



DATE

**INDIRECT / DIRECT** 



**PROJECT** 

COMMENTS



# **PRODUCT FEATURES**

#### **COMPACT FIXTURE HOUSING**

Width: 2.0" Height: 4.0"

#### INDIRECT ILLUMINATION

We offer three indirect illumination options. Standard Lambertian can be upgraded to Batwing Up (BW) or Asymmetric Up (AU)

## **ONE-PIECE EXTRUDED ALUMINUM HOUSING**

Housing ensures straighter rows and consistent lens retention

120/277VAC 0-10 VOLT DIMMING TO 1% STANDARD

**UP TO 152.3 LUMENS PER WATT AT 90 CRI** 















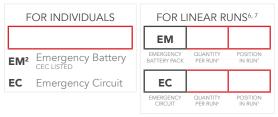
# **ORDERING GUIDE** EX: 2SID - 20 - VHU - MD - 35 - UNV - T1 - WH - C90

| SERIES  | LENGTH                        | UPP              | ER OUTPUT  | DIRE | CT OUTPUT  |    | ССТ   | V                       | OLTAGE   |    | MOUNTING     | COLOR            |
|---|-------------------------------|------------------|------------|------|------------|----|-------|-------------------------|----------|----|--------------|------------------|
| 2SID  |                               |                  |            |      |            |    |       |                         |          |    |              |                  |
|   | XX FT                         | VHU              | 1250 LM/FT | VHD  | 1250 LM/FT | 30 | 3000K | UNV                     | 120-277V | T1 | 1" Grid      | WH White         |
| ORDERING NOTES  | 1' Increments<br>EX: 20' = 20 | HU               | 1000 LM/FT | HD   | 1000 LM/FT | 35 | 3500K | <b>347</b> <sup>1</sup> | 347V     | Т9 | 9/16" Grid   | <b>BLK</b> Black |
| 1. EM NOT AVAILABLE WITH 347V.  |                               | MU               | 750 LM/FT  | MD   | 750 LM/FT  | 40 | 4000K |                         |          | SC | Screw Slot   |                  |
| <ol><li>EM AND SENSORS ARE NOT AVAILABLE WIT FIXTURES.</li></ol>                  | TH 2' AND 3'                  | LU               | 500 LM/FT  | LD   | 500 LM/FT  |    |       |                         |          | нс | Hard Ceiling |                  |
| 3. FOR INDIVIDUAL FIXTURES, SENSOR LOCATE FEED END. FOR RUNS, A SENSOR IS INSTALL |                               | VLU <sup>4</sup> | 250 LM/FT  | VLD  | 250 LM/FT  |    |       |                         |          | JB | Junction Box |                  |
| FIXTURE IN RUN, EX. 2 SENSORS ARE INSTALL RUN (1 SENSOR IN EACH 8' FIXTURE).      |                               | CU               | Custom     | CD   | Custom     |    |       |                         |          |    |              |                  |

<sup>4.</sup> VLU NOT AVAILABLE ON 2 FT LENGTHS.

## **OPTIONS**





## **OPTIONS NOTES**

- 5. CONSULT FACTORY FOR COMPONENT OR SYSTEM NOT LISTED.
- 6. EM AND EC QUANTITY IS NOT TO EXCEED NUMBER OF DISCRETE FIXTURE SECTIONS IN A ROW.
- 7.  $\,$  EM and EC Position refers to which fixture in the Run THAT WILL BE POWERED BY THE EM/EC CIRCUIT. POSITION OPTIONS: **S**=STARTER, **J**=JOINER, **E**=ENDER EX: 2SIDID-20-HU-HD-35-UNV-T1-WH-EM2SJ



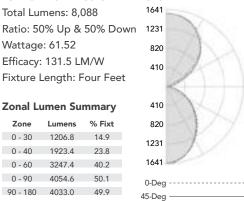




### **PHOTOMETRICS**

### **ENERGY CONSUMPTION** WATTS PER LINEAR FOOT

#### 2SID-04-HU-HD-35-UNV-XX-C90



#### INDIRECT (LAMBERTIAN) / DIRECT (LAMBERTIAN) LIGHT AT 90 CRI, 3500K

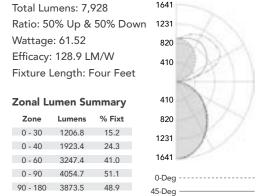
|         | VHU-VHD        | VHU-HD | VHU-MD | VHU-LD | VHU-VLD |
|---------|----------------|--------|--------|--------|---------|
| Watts/  | ft 19.3        | 17.2   | 14.7   | 12.2   | 10.1    |
| Lumens/ | ft 2550        | 2302   | 2067   | 1780   | 1538    |
| LP\     | <b>V</b> 132.1 | 134.2  | 140.4  | 145.9  | 152.3   |
|         |                |        |        |        |         |
|         | HU-VHD         | HU-HD  | HU-MD  | HU-LD  | HU-VLD  |
| Watts/  | <b>ft</b> 17.5 | 15.4   | 13.0   | 10.4   | 8.3     |
| Lumens/ | ft 2270        | 2022   | 1787   | 1500   | 1258    |
| LP\     | <b>N</b> 129.5 | 131.5  | 138.0  | 143.8  | 151.0   |
|         |                |        |        |        |         |
|         | MU-VHD         | MU-HD  | MU-MD  | MU-LD  | MU-VLD  |
| Watts/  | <b>ft</b> 16.0 | 13.8   | 11.4   | 8.9    | 6.8     |
| Lumens/ | ft 2004        | 1755   | 1521   | 1234   | 992     |
| LP\     | <b>N</b> 125.4 | 126.9  | 133.3  | 138.9  | 146.2   |

| Watts/ft              | 14.6                | 12.5               | 10.0                 | 7.5                  | 5.4            |
|-----------------------|---------------------|--------------------|----------------------|----------------------|----------------|
| Lumens/ft             | 1773                | 1524               | 1290                 | 1003                 | 761            |
| LPW                   | 121.4               | 122.4              | 128.6                | 133.7                | 140.8          |
|                       |                     |                    |                      |                      |                |
|                       |                     |                    |                      |                      |                |
|                       | VLU-VHD             | VLU-HD             | VLU-MD               | VLU-LD               | VLU-VLD        |
| Watts/ft              | <b>VLU-VHD</b> 13.2 | <b>VLU-HD</b> 11.0 | <b>VLU-MD</b><br>8.6 | <b>VLU-LD</b><br>6.1 | VLU-VLD<br>4.0 |
| Watts/ft<br>Lumens/ft |                     |                    |                      |                      |                |

LU-VHD LU-HD LU-MD LU-LD LU-VLD

#### 2SID-04-HU-HD-35-UNV-XX-C90-BW

0 - 180 8087 6 100 0



# INDIRECT (BATWING) / DIRECT (LAMBERTIAN) LIGHT AT 90 CRI, 3500K

|           | VHU-VHD | VHU-HD | VHU-MD | VHU-LD | VHU-VLD |
|-----------|---------|--------|--------|--------|---------|
| Watts/ft  | 19.3    | 17.2   | 14.7   | 12.2   | 10.1    |
| Lumens/ft | 2499    | 2251   | 2016   | 1729   | 1487    |
| LPW       | 129.5   | 131.2  | 136.9  | 141.7  | 147.2   |
|           | HU-VHD  | HU-HD  | HU-MD  | HU-LD  | HU-VLD  |
| Watts/ft  | 17.5    | 15.4   | 13.0   | 10.4   | 8.3     |
| Lumens/ft | 2230    | 1982   | 1747   | 1460   | 1218    |
| LPW       | 127.2   | 128.9  | 134.9  | 140.0  | 146.2   |
|           | MU-VHD  | MU-HD  | MU-MD  | MU-LD  | MU-VLD  |
| Watts/ft  | 16.0    | 13.8   | 11.4   | 8.9    | 6.8     |
| Lumens/ft | 1974    | 1726   | 1491   | 1204   | 962     |
| LPW       | 123.5   | 124.8  | 130.7  | 135.6  | 141.9   |
|           |         |        |        |        |         |

| Lumens/ft | 1752    | 1504         | 1269   | 982        | 740        |
|-----------|---------|--------------|--------|------------|------------|
| LPW       | 120.0   | 120.8        | 126.6  | 131.0      | 137.1      |
|           | VLU-VHD | VLU-HD       | VLU-MD | VLU-LD     | VLU-VLD    |
| Watts/ft  |         |              |        |            |            |
| vvatts/1t | 13.2    | 11.0         | 8.6    | 6.1        | 4.0        |
| Lumens/ft |         | 11.0<br>1265 | 1030   | 6.1<br>743 | 4.0<br>501 |

Watts/ft 14.6 12.5 10.0 7.5

LU-VHD LU-HD LU-MD LU-LD LU-VLD

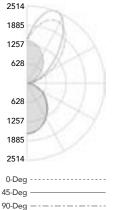
5.4

# 2SID-04-HU-HD-35-UNV-XX-C90-AU



0 - 180 7928.2 100.0

| Zonal Lumen Summary |        |        |  |  |  |  |  |  |
|---------------------|--------|--------|--|--|--|--|--|--|
| Zone                | Lumens | % Fixt |  |  |  |  |  |  |
| 0 - 30              | 1206.8 | 15.2   |  |  |  |  |  |  |
| 0 - 40              | 1923.4 | 24.2   |  |  |  |  |  |  |
| 0 - 60              | 3247.4 | 40.9   |  |  |  |  |  |  |
| 0 - 90              | 4054.6 | 51.1   |  |  |  |  |  |  |
| 90 - 180            | 3884.0 | 48.9   |  |  |  |  |  |  |
| 0 - 180             | 7938.6 | 100.0  |  |  |  |  |  |  |
|                     |        |        |  |  |  |  |  |  |



90-Deg -----

90-Deg -----

# INDIRECT (ASYMMETRIC) / DIRECT (LAMBERTIAN) LIGHT AT 90 CRI, 3500K

|           | VHU-VHD | VHU-HD | VHU-MD | VHU-LD | VHU-VLD |           | LU-VHD  | LU-HD  | LU-MD  | LU-LD  | LU-VLD  |
|-----------|---------|--------|--------|--------|---------|-----------|---------|--------|--------|--------|---------|
| Watts/ft  | 19.3    | 17.2   | 14.7   | 12.2   | 10.1    | Watts/ft  | 14.6    | 12.5   | 10.0   | 7.5    | 5.4     |
| Lumens/ft | 2502    | 2254   | 2019   | 1732   | 1490    | Lumens/ft | 1754    | 1505   | 1271   | 984    | 742     |
| LPW       | 129.7   | 131.4  | 137.1  | 142.0  | 147.6   | LPW       | 120.1   | 120.9  | 126.7  | 131.2  | 137.3   |
|           | HU-VHD  | HU-HD  | HU-MD  | HU-LD  | HU-VLD  |           | VLU-VHD | VLU-HD | VLU-MD | VLU-LD | VLU-VLD |
| Watts/ft  | 17.5    | 15.4   | 13.0   | 10.4   | 8.3     | Watts/ft  | 13.2    | 11.0   | 8.6    | 6.1    | 4.0     |
| Lumens/ft | 2233    | 1985   | 1750   | 1463   | 1221    | Lumens/ft | 1514    | 1266   | 1031   | 744    | 502     |
| LPW       | 127.4   | 129.0  | 135.1  | 140.3  | 146.6   | LPW       | 115.1   | 115.1  | 120.2  | 123.0  | 127.1   |
|           | MU-VHD  | MU-HD  | MU-MD  | MU-LD  | MU-VLD  |           |         |        |        |        |         |
| Watts/ft  | 16.0    | 13.8   | 11.4   | 8.9    | 6.8     |           |         |        |        |        |         |
| Lumens/ft | 1976    | 1728   | 1493   | 1206   | 964     |           |         |        |        |        |         |
| LPW       | 123.7   | 124.9  | 130.9  | 135.8  | 142.2   |           |         |        |        |        |         |

| Lumens/ft | 1754    | 1505   | 1271   | 984    | 742     |
|-----------|---------|--------|--------|--------|---------|
|           |         |        |        |        |         |
| LPW       | 120.1   | 120.9  | 126.7  | 131.2  | 137.3   |
|           |         |        |        |        |         |
|           |         |        |        |        |         |
|           | VLU-VHD | VLU-HD | VLU-MD | VLU-LD | VLU-VLD |
|           |         |        |        |        |         |
| Watts/ft  | 13.2    | 11.0   | 8.6    | 6.1    | 4.0     |
|           |         |        |        |        |         |
| Lumens/ft | 1514    | 1266   | 1031   | 744    | 502     |
|           |         |        |        |        |         |
| LPW       | 115.1   | 115.1  | 120.2  | 123.0  | 127.1   |

## **LUMEN ADJUSTMENT CALCULATIONS**

| LUMEN MULTIPLIER |       |  |  |  |  |  |  |
|------------------|-------|--|--|--|--|--|--|
| 3000K            | 0.995 |  |  |  |  |  |  |
| 3500K            | 1.000 |  |  |  |  |  |  |
| 4000K            | 1.023 |  |  |  |  |  |  |

Example: HU-MD Output, 3000K at 90CRI

Total Light Output: 7148 x 0.995 = 7112 lm

Total Light Output Per Foot: 1787 x 0.995 = 1778 lm/ft

Efficacy = 1778 / 13.0 = 136.7 lm/W

# **2SID** SUSPENDED

INDIRECT / DIRECT



#### **OPERATION**

### **Light Engine:**

The 2SID is available in 3000K, 3500K and 4000K CCT all within a 3-Step MacAdam Ellipse and has a standard CRI of 90+.

## **Direct Optics:**

The back-lit extruded acrylic lens ensures high efficiency light output, in a minimal form factor for a clean, evenly illuminated surface with minimal glare.

#### Indirect Optics

Standard Lambertian can be upgraded to indirect batwing (BW) or Asymmetric (AU). The extruded acrylic batwing lens (BW) provides an ultrawide distribution with even illumination across the ceiling while allowing for maximum spacing between fixtures. The Asymmetric (AU) diffused forward-throw optics properly illuminates the wall. All 3 indirect acrylic optics protect LED's from dust and debris.

#### **Electrical:**

Class 2 programmable (factory pre-set) premium power supply, 120-277VAC input. Power factor >0.9. THD <15%. Integral Surge Protection to 2KV.

#### Dimming:

The 2SID comes standard with 0-10V dimming to 1%. For DOS (Daylight/ Occupancy Sensor) ordering code, DALI driver required. Advance Xitanium SR, 1% dimming to be utilized.

#### **Emergency Battery Pack:**

Emergency Battery Pack has been engineered to exceed UL minimum safety standards. Standard battery is CEC Listed. For most fixtures, the entire direct portion of the fixture will be illuminated by the EM Battery Pack. For 8' VHD, 10' HD and VHD, and 12' MD, HD, and VHD, only the first portion of the fixture will be illuminated by the EM battery pack. "Quantity per Run" refers to the number of fixtures in the run that will be supplied with an emergency battery pack. "Position in Run" refers to which fixture in the run that will contain the battery. Position options are Starter (S), Joiner (J), or Ender (E). For example, a 24' run needing two emergency battery packs, one in the starter and one in the joiner, would be ordered as EM2SJ. When a joiner is selected, battery packs are always supplied in 8' fixtures before 6' fixtures in that run.

#### **Emergency Circuit:**

Emergency Circuit fixtures are engineered so that the entire fixture is wired to the emergency circuit. "Quantity per Run" refers to the number of fixtures in the run that are wired to the emergency circuit. "Position in Run" refers to which fixture in the run that will be powered by the Emergency Circuit. Position options are Starter (S), Joiner (J), or Ender (E). For example, a 24' run needing two emergency sections, one in the starter and one in the joiner, would be ordered as EC2SJ. When a joiner is selected, Emergency Circuits are always supplied in 8' fixtures before 6' fixtures in that run.

## **GENERAL**

### Warranty:

Ten (10) Year limited warranty from date of shipment.

## **Lumen Maintenance:**

Rated for 85% initial lumen output at 90,000 Hours of operation, operated at 25°C ambient temperature; per TM-21 Guidelines published by the Illuminating Engineering Society (IES).

## Certifications:

All Luminaires are UL/cUL Listed to UL 1598 Standards and approved for Indoor use in Dry/Damp Locations.

## Shipping:

2 week lead time for White (WH) or Black (BLK) finish orders up to 1000 feet. Lead time for orders greater than 1000 linear feet will be determined at time of order.

## Manufactured in the USA:

All ALL Luminaires and Components (with the exception of our LED boards and drivers) are proudly manufactured and assembled in the USA.

#### **MECHANICAL**

### **Housing Construction:**

Extruded Aluminum 6063-T5 alloy outer housing with die-formed steel internal components for strength, alignment, and mounting attachment. Our high-quality die-cast end caps are engineered to conceal all fasteners and to retain the sealing gaskets on the inside of the fixture while completing the clean and minimalistic look of this luminaire.

### Alignment/Assembly:

The alignment system employs a four-point alignment and attachment method, designed to create straighter rows and minimize seams between sections (field assembled). Four alignment pins ensure the outer extruded aluminum rails are aligned, while a draw-screw secures housing-to-housing attachment. Additional alignment biscuits double as the light shields.

#### Lengths:

The 2SID is available in a minimum 2-foot (nominal) length with additional 1-foot increments available ( $\pm 0.030$ ",  $\pm 0.50$ °). Longer fixture rows are available and will be configured with 4-foot, 5-foot, 6-foot, 7-foot, and 8-foot fixtures. Maximum run length on one power feed is 72'. Continuous runs over 72' will require a second feed.

### Mounting Method/Hardware:

The 2SID is available for mounting upon any ceiling type, additional mounting hardware available by others.

# **Exterior Finish:**

The 2SID is available in White and Black polyester powder coat finish to ensure durability.

#### **Suspension Components:**

The Hidden Connect design recesses or hides attachment hardware at the fixture. Fixtures are suspended by 1/16" galvanized aircraft cable. Cables are attached to the ceiling suspension point with a ¼-20 threaded ceiling cable barrel that incorporates a threaded ring to support the feed/hanger canopy allowing access to the J-box/hanger without removal of the suspension cable allowing conductor inspection/service without having to support the fixture(s). Feed canopies are 5" O.D. And hanger canopies are 2" O.D. (JB Option = 5" O.D.) Cable lengths can be specified for 48", 96" and 144" suspension lengths. Ceiling type options are "T1" T-grid, "T9" T-grid, "SC" screw slot grid, "HC" hard ceiling or "JB" hard ceiling J-box mount.

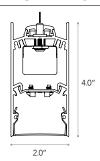
# **Integrated Controls:**

The 2SID is available with optional integrated controls. Sensors are conveniently designed to mount in aperture and are located at the power feed end of each fixture. For runs, each fixture section will be supplied with a discrete sensor that will control that specific section. Philips EasySense is standard daylight/occupancy sensor. DALI driver required. If your project requires a component or system not listed, please contact your local American Linear Lighting representative.

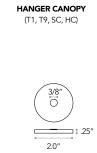
| MANUFACTURER         | ORDERING CODE | SENSOR                    | CONNECTION | DRIVER  |
|----------------------|---------------|---------------------------|------------|---|
| Philips<br>EasySense | DOS           | Daylight/PIR<br>Occupancy | Wireless   | DALI<br>(Advanced Xitanium<br>SR, 1% Dimming) |

## **MOUNTING DETAILS**

SECTION





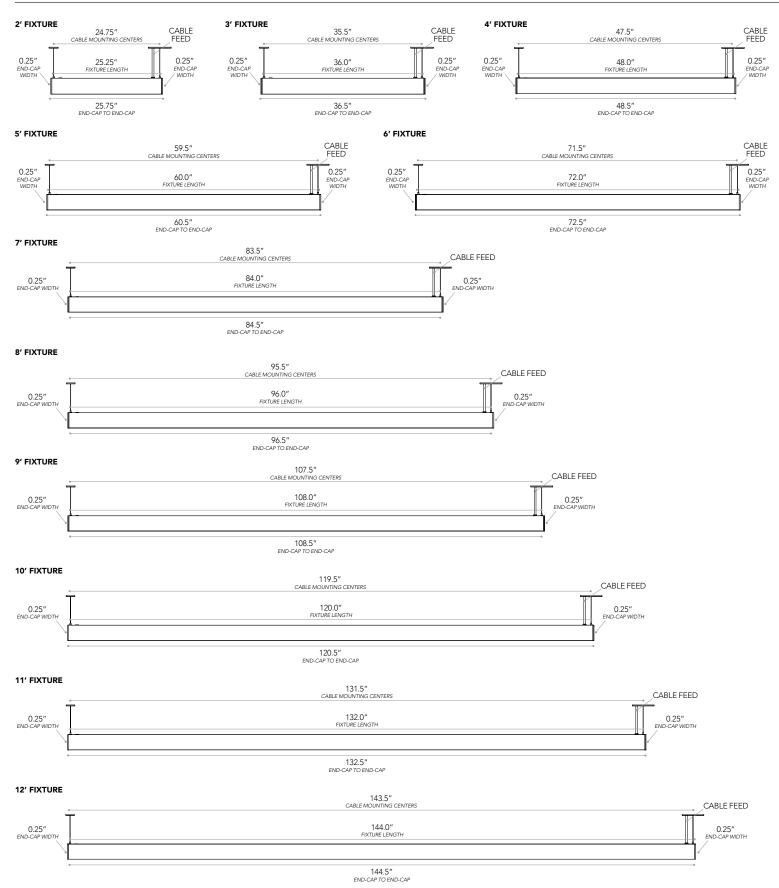








# **FIXTURE ROW LAYOUT: SINGLE UNIT** 2' - 3' - 4' - 5' - 6' - 7' - 8' - 9' - 10' - 11' - 12'

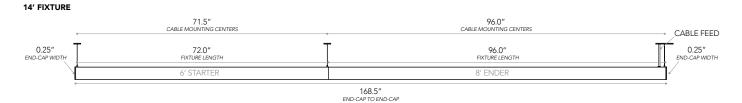


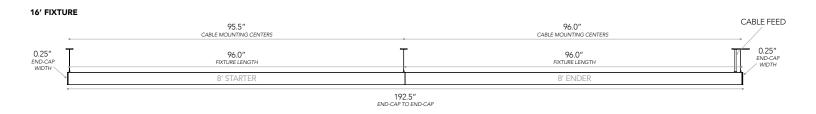






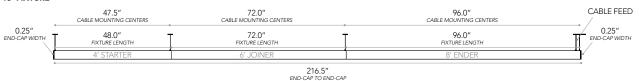
## FIXTURE ROW LAYOUT: TWO UNITS 14' - 16'





## FIXTURE ROW LAYOUT: THREE UNITS 18' - 20' - 22' - 24'

#### 18' FIXTURE



## 20' FIXTURE













# **FIXTURE ROW COMPONENTS**

|            |             | FIXTURE LENGTHS  CTARTER  FAIRER  FAIRER |     |    |             |    |    |     |            |        | . FEED | HANGER | FND CARTO FND CO   |
|------------|-------------|--|-----|----|-------------|----|----|-----|------------|--------|--------|--------|--------------------|
| RUN LENGTH | STARTER     | 2  | 3   | 4  | JOINER<br>5 |    | 7  | 8   | ENDER<br>9 | JOINER | KITS   | KITS   | END-CAP TO END-CAP |
| 13'        | <b>1</b> 5' |  | - 3 | 4  | - 5         | 6  |    | - 8 | 8'         | 1      | 1      | 2      | 156.5"             |
|            | 6'          |  |     | -  |             |    |    |     |            | 1      | 1      | 2      |                    |
| 14'        | 7'          | -  | -   | -  | -           | -  | -  | -   | 8′         |        |        |        | 168.5"             |
| 15'        |             | -  | -   | -  | -           | -  | -  | -   | 8′         | 1      | 1      | 2      | 180.5"             |
| 16′        | 8'          | -  | -   | -  | -           | -  | -  | -   | 8′         | 1      | 1      | 2      | 192.5"             |
| 17'        | 3′          | 6'                                       | -   | -  | -           | -  | -  | -   | 8'         | 2      | 1      | 3      | 204.5"             |
| 18′        | 4'          | 6'                                       | -   | -  | -           | -  | -  | -   | 8′         | 2      | 1      | 3      | 216.5"             |
| 19′        | 5′          | 6'                                       | -   | -  | -           | -  | -  | -   | 8′         | 2      | 1      | 3      | 228.5"             |
| 20′        | 4′          | 8′                                       | -   | -  | -           | -  | -  | -   | 8′         | 2      | 1      | 3      | 240.5"             |
| 21′        | 5′          | 8′                                       | -   | -  | -           | -  | -  | -   | 8′         | 2      | 1      | 3      | 252.5"             |
| 22′        | 6'          | 8′                                       | -   | -  | -           | -  | -  | -   | 8′         | 2      | 1      | 3      | 264.5"             |
| 23′        | 7'          | 8′                                       | -   | -  | -           | -  | -  | -   | 8′         | 2      | 1      | 3      | 276.5"             |
| 24'        | 8′          | 8′                                       | -   | -  | -           | -  | -  | -   | 8′         | 2      | 1      | 3      | 288.5"             |
| 25'        | 5′          | 6'                                       | 6'  | -  | -           | -  | -  | -   | 8′         | 3      | 1      | 4      | 300.5"             |
| 26'        | 4'          | 6'                                       | 8′  | -  | -           | -  | -  | -   | 8′         | 3      | 1      | 4      | 312.5"             |
| 27'        | 5'          | 6'                                       | 8′  | -  | -           | -  | -  | -   | 8′         | 3      | 1      | 4      | 324.5"             |
| 28'        | 4'          | 8′                                       | 8′  | -  | -           | -  | -  | -   | 8′         | 3      | 1      | 4      | 336.5"             |
| 29′        | 5'          | 8′                                       | 8′  | -  | -           | _  | _  | _   | 8′         | 3      | 1      | 4      | 348.5"             |
| 30′        | 6'          | 8′                                       | 8′  | -  | _           | _  | _  | -   | 8′         | 3      | 1      | 4      | 360.5"             |
| 31′        | 7'          | 8′                                       | 8′  | _  | _           | _  |    | _   | 8′         | 3      | 1      | 4      | 372.5"             |
| 32'        | 8'          | 8′                                       | 8′  | _  | _           | _  | _  | _   | 8'         | 3      | 1      | 4      | 384.5"             |
| 33'        | 5'          | 6'                                       | 6'  | 8′ | _           | _  | _  | _   | 8'         | 4      | 1      | 5      | 396.5"             |
| 34'        | 4'          | 6'                                       | 8′  | 8' | _           | _  | -  | _   | 8'         | 4      | 1      | 5      | 408.5"             |
|            | 5'          | 6'                                       | 8'  | 8' | -           | -  |    | -   | 8'         | 4      | 1      | 5      |                    |
| 35′        |             |  |     |    |             |    |    |     |            |        |        |        | 420.5"             |
| 36′        | 4'          | 8'                                       | 8′  | 8' | -           | -  | -  | -   | 8'         | 4      | 1      | 5      | 432.5"             |
| 37′        | 5′          | 8′                                       | 8′  | 8′ | -           | -  | -  | -   | 8′         | 4      | 1      | 5      | 444.5"             |
| 38′        | 6'          | 8′                                       | 8′  | 8′ | -           | -  | -  | -   | 8′         | 4      | 1      | 5      | 456.5"             |
| 39′        | 7'          | 8′                                       | 8′  | 8′ | -           | -  | -  | -   | 8′         | 4      | 1      | 5      | 468.5"             |
| 40′        | 8′          | 8′                                       | 8′  | 8′ | -           | -  | -  | -   | 8′         | 4      | 1      | 5      | 480.5"             |
| 41′        | 5′          | 6'                                       | 6'  | 8′ | 8′          | -  | -  | -   | 8′         | 5      | 1      | 6      | 492.5"             |
| 42'        | 4'          | 6'                                       | 8′  | 8′ | 8′          | -  | -  | -   | 8′         | 5      | 1      | 6      | 504.5"             |
| 43'        | 5′          | 6'                                       | 8′  | 8′ | 8′          | -  | -  | -   | 8′         | 5      | 1      | 6      | 516.5"             |
| 44'        | 4'          | 8′                                       | 8′  | 8′ | 8′          | -  | -  | -   | 8′         | 5      | 1      | 6      | 528.5"             |
| 45'        | 5′          | 8′                                       | 8′  | 8′ | 8′          | -  | -  | -   | 8′         | 5      | 1      | 6      | 540.5"             |
| 46'        | 6'          | 8′                                       | 8′  | 8′ | 8′          | -  | -  | -   | 8′         | 5      | 1      | 6      | 552.5"             |
| 47'        | 7'          | 8′                                       | 8′  | 8′ | 8′          | -  | -  | -   | 8′         | 5      | 1      | 6      | 564.5"             |
| 48'        | 8′          | 8'                                       | 8′  | 8′ | 8′          | -  | -  | -   | 8′         | 5      | 1      | 6      | 576.5"             |
| 49'        | 5'          | 6'                                       | 6'  | 8′ | 8′          | 8′ | _  | _   | 8′         | 6      | 1      | 7      | 588.5"             |
| 50'        | 4'          | 6'                                       | 8′  | 8′ | 8′          | 8′ | _  | -   | 8′         | 6      | 1      | 7      | 600.5"             |
| 51′        | 5'          | 6'                                       | 8′  | 8′ | 8′          | 8′ | _  | _   | 8'         | 6      | 1      | 7      | 612.5"             |
| 52'        | 4'          | 8'                                       | 8′  | 8' | 8′          | 8′ | _  | _   | 8'         | 6      | 1      | 7      | 624.5"             |
| 53'        | 5'          | 8'                                       | 8′  | 8' | 8'          | 8′ | _  | -   | 8'         | 6      | 1      | 7      | 636.5"             |
| 54'        | 6'          | 8'                                       | 8′  | 8' | 8'          | 8′ | -  | _   | 8'         | 6      | 1      | 7      | 648.5"             |
| 55′        | 7'          | 8′                                       | 8'  | 8' | 8'          | 8′ | -  | -   | 8'         | 6      | 1      | 7      | 660.5"             |
|            |             |  |     |    |             |    |    |     |            |        |        | 7      |                    |
| 56′        | 8′          | 8'                                       | 8'  | 8' | 8'          | 8′ | -  | -   | 8'         | 6      | 1      |        | 672.5"             |
| 57′        | 5′          | 6'                                       | 6'  | 8' | 8'          | 8′ | 8' | -   | 8'         | 7      | 1      | 8      | 684.5"             |
| 58′        | 4'          | 6′                                       | 8′  | 8′ | 8′          | 8′ | 8′ | -   | 8′         | 7      | 1      | 8      | 696.5"             |
| 59′        | 5′          | 6'                                       | 8′  | 8′ | 8′          | 8′ | 8′ | -   | 8′         | 7      | 1      | 8      | 708.5"             |
| 60′        | 4′          | 8′                                       | 8′  | 8′ | 8′          | 8′ | 8′ | -   | 8′         | 7      | 1      | 8      | 720.5"             |
| 61′        | 5′          | 8'                                       | 8′  | 8′ | 8′          | 8′ | 8′ | -   | 8′         | 7      | 1      | 8      | 732.5"             |
| 62'        | 6'          | 8′                                       | 8′  | 8′ | 8′          | 8′ | 8′ | -   | 8′         | 7      | 1      | 8      | 744.5"             |
| 63'        | 7'          | 8′                                       | 8′  | 8′ | 8′          | 8′ | 8′ | -   | 8′         | 7      | 1      | 8      | 756.5"             |
| 64'        | 8′          | 8′                                       | 8′  | 8′ | 8′          | 8′ | 8′ | -   | 8′         | 7      | 1      | 8      | 768.5"             |
| 65′        | 5'          | 6'                                       | 6'  | 8′ | 8′          | 8′ | 8′ | 8′  | 8'         | 8      | 1      | 9      | 780.5"             |
| 66′        | 4'          | 6'                                       | 8′  | 8′ | 8′          | 8′ | 8′ | 8′  | 8′         | 8      | 1      | 9      | 792.5"             |
| 67'        | 5'          | 6'                                       | 8′  | 8′ | 8′          | 8′ | 8′ | 8′  | 8'         | 8      | 1      | 9      | 804.5"             |
| 68′        | 4'          | 8′                                       | 8′  | 8′ | 8′          | 8′ | 8′ | 8′  | 8'         | 8      | 1      | 9      | 816.5"             |
| 69'        | 5'          | 8'                                       | 8′  | 8′ | 8'          | 8′ | 8' | 8′  | 8'         | 8      | 1      | 9      | 828.5"             |
| 70′        | 6'          | 8′                                       | 8′  | 8′ | 8'          | 8′ | 8′ | 8′  | 8′         | 8      | 1      | 9      | 840.5"             |
| 71′        | 7'          |  | 8′  | 8′ | 8′          | 8′ | 8′ | 8′  |            | 8      | 1      |        | 852.5"             |
| / 1        | /           | 8′                                       | 0   | 0  | ō           | 8' | 8' | 0   | 8'<br>8'   | 8      | 1      | 9      | 864.5"             |

|    | FIXTURE LENGTH | MOUNTING CENTERS |              |  |  |  |  |
|----|----------------|------------------|--------------|--|--|--|--|
|    | STARTER        | STARTER          | JOINER/ENDER |  |  |  |  |
| 3′ | 36.0"          | 35.5"            | -            |  |  |  |  |
| 4′ | 48.0"          | 47.5"            | -            |  |  |  |  |
| 5′ | 60.0"          | 59.5"            | -            |  |  |  |  |
| 6′ | 72.0"          | 71.5"            | 72.0"        |  |  |  |  |
| 7′ | 84.0"          | 83.5"            | -            |  |  |  |  |
| 8′ | 96.0"          | 95.5"            | 96.0"        |  |  |  |  |

