TMU140055CL84050H

RoHS COMPLIANT

44" 2-CCT SELECTABLE LINEARHO DC MODULE, 1400mA MAX CURRENT

- 4000K/5000K 2-CCT Selectable
- Extruded Aluminum material for thermal management
- Magnets pre-mounted, for ease of installation
- High lumen, high efficacy, suitable for DLC 6.0
- Accessories: Diffused lens and End-Caps available
- For use in UL Class 2 lighting systems
- Suitable for DLC applications: L70>60,000hrs / L90>60,000hrs
- Meets UL8750 recognized
- RoHS compliant
- The module is supplied by short circuit proof SELV controlgear

General Specifications

	4000K/80CRI	4000K/80CRI	5000K/80CRI	5000K/80CRI
Input Voltage ①	32.7VDC	34.0VDC	33.3VDC	35.2VDC
Input Current ①	700mA	1400mA(Max.)	700mA	1400mA(Max.)
Input Power ①	22.9W	47.7W	23.3W	49.2W
Initial Lumens @4000K / 80CRI	4,504 lumens	8,886 lumens	4,659 lumens	9,050 lumens
Initial Lm/W @4000K / 80CRI	197 lm/W	186 lm/W	200 lm/W	184 lm/W

Beam Angle	120°
CRI	80CRI Standard; 90CRI 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)	L70: Tc max 105°C/ L90: Tc max 105°C
Estimated Lumen Maintenance ②	L70: >60,000Hrs / L90: >60,000Hrs
Color Consistency	Binning per ANSI C78.377-2015 @ 25°C; 3 SDCM Typ.; 6 SDCM Max.
Overall Size	44” x 1.73” x 0.52” (1120mm x 44mm x 13.2mm)
PCB Material / Thermal Conductivity	MCPCB/ 1.0W/mK
Extruded Material / Finish	Aluminum/surface treatment with Anodic Oxidation
LED Quantity	108pcs CW + 60pcs WW
Module Weight	220g / 0.48lb.
PCB Part Number	PTL097C01M1
Magnets Quantity / Magnetic Force	3 / 2N (.45lbf) per magnet
Maximum Screw Installation Torque	25 inch - ounces
Connector Type	WAGO #744-392 (2 pin connector)
Packaging: Master Carton	20pcs.
Thermal Feedback	Not Available
Safety/Compliance	cURus (File # E351548)
	Suitable for UL Class 2 Lighting Systems
	RoHS Compliant
	Dry and Damp Location
	CE (IEC 62031: 2008. AMD1: 2012, AMD2: 2014)
	SELV
Energy Efficiency Label (EEI-Label)	C
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. 5) for higher temperature operation.

②TM-21 Reported Numbers

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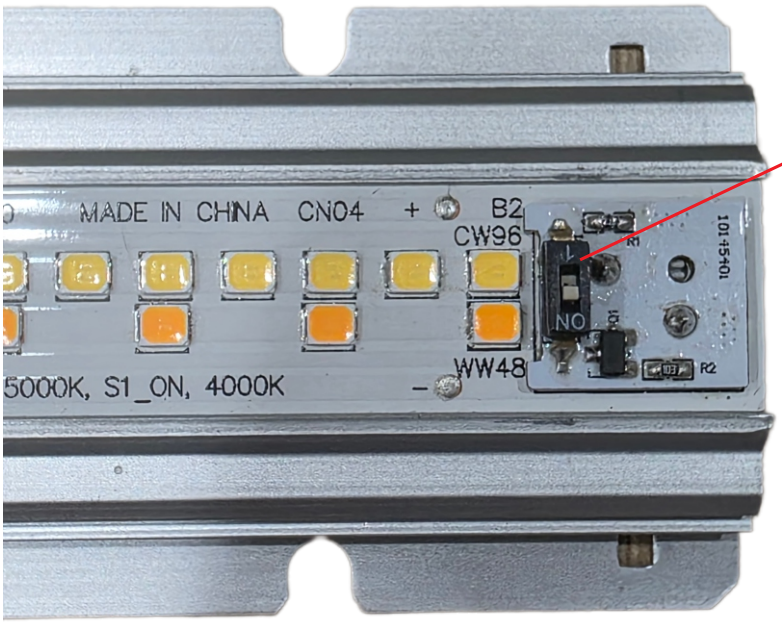
CCT Selection Indication

1. The VividHorse LinearHO DC Module is a dual-channel LED product that allows for CCT selection via a dip switch on the PCB. Available CCTs include 4000K and 5000K.
2. A pre-set CCT will come from the factory. Check the product label or packaging to see the pre-set level.
3. Change the CCT dip switch to set the desired CCT level.

NOTE: This is a Field Adjustable Color Temperature (FACT) product that enables the user to make adjustments to the Correlated Color Temperature (CCT) at the time of installation. Field adjustable parameters are not intended to be changed in the normal course of luminaire operation.



CCT SWITCH

S1_ON	S1_OFF
4000K	5000K

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RoHS COMPLIANT

Electrical and Optical Specifications

4000K CCT

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	Nom. Lum. Flux per foot @4000K/80CRI	Nom. Lum. Flux per string @4000K/80CRI
TMU140055CL84050H (44")	108+60	200 mA	31.4 V	6.3 W	34 V	7 W	1278 lm	204 lm/W	349 lm/ft	142 lm/string
		250 mA	31.5 V	7.9 W	34 V	9 W	1604 lm	204 lm/W	437 lm/ft	178 lm/string
		300 mA	31.7 V	9.5 W	34 V	10 W	1928 lm	203 lm/W	526 lm/ft	214 lm/string
		350 mA	31.8 V	11.1 W	34 V	12 W	2253 lm	202 lm/W	614 lm/ft	250 lm/string
		400 mA	31.9 V	12.8 W	34 V	14 W	2576 lm	202 lm/W	703 lm/ft	286 lm/string
		450 mA	32.1 V	14.4 W	34 V	15 W	2899 lm	201 lm/W	791 lm/ft	322 lm/string
		500 mA	32.2 V	16.1 W	34 V	17 W	3222 lm	200 lm/W	879 lm/ft	358 lm/string
		550 mA	32.3 V	17.8 W	35 V	19 W	3543 lm	199 lm/W	966 lm/ft	394 lm/string
		600 mA	32.4 V	19.5 W	35 V	21 W	3864 lm	199 lm/W	1054 lm/ft	429 lm/string
		650 mA	32.5 V	21.2 W	35 V	23 W	4184 lm	198 lm/W	1141 lm/ft	465 lm/string
		700 mA	32.7 V	22.9 W	35 V	25 W	4504 lm	197 lm/W	1228 lm/ft	500 lm/string
		750 mA	32.8 V	24.6 W	35 V	26 W	4822 lm	196 lm/W	1315 lm/ft	536 lm/string
		800 mA	32.9 V	26.3 W	35 V	28 W	5140 lm	195 lm/W	1402 lm/ft	571 lm/string
		850 mA	33.0 V	28.0 W	35 V	30 W	5457 lm	195 lm/W	1488 lm/ft	606 lm/string
		900 mA	33.1 V	29.8 W	35 V	32 W	5773 lm	194 lm/W	1575 lm/ft	641 lm/string
		950 mA	33.2 V	31.5 W	36 V	34 W	6089 lm	193 lm/W	1661 lm/ft	677 lm/string
		1000 mA	33.3 V	33.3 W	36 V	36 W	6403 lm	192 lm/W	1746 lm/ft	711 lm/string
		1050 mA	33.4 V	35.1 W	36 V	38 W	6717 lm	192 lm/W	1832 lm/ft	746 lm/string
		1100 mA	33.5 V	36.8 W	36 V	40 W	7030 lm	191 lm/W	1917 lm/ft	781 lm/string
		1150 mA	33.6 V	38.6 W	36 V	41 W	7341 lm	190 lm/W	2002 lm/ft	816 lm/string
		1200 mA	33.7 V	40.4 W	36 V	43 W	7652 lm	189 lm/W	2087 lm/ft	850 lm/string
		1250 mA	33.8 V	42.2 W	36 V	45 W	7962 lm	189 lm/W	2172 lm/ft	885 lm/string
		1300 mA	33.9 V	44.0 W	36 V	47 W	8271 lm	188 lm/W	2256 lm/ft	919 lm/string
		1350 mA	33.9 V	45.8 W	36 V	49 W	8579 lm	187 lm/W	2340 lm/ft	953 lm/string
		1400 mA*	34.0 V	47.7 W	36 V	50 W	8886 lm	186 lm/W	2424 lm/ft	987 lm/string

Luminous Flux De-Rating: CRI Multipliers

CRI 80(R9> 0)	1.00
CRI 90(R9>50)	0.85

NOTES:
1) Performance based on Tc mod = 25°C. See thermal de-rating chart (pg. 5) 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.
6) 70CRI is NOT available.

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Electrical and Optical Specifications

5000K CCT

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	Nom. Lum. Flux per foot @5000K/80CRI	Nom. Lum. Flux per string @5000K/80CRI
TMU140055CL84050H (44")	108+60	200 mA	31.7 V	6.3 W	34 V	7 W	1339 lm	212 lm/W	365 lm/ft	149 lm/string
		250 mA	31.9 V	8.0 W	34 V	9 W	1677 lm	211 lm/W	457 lm/ft	186 lm/string
		300 mA	32.1 V	9.6 W	34 V	10 W	2013 lm	209 lm/W	549 lm/ft	224 lm/string
		350 mA	32.2 V	11.3 W	34 V	12 W	2348 lm	208 lm/W	640 lm/ft	261 lm/string
		400 mA	32.4 V	13.0 W	35 V	14 W	2682 lm	207 lm/W	731 lm/ft	298 lm/string
		450 mA	32.6 V	14.7 W	35 V	16 W	3015 lm	206 lm/W	822 lm/ft	335 lm/string
		500 mA	32.7 V	16.4 W	35 V	18 W	3346 lm	204 lm/W	913 lm/ft	372 lm/string
		550 mA	32.9 V	18.1 W	35 V	19 W	3677 lm	203 lm/W	1003 lm/ft	409 lm/string
		600 mA	33.1 V	19.8 W	35 V	21 W	4006 lm	202 lm/W	1092 lm/ft	445 lm/string
		650 mA	33.2 V	21.6 W	36 V	23 W	4333 lm	201 lm/W	1182 lm/ft	481 lm/string
		700 mA	33.3 V	23.3 W	36 V	25 W	4659 lm	200 lm/W	1271 lm/ft	518 lm/string
		750 mA	33.5 V	25.1 W	36 V	27 W	4984 lm	198 lm/W	1359 lm/ft	554 lm/string
		800 mA	33.6 V	26.9 W	36 V	29 W	5307 lm	197 lm/W	1447 lm/ft	590 lm/string
		850 mA	33.7 V	28.7 W	36 V	31 W	5629 lm	196 lm/W	1535 lm/ft	625 lm/string
		900 mA	33.9 V	30.5 W	36 V	32 W	5949 lm	195 lm/W	1622 lm/ft	661 lm/string
		950 mA	34.0 V	32.3 W	36 V	34 W	6267 lm	194 lm/W	1709 lm/ft	696 lm/string
		1000 mA	34.1 V	34.1 W	37 V	37 W	6584 lm	193 lm/W	1796 lm/ft	732 lm/string
		1050 mA	34.3 V	36.0 W	37 V	39 W	6898 lm	192 lm/W	1881 lm/ft	766 lm/string
		1100 mA	34.4 V	37.8 W	37 V	41 W	7212 lm	191 lm/W	1967 lm/ft	801 lm/string
		1150 mA	34.5 V	39.7 W	37 V	43 W	7523 lm	190 lm/W	2052 lm/ft	836 lm/string
		1200 mA	34.6 V	41.6 W	37 V	44 W	7832 lm	188 lm/W	2136 lm/ft	870 lm/string
		1250 mA	34.8 V	43.5 W	37 V	46 W	8140 lm	187 lm/W	2220 lm/ft	904 lm/string
		1300 mA	34.9 V	45.4 W	37 V	48 W	8445 lm	186 lm/W	2303 lm/ft	938 lm/string
		1350 mA	35.0 V	47.3 W	37 V	50 W	8749 lm	185 lm/W	2386 lm/ft	972 lm/string
		1400 mA*	35.2 V	49.2 W	38 V	53 W	9050 lm	184 lm/W	2468 lm/ft	1006 lm/string

Luminous Flux De-Rating: CRI Multipliers

CRI 80(R9> 0)	1.00
CRI 90(R9>50)	0.85

NOTES:
1) Performance based on Tc mod = 25°C. See thermal de-rating chart (pg. 5) 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.
6) 70CRI is NOT available.

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Thermal Specifications

	LinearHO 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	0.995
35ºC	0.996	0.990
40ºC	0.994	0.985
45ºC	0.992	0.979
50ºC	0.990	0.974
55ºC	0.988	0.968
60ºC	0.986	0.962
65ºC	0.985	0.956
70ºC	0.983	0.950
75ºC	0.981	0.944
80ºC	0.979	0.938
85ºC	0.977	0.931
90ºC	0.975	0.925
95ºC	0.974	0.918
100ºC	0.972	0.911
105ºC	0.970	0.904

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Certification Chart

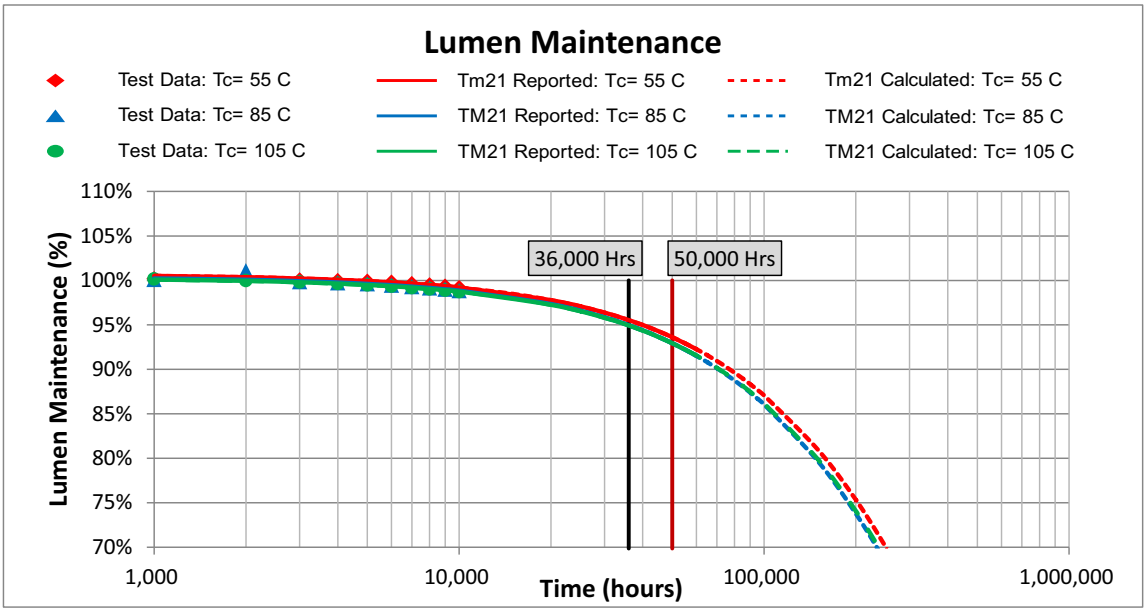
Classification \ Model	TMU140055CL8xxH
RoHS COMPLIANT	YES
c UL us	YES
CE UKCA	YES
Energy Efficiency Label (EEI-Label)	C
Suitable for UL Class 2 Lighting System	YES

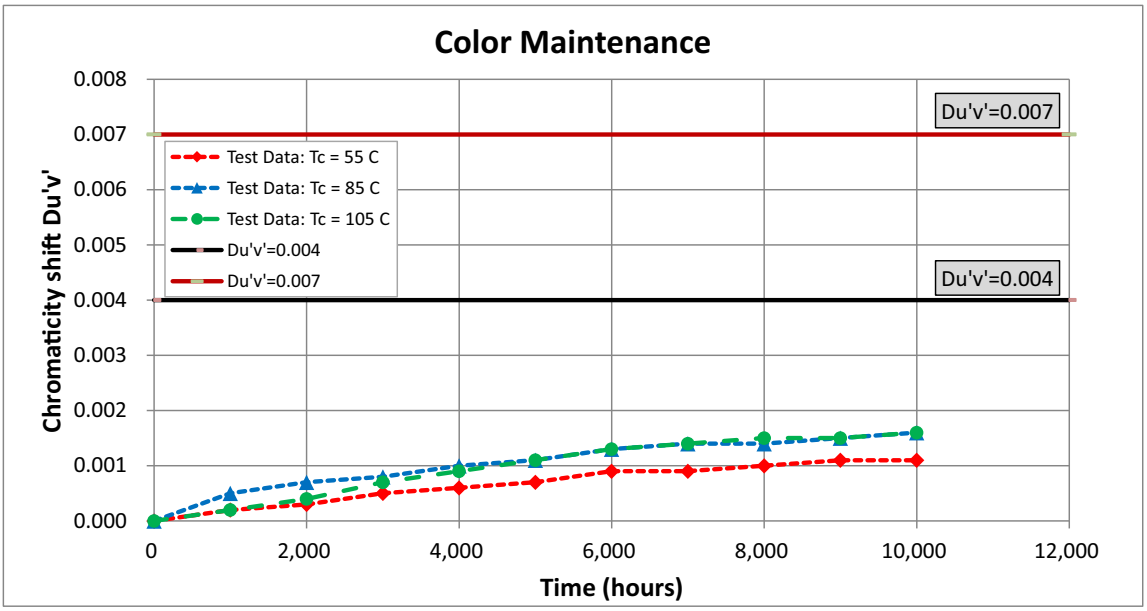
Energy Star™ TM-21 Calculator Data

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

Tc Module	Calculated L70	Calculated L90
55°C	250,000 Hrs	77,000 Hrs
85°C	234,000 Hrs	70,000 Hrs
105°C	237,000 Hrs	71,000 Hrs

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





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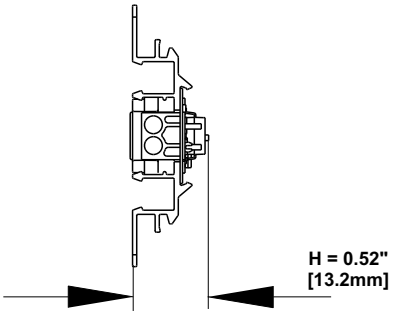
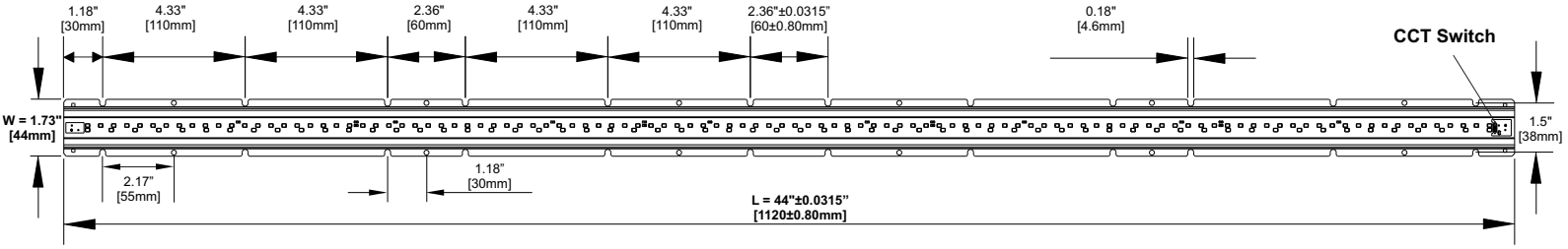
Mechanical Drawings

44”
[1120mm]

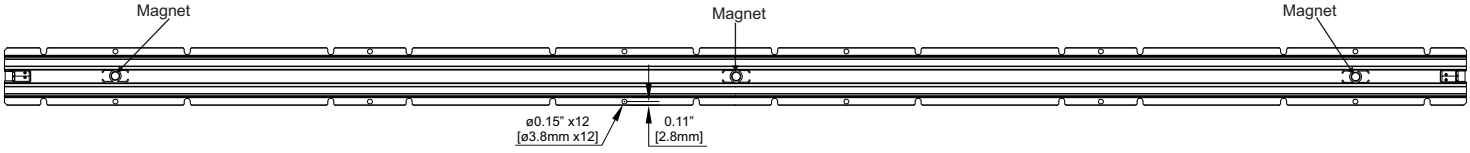


SIDE VIEW

Overall Dimensions	
Length	44” [1120mm]
Width	1.73” [44mm]
Height	0.52” [13.2mm]



TOP VIEW



BOTTOM VIEW

Unmarked General Tolerance

<4” [100mm]:	±0.0138” [±0.35mm]
4”~11.8” [100~300mm]:	±0.0197” [±0.5mm]
>11.8” [300mm]:	±0.0236” [±0.6mm]
HOLES:	±0.002” [±0.05mm]

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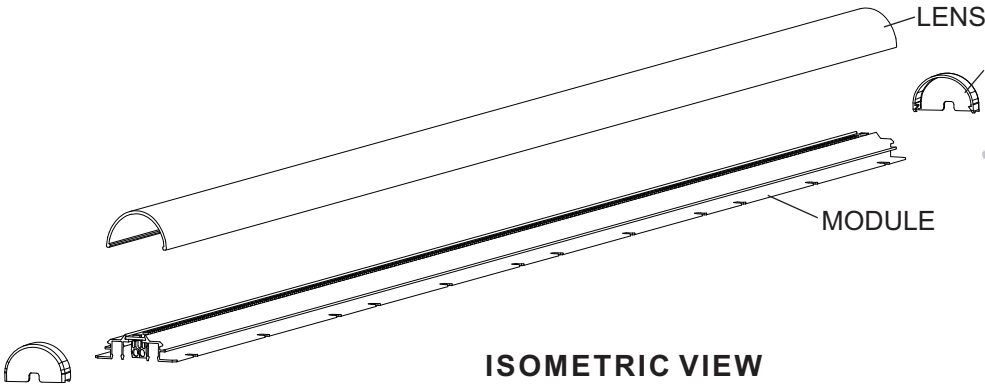
Accessories

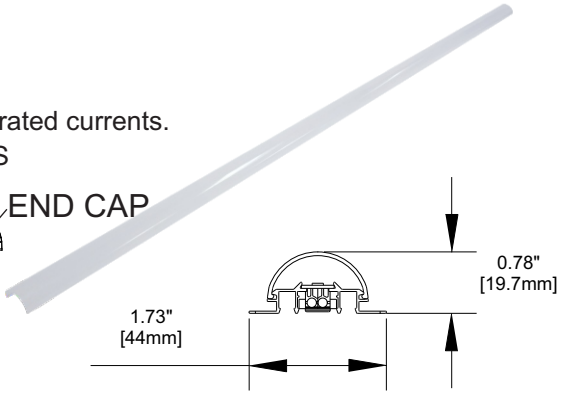
44" Diffuser Lens

Fulham Part Number: **TLE-OPT-120-013**

- White polycarbonate diffuser lens - 82% transmissivity at nominally rated currents.



ISOMETRIC VIEW



SIDE VIEW

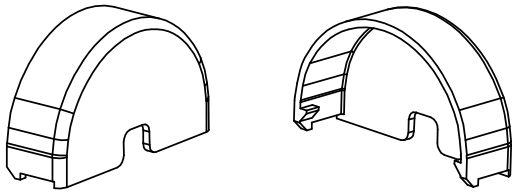
Installation Steps when using clamps:

1.Place the LED Module on the luminaire surface.
2.Place the Diffuser lens on top of LED module (line it up with LED module mounting edges).
3.Push down to snap into place.

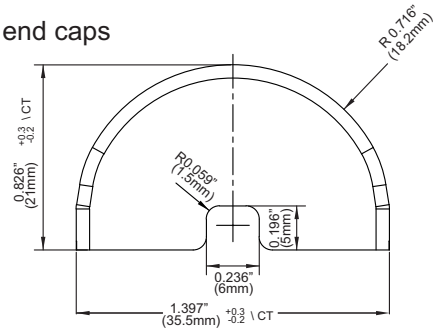
End Caps

Fulham Part Number: **TLE-OPT-120-020**

- White Polybutylene Terephthalate (PBT) end caps



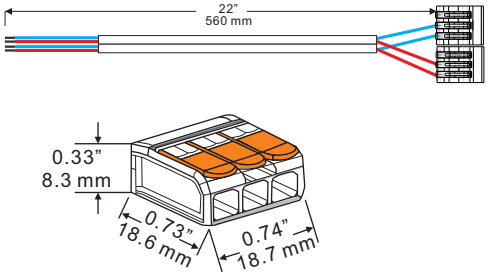
ISOMETRIC VIEW



SIDE VIEW

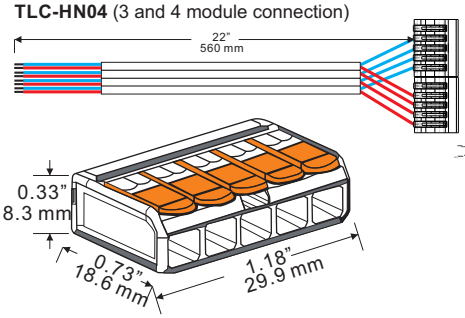
Harness

TLC-HN02 (1 and 2 module connection)



ISOMETRIC VIEW

TLC-HN04 (3 and 4 module connection)



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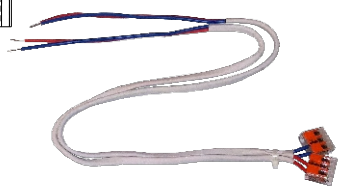
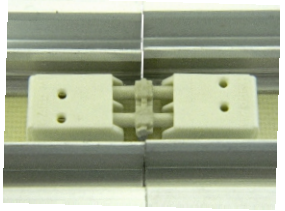


Interconnects

- Interconnect Type: WAGO Double pins to interconnect Modules (#2060-952/028-000)
- Approvals: cURus, UL 1977, and RoHS Compliant



BOTTOM VIEW

NOTES:

1) Interconnects are NOT sold by Fulham.
2) 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 link on page #8). If the current is higher than the rated max, it is recommended to use wiring diagram #3.

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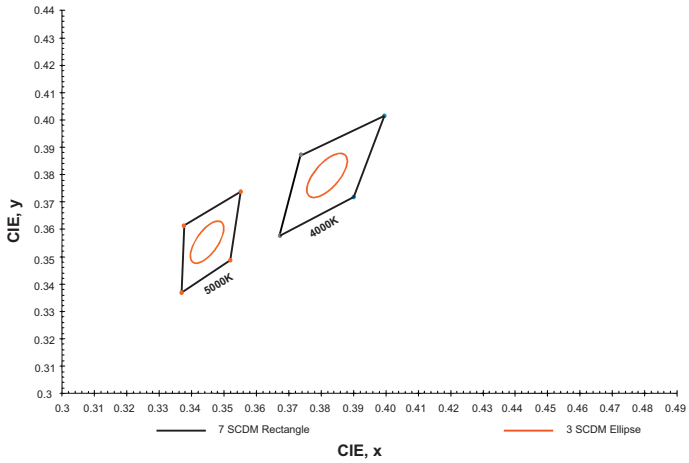
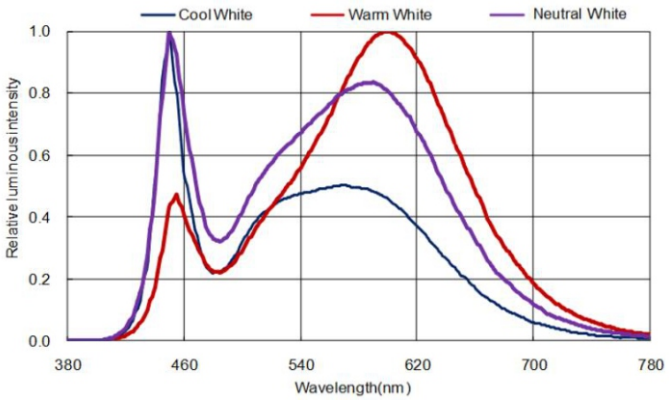
Color and Binning



Optical Spectrum



NOTES:

1) The Color and Binning and Optical Spectrum charts are for reference only. For more detailed info, contact factory.
2) Reference Seoul 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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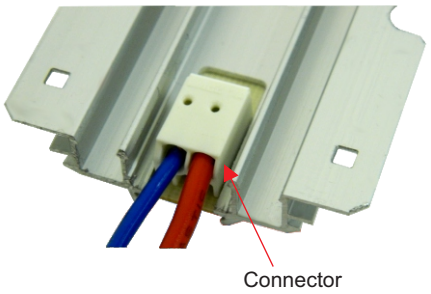
Guidelines

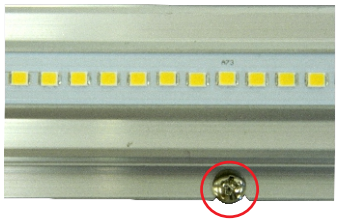
Termination Notes

- Connector Type: WAGO #744-392 (2 pin push wire connector)
  - AWG: 20...16 solid wire
  - Strip length: 8...9mm / 0.31...0.35in
  - Connector Max amp. rating: 6 Amps.



Fastening Notes

- If fastening by screw hole, use any screw with diameter less than 0.185 in (4.7mm). Use all available screw holes to ensure good contact between back side of module and mounting surface. Refer to max specified torque for installation. Suggested screw sizes: #6 or M4 Pan Head screw.



- 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 LinearHO 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 LinearHO 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.

TMU140055CL84050H

RoHS COMPLIANT

Part Number Matrix

T	M	U	140	055	CL	8	4050	H
Type M = Module (UL Class 2)	Control Type U = None	Input Current 140 = 1400mA Max.	Max. Power 055 = 55W	Shape CL=Linear	CRI ③8 = 80 9 = 90	Color Temperature **4050** = 4000K/5000K selectable	Option **H =** High Efficacy ④**K =** Conformal Coating (MTO)	

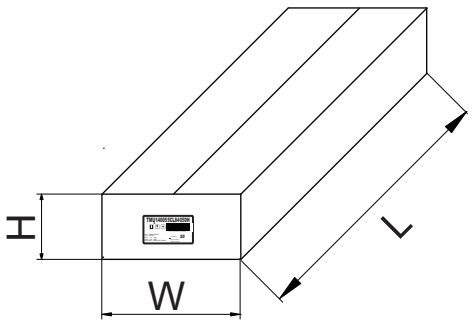
③Standard Product offering (All other options are made to order with MOQ and lead time)
④See page #10 for Conformal Coating information. Made to order (MTO).

Product Image: LinearHO Module

TOP VIEW

Packaging

Master Carton



OUTER DIMENSION		
L	W	H
45.47”(1155mm)	10.63”(270mm)	4.33”(110mm)

Net Weight	Gross Weight	QUANTITY
10.58 lbs. (4.8kg)	13.34 lbs. (6.05kg)	20pc.