VMU252095CT9xxHT-48

47.95" CUTTABLE DC MODULE, HIGH EFFICACY CRI90, 2520mA MAX CURRENT

- For use in UL Class 2 lighting systems
- Constant current for maximum efficacy
- 48" length, cuttable at every 1.333"
- Potassium Fluorosilicate (PFS) phosphor LEDs to achieve as high efficacy as today's CRI80 LEDs
- Lumen Maintenance: L70>72,000hrs / L90=33,000hrs
- Meets UL8750 recognized
- RoHS compliant
- Ideal for linear architectural applications

General Specifications

	48"(47.95")	24"(23.975")	1.333"
LED Quantity	144 (4s36p)	72 (4s18p)	4 (4s1p)
Input Voltage ①	34.7VDC	34.7VDC	34.7VDC
Input Current ①	2520mA Max.	1260mA Max.	70mA Max.
Input Power ①	87.3W	43.7W	2.4W
Initial Lumens @4000K / 80CRI ①	14,782 lumens	7,391 lumens	411 lumens
Initial Lm/W @4000K / 80CRI ①	169 lm/W	169 lm/W	169 lm/W
Initial Lumens per inch @Max. Current ①	308 lm/inch		
Initial Lumens per string @Max. Current ①	411 lm/string (4 LEDs)		
Beam Angle	120°		
CRI	90CRI		
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: >72,000Hrs@105°C / L90: 33,000Hrs@105°C, 36,000hrs@90°C		
Color Consistency	Binning per ANSI C78.377-2015 @ 25°C; 3 SDCM		
Overall Size	47.95" L x 0.75" W x 0.173" H (1218mm x 19.05mm x 4.4mm)		
PCB Material / Thermal Conductivity	FR-4, 1.6mm thickness, 1oz copper, 0.3W/mK		
Module Weight	109g / 0.24lb.		
PCB Part Number	PTL078C01F4		
Maximum Screw Installation Torque	25 inch - ounces		
Connector Type	BJB #46.141.1001 or equivalent (single pole nano connector)		
Packaging: Master Carton	100pcs		
Thermal Feedback	Not Available		
Safety/Compliance	cURus (File # E351548)		
	Suitable for UL Class 2 Lighting Systems		
	RoHS Compliant		
	Dry and Damp Location		
Warranty	5 years @ Tc=90°C 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

VMU252095CT9xxHT-48

RoHS COMPLIANT

Electrical and Optical Specification

Full length - 48"

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/90 CRI	Nom. Efficacy @4000K/90 CRI	Nom. Lum. Flux per inch @4000K/90CRI	Nom. Lum. Flux per string @4000K/90CRI
VMU252095CT9xxHT-48 Full Length 48" (36 Segments)	144	500 mA	32.2 VDC	16.1 W	35 VDC	18 W	3146 lm	195 lm/W	66 lm/inch	87 lm/string
		600 mA	32.4 VDC	19.4 W	36 VDC	22 W	3764 lm	194 lm/W	78 lm/inch	105 lm/string
		700 mA	32.5 VDC	22.8 W	36 VDC	25 W	4378 lm	192 lm/W	91 lm/inch	122 lm/string
		800 mA	32.7 VDC	26.1 W	36 VDC	29 W	4988 lm	191 lm/W	104 lm/inch	139 lm/string
		900 mA	32.8 VDC	29.5 W	36 VDC	32 W	5593 lm	189 lm/W	117 lm/inch	155 lm/string
		1000 mA	33.0 VDC	33.0 W	36 VDC	36 W	6195 lm	188 lm/W	129 lm/inch	172 lm/string
		1100 mA	33.1 VDC	36.4 W	36 VDC	40 W	6793 lm	187 lm/W	142 lm/inch	189 lm/string
		1200 mA	33.2 VDC	39.9 W	37 VDC	44 W	7386 lm	185 lm/W	154 lm/inch	205 lm/string
		1300 mA	33.3 VDC	43.3 W	37 VDC	48 W	7975 lm	184 lm/W	166 lm/inch	222 lm/string
		1400 mA	33.5 VDC	46.8 W	37 VDC	52 W	8560 lm	183 lm/W	178 lm/inch	238 lm/string
		1500 mA	33.6 VDC	50.4 W	37 VDC	56 W	9140 lm	181 lm/W	190 lm/inch	254 lm/string
		1600 mA	33.7 VDC	53.9 W	37 VDC	59 W	9715 lm	180 lm/W	202 lm/inch	270 lm/string
		1700 mA	33.8 VDC	57.5 W	37 VDC	63 W	10286 lm	179 lm/W	214 lm/inch	286 lm/string
		1800 mA	33.9 VDC	61.1 W	37 VDC	67 W	10852 lm	178 lm/W	226 lm/inch	301 lm/string
		1900 mA	34.0 VDC	64.7 W	37 VDC	70 W	11414 lm	177 lm/W	238 lm/inch	317 lm/string
		2000 mA	34.1 VDC	68.3 W	38 VDC	76 W	11970 lm	175 lm/W	249 lm/inch	333 lm/string
		2100 mA	34.2 VDC	71.9 W	38 VDC	80 W	12522 lm	174 lm/W	261 lm/inch	348 lm/string
		2200 mA	34.3 VDC	75.5 W	38 VDC	84 W	13068 lm	173 lm/W	272 lm/inch	363 lm/string
		2300 mA	34.4 VDC	79.2 W	38 VDC	87 W	13609 lm	172 lm/W	284 lm/inch	378 lm/string
		2400 mA	34.5 VDC	82.9 W	38 VDC	91 W	14146 lm	171 lm/W	295 lm/inch	393 lm/string
		2520 mA*	34.7 VDC	87.3 W	38 VDC	96 W	14782 lm	169 lm/W	308 lm/inch	411 lm/string

Luminous Flux De-Rating: CCT and CRI Multipliers

	2700K	3000K	3500K	4000K	5000K	5700K	6500K
CRI 90(R9> 50)	0.962	0.976	0.979	1.000	1.000	0.979	0.979

NOTES:

1) Performance 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. Lumen tolerance +/- 8%.
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) 70CRI is NOT available.

VMU252095CT9xxHT-48

RoHS COMPLIANT

Electrical and Optical Specification

Every Single Cut - 1.333"

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/90 CRI	Nom. Efficacy @4000K/90 CRI	Nom. Lum. Flux per inch @4000K/90CRI	Nom. Lum. Flux per string @4000K/90CRI
Every Single Cut 1.33" (1 Segment)	4	15 mA	32.3 VDC	0.5 W	36 VDC	1 W	94 lm	195 lm/W	71 lm/inch	94 lm/string
		20 mA	32.6 VDC	0.7 W	36 VDC	1 W	125 lm	192 lm/W	94 lm/inch	125 lm/string
		25 mA	32.8 VDC	0.8 W	36 VDC	1 W	155 lm	189 lm/W	117 lm/inch	155 lm/string
		30 mA	33.1 VDC	1.0 W	36 VDC	1 W	185 lm	187 lm/W	139 lm/inch	185 lm/string
		35 mA	33.3 VDC	1.2 W	37 VDC	1 W	215 lm	185 lm/W	161 lm/inch	215 lm/string
		40 mA	33.5 VDC	1.3 W	37 VDC	1 W	244 lm	182 lm/W	183 lm/inch	244 lm/string
		45 mA	33.7 VDC	1.5 W	37 VDC	2 W	273 lm	180 lm/W	205 lm/inch	273 lm/string
		50 mA	33.9 VDC	1.7 W	37 VDC	2 W	301 lm	178 lm/W	226 lm/inch	301 lm/string
		55 mA	34.1 VDC	1.9 W	38 VDC	2 W	329 lm	176 lm/W	247 lm/inch	329 lm/string
		60 mA	34.3 VDC	2.1 W	38 VDC	2 W	357 lm	173 lm/W	268 lm/inch	357 lm/string
		65 mA	34.5 VDC	2.2 W	38 VDC	2 W	384 lm	171 lm/W	288 lm/inch	384 lm/string
		70 mA*	34.7 VDC	2.4 W	38 VDC	3 W	411 lm	169 lm/W	308 lm/inch	411 lm/string

Luminous Flux De-Rating: CCT and CRI Multipliers

	2700K	3000K	3500K	4000K	5000K	5700K	6500K
CRI 90(R9> 50)	0.962	0.976	0.979	1.000	1.000	0.979	0.979

NOTES:

1) Performance 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. Lumen tolerance +/- 8%.
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) 70CRI is NOT available.

VMU252095CT9xxHT-48

RoHS COMPLIANT

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	0.991
35ºC	0.996	0.983
40ºC	0.993	0.974
45ºC	0.991	0.965
50ºC	0.989	0.956
55ºC	0.987	0.947
60ºC	0.985	0.938
65ºC	0.983	0.929
70ºC	0.981	0.920
75ºC	0.978	0.911
80ºC	0.976	0.902
85ºC	0.974	0.892
90ºC	0.971	0.883
95ºC	0.969	0.873
100ºC	0.966	0.863
105ºC	0.964	0.853

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.

VMU252095CT9xxHT-48

Certification Chart

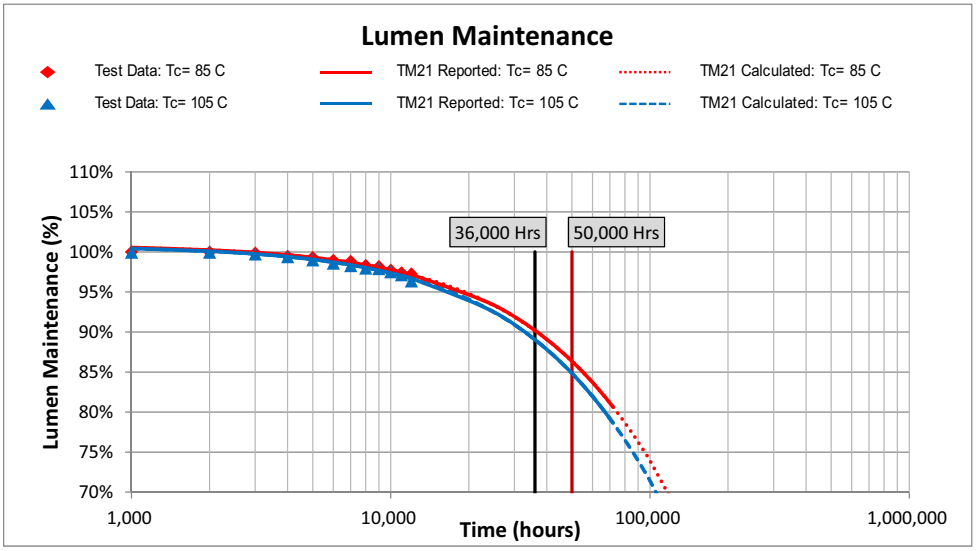
Classification \ Model	VMU252095CT9xxHT-48
RoHS COMPLIANT	YES
c UL us	YES
Suitable for UL Class 2 Lighting System	YES

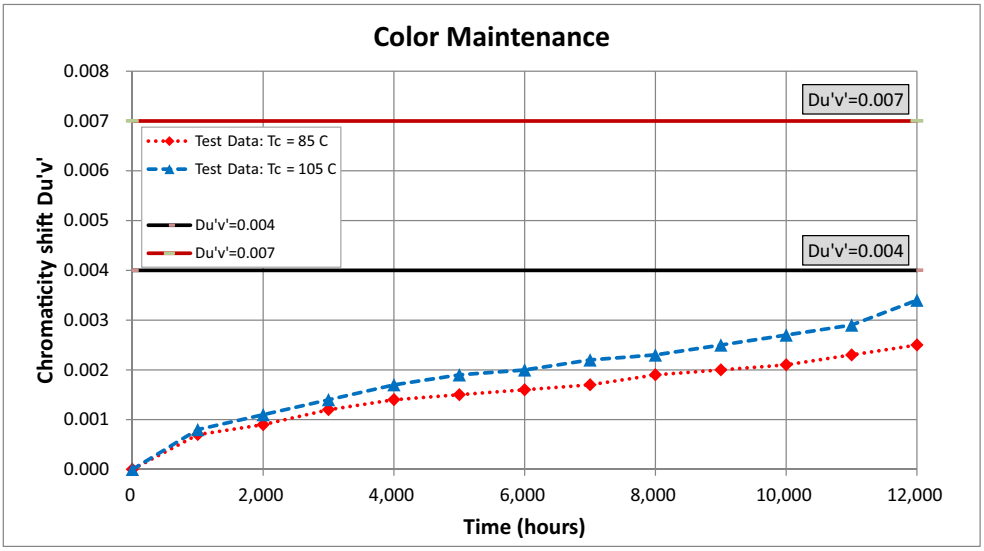
Energy Star™ TM-21 Calculator Data

Tc Module	Reported L70	Reported L90
85°C	>72,000 Hrs	37,000 Hrs
90°C	>72,000 Hrs	36,000 Hrs
105°C	>72,000 Hrs	33,000 Hrs

Tc Module	Calculated L70	Calculated L90
85°C	117,000 Hrs	37,000 Hrs
90°C	114,000 Hrs	36,000 Hrs
105°C	105,000 Hrs	33,000 Hrs

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





VMU252095CT9xxHT-48

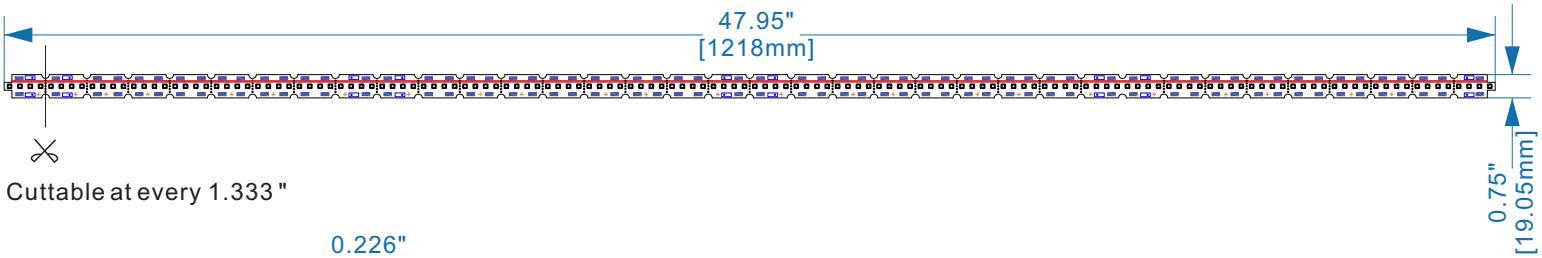
RoHS COMPLIANT

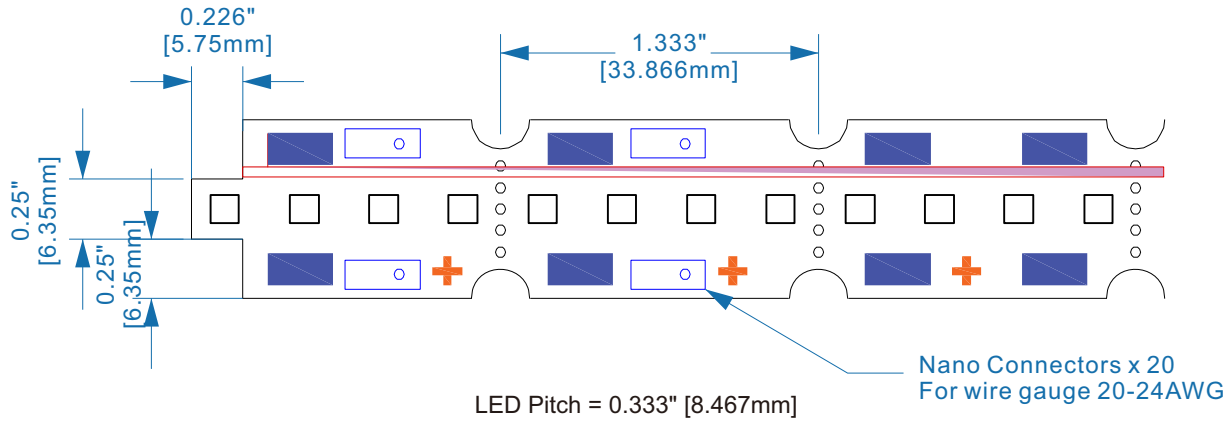
Mechanical Drawings

47.95"
[1218mm]

Overall Dimensions	
Length	47.95" [1218mm]
Width	0.75" [19.05mm]
Height (with Connector)	0.173" [4.4mm]
PCB Thickness	0.063" [1.6mm]

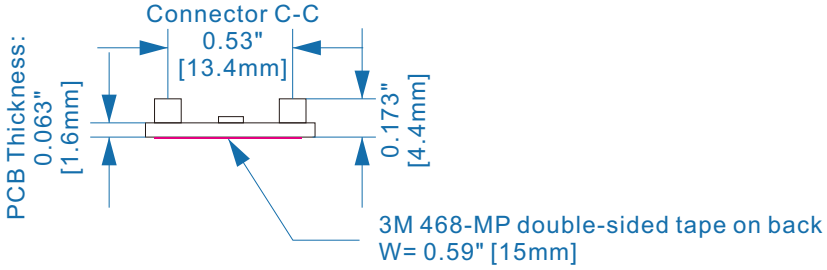
47.95" -144pcs LEDs





LED Pitch = 0.333" [8.467mm]

TOP VIEW

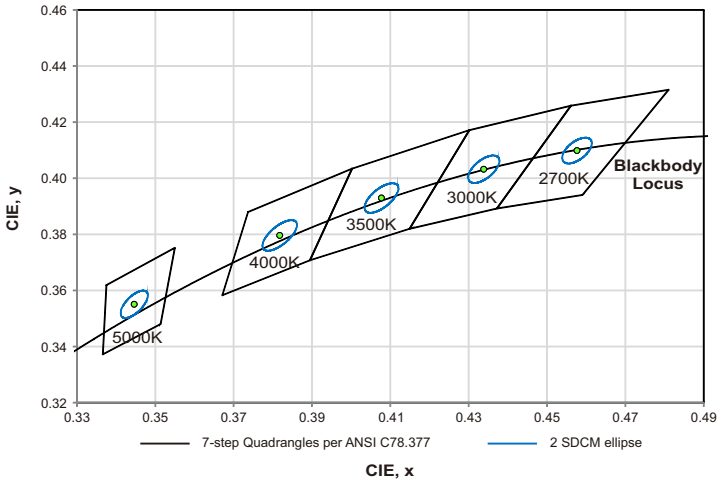


SIDE VIEW

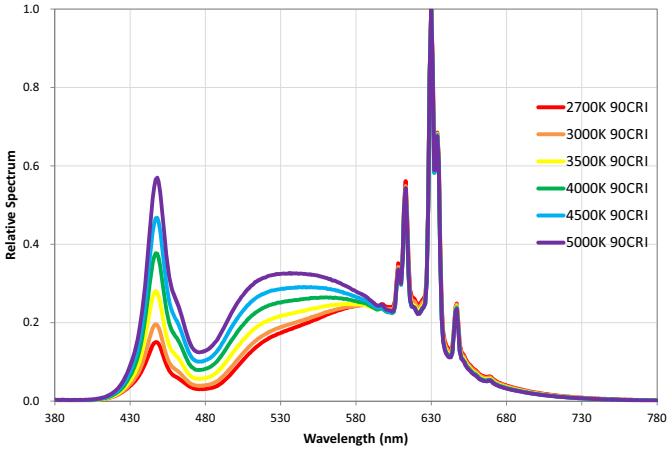
VMU252095CT9xxHT-48

RoHS COMPLIANT

Color and Binning



Optical Spectrum



Compatible Fulham Drivers

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

- 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 DC 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.

VMU252095CT9xxHT-48

Guidelines

Termination Notes

- Connector Type: BJB Single Pole SMD Terminal Block, Part #: 46.141.1001 or Wago Part #: 2059-301
- cURus, ENEC Rating: 3A/320V
- Use solid wire size 20 - 24 AWG, and stripped to length 7 mm (0.275 inches).

Fastening Notes

- This module is not designed to work with metal screws. Fastening using plastic crews or double-sided tape is preferred.
- 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.

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.

VMU252095CT9xxHT-48

RoHS COMPLIANT

Part Number Matrix

V M U 252 095 CT 9 XX HT-48

Product Line	Type	Control Type	Input Current	Max. Power	Design	CRI	Color Temperature	Option	Length
V = Vizion	**M** = Module (UL Class 2)	**U** = None	**252** = 2520mA Max.	**095** = 95W	**CT**=Cuttable	**9** = 90CRI	**27** = 2700K **30** = 3000K **35** = 3500K **40** = 4000K **50** = 5000K **57** = 5700K **65** = 6500K	**HT** = High Efficacy CRI90 Version with 3M-468 tape on back	**48** = 48"

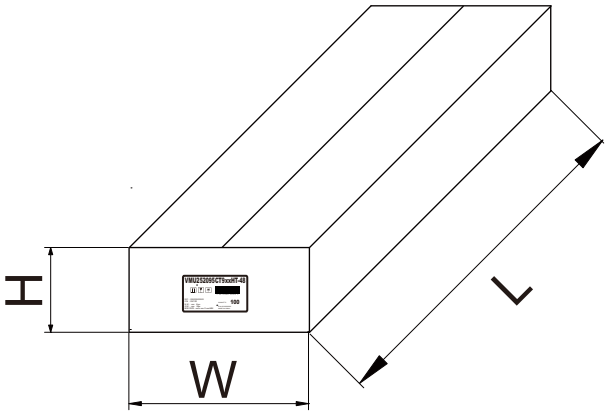
All CCT and CRI options are made to order with MOQ and lead time.

Product Image:

TOP VIEW

Packaging

Master Carton



OUTER DIMENSION		
L	W	H
49.45"(1256mm)	8.66"(220mm)	6.5"(165mm)

Net Weight	Gross Weight	QUANTITY
24 lbs. (10.9kg)	27.34 lbs. (12.4kg)	100pc.