm/W
		1800 mA	35.3 VDC	63.5 W	39 VDC	70 W	11088 lm	175 lm/W
		1920 mA*	35.5 VDC	68.2 W	39 VDC	75 W	11770 lm	173 lm/W

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Light Distribution

Zone	Zone Flux	Zone Flux%	Sum Zone Flux	Sum Zone Flux%
0 ~ 10	83.2	3.3%	83.2	3.3%
10 ~ 20	239.9	9.5%	323.1	12.7%
20 ~ 30	358.0	14.1%	681.1	26.9%
30 ~ 40	439.8	17.4%	1120.9	44.2%
40 ~ 50	463.2	18.3%	1584.1	62.5%
50 ~ 60	415.1	16.4%	1999.2	78.9%
60 ~ 70	308.6	12.2%	2307.8	91.1%
70 ~ 80	167.7	6.6%	2475.5	97.7%
80 ~ 90	44.4	1.8%	2519.9	99.4%
90 ~ 180	14.7	0.6%	2534.6	100.0%



Luminous Flux De-Rating: CRI Multipliers

CRI 80(R9> 0)	1.000
CRI 90(R9>50)	0.844

NOTES:

- Performance data (pg. 3~5) is based on Tc mod = 25°C. See thermal de-rating chart (pg. 7) for higher temperature operation.
- Zone Flux and light distribution data (pg. 6) is based on nominal input current 840mA, 4000K sample, thermal stable.
- Tolerance for flux data is $\pm 7\%$
- Specifications are subject to change without notice.
- 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.
- Modules need to be operated at a current less than the max. current, below the Tc rating.

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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 140°F
Maximum Case Temperature (Tc)	Safety: 105°C(221°F) / L70(>54Khrs): 105°C(221°F) / L90(40Khrs): 105°C(221°F)

Thermal De-Rating

Module 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	0.998	0.991
35°C	0.997	0.983
40°C	0.995	0.974
45°C	0.993	0.966
50°C	0.991	0.957
55°C	0.990	0.949
60°C	0.988	0.940
65°C	0.986	0.932
70°C	0.985	0.923
75°C	0.983	0.915
80°C	0.981	0.906
85°C	0.980	0.898
90°C	0.978	0.890
95°C	0.976	0.881
100°C	0.974	0.873
105°C	0.973	0.864

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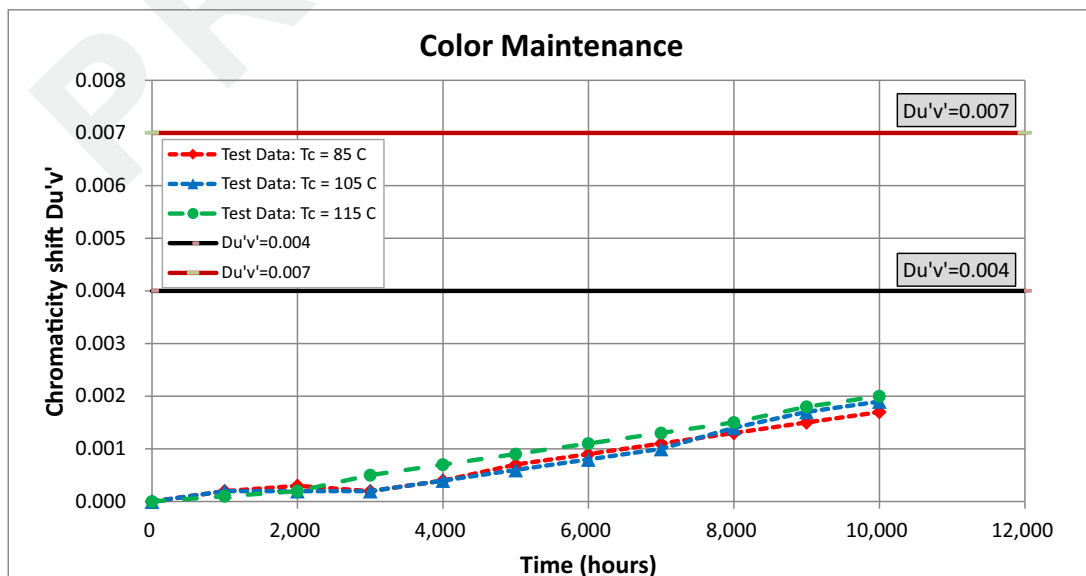
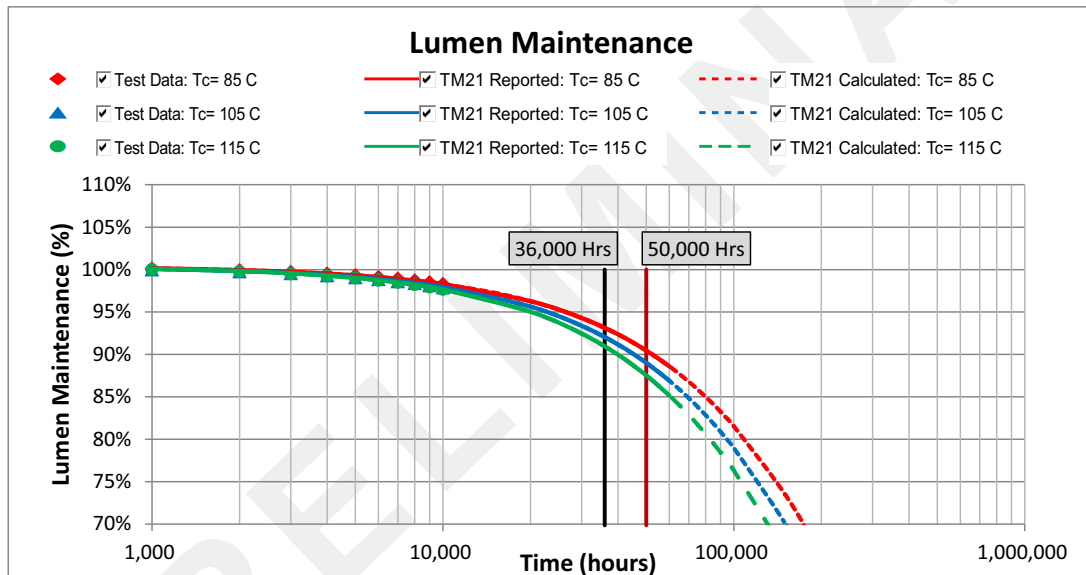
Certification Chart

Model	Classification
VMU192072BR8TWA-44	RoHS COMPLIANT
YES	RoHS COMPLIANT
YES	RoHS COMPLIANT
YES	RoHS COMPLIANT

Energy Star™ TM-21 Calculator Data

Tc Module	Reported L70	Reported L90
85°C	>60,000 Hrs	52,000 Hrs
105°C	>60,000 Hrs	45,000 Hrs
115°C	>60,000 Hrs	40,000 Hrs
Tc Module	Calculated L70	Calculated L90
85°C	247,000 Hrs	52,000 Hrs
105°C	214,000 Hrs	45,000 Hrs
115°C	187,000 Hrs	40,000 Hrs

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

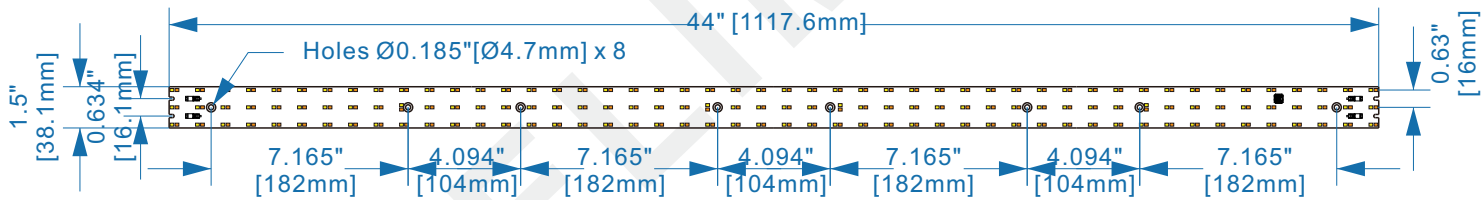


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Mechanical Drawings

44"L x 1.5"W x 0.24"H
 [1117.6mm x 38.1mm x 6.2mm]

Overall Dimensions	
Length	44" [1117.6mm]
Width	1.5" [38.1mm]
Height	0.24" [6.1mm]
PCB Thickness	0.063" [1.6mm]



LED Pitch in x direction: 0.928" [23.57mm]

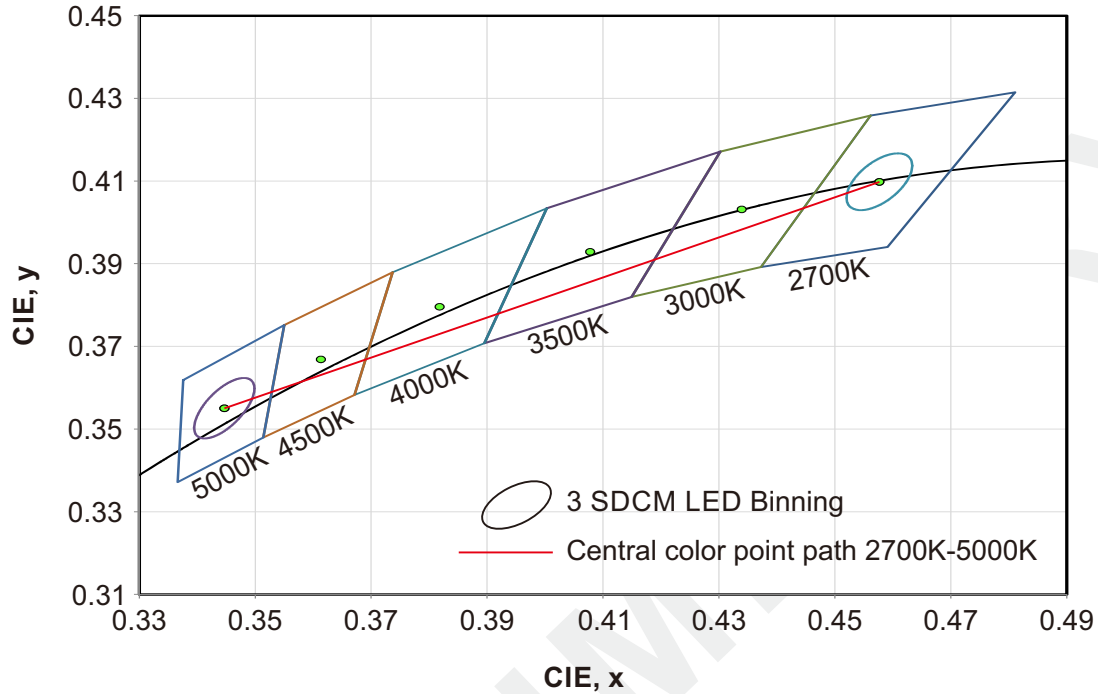
TOP VIEW

Screw Instructions:

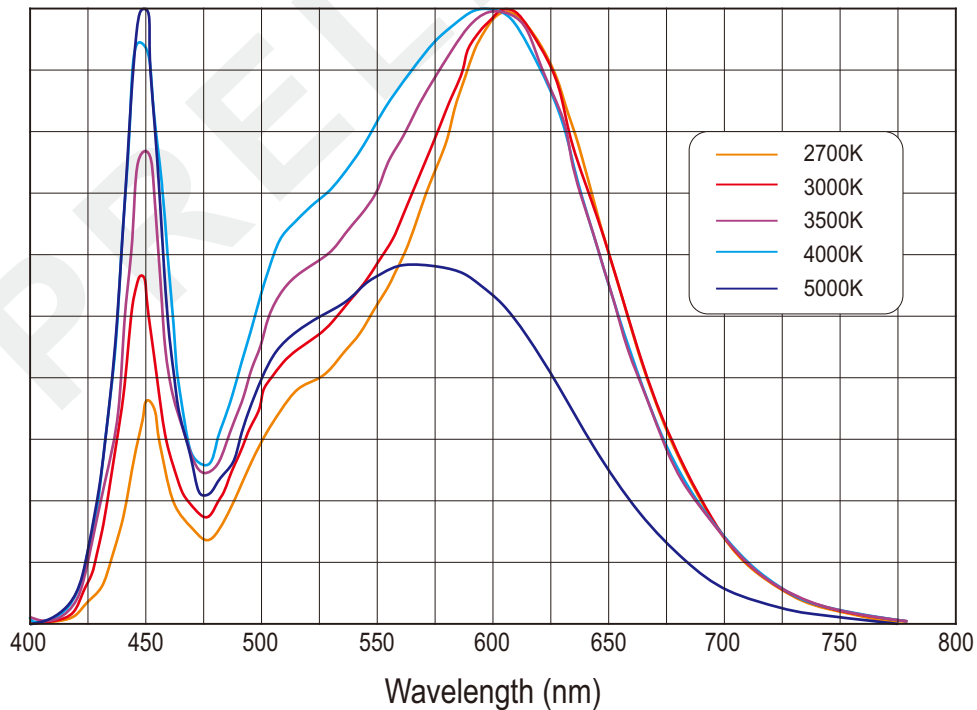
- Recommended Screws: 6#
- DO NOT use screws with metal head, if the screw head diameter is $\geq 0.295"$ [7.5mm] and $\leq 0.433"$ [11mm].
- DO NOT use any screws with head diameter $> 0.433"$ [11mm].

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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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Guidelines

Termination Notes

- Connector Type: BJB 46.131.1001 (1 pin push wire connector)
 - AWG: 24...18 solid wire
 - Strip length: 8mm / 0.315in
 - Connector Max amp. rating: 9 Amps.



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.
- 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>.

Environmental Rating

- 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.

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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Part Number Matrix

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Product Line	Type	Control Type	Input Current	Typ. Power	Design	CRI	Color Temperature	Option	Length
V = VividHorse	M = Module (UL Class 2)	U = None	192 = 1920mA Max.	072 = 72W	BR = Bar	8 = 80 9 = 90	⊙TW = 2700K-5000K Tunable White	A = Standard	44 = 44"

⊙ CRI90 option is standard; CRI80 option is made to order with MOQ and lead time.

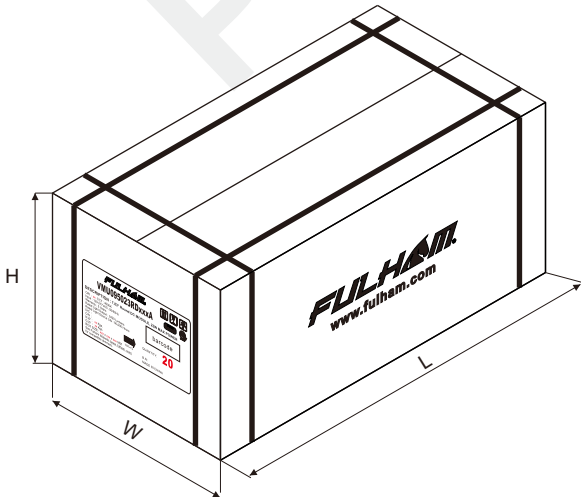
Product Image:



TOP VIEW

Packaging

Master Carton



OUTER DIMENSION		
L	W	H
11.14"(283mm)	11.14"(283mm)	9.76"(248mm)
Net Weight	Gross Weight	QUANTITY
2.74 lbs. (1.24 kg)	7.28 lbs. (3.3 kg)	20pcs.