

Scaled data based on original data using  
LM-79-2019 Approved Method: Electrical and Photometric Measurements of Solid-  
State Lighting Products

Test Report Prepared for  
Cooper Lighting Solutions

Brand: FAIL-SAFE

Report Number: P564131

Luminaire Tested: FSR-24-4-LD4-4STD-40-UNV-93-85-EDD

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P564131  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2102-135-5)  
Test Lab: INNOVATION CENTER  
Issue Date: 7/20/2021  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: FAIL-SAFE  
Catalog Number: FSR-24-4-LD4-4STD-40-UNV-93-85-EDD  
Description: 2X4 FSR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .187 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 80 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

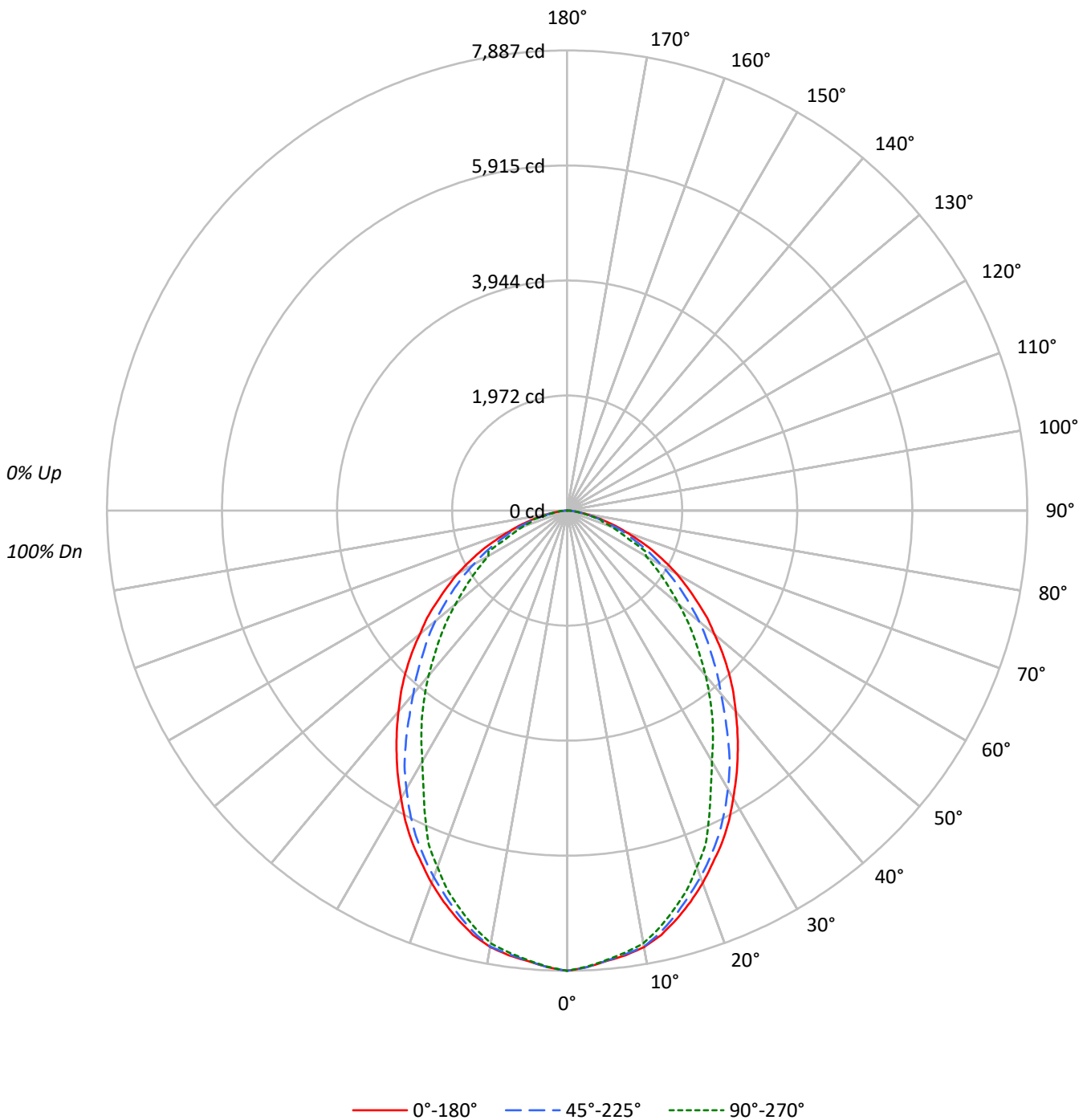
Lumens per Lamp: N/A  
Luminaire Lumens: 15484.0 lumens  
Efficiency: N/A  
Efficacy: 116.2 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 133.2  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 24 FT



TEST NUMBER: P564131

CATALOG NUMBER: FSR-24-4-LD4-4STD-40-UNV-93-85-EDD

### Luminous Intensity Polar Plot





TEST NUMBER: P564131

CATALOG NUMBER: FSR-24-4-LD4-4STD-40-UNV-93-85-EDD

**COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:**

RF	20				20				20				20				20	
RC	80				70				50				30				10	0
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	0
RCR																		
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100
1	110	106	102	99	108	104	100	97	100	97	94	96	94	91	92	90	89	87
2	101	94	88	83	99	92	87	82	89	84	80	86	82	78	83	79	77	75
3	93	84	77	71	91	82	76	70	79	74	69	77	72	68	74	70	67	65
4	86	75	67	61	84	74	66	61	72	65	60	69	64	59	67	62	58	56
5	80	68	60	54	78	67	59	53	65	58	53	63	57	52	61	56	52	50
6	74	62	53	48	72	61	53	47	59	52	47	57	51	47	56	50	46	44
7	69	56	48	43	67	56	48	42	54	47	42	53	46	42	51	46	42	40
8	65	52	44	38	63	51	44	38	50	43	38	49	42	38	48	42	38	36
9	61	48	40	35	59	47	40	35	46	39	35	45	39	34	44	38	34	33
10	57	44	37	32	56	44	37	32	43	36	32	42	36	32	41	36	32	30

**AVERAGE LUMINANCE (cd/sqm):**

	0°	45°	90°
0°	10612	10612	10612
5°	10468	10456	10443
10°	10377	10365	10290
15°	10098	9996	9856
20°	9727	9570	9309
25°	9327	9124	8555
30°	8840	8557	7707
35°	8372	7908	7129
40°	7896	7207	6486
45°	7443	6662	5864
50°	6890	6184	5230
55°	6374	5604	4684
60°	5840	5005	4196
65°	5138	4384	3716
70°	4233	3838	3157
75°	3366	2939	3081
80°	2261	2119	1978
85°	1408	1689	1971

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 7443 cd/sqm



TEST NUMBER: P564131

CATALOG NUMBER: FSR-24-4-LD4-4STD-40-UNV-93-85-EDD

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	734.2	4.7
10°-20°	2015.0	13.0
20°-30°	2789.6	18.0
30°-40°	2974.5	19.2
40°-50°	2713.6	17.5
50°-60°	2125.9	13.7
60°-70°	1385.6	8.9
70°-80°	613.9	4.0
80°-90°	131.8	0.9
90°-100°	0.0	0.0
100°-110°	0.0	0.0
110°-120°	0.0	0.0
120°-130°	0.0	0.0
130°-140°	0.0	0.0
140°-150°	0.0	0.0
150°-160°	0.0	0.0
160°-170°	0.0	0.0
170°-180°	0.0	0.0
0°-30°	5538.7	35.8
0°-40°	8513.3	55.0
0°-60°	13352.8	86.2
0°-90°	15484.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	15484.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	7887	7887	7887	7887	7887	
5°	7751	7741	7741	7732	7732	736
15°	7249	7249	7176	7103	7076	2038
25°	6282	6246	6146	5927	5763	2884
35°	5097	5061	4814	4450	4340	3187
45°	3912	3830	3501	3210	3082	3013
55°	2717	2635	2389	2106	1997	2437
65°	1614	1523	1377	1404	1167	1591
75°	647	602	565	538	593	694
85°	91	100	109	118	128	126
90°	0	0	0	0	0	



TEST NUMBER: P564131

CATALOG NUMBER: FSR-24-4-LD4-4STD-40-UNV-93-85-EDD

**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	7887.3	7887.3	7887.3	7887.3	7887.3
2.5°	7832.6	7832.6	7832.6	7823.5	7823.5
5°	7750.6	7741.4	7741.4	7732.3	7732.3
7.5°	7686.7	7677.6	7668.5	7659.4	7641.1
10°	7595.6	7595.6	7586.4	7540.8	7531.7
12.5°	7449.7	7440.5	7404.1	7340.2	7322.0
15°	7249.1	7249.1	7176.1	7103.2	7075.8
17.5°	7030.2	7021.1	6929.9	6857.0	6820.5
20°	6793.1	6774.9	6683.7	6565.2	6501.4
22.5°	6528.7	6528.7	6419.3	6264.3	6200.5
25°	6282.5	6246.0	6145.7	5926.9	5762.8
27.5°	5999.9	5945.1	5835.7	5525.7	5334.2
30°	5689.8	5662.5	5507.5	5106.3	4960.4
32.5°	5398.0	5352.5	5188.3	4768.9	4650.3
35°	5097.1	5060.7	4814.5	4449.7	4340.3
37.5°	4796.2	4750.6	4440.6	4148.8	4012.1
40°	4495.3	4440.6	4103.2	3838.8	3692.9
42.5°	4212.7	4139.7	3811.5	3528.8	3364.7
45°	3911.8	3829.7	3501.4	3209.6	3082.0
47.5°	3610.9	3537.9	3237.0	2936.1	2790.2
50°	3291.7	3227.9	2954.3	2653.4	2498.4
52.5°	3027.3	2927.0	2662.5	2361.6	2234.0
55°	2717.3	2635.2	2389.0	2106.3	1996.9
57.5°	2434.6	2352.5	2124.6	1860.1	1769.0
60°	2170.2	2051.6	1860.1	1632.2	1559.2
62.5°	1878.4	1787.2	1623.1	1431.6	1522.8
65°	1613.9	1522.8	1376.9	1404.2	1167.1
67.5°	1322.2	1276.6	1148.9	1021.3	984.8
70°	1076.0	1021.3	975.7	838.9	802.4
72.5°	857.1	802.4	738.6	665.6	638.3
75°	647.4	601.8	565.3	538.0	592.7
77.5°	446.8	428.6	401.2	373.9	364.7
80°	291.8	282.7	273.5	264.4	255.3
82.5°	173.2	173.2	173.2	173.2	173.2
85°	91.2	100.3	109.4	118.5	127.7
87.5°	54.7	54.7	63.8	72.9	82.1
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)