

LINEAR^{SERIES}



DATE

PROJECT

COMMENTS

CERTIFICATIONS



2R RECESSED DIRECT

AN EXTENSION OF OUR 2-INCH LINEAR FAMILY SERIES

FEATURES

HOUSING

- 1. MINIMAL RECESSED HEIGHT**
Shallow 3.5" housing provides maximum plenum clearance.
- 2. ONE-PIECE EXTRUDED ALUMINUM HOUSING**
Housing ensures straighter rows and consistent lens retention.
- 3. MULTIPLE CEILING SYSTEMS**
Engineered to be installed within multiple ceiling applications; see options below for available mounting types.

5. VERSATILE LIGHT ENGINE

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

ELECTRICAL

OPTIONAL INTEGRAL EMERGENCY BATTERY PACK

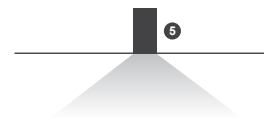
Engineered to exceed UL minimum safety standards and is CEC Listed.

0-10 VOLT DIMMING STANDARD

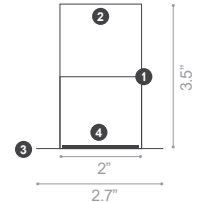
120/277VAC 0-10V dimming to 1% standard.

UP TO 112.5 LUMENS PER WATT AT 90 CRI

LIGHT DISTRIBUTION



CROSS-SECTION



OPTICAL SYSTEM

- 4. 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.

SAMPLE PART NUMBER: 2R-24-MD-30-UNV-T1-WH-C90

ORDERING

SERIES	LENGTH	OUTPUT				CCT	VOLTAGE	MOUNTING				FINISH			
2R															
ORDERING NOTES	XXX FT	VHD	1250 LM/FT	LD	500 LM/FT	30	3000K	UNV	120-277V	T1	1" T-Grid	SC	Screw Slot Grid	WH	White
	1' Increments EX: 20' = 20	HD	1000 LM/FT	VLD	250 LM/FT	35	3500K	347 ¹	347V	T9	9/16" T-Grid	OF	Overlapping Flange	BLK	Black
		MD	750 LM/FT	CD	Custom	40	4000K			TG	1" T-Teg Grid	SF	Spackle Flange		
										TG9	9/16" T-Teg Grid				

1 EM not available with 347V.

0.5M and 0.75M versions are not available with 1" Grid and 0.5" Spacing.

ORDERING NOTES

1 EM not available with 347V.

2 EM and sensors are not available with 2' and 3' fixtures

OPTIONS

CRI	INTEGRATED CONTROLS ^{2, 3, 4}		ACCESSORY	FOR INDIVIDUALS		FOR LINEAR RUNS ^{5, 6}		
C90						EM		
C90	90 CRI	DOS	Daylight Occupancy Sensor DALI DRIVER STANDARD	CP	Chicago Plenum	EM ²	Emergency Battery CEC LISTED	EM
				GC	Grid Clips	EC	Emergency Circuit	EC

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 EM and EC quantity is not to exceed number of discrete fixture sections in a row.

6 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: 2R-24-HD-35-UNV-T1-WH-EM2SJ

ooo STARTER ooo JOINER ooo ENDER ooo

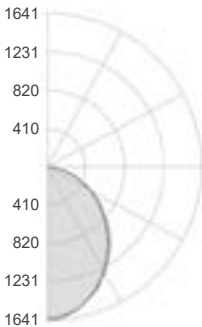
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PHOTOMETRICS & ENERGY CHARTS

2R-04-HD-35-UNV-XX-C90

Total Lumens: 4,055
Ratio: 0% Up & 100% Down
Wattage: 37.4
Efficacy: 108.0 LM/W
Fixture Length: Four Feet



Zonal Lumen Summary

Zone	Lumens	% Fixt
0 - 30	1206.8	29.8
0 - 40	1923.4	47.4
0 - 60	3247.4	80.1
0 - 90	4054.6	100.0
90 - 180	0.2	0.0
0 - 180	4054.8	100.0

Direct (Lambertian) Light at 90 CRI, 3500K

	VHD:1250	HD:1000	MD:750	LD:500	VLD:250
Watts/ft	11.5	9.4	6.9	4.4	2.3
Lumens/ft	1262	1014	779	492	250
LPW	109.7	108.4	112.5	111.8	108.7

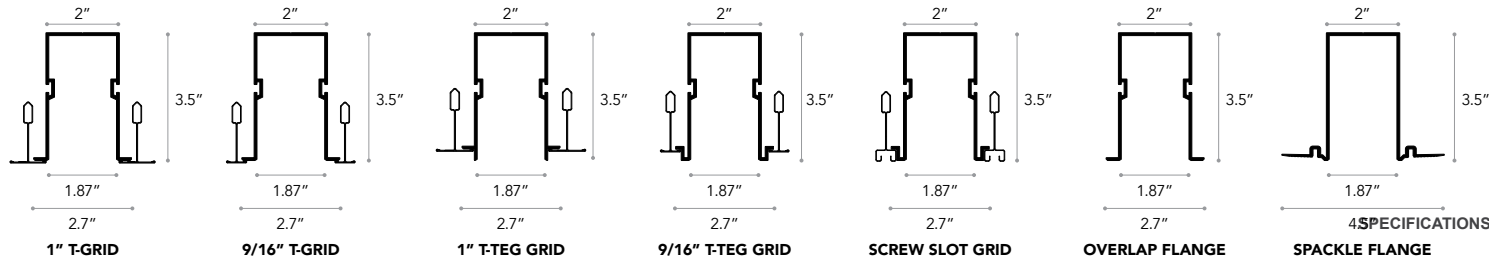
Lumen Adjustment Calculations

LUMEN MULTIPLIERS	
3000K	0.995
3500K	1.000
4000K	1.023

Example: MD Output, 3000K at 90CRI

Total Light Output: 3116 x 0.995 = 3100 lm
Total Light Output Per Foot: 779 x 0.995 = 775 lm/ft
Efficacy = 775 / 6.9 = 112.3 lm/W

MOUNTING OPTIONS (3" GRID CENTERS)



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 minimalist 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.

Lengths:

The 2R 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 2R is designed for lay-in grid ceilings or "Hard" sheet rock construction. Hard ceiling installations can be supplied for overlapping flange or "Trimless" spackle flange types. The 2R is available with optional Grid Clip (GC). 4 Grid Clips are factory installed on each fixture. Specify in Accessory section of Ordering.

Exterior Finish:

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

Integrated Controls:

The 2R 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 2R 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.

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 2R 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 and luminaire. Optional accessories are covered by their individual Manufacturers' 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. Luminaires are IC rated.

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.

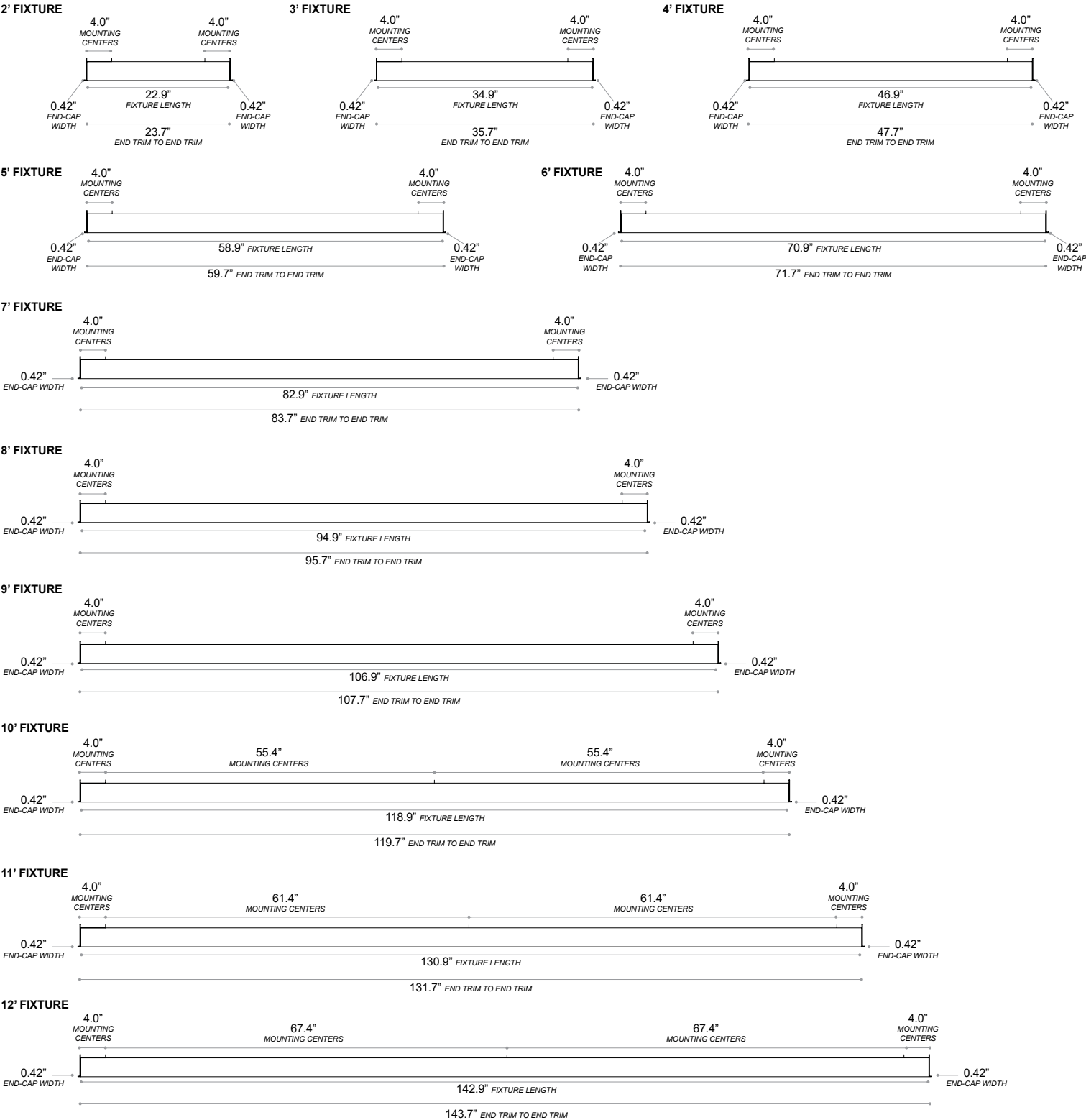
Shipping:

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.

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

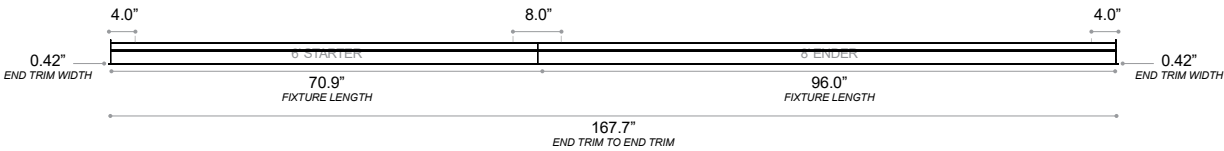


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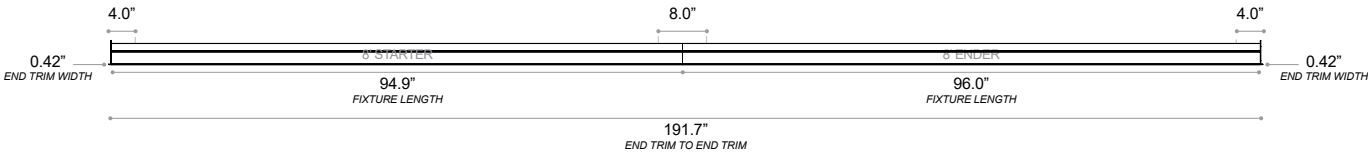


Fixture Row Layout: Two Units 14' - 16'

14' FIXTURE

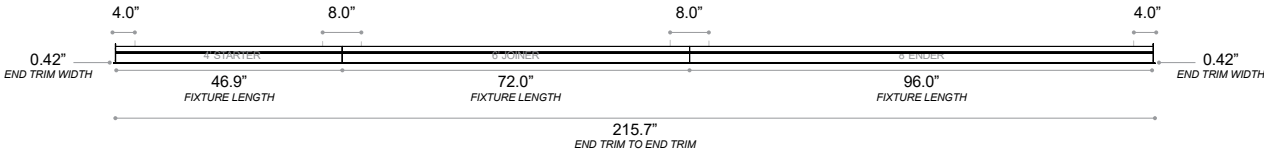


16' FIXTURE

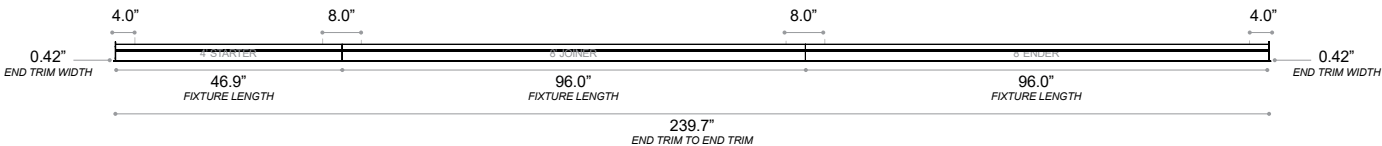


Fixture Row Layout: Three Units 18' - 20' - 22' - 24'

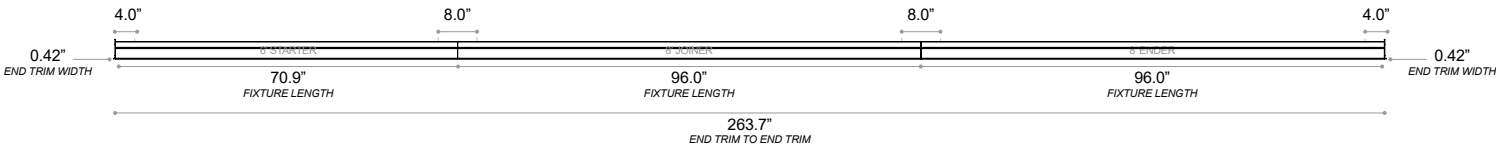
18' FIXTURE



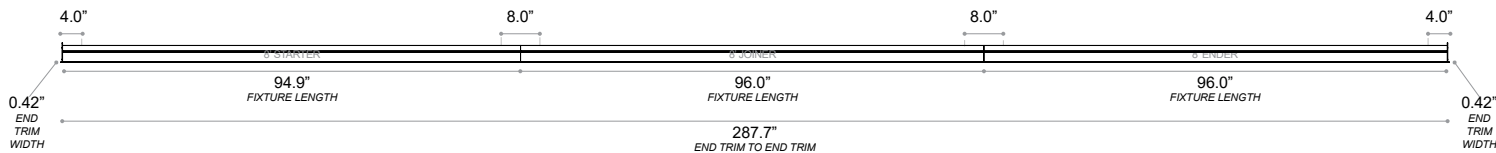
20' FIXTURE



22' FIXTURE



24' FIXTURE



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Fixture Row Components

RUN LENGTH	FIXTURE LENGTHS									JOINER KITS	CEILING CUT OUT LENGTHS
	STARTER	JOINER							ENDER		
	1	2	3	4	5	6	7	8	9		
13'	5'	-	-	-	-	-	-	-	8'	1	155.25"
14'	6'	-	-	-	-	-	-	-	8'	1	167.25"
15'	7'	-	-	-	-	-	-	-	8'	1	179.25"
16'	8'	-	-	-	-	-	-	-	8'	1	191.25"
17'	3'	6'	-	-	-	-	-	-	8'	2	203.25"
18'	4'	6'	-	-	-	-	-	-	8'	2	215.25"
19'	5'	6'	-	-	-	-	-	-	8'	2	227.25"
20'	4'	8'	-	-	-	-	-	-	8'	2	239.25"
21'	5'	8'	-	-	-	-	-	-	8'	2	251.25"
22'	6'	8'	-	-	-	-	-	-	8'	2	263.25"
23'	7'	8'	-	-	-	-	-	-	8'	2	275.25"
24'	8'	8'	-	-	-	-	-	-	8'	2	287.25"
25'	5'	6'	6'	-	-	-	-	-	8'	3	299.25"
26'	4'	6'	8'	-	-	-	-	-	8'	3	311.25"
27'	5'	6'	8'	-	-	-	-	-	8'	3	323.25"
28'	4'	8'	8'	-	-	-	-	-	8'	3	335.25"
29'	5'	8'	8'	-	-	-	-	-	8'	3	347.25"
30'	6'	8'	8'	-	-	-	-	-	8'	3	359.25"
31'	7'	8'	8'	-	-	-	-	-	8'	3	371.25"
32'	8'	8'	8'	-	-	-	-	-	8'	3	383.25"
33'	5'	6'	6'	8'	-	-	-	-	8'	4	395.25"
34'	4'	6'	8'	8'	-	-	-	-	8'	4	407.25"
35'	5'	6'	8'	8'	-	-	-	-	8'	4	419.25"
36'	4'	8'	8'	8'	-	-	-	-	8'	4	431.25"
37'	5'	8'	8'	8'	-	-	-	-	8'	4	443.25"
38'	6'	8'	8'	8'	-	-	-	-	8'	4	455.25"
39'	7'	8'	8'	8'	-	-	-	-	8'	4	467.25"
40'	8'	8'	8'	8'	-	-	-	-	8'	4	479.25"
41'	5'	6'	6'	8'	8'	-	-	-	8'	5	491.25"
42'	4'	6'	8'	8'	8'	-	-	-	8'	5	503.25"
43'	5'	6'	8'	8'	8'	-	-	-	8'	5	515.25"
44'	4'	8'	8'	8'	8'	-	-	-	8'	5	527.25"
45'	5	8'	8'	8'	8'	-	-	-	8'	5	539.25"
46'	6'	8'	8'	8'	8'	-	-	-	8'	5	551.25"
47'	7'	8'	8'	8'	8'	-	-	-	8'	5	563.25"
48'	8'	8'	8'	8'	8'	-	-	-	8'	5	575.25"
49'	5'	6'	6'	8'	8'	8'	-	-	8'	6	587.25"
50'	4'	6'	8'	8'	8'	8'	-	-	8'	6	599.25"
51'	5'	6'	8'	8'	8'	8'	-	-	8'	6	611.25"
52'	4'	8'	8'	8'	8'	8'	-	-	8'	6	623.25"
53'	5'	8'	8'	8'	8'	8'	-	-	8'	6	635.25"
54'	6'	8'	8'	8'	8'	8'	-	-	8'	6	647.25"
55'	7'	8'	8'	8'	8'	8'	-	-	8'	6	659.25"
56'	8'	8'	8'	8'	8'	8'	-	-	8'	6	671.25"
57'	5'	6'	6'	8'	8'	8'	8'	-	8'	7	683.25"
58'	4'	6'	8'	8'	8'	8'	8'	-	8'	7	695.25"
59'	5'	6'	8'	8'	8'	8'	8'	-	8'	7	707.25"
60'	4'	8'	8'	8'	8'	8'	8'	-	8'	7	719.25"

	FIXTURE LENGTH	
	STARTER	JOINER/ENDER
3'	34.9"	36.0"
4'	46.9"	48.0"
5'	58.9"	60.0"
6'	70.9"	72.0"
7'	82.9"	84.0"
8'	94.9"	96.0"

OVERLAPPING FLANGE CEILING CUT OUT WIDTH	SPACKLE FLANGE CEILING CUT OUT WIDTH
3.4"	4.25"

