



# VR44-MU-xxx-8yy-xxxxz



## 44" UNIVERSAL INPUT LINEAR LED RETROFIT KITS

- Suitable for 2' x 4' luminaires
- Suitable for use in retrofit rebate programs
- Kitted for ease of installation with provided harness
- Universal Voltage with 0-10V dimming
- Optional lens to diffuse light
- L70= >60,000hrs / L90= >40,000hrs
- High performance efficacy up to 156lm/W
- cULus Classified
- Class 2 Lighting System
- Applications: Airports, Offices, Schools, Residential Buildings, Stadiums, etc.

### General Specifications

|                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|--------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Input Voltage ①                      | 120~277V (+/- 10%)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Input Current ①                      | Models: 0700z - 0.23A max; 1050z - 0.337A max; 1400z - 0.45A max; 2400z - 0.738A max                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Input PF: THD                        | >0.9; <20%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Dimming Type/Range                   | Please see page #2 for specific setup                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Beam Angle                           | 120°                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| CRI                                  | 80CRI                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Storage Temperature Range            | -40°C to 100°C / -40°F to 212°F                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Operating Temperature Range (Ta)     | -40°C to 58°C / -40°F to 136.4°F                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Maximum Driver Case Temperature (Tc) | T1M1UNV105P-40E Max: 88°C / 190.4°F<br>T1M1UNV240P-96L Max: 85°C / 185°F<br>T1M1UNV0700-30L Max: 86°C / 186.8°F<br>T1M1UNV1400-60L Max: 84°C / 183.2°F<br>THCC-1M1UNV240P-85E Max: 90°C / 194°F<br>WHCC-1M1UNV260P-100L Max: 90°C / 194°F<br>THCC-1M1UNV105P-30E Max: 90°C / 194°F<br>THCC-1M1UNV140P-50E                                                                                                                                                                                                                                                    |
| Maximum Module Case Temperature      | 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 of Modules              | 44" L x 1.5" W x 0.39" H (1120mm x 38mm x 10mm)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Overall Size of Drivers              | T1M1UNV105P-40E 10.83"L x 1.22"W x 0.98"H (275mm x 31mm x 25mm)<br>T1M1UNV240P-96L 6.69"L x 2.56"W x 1.26"H (170mm x 65mm x 32mm)<br>T1M1UNV0700-30L 4.65"L x 1.18"W x 1.16"H (118mm x 30mm x 29.5mm)<br>T1M1UNV1400-60L 9.49"L x 1.69"W x 1.21"H (241mm x 43mm x 30.7mm)<br>THCC-1M1UNV240P-85E 16.69"L x 1.18"W x 1.02"H (424mm x 30mm x 26mm)<br>WHCC-1M1UNV260P-100L 5.71"L x 2.6"W x 1.44"H (145mm x 66mm x 36.5mm)<br>THCC-1M1UNV105P-30E 11.02"L x 1.2" W x 1.02"H (280mm x 29mm x 26mm)<br>THCC-1M1UNV140P-50E                                       |
| Magnets Qty. / Magnetic Force        | 3 / 2N (.45lbf) per magnet                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Safety/Compliance                    | Retrofit Kit: cULus (File # E486779)<br>DLC 5.1: Linear LED Retrofit (Standard)<br>Please reference DLC QPL <a href="https://www.designlights.org/search/?search=fulham">https://www.designlights.org/search/?search=fulham</a><br>Suitable for UL Class 2 Lighting Systems<br>RoHS Compliant<br>Dry and Damp Location<br>CE Module (IEC 62031: 2008, AMD1: 2012, AMD2: 2014)<br>CE Drivers: T1M1UNV105P-40E<br>T1M1UNV0700-30L<br>T1M1UNV1400-60L<br>SELV ( Drivers: T1M1UNV105P-40E / T1M1UNV0700-30L / T1M1UNV1400-60L)<br>FCC Part 15B Consumer, EN55015 |
| RFI/EMI                              | A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Sound Rating                         | 50,000hrs @ Max. Tc of module and driver                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Service Life                         | C                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Energy Efficiency Label (EEL-Label)  | 5 years @ Max. Tc from the date of manufacture                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Warranty                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |

① Measured electrical data per UL file

② TM-21 Reported Numbers



# VR44-MU-xxx-8yy-xxxxz



## Part Number Matrix

# V R 44 M U x xx 8 yy xxx x z

| Product Line | Type                                   | Module Length | Dimming   | Input Voltage    | # of Modules | Max. Module Rated Power | CRI     | Color Temperature                                                                                  | Driver Output Current                                           | Options                                                                 |
|--------------|----------------------------------------|---------------|-----------|------------------|--------------|-------------------------|---------|----------------------------------------------------------------------------------------------------|-----------------------------------------------------------------|-------------------------------------------------------------------------|
| V = Vizion   | R = Retrofit Kit<br>(cULus Classified) | 44 = 44"      | M = 0-10V | UNV = 120~277VAC | 1<br>2<br>4  | 95 = 95W                | ③8 = 80 | 27 = 2700K<br>③30 = 3000K<br>③35 = 3500K<br>③40 = 4000K<br>③50 = 5000K<br>57 = 5700K<br>65 = 6500K | 0700 = 700mA<br>1050 = 1050mA<br>1400 = 1400mA<br>2400 = 2400mA | A = Standard Option<br>B = Alternate Driver 1<br>C = Alternate Driver 2 |

## Electrical and Optical Specifications

| LED Retrofit VR Number  | LED Module Part Number | Number of Modules | Drive Current per Module | LED Driver Part Number<br>(1 driver per kit) | Overall Driver Dimensions | Driver Dim Range | 12V Aux. | Total System Power (W) | Driver Efficiency @ 277V (%) | Total System Lumens (lm) | Total System Efficacy (lm/W) | Wiring Diagram* |
|-------------------------|------------------------|-------------------|--------------------------|----------------------------------------------|---------------------------|------------------|----------|------------------------|------------------------------|--------------------------|------------------------------|-----------------|
| VR44-MU-195-840-0700A   | TMU240095CL840A        | 1                 | 700 mA                   | T1M1UNV0700-30L                              | 4.65"L x 1.18"W x 1.16"H  | 100-10%          |          | 27.2                   | 85                           | 4480                     | 165                          | 1P              |
| VR44-MU-195-840-0700B   | TMU240095CL840A        | 1                 | 700 mA                   | THCC-1M1UNV105P-30E                          | 11.02"L x 1.2"W x 1.02"H  | 100-1%;0%        | ✓        | 27.2                   | 85                           | 4480                     | 165                          | 3P              |
| VR44-MU-295-840-0700A   | TMU240095CL840A        | 2                 | 350 mA                   | T1M1UNV0700-30L                              | 4.65"L x 1.18"W x 1.16"H  | 100-10%          |          | 26.6                   | 85                           | 4460                     | 168                          | 2P              |
| VR44-MU-295-840-0700B   | TMU240095CL840A        | 2                 | 350 mA                   | THCC-1M1UNV105P-30E                          | 11.02"L x 1.2"W x 1.02"H  | 100-1%;0%        | ✓        | 26.6                   | 85                           | 4460                     | 168                          | 5P              |
| *VR44-MU-295-840-1050A* | TMU240095CL840A        | 2                 | 525 mA                   | T1M1UNV105P-40E                              | 10.83"L x 1.22"W x 0.98"H | 100-0%           |          | 40.2                   | 85                           | 6756                     | 168                          | 5P              |
| VR44-MU-295-840-1050B   | TMU240095CL840A        | 2                 | 525 mA                   | THCC-1M1UNV140P-50E                          | 11.02"L x 1.2"W x 1.02"H  | 100-1%;0%        | ✓        | 40.2                   | 85                           | 6756                     | 168                          | 5P              |
| *VR44-MU-295-840-1400A* | TMU240095CL840A        | 2                 | 700 mA                   | T1M1UNV1400-60L                              | 9.49"L x 1.69"W x 1.21"H  | 100-10%          |          | 52.5                   | 88                           | 8960                     | 171                          | 2P              |
| VR44-MU-295-840-1400B   | TMU240095CL840A        | 2                 | 700 mA                   | THCC-1M1UNV140P-50E                          | 11.02"L x 1.2"W x 1.02"H  | 100-1%;0%        | ✓        | 52.5                   | 88                           | 8960                     | 171                          | 5P              |
| *VR44-MU-495-840-2400A* | TMU240095CL840A        | 4                 | 600 mA                   | T1M1UNV240P-96L                              | 6.69"L x 2.56"W x 1.26"H  | 100-10%          |          | 87.1                   | 90                           | 15404                    | 177                          | 3P              |
| VR44-MU-495-840-2400B   | TMU240095CL840A        | 4                 | 600 mA                   | THCC-1M1UNV240P-85E                          | 16.69"L x 1.18"W x 1.02"H | 100-1%;0%        | ✓        | 87.1                   | 90                           | 15404                    | 177                          | 6P              |
| VR44-MU-495-840-2400C   | TMU240095CL840A        | 4                 | 600 mA                   | WHCC-1M1UNV260P-100L                         | 5.71"L x 2.6"W x 1.44"H   | 100-10%          |          | 87.1                   | 90                           | 15404                    | 177                          | 3P              |

| *Obsolete Kit List*         |                             |
|-----------------------------|-----------------------------|
| Obsolete VR kit Part Number | Replacement Kit Part Number |
| VR44-MU-295-840-1050A       | VR44-MU-295-840-1050B       |
| VR44-MU-295-840-1400A       | VR44-MU-295-840-1400B       |
| VR44-MU-495-840-2400A       | VR44-MU-495-840-2400B       |
| VR44-MU-495-840-2400A       | VR44-MU-495-840-2400C       |

## Luminous Flux De-Rating: CCT and CRI Multipliers

|               | 2700K | 3000K | 3500K | 4000K | 5000K | 5700K | 6500K |
|---------------|-------|-------|-------|-------|-------|-------|-------|
| CRI 80(R9> 0) | 0.92  | 0.95  | 0.97  | 1.00  | 1.01  | 1.01  | 1.00  |
| CRI 90(R9>50) | 0.77  | 0.84  | 0.83  | 0.85  | 0.86  | 0.86  | 0.85  |

### 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 configure with different LED chip quantities, series and parallel design configurations to meet a specific design requirement. Contact Fulham for further assistance.
- 5) 70CRI is NOT available
- 6) Driver Efficiency @277V

\* See page #8 for Wiring Diagram

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

## Thermal Specifications

| LinearHO Retro fiKit                 |                                                             |                     |
|--------------------------------------|-------------------------------------------------------------|---------------------|
| Storage Temperature Range            | -40 to 100°C / -40 to 212°F                                 |                     |
| Operating Temperature Range (Ta)     | -40 to 55°C / -40 to 131°F                                  |                     |
| Maximum Driver Case Temperature (Tc) | T1M1UNV105P-40E                                             | Max: 88°C / 190.4°F |
|                                      | T1M1UNV240P-96L                                             | Max: 85°C / 185°F   |
|                                      | T1M1UNV0700-30L                                             | Max: 86°C / 186.8°F |
|                                      | T1M1UNV1400-60L                                             | Max: 84°C / 183.2°F |
|                                      | THCC-1M1UNV240P-85E                                         | Max: 90°C / 194°F   |
|                                      | WHCC-1M1UNV260P-100L                                        | Max: 90°C / 194°F   |
|                                      | THCC-1M1UNV105P-30E<br>THCC-1M1UNV140P-50E                  | Max: 90°C / 194°F   |
| Maximum Module Case Temperature      | L70: Tc max 105°C (Ts=110°C) / L90: Tc max 105°C (Ts=110°C) |                     |



## Thermal De-Rating: Tc vs. Forward Voltage vs. Luminous Flux

| Module Case Temperature (Tc) | Total Vf Multiplier | Luminous Flux Multiplier |
|------------------------------|---------------------|--------------------------|
| 25°C                         | 1.000               | 1.000                    |
| 30°C                         | 1.000               | 0.991                    |
| 35°C                         | 0.997               | 0.982                    |
| 40°C                         | 0.993               | 0.973                    |
| 45°C                         | 0.993               | 0.964                    |
| 50°C                         | 0.990               | 0.953                    |
| 55°C                         | 0.987               | 0.944                    |
| 60°C                         | 0.987               | 0.935                    |
| 65°C                         | 0.984               | 0.926                    |
| 70°C                         | 0.984               | 0.917                    |
| 75°C                         | 0.980               | 0.908                    |
| 80°C                         | 0.977               | 0.899                    |
| 85°C                         | 0.977               | 0.889                    |
| 90°C                         | 0.974               | 0.880                    |
| 95°C                         | 0.970               | 0.862                    |
| 100°C                        | 0.967               | 0.853                    |



# VR44-MU-xxx-8yy-xxxxz



## Certification Chart

| Classification                          | Model                                                                                                        |
|-----------------------------------------|--------------------------------------------------------------------------------------------------------------|
| RoHS COMPLIANT                          | YES                                                                                                          |
| cUL US                                  | YES                                                                                                          |
| DLC LISTED                              | VR44-MU-195-8yy-0700z<br>VR44-MU-295-8yy-0700z<br>VR44-MU-295-8yy-1050z<br>VR44-MU-295-8yy-1400z             |
| CE                                      | Drivers: T1M1UNV105P-40E<br>T1M1UNV0700-30L<br>T1M1UNV1400-60L<br>Module: TMU140055CL8xxA<br>TMU240095CL8xxA |
| Energy Efficiency Label (EEL-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    | >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     |

## Product Image: 44" Universal Input LED Troffer Retrofit Kits

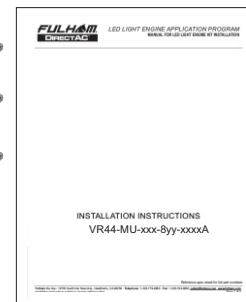
### VR44-MU-xxx-8yy-xxxxz



### TOP VIEW



(Varies per Driver model)



**WARNING:** Risk of fire and electrical shock. Luminaire wiring and electrical parts may be damaged when drilling for installation of LED retrofit kit. Check for enclosed wiring and components.

**Avertissement:** Risque d'incendie et d'électrocution. câblage des luminaires et pièces électriques peuvent être endommagés lors du forage pour l'installation du kit de conversion à DEL. Vérifier le câblage et les composants ci-joint.

## Hardware Kit: TLC-HW14 (x2)

### LinearHO UNV Retrofit Kit includes:

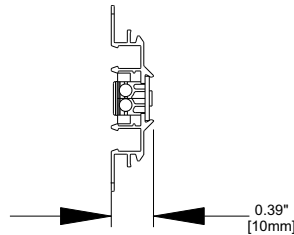
LED Module, LED Driver, Hardware, Harness, Label & Installation Instructions

Components individually packaged

1) DLC listed with 3K and higher CCT's. For specific models please visit: <https://www.designlights.org/search/?search=fulham>

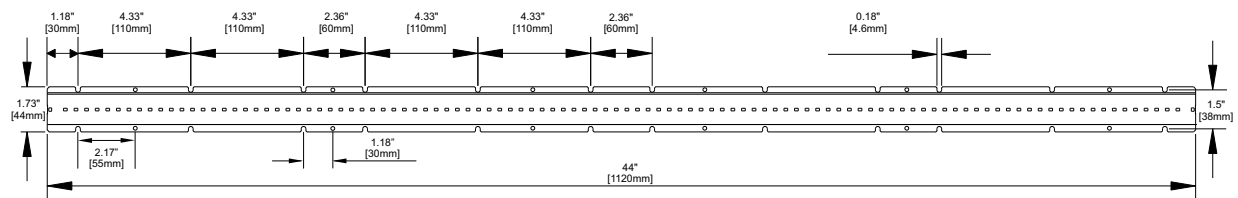
## Mechanical Drawings (Module)

**44"**  
[1120mm]

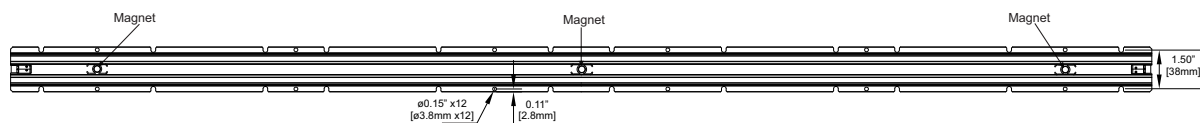


**SIDE VIEW**

| Overall Dimensions |                 |
|--------------------|-----------------|
| Length             | 44"<br>[1120mm] |
| Width              | 1.73"<br>[44mm] |
| Height             | 0.39"<br>[10mm] |

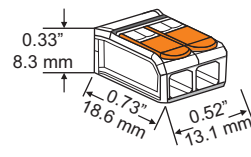
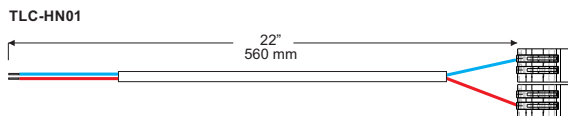


**TOP VIEW**



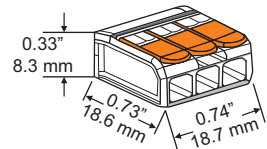
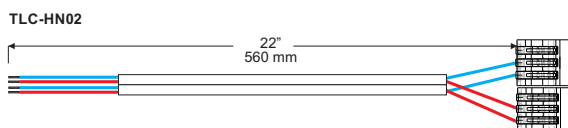
**BOTTOM VIEW**

## Mechanical Drawings (Harness)



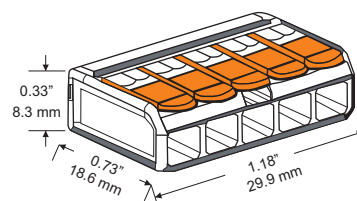
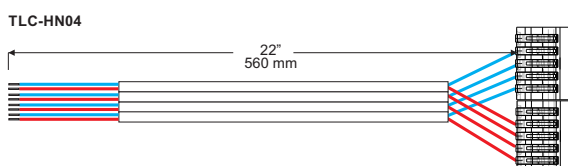
**ISOMETRIC VIEW**

| Overall Dimensions |                   |
|--------------------|-------------------|
| Length (wire)      | 22"<br>[560mm]    |
| Depth (connector)  | 0.73"<br>[18.6mm] |
| Width (connector)  | 0.52"<br>[13.1mm] |
| Height (connector) | 0.33"<br>[8.3mm]  |



**ISOMETRIC VIEW**

| Overall Dimensions |                   |
|--------------------|-------------------|
| Length (wire)      | 22"<br>[560mm]    |
| Depth (connector)  | 0.73"<br>[18.6mm] |
| Width (connector)  | 0.74"<br>[18.7mm] |
| Height (connector) | 0.33"<br>[8.3mm]  |



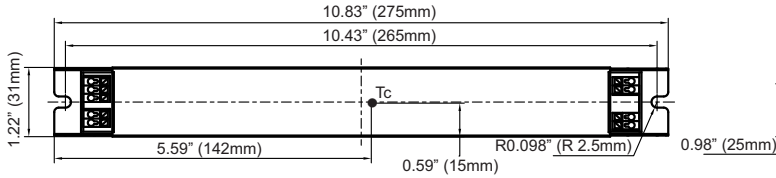
**ISOMETRIC VIEW**

| Overall Dimensions |                   |
|--------------------|-------------------|
| Length (wire)      | 22"<br>[560mm]    |
| Depth (connector)  | 0.73"<br>[18.6mm] |
| Width (connector)  | 1.18"<br>[29.9mm] |
| Height (connector) | 0.33"<br>[8.3mm]  |

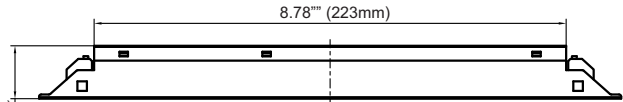
## Mechanical Drawings (Drivers)

### T1M1UNV105P-40E

#### TOP VIEW



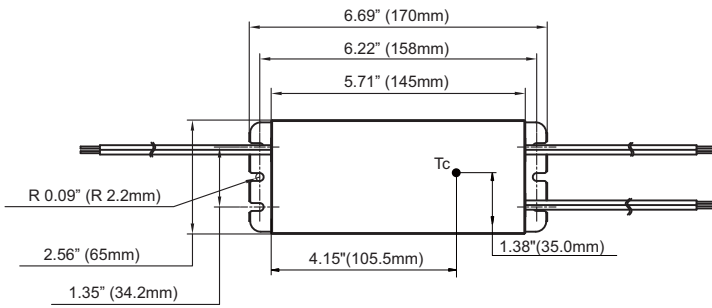
#### SIDE VIEW



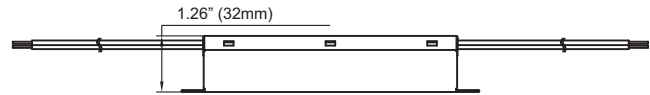
| Overall Dimensions |                |
|--------------------|----------------|
| Length             | 10.83" [275mm] |
| Width              | 1.22" [31mm]   |
| Height             | 0.98" [25mm]   |

### T1M1UNV240P-96L

#### TOP VIEW



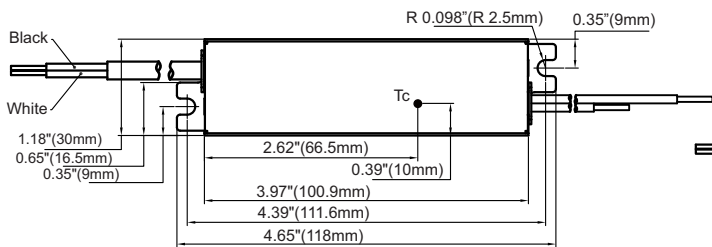
#### SIDE VIEW



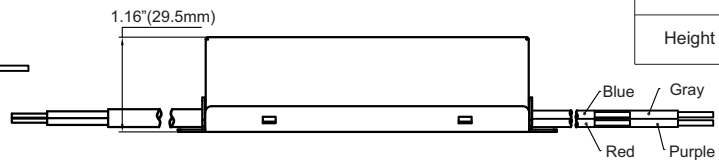
| Overall Dimensions |               |
|--------------------|---------------|
| Length             | 6.69" [170mm] |
| Width              | 2.56" [65mm]  |
| Height             | 1.26" [32mm]  |

### T1M1UNV0700-30L

#### TOP VIEW



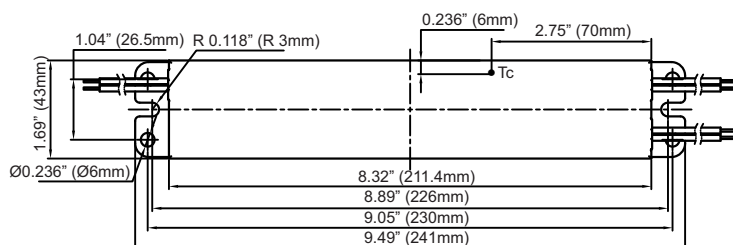
#### SIDE VIEW



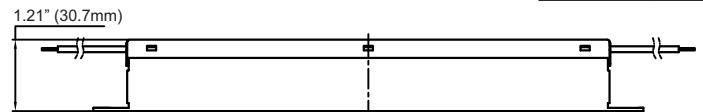
| Overall Dimensions |                |
|--------------------|----------------|
| Length             | 4.65" [118mm]  |
| Width              | 1.18" [30mm]   |
| Height             | 1.16" [29.5mm] |

### T1M1UNV1400-60L

#### TOP VIEW



#### SIDE VIEW



| Overall Dimensions |                |
|--------------------|----------------|
| Length             | 9.49" [241mm]  |
| Width              | 1.69" [43mm]   |
| Height             | 1.21" [30.7mm] |

## Mechanical Drawings (Drivers-Cont.)

### THCC-1M1UNV105P-30E

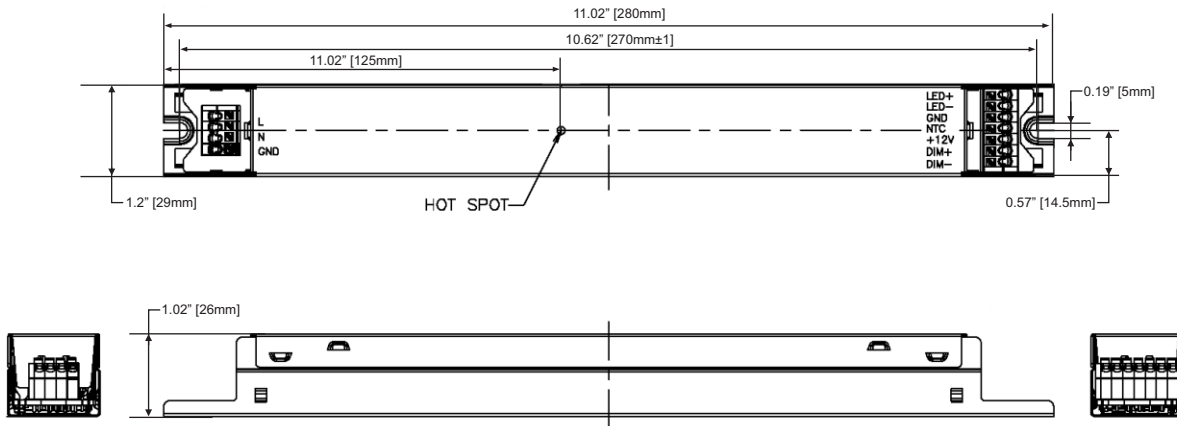
### THCC-1M1UNV140P-50E

#### Overall Dimensions

|          |                |
|----------|----------------|
| Length   | 11.02" [280mm] |
| Width    | 1.2" [29mm]    |
| Height   | 1.02" [26mm]   |
| Mounting | 10.62" [270mm] |

#### Connector Type

WAGO 250-402



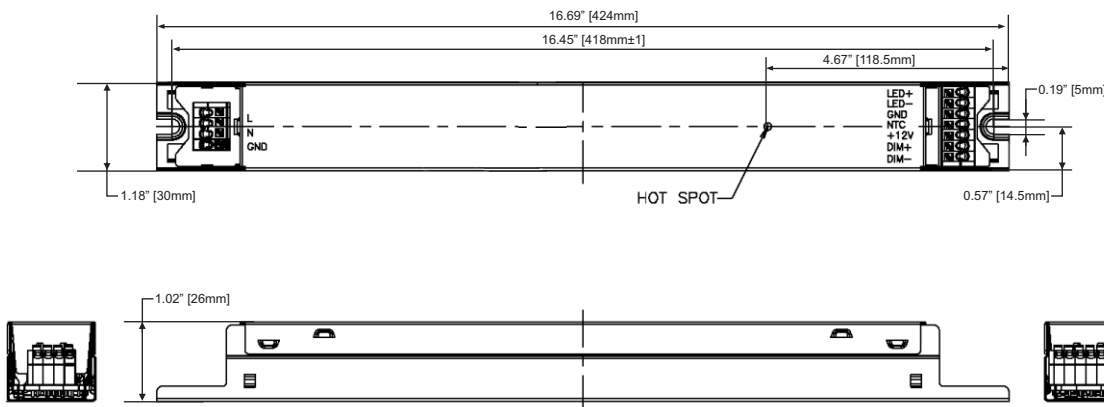
### THCC-1M1UNV240P-85E

#### Overall Dimensions

|          |                |
|----------|----------------|
| Length   | 16.69" [424mm] |
| Width    | 1.18" [30mm]   |
| Height   | 1.02" [26mm]   |
| Mounting | 16.45" [418mm] |

#### Connector Type

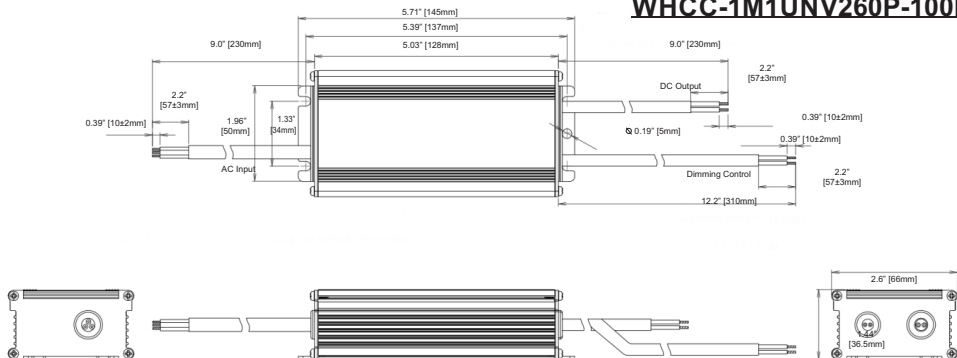
WAGO 250-402



### WHCC-1M1UNV260P-100L

#### Overall Dimensions

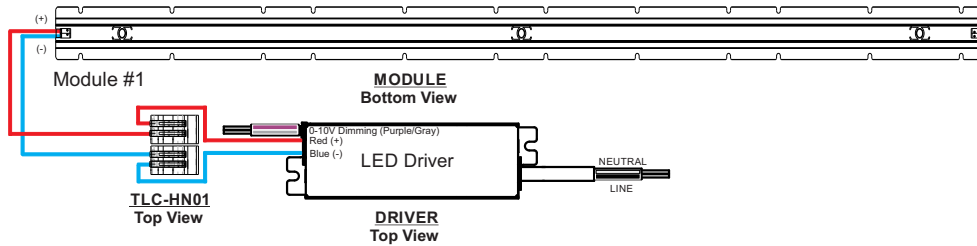
|          |                |
|----------|----------------|
| Length   | 5.71" [145mm]  |
| Width    | 2.6" [66mm]    |
| Height   | 1.44" [36.5mm] |
| Mounting | 5.39" [137mm]  |



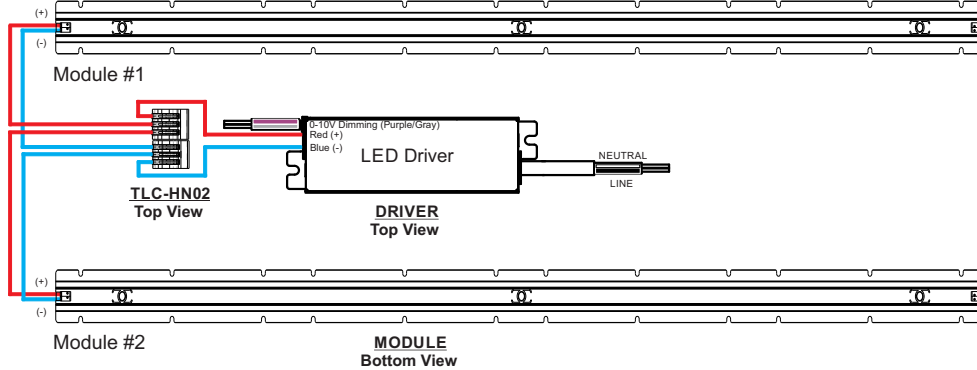
## Wiring Diagrams

1. Connect the driver positive wire (Red +) to the harness positive wires (Red +)
2. Connect the driver negative wire (Blue -) to the harness negative wires (Blue -)
3. Connect the harness positive wires (Red +) to the module(s) positive connector (+)
4. Connect the harness negative wires (Blue -) to the module(s) negative connector (-)

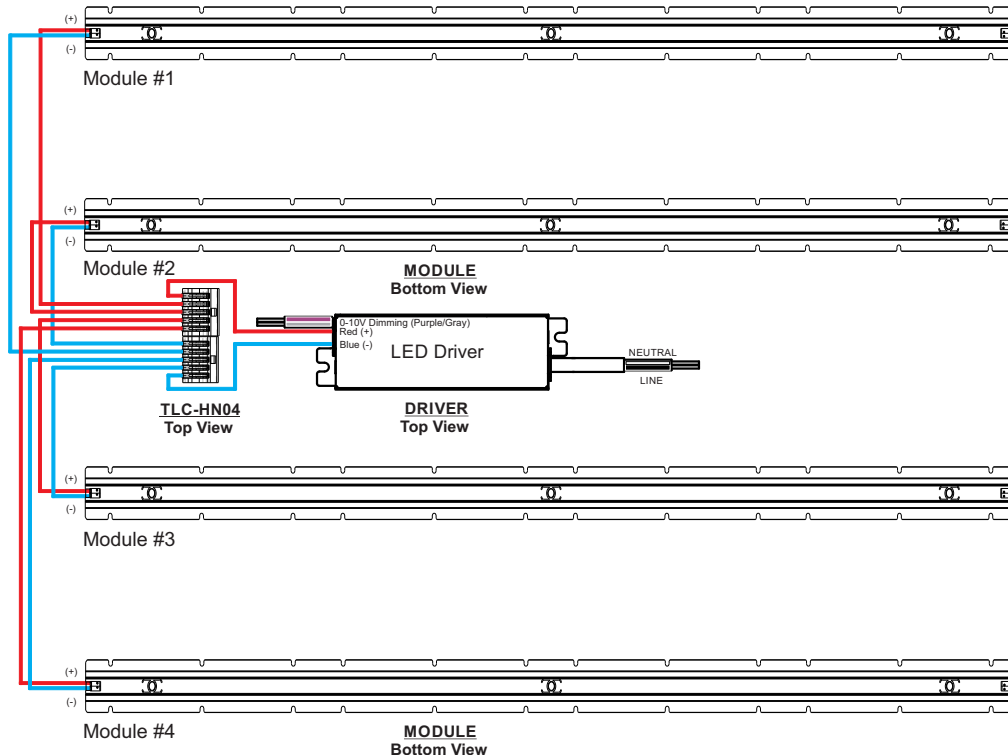
### One Module Wiring (1P)



### Two Module Wiring (2P)



### Four Module Wiring (3P)

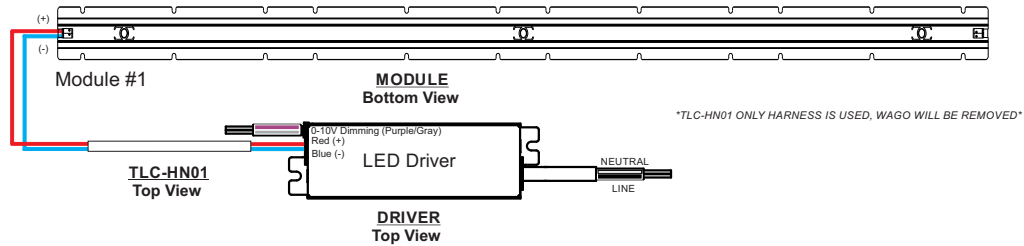




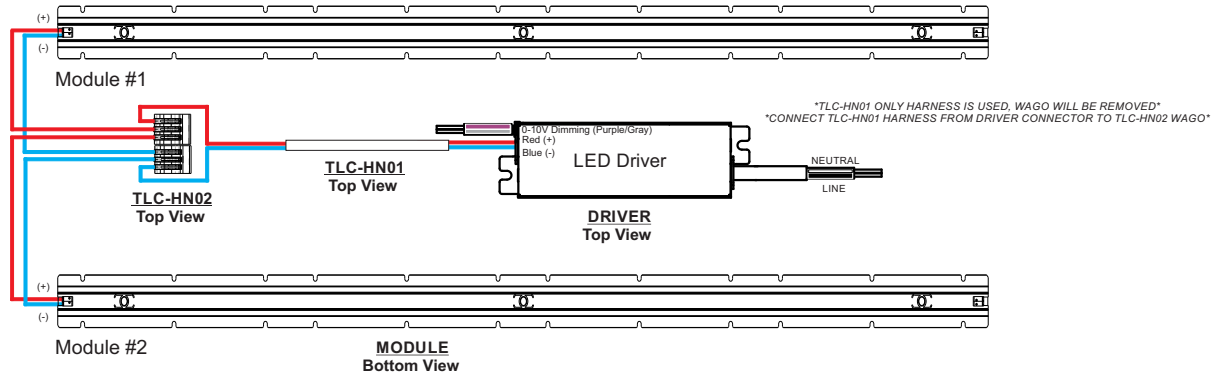
## Wiring Diagrams cont.

1. Connect the driver positive wire (Red +) to the harness positive wires (Red +)
2. Connect the driver negative wire (Blue -) to the harness negative wires (Blue -)
3. Connect the harness positive wires (Red +) to the module(s) positive connector (+)
4. Connect the harness negative wires (Blue -) to the module(s) negative connector (-)

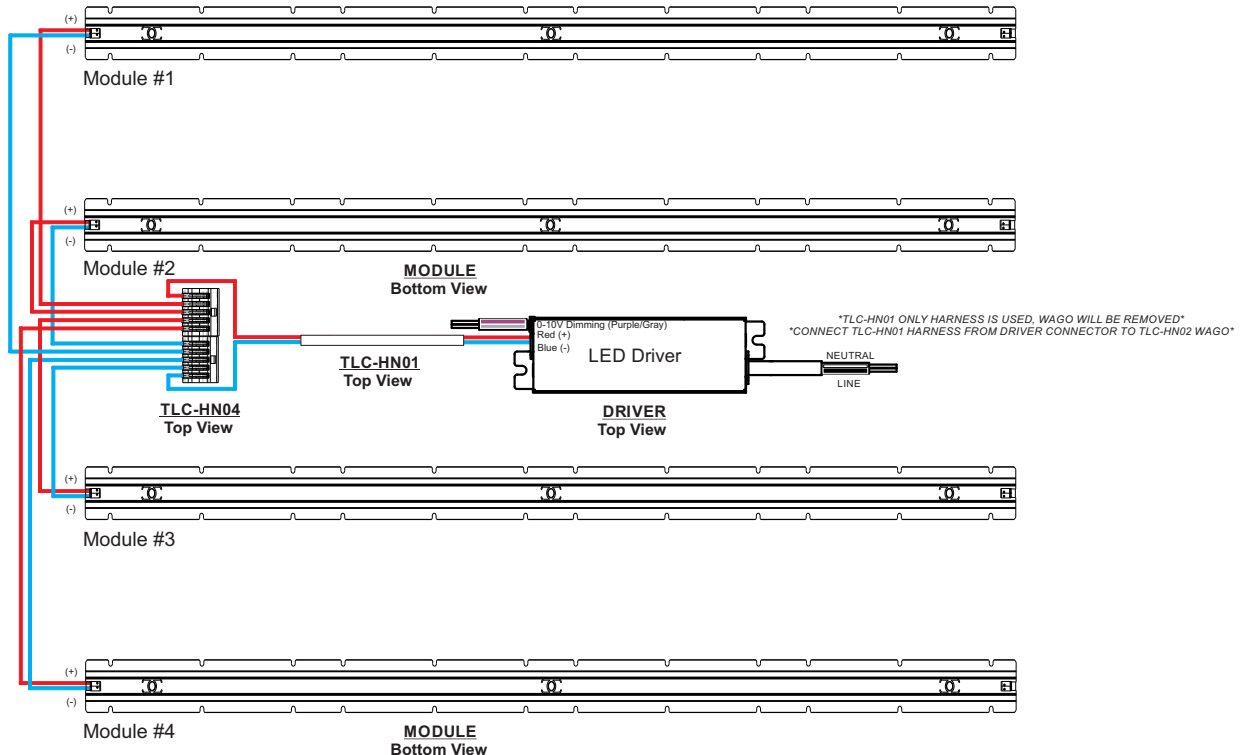
### One Module Wiring (4P, DRIVER WITH CONNECTORS)



### Two Module Wiring (5P, DRIVER WITH CONNECTORS)



### Four Module Wiring (6P, DRIVER WITH CONNECTORS)

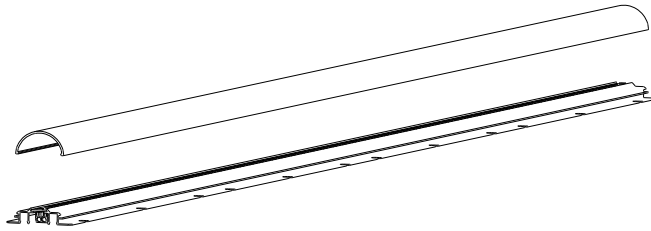


## Accessories (Not included with kit)

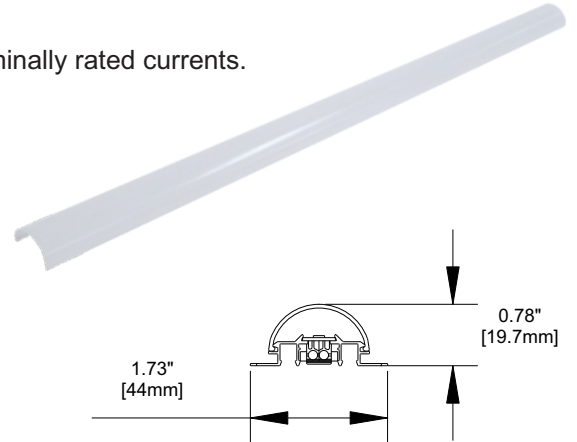
### 44" Diffuser Lens

Fulham Part Number: **44": TLE-OPT-120-013**

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



ISOMETRIC VIEW



SIDE VIEW

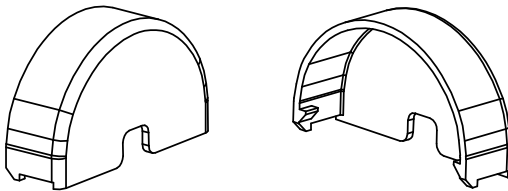
#### Installation Steps when using clamps:

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.

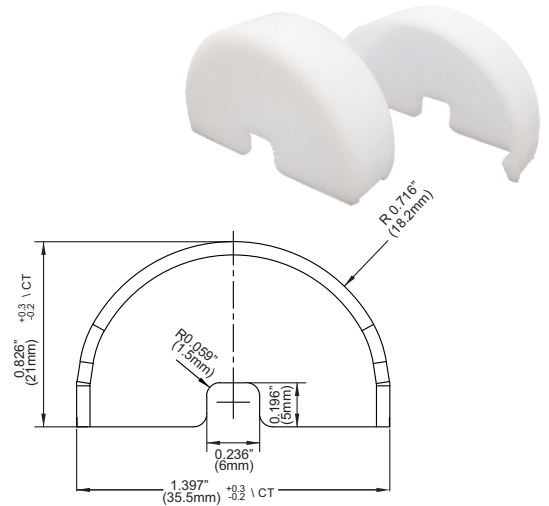
## End Caps

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

- White Polybutylene Terephthalate (PBT) end caps



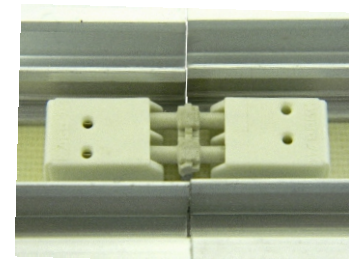
ISOMETRIC VIEW



SIDE VIEW

## Interconnects

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



Bottom View

### NOTES:

- 1) Interconnects are NOT sold by Fulham.
- 2) For more detail information, please visit Wago's website: <http://www.wago.com/infomaterial/pdf/60291132.pdf>



## Luminaire Compatibility

| LED Retrofit<br>VR Number | Compatible<br>Luminaire Type | Troffer<br>Recessed<br>Luminaire<br>(1x4) | Troffer<br>Recessed<br>Luminaire<br>(2x4) | Linear<br>Highbay<br>Luminaire<br>(4 Lamp) | Vapor<br>Tight<br>Luminaire<br>(1x4) | Vapor<br>Tight<br>Luminaire<br>(2x4) | Number of<br>LED<br>Modules | Number of<br>LED<br>Drivers | Input<br>Voltage<br>(VDC) | Input Current (A) |       | Total<br>System<br>Power<br>(W) | Driver<br>Efficiency<br>(%) | Total<br>System<br>Lumens<br>(lm) | Total<br>System<br>Efficacy<br>(lm/W) |
|---------------------------|------------------------------|-------------------------------------------|-------------------------------------------|--------------------------------------------|--------------------------------------|--------------------------------------|-----------------------------|-----------------------------|---------------------------|-------------------|-------|---------------------------------|-----------------------------|-----------------------------------|---------------------------------------|
|                           |                              |                                           |                                           |                                            |                                      |                                      |                             |                             |                           | 120V              | 277V  |                                 |                             |                                   |                                       |
| VR44-MU-195-8yy-0700z     |                              | ✓                                         |                                           |                                            | ✓                                    |                                      | 1                           | 1                           | 120-277                   | 0.23              | 0.103 | 27.2                            | 85                          | 4480                              | 165                                   |
| VR44-MU-295-8yy-0700z     |                              | ✓                                         | ✓                                         |                                            | ✓                                    | ✓                                    | 2                           | 1                           | 120-277                   | 0.225             | 0.101 | 26.6                            | 85                          | 4460                              | 168                                   |
| VR44-MU-295-8yy-1050z     |                              | ✓                                         | ✓                                         |                                            | ✓                                    | ✓                                    | 2                           | 1                           | 120-277                   | 0.337             | 0.153 | 40.2                            | 85                          | 6756                              | 168                                   |
| VR44-MU-295-8yy-1400z     |                              | ✓                                         | ✓                                         |                                            | ✓                                    | ✓                                    | 2                           | 1                           | 120-277                   | 0.45              | 0.2   | 52.5                            | 88                          | 8960                              | 171                                   |
| VR44-MU-495-8yy-2400z     |                              |                                           | ✓                                         | ✓                                          |                                      | ✓                                    | 4                           | 1                           | 120-277                   | 0.738             | 0.331 | 87.1                            | 90                          | 15404                             | 177                                   |



Troffer Luminaire



Vapor Tight Luminaire

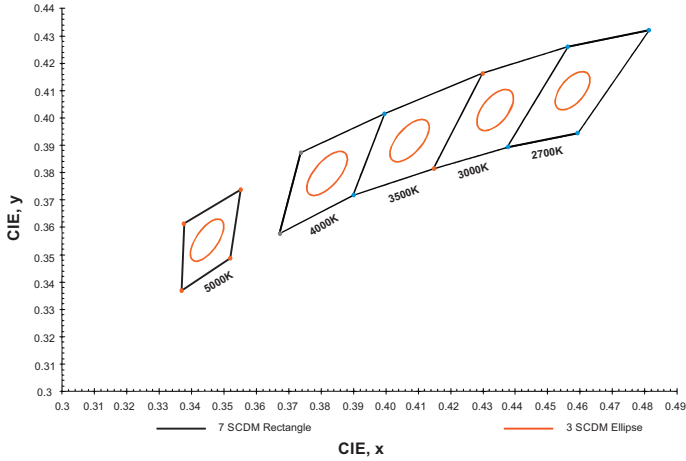


Highbay Luminaire

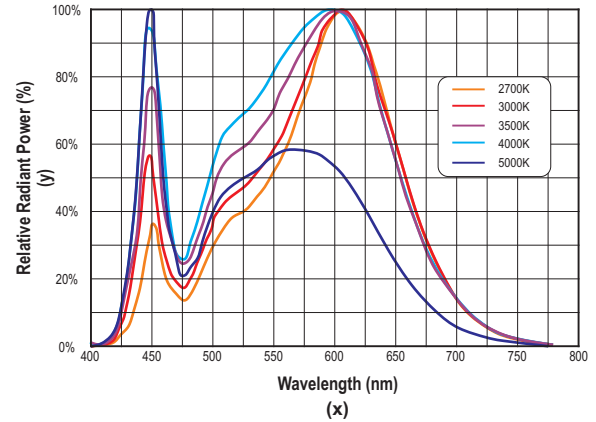
### NOTES:

- 1) Checkmark (✓) = cULus Classified Application
- 2) DLC listed with 3K and higher CCT's. For specific models please visit: <https://www.designlights.org/search/?search=fulham>
- 3) All electrical and lumen calculations based at 277V

## Color and Binning



## Optical Spectrum



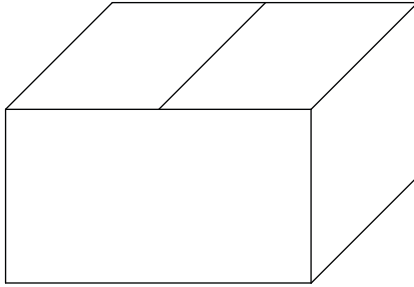
### NOTES:

- 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.
- 4) Driver not included.



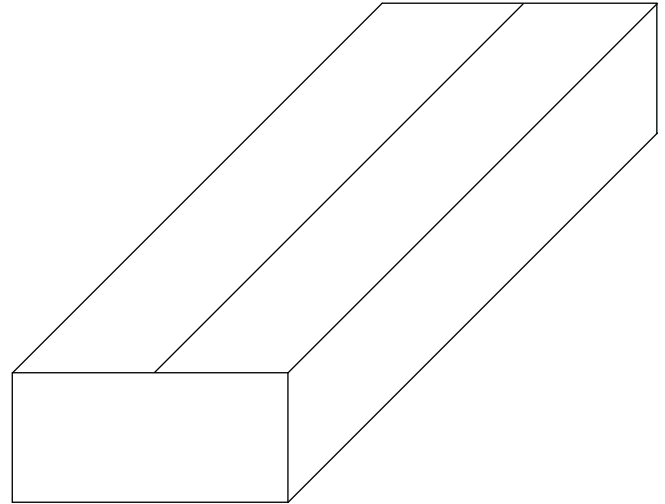
## Packaging

Components individually packaged



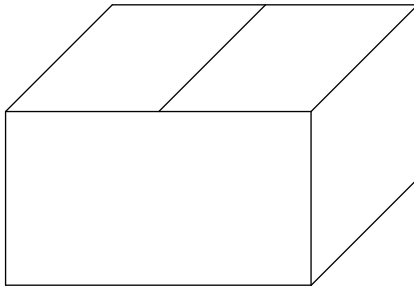
### LED HARNESS

TLC-HN01  
TLC-HN02  
TLC-HN04



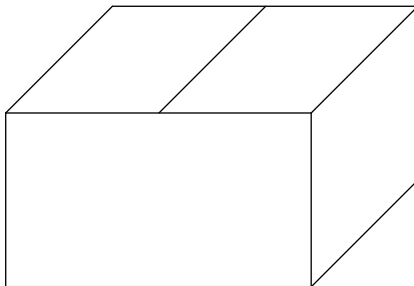
### LED LINEARHO MODULE

TMU240095CL8yyA



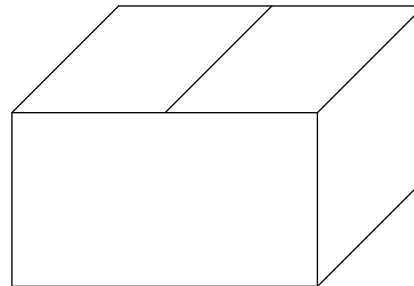
### LABELS

LABEL #1  
LABEL #2



### HARDWARE

HHILPF00049



### LED DRIVER

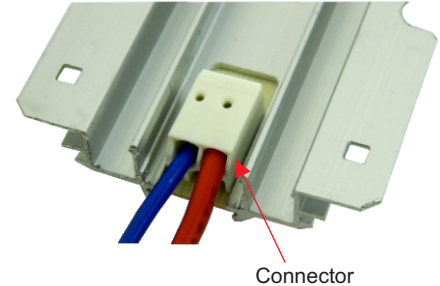
|                 |                      |
|-----------------|----------------------|
| T1M1UNV0700-30L | THCC-1M1UNV105P-30E  |
| T1M1UNV105P-40E | THCC-1M1UNV140P-50E  |
| T1M1UNV1400-60L | THCC-1M1UNV240P-85E  |
| T1M1UNV240P-96L | WHCC-1M1UNV260P-100L |

## Guidelines

(Reference instruction sheets for detail installation of VR kit)

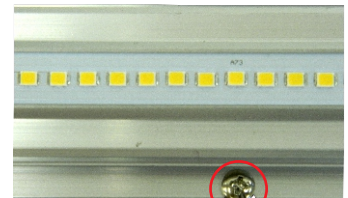
## Termination Notes

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



## 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.