

VM2240200RT8xxA

4" x 11" RECTANGULAR DC MODULE, 2 CHANNELS, 2400mA MAX PER CHANNEL

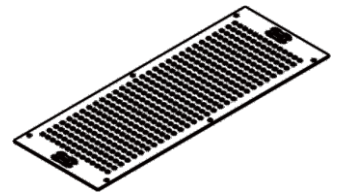
- 2 Channels Input
- Up to 200W total channels, high lumen output, high efficacy
- Compact and symmetric form factor, ease of system design
- Through board connector for minimum shadowing
- Suitable for High bay, Canopy and Flood applications
- Each channel for use in UL Class 2 lighting systems
- Suitable for DLC applications: L70>60,000hrs / L90=40,000hrs
- Meets UL8750 recognized
- RoHS compliant

General Specifications

	Min.	Typical	Typical	Max.
Input Voltage Per Channel ^①	37.0VDC	39.6VDC	40.4VDC	41.4VDC
Input Current Per Channel ^①	300mA	1400mA	1800mA	2400mA
Input Power Total ^①	22.2W	111.0W	145.3W	198.6W
Initial Lumens Total @4000K / 80CRI	4,815 lumens	21,296 lumens	26,880 lumens	34,901 lumens
Initial Lm/W @4000K / 80CRI	217 lm/W	192 lm/W	185 lm/W	176 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 (Ts=110°C) / L90: Tc max 105°C (Ts=110°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	11" L x 4" W x 0.29" H (279.4mm x 101.6mm x 7.45mm)			
PCB Material / Thermal Conductivity	MCPCB (Aluminum Clad) 1.6mm, 1oz, 1.0W / mK			
LED Quantity	420pcs.			
Module Weight	TBD			
PCB Part Number	TBD			
Maximum Screw Installation Torque	25 inch - ounces			
Connector Type	WAGO #2070-542 / 998-406 (2 pin through board connector)			
Packaging: Master Carton	TBD			
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			

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

^② TM-21 Reported Numbers



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Electrical and Optical Specifications

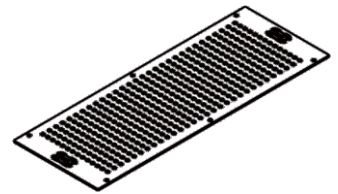
LED Module Part Number	Number of LED	Input Current Per Channel	Nom. Forward Voltage	Nom. Rated Power Total	Max. Fwd. Voltage	Max. Rated Power Total	Nom. Lum. Flux @4000K/80 CRI	Nom. Efficacy @4000K/80 CRI
VM2240200RT8xxA	420	300 mA	37.0 V	22.2 W	40 V	24 W	4815 lm	217 lm/W
		400 mA	37.3 V	29.9 W	40 V	32 W	6387 lm	214 lm/W
		500 mA	37.6 V	37.6 W	40 V	40 W	7944 lm	211 lm/W
		600 mA	37.9 V	45.4 W	41 V	49 W	9486 lm	209 lm/W
		700 mA	38.1 V	53.4 W	41 V	57 W	11012 lm	206 lm/W
		800 mA	38.4 V	61.4 W	41 V	66 W	12524 lm	204 lm/W
		900 mA	38.6 V	69.5 W	41 V	74 W	14021 lm	202 lm/W
		1000 mA	38.8 V	77.7 W	42 V	84 W	15504 lm	200 lm/W
		1100 mA	39.1 V	85.9 W	42 V	92 W	16972 lm	198 lm/W
		1200 mA	39.3 V	94.2 W	42 V	101 W	18427 lm	196 lm/W
		1300 mA	39.5 V	102.6 W	42 V	109 W	19868 lm	194 lm/W
		1400 mA	39.6 V	111.0 W	42 V	118 W	21296 lm	192 lm/W
		1500 mA	39.8 V	119.5 W	43 V	129 W	22711 lm	190 lm/W
		1600 mA	40.0 V	128.1 W	43 V	138 W	24113 lm	188 lm/W
		1700 mA	40.2 V	136.7 W	43 V	146 W	25502 lm	187 lm/W
		1800 mA	40.4 V	145.3 W	43 V	155 W	26880 lm	185 lm/W
		1900 mA	40.5 V	154.0 W	43 V	163 W	28245 lm	183 lm/W
		2000 mA	40.7 V	162.8 W	44 V	176 W	29599 lm	182 lm/W
		2100 mA	40.9 V	171.7 W	44 V	185 W	30941 lm	180 lm/W
		2200 mA	41.0 V	180.6 W	44 V	194 W	32272 lm	179 lm/W
		2300 mA	41.2 V	189.5 W	44 V	202 W	33592 lm	177 lm/W
		2400 mA*	41.4 V	198.6 W	44 V	211 W	34901 lm	176 lm/W

Luminous Flux De-Rating: CCT and CRI Multipliers

	2700K	3000K	3500K	4000K	5000K	5700K	6500K
CRI 80(R9> 0)	0.929	0.955	0.968	1.000	1.013	1.006	1.000
CRI 90(R9>50)	0.776	0.801	0.821	0.863	0.869	0.865	0.863

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 configured 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) 70CRI is NOT available.



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Thermal Specifications

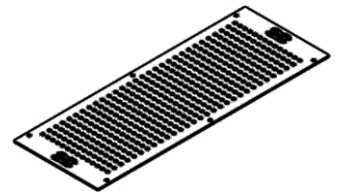
DC Module

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
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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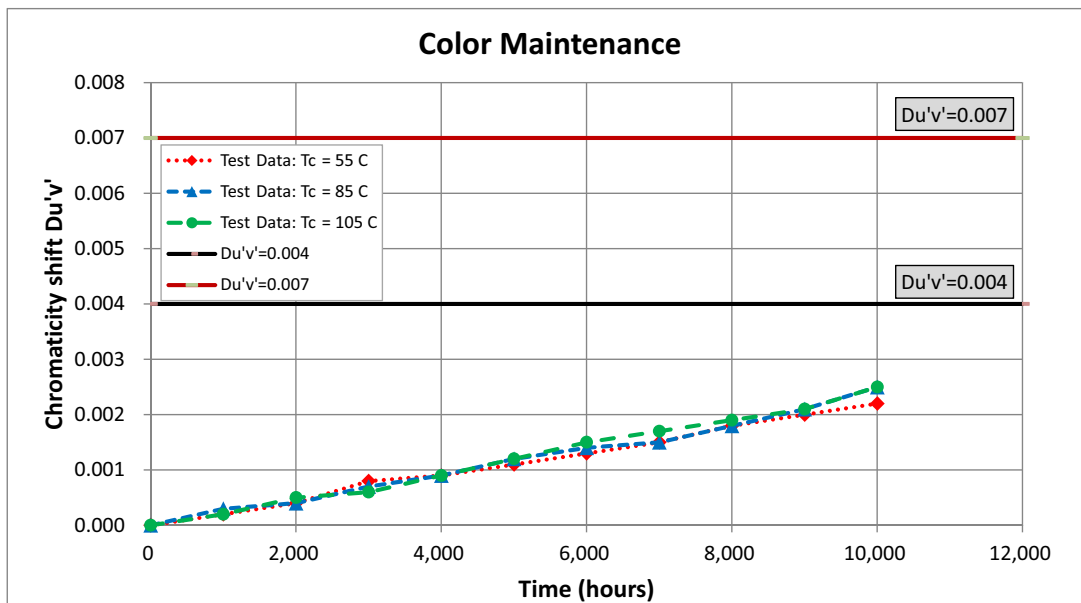
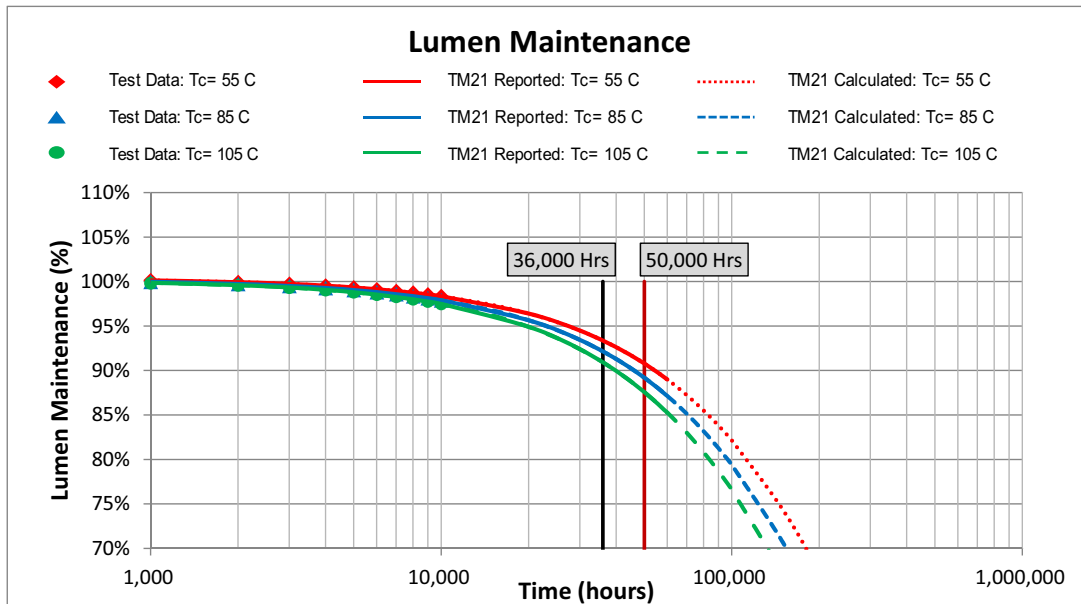
Certification Chart

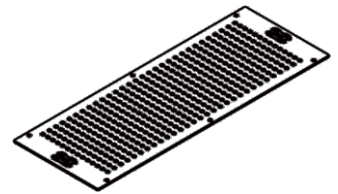
Classification	Model
	VM2240200RT8xxA
RoHS COMPLIANT	YES
cULUS	YES
CE	Pending
Energy Efficiency Label (EEI-Label)	A++
Suitable for UL Class 2 Lighting System	YES

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 & TM-21 Calculation

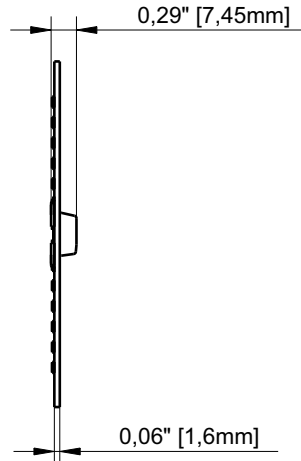




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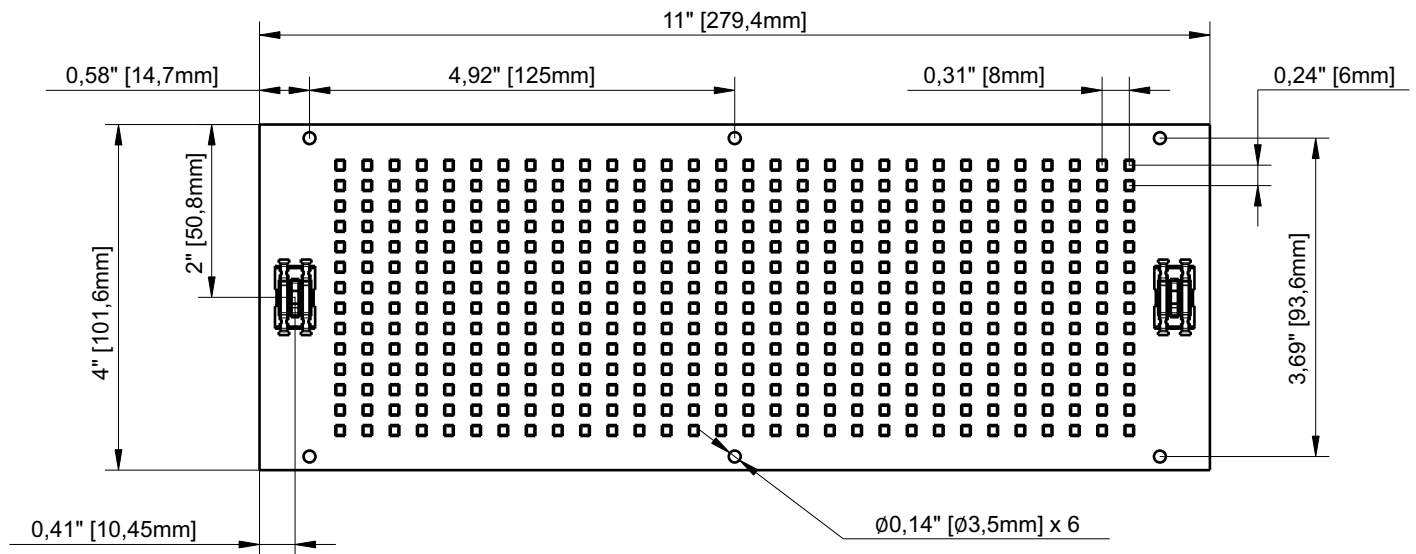
Mechanical Drawings

4" x 11"



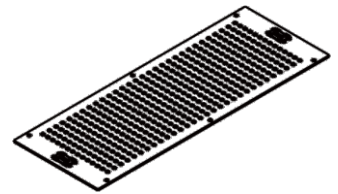
SIDE VIEW

Overall Dimensions	
Length	11" [279.4mm]
Width	4" [101.6mm]
Height	0.29" [7.45mm]



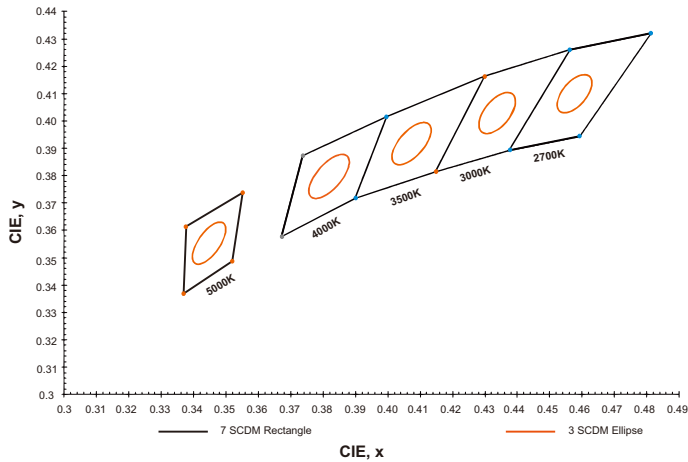
PCB & Heatsink opening for connector:
0.512" x 0.43" [13mmx10.9mm]

TOP VIEW

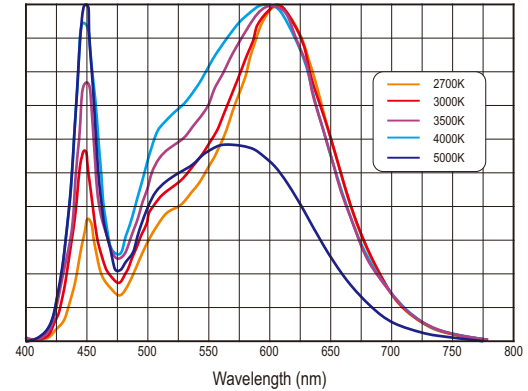


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Color and Binning



Optical Spectrum



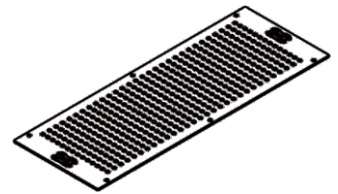
Compatible Fulham Drivers

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

- LP-LinearHO System Combination:
- 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; 3 SDCM.
- 3) The Optical Spectrum values vary depending on product type and color rank.
- 4) Driver not included.
- 5) Do not connect LinearHO 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.

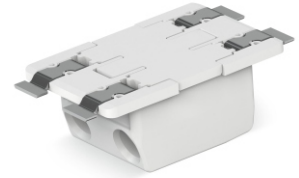


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Guidelines

Termination Notes

- Connector Type: WAGO #2070-542 / 998-406 (2 pin through board connector)
 - AWG: 24...18 solid wire
 - Strip length: 8...10mm / 0.315...0.394in
 - Connector Max amp. rating: 9 Amps.



For more detail information, please visit Wago's website:

Fastening Notes

- 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.

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)

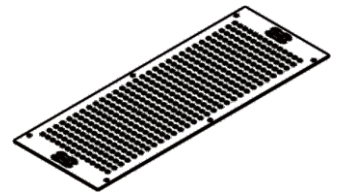
- Fulham LED products should be handled with proper measures to protect against any potential ESD damage.
- When servicing, personnel should be ground and direct contact with LED should be avoided.

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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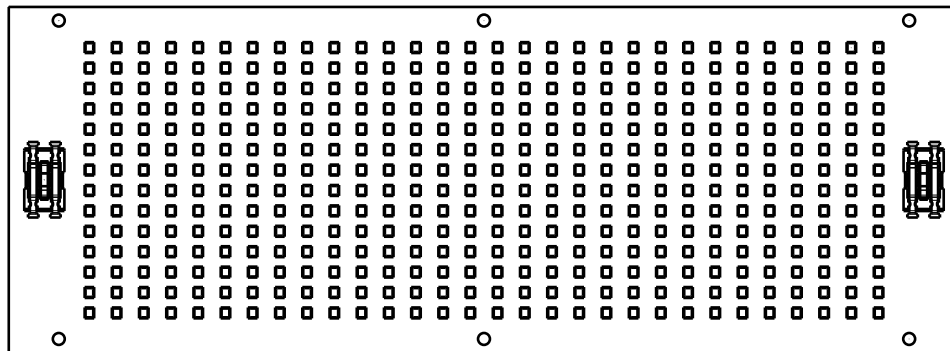
Part Number Matrix

V M 2 240 200 RT 8 XX A

Product Line	Type	Output Channel	Input Current	Max. Power	Design	CRI ^②	Color Temperature	Option
V = Vizion	M = Module (UL Class 2)	2 = 2 Channels	240 = 2400mA Max. per channel	200 = 200W total channels	RT=Rectangular	8 = 80 9 = 90	27 = 2700K 30 = 3000K 35 = 3500K 40 = 4000K 50 = 5000K 57 = 5700K 65 = 6500K	A = Standard ②D = Conformal Coating (MTO)

- ② All CCT, CRI options are made to order with MOQ and lead time
 ② See page #7 for Conformal Coating information. Made to order (MTO).

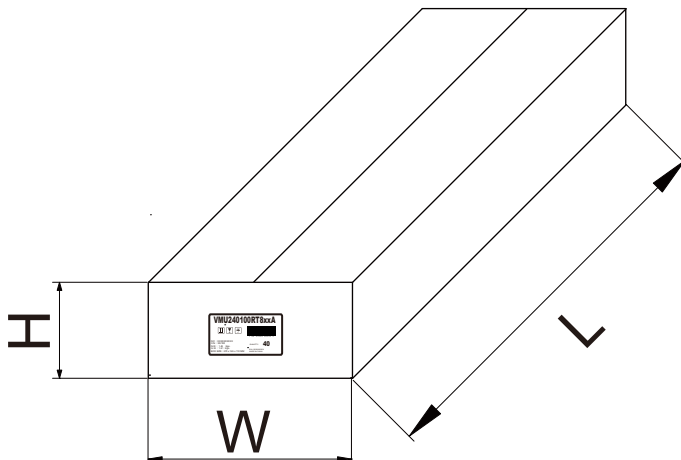
Product Image:



TOP VIEW

Packaging

Master Carton



OUTER DIMENSION		
L	W	H
xxx"(xxx mm)	xxx"(xxs mm)	xxx"(xxx mm)
Net Weight	Gross Weight	QUANTITY
xxx lbs. (xxx kg)	xxx lbs. (xxx kg)	TBD