

# LINEAR<sup>SERIES</sup>



DATE

PROJECT

COMMENTS

CERTIFICATIONS



## 3S SUSPENDED DIRECT

AN EXTENSION OF OUR 3-INCH LINEAR FAMILY SERIES

FEATURES

### HOUSING

#### 1. ARCHITECTURAL DETAILS

Provide a clean architectural appearance with the hidden connect mounting system and seamlessly adjoin luminaires with the sure-fit alignment process.

#### 2. SURE-FIT ALIGNMENT

4-Point alignment system adjoining each luminaire section to ensure straighter rows while minimizing the appearance of seams.

### OPTICAL SYSTEM

#### 3. EVENLY ILLUMINATED ARCHITECTURAL LENS

Architectural grade diffuser designed to minimize glare, provide uniform light distribution, and optimal aesthetic value without sacrificing high efficiency light output. Optional Wall Wash (WW) achieves superior wall uniformity while minimizing glare.

#### 4. VERSATILE LIGHT ENGINE

Multiple lumen intensities provide the correct level of illumination within each space.

### ELECTRICAL

#### OPTIONAL INTEGRAL EMERGENCY BATTERY PACK

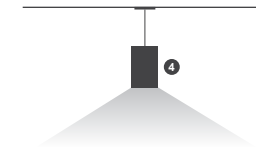
Engineered to exceed UL minimum safety standards and is CEC Listed.

#### 0-10 VOLT DIMMING STANDARD

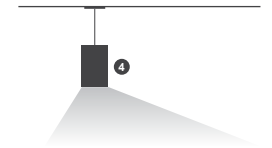
120/277VAC 0-10V dimming to 1% standard.

UP TO 136.7 LUMENS PER WATT AT 90 CRI

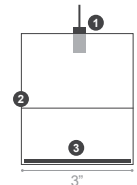
LIGHT DISTRIBUTION: LAMBERTIAN



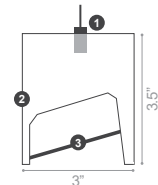
LIGHT DISTRIBUTION: WW



CROSS-SECTION: LAMBERTIAN



CROSS-SECTION: WW



SAMPLE PART NUMBER: 3S-24-MD-30-UNV-T1-WH-C90

ORDERING

SERIES	LENGTH	OUTPUT	CCT	VOLTAGE	MOUNTING	FINISH
3S						
ORDERING NOTES 1 EM not available with 347V. 2 EM and sensors are not available with 2' and 3' fixtures.	XXX FT	VHD 1250 LM/FT	LD 500 LM/FT	30 3000K	UNV 120-277V	T1 1" T-Grid
	1' Increments EX: 20' ± 20"	HD 1000 LM/FT	VLD 250 LM/FT	35 3500K	347' 347V	T9 9/16" T-Grid
		MD 750 LM/FT	CD Custom	40 4000K		SC Screw Slot Grid
					HC Hard Ceiling	WH White
					JB Junction Box	BLK Black

CRI	SUSPENSION	INTEGRATED CONTROLS <sup>2, 3, 4</sup>	OPTICAL	OPTIONS
C90				
C90 90 CRI	BLANK = 48" CABLE BC	Black Canopy & Cord DOS	Daylight Occupancy Sensor DALI DRIVER STANDARD	BLANK = LAMBERTIAN
CB96	96" Cables			WW <sup>5</sup> Wall Wash, Direct
CB144	144" Cables			

#### FOR INDIVIDUALS

EM<sup>2</sup> Emergency Battery  
CEC LISTED

EC Emergency Circuit

#### FOR LINEAR RUNS<sup>6, 7</sup>

EM	QUANTITY PER RUN <sup>6</sup>	POSITION IN RUN <sup>7</sup>
EMERGENCY BATTERY PACK		
EC	QUANTITY PER RUN <sup>6</sup>	POSITION IN RUN <sup>7</sup>
EMERGENCY CIRCUIT		

#### OPTIONS NOTES

3 For individual fixtures, sensor located at power feed end. For runs, a sensor is installed into each fixture in run, ex. 2 sensors are installed in a 16' run (1 sensor in each 8' fixture).

4 Consult factory for component or system not listed.

5 Integrated controls not available with wall wash.

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=End  
Ex: 3S-24-HD-35-UNV-T1-WH-EM2SJ



# 3S SUSPENDED DIRECT



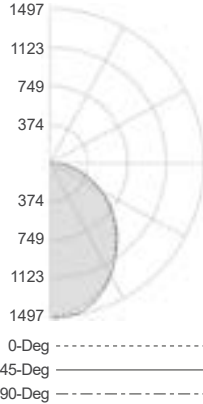
## PHOTOMETRICS & ENERGY CHARTS

### 3S-04-HD-35-UNV-XX-C90

Total Lumens: 3,999  
Ratio: 0% Up & 100% Down  
Wattage: 31.8  
Efficacy: 126.0 LM/W  
Fixture Length: Four Feet

#### Zonal Lumen Summary

Zone	Lumens	% Fixt
0 - 30	1136.0	28.4
0 - 40	1828.8	45.7
0 - 60	3145.9	78.7
0 - 90	3997.3	99.9
90 - 180	2.09	0.1
0 - 180	3999.4	100.0

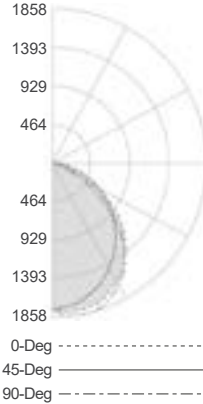


### 3S-04-HD-35-UNV-XX-C90-WW

Total Lumens: 4,057  
Ratio: 0% Up & 100% Down  
Wattage: 32.0  
Efficacy: 127.0 LM/W  
Fixture Length: Four Feet

#### Zonal Lumen Summary

Zone	Lumens	% Fixt
0 - 30	1302.7	32.1
0 - 40	2069.4	51.0
0 - 60	3396.3	83.7
0 - 90	4056.4	100.0
90 - 180	0.23	0.0
0 - 180	4056.6	100.0



### Direct (Lambertian) Light at 90 CRI, 3500K

	VHD:1250	HD:1000	MD:750	LD:500	VLD:250
Watts/ft	10.4	8.0	5.9	3.9	2.0
Lumens/ft	1255	999	755	499	268
LPW	120.7	124.9	128.0	127.9	136.7

### Direct (Wall Wash) Light at 90 CRI, 3500K

	VHD:1250	HD:1000	MD:750	LD:500	VLD:250
Watts/ft	10.4	8.0	5.9	3.9	2.0
Lumens/ft	1274	1014	766	506	272
LPW	122.5	126.7	129.9	129.9	138.8

### Lumen Adjustment Calculations

LUMEN MULTIPLIERS		Example: MD, 3000K at 90CRI
3000K	0.995	Light Output: 3064 x 0.995 = 3049 lm
4000K	1.023	Light Output/ft: 766 x 0.995 = 763 lm/ft
		Efficacy = 763 / 5.9 = 129.3 lm/W

## SPECIFICATIONS

## MECHANICAL

### Housing Construction:

Extruded Aluminum 6063-T5 alloy outer housing and LED tray 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 3S is available in a minimum 2-foot (nominal) length with additional 1-foot increments available ( $\pm 0.030"$ ). 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 Hidden-Connect design recesses all attachment hardware (hanging cable and power cord) below the top plane of the housing to enable a sleek, clean finished look. Standard hanging hardware includes 1/16" diameter, galvanized steel aircraft cable with adjustable and lockable nickel-plated cable grippers and a white 18/5 S.J.T. power cord. The standard hardware includes a 60" power cord and 54" aircraft cables to accommodate a 48" mounting distance from the ceiling. Longer hanging cables and power cords are available as an option. Ceiling type options are "T1" = T-Grid, "T9" = T-Grid, "SC" = Screw Slot Grid, "HC" = Hard Ceiling or "JB" = J-Box mount. Ceiling canopy provided. All Lumato suspension hardware is tested and listed to UL1598 requirements for loading/fixture support.

### Exterior Finish:

The 3S is available in White and Black polyester powder coat finish to ensure durability.

### Suspension Components:

Fixtures are suspended by 1/16" galvanized aircraft cable. Cables are attached to the ceiling suspension point with a 1/4-20 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 = 5" O.D.). Cable lengths can be specified for 48", 96" and 144" suspension lengths.

### Integrated Controls:

The 3S 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 Lumato lighting representative.

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

## OPERATION

### Light Engine:

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

### 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.

### Optional Direct Wall Wash:

Asymmetric extruded aluminum reflector with recessed extruded acrylic lens to achieve a superior wall uniformity while minimizing glare.

### 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 3S 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, covers LED's, driver, luminaire. Opt. accessories are covered by their individual MFRS' warranties.

### 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.

### Manufactured in the USA:

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

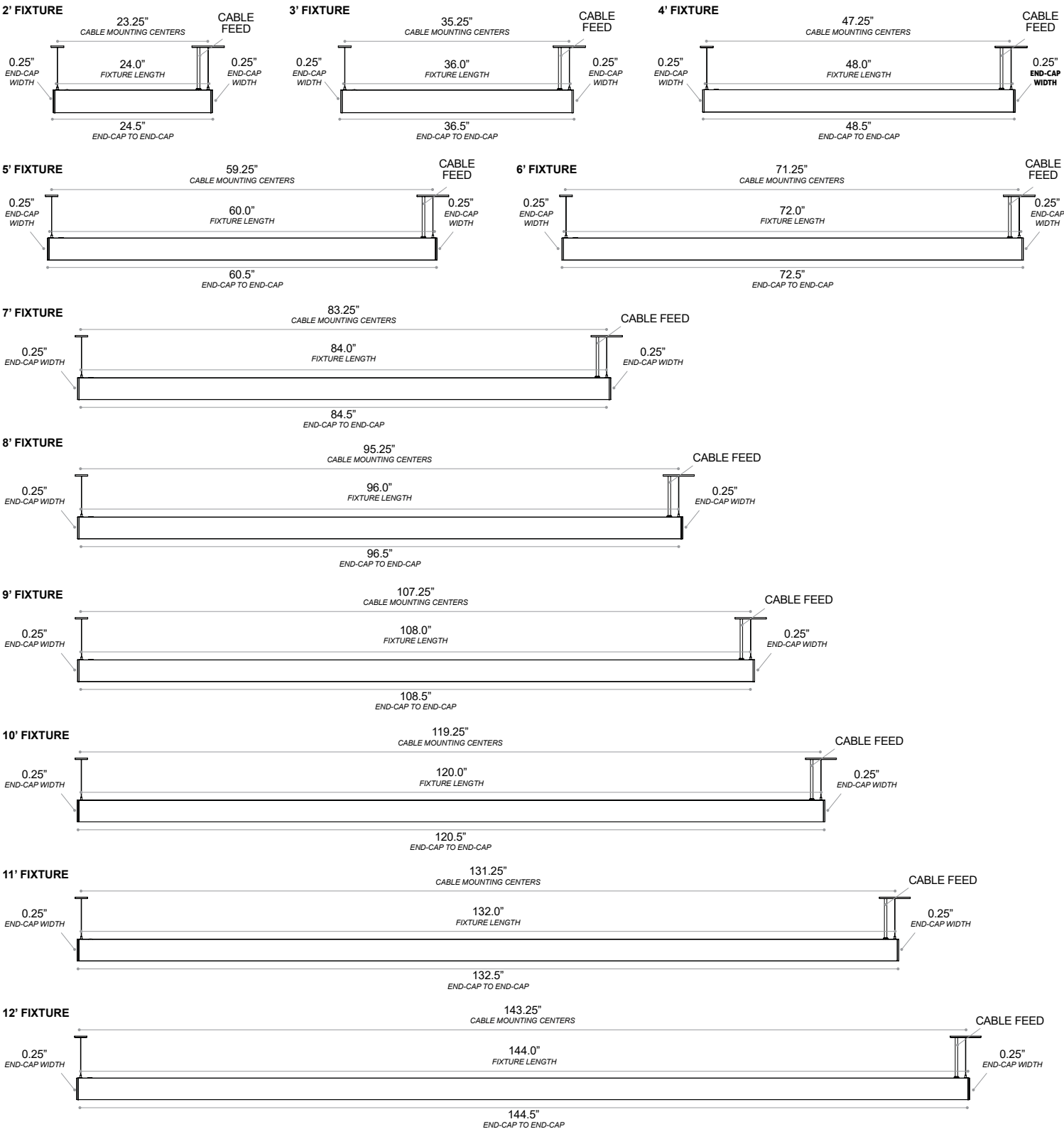
### Shipping:

4 week lead-time for orders up to 1000 linear feet.

Lead-time for orders greater than 1000 linear feet will be determined at time of order.



Fixture Row Layout: Single Unit 2' - 3' - 4' - 5' - 6' - 7' - 8' - 9' - 10' - 11' - 12'

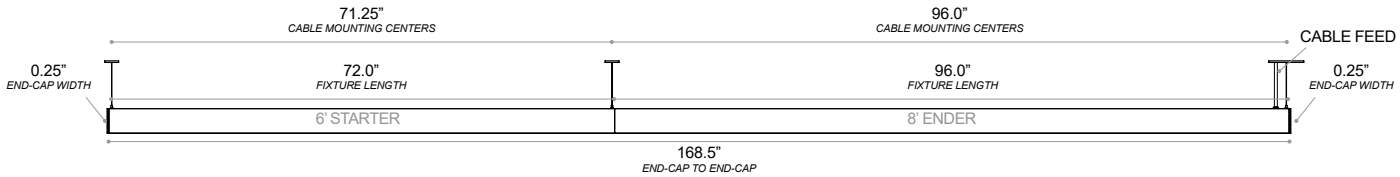


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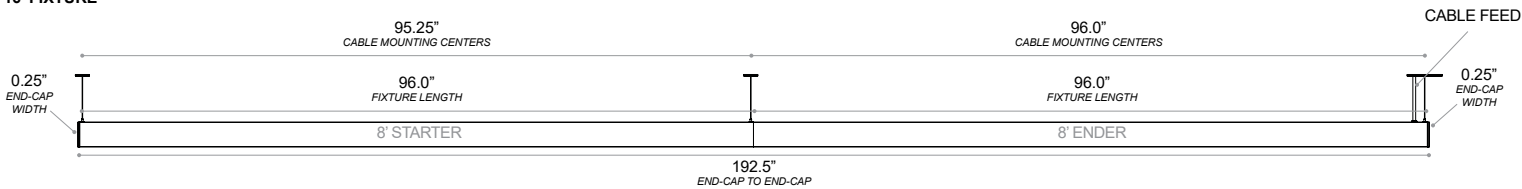


Fixture Row Layout: Two Units 14' - 16'

14' FIXTURE

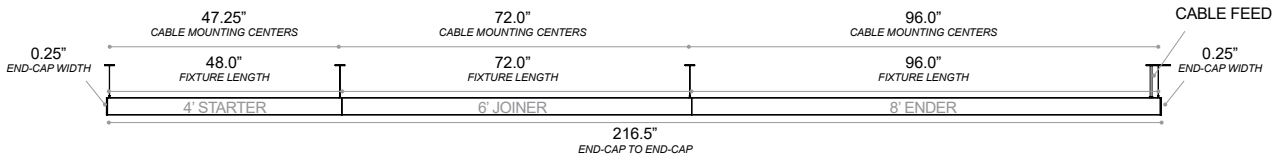


16' FIXTURE

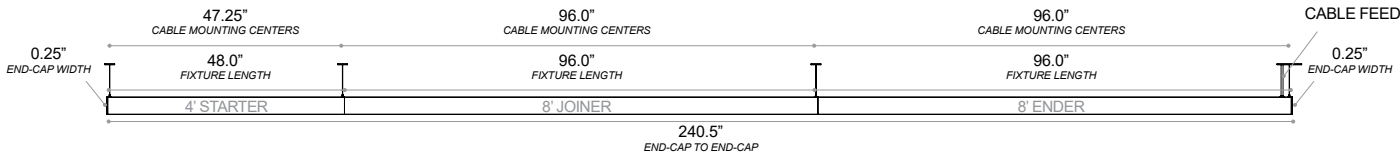


Fixture Row Layout: Three Units 18' - 20' - 22' - 24'

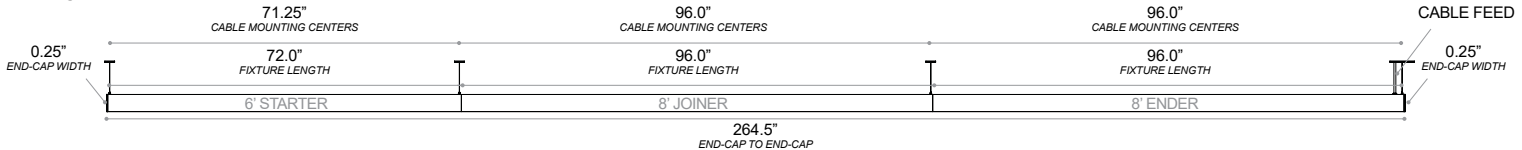
18' FIXTURE



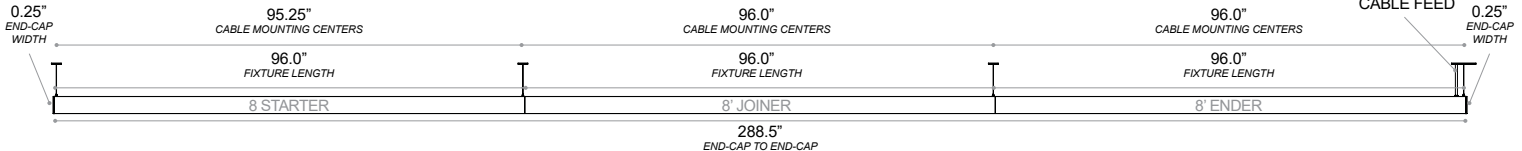
20' FIXTURE



22' FIXTURE



24' FIXTURE





Fixture Row Components

RUN LENGTH	FIXTURE LENGTHS									JOINER	FEED KITS	HANGER KITS	END-CAP TO END-CAP
	STARTER	JOINER							ENDER				
		1	2	3	4	5	6	7					
13'	5'	-	-	-	-	-	-	-	8'	1	1	2	156.5"
14'	6'	-	-	-	-	-	-	-	8'	1	1	2	168.5"
15'	7'	-	-	-	-	-	-	-	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"
35'	5'	6'	8'	8'	-	-	-	-	8'	4	1	5	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"
56'	8'	8'	8'	8'	8'	8'	-	-	8'	6	1	7	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"

	FIXTURE LENGTH	MOUNTING CENTERS	
	STARTER	STARTER	JOINER/ENDER
3'	36.0"	35.25"	-
4'	48.0"	47.25"	-
5'	60.0"	59.25"	-
6'	72.0"	71.25"	72.0"
7'	84.0"	83.25"	-
8'	96.0"	95.25"	96.0"

