

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: P562338

Luminaire Tested: FSR-24-4-LD4-1STD-35-UNV-93-85-EDD-90

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P562338  
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-LD4-1STD-35-UNV-93-85-EDD-90  
Description: 2X4 FSR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .187 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

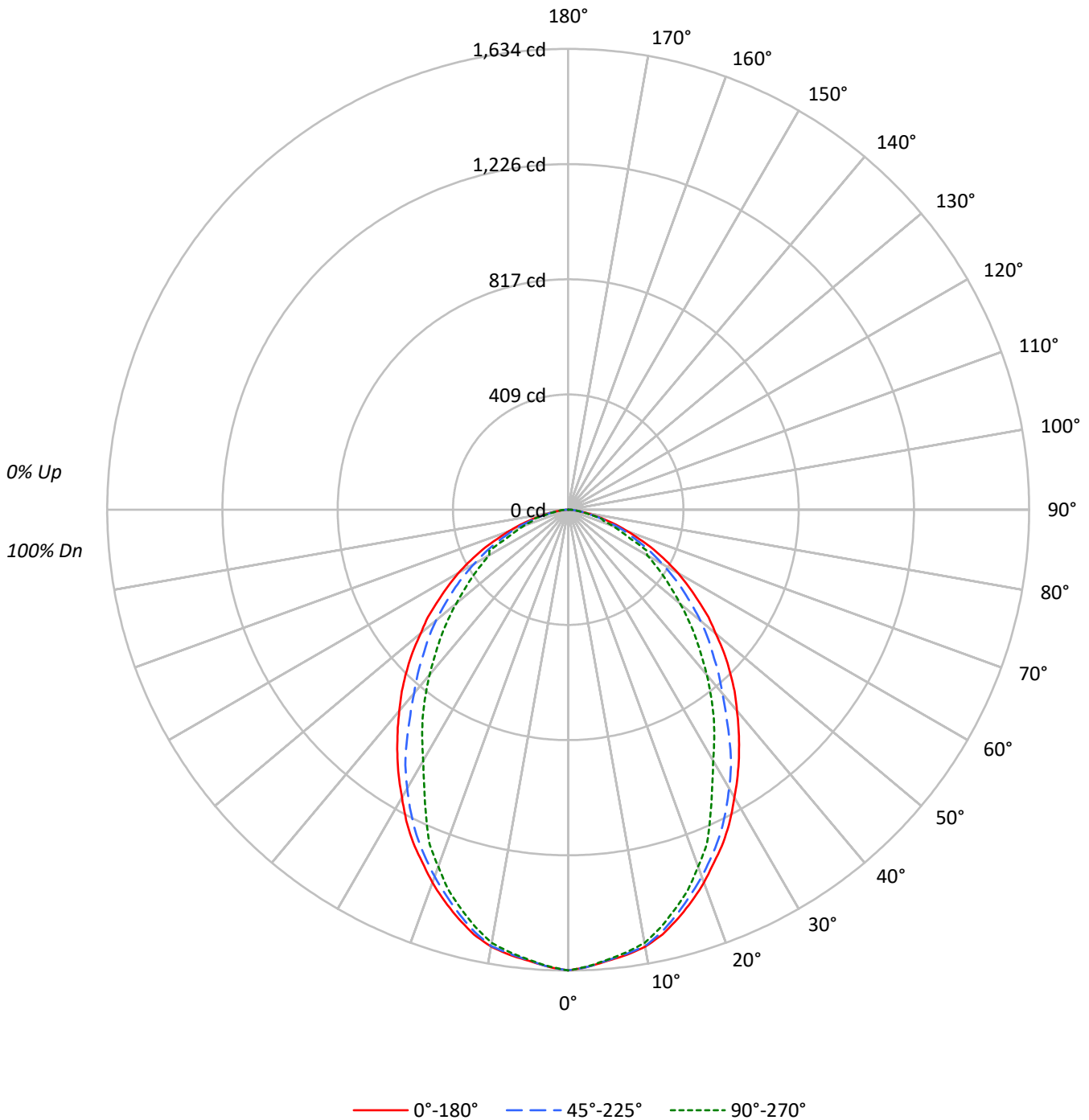
Lumens per Lamp: N/A  
Luminaire Lumens: 3207.0 lumens  
Efficiency: N/A  
Efficacy: 96.3 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 33.3  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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



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### Luminous Intensity Polar Plot





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**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°	2198	2198	2198
5°	2168	2166	2163
10°	2149	2147	2131
15°	2091	2070	2041
20°	2015	1982	1928
25°	1932	1890	1772
30°	1831	1772	1596
35°	1734	1638	1477
40°	1635	1493	1343
45°	1542	1380	1215
50°	1427	1281	1083
55°	1320	1161	970
60°	1210	1037	869
65°	1064	908	770
70°	876	795	654
75°	697	609	638
80°	468	439	410
85°	292	350	408

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 1542 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	152.1	4.7
10°-20°	417.3	13.0
20°-30°	577.8	18.0
30°-40°	616.1	19.2
40°-50°	562.0	17.5
50°-60°	440.3	13.7
60°-70°	287.0	8.9
70°-80°	127.1	4.0
80°-90°	27.3	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°	1147.2	35.8
0°-40°	1763.2	55.0
0°-60°	2765.6	86.2
0°-90°	3207.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3207.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1634	1634	1634	1634	1634	
5°	1605	1603	1603	1602	1602	152
15°	1501	1501	1486	1471	1466	422
25°	1301	1294	1273	1228	1194	597
35°	1056	1048	997	922	899	660
45°	810	793	725	665	638	624
55°	563	546	495	436	414	505
65°	334	315	285	291	242	329
75°	134	125	117	111	123	144
85°	19	21	23	25	26	26
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1633.6	1633.6	1633.6	1633.6	1633.6
2.5°	1622.3	1622.3	1622.3	1620.4	1620.4
5°	1605.3	1603.4	1603.4	1601.5	1601.5
7.5°	1592.1	1590.2	1588.3	1586.4	1582.6
10°	1573.2	1573.2	1571.3	1561.8	1559.9
12.5°	1543.0	1541.1	1533.5	1520.3	1516.5
15°	1501.4	1501.4	1486.3	1471.2	1465.5
17.5°	1456.1	1454.2	1435.3	1420.2	1412.6
20°	1407.0	1403.2	1384.3	1359.8	1346.5
22.5°	1352.2	1352.2	1329.5	1297.4	1284.2
25°	1301.2	1293.7	1272.9	1227.6	1193.6
27.5°	1242.7	1231.3	1208.7	1144.5	1104.8
30°	1178.5	1172.8	1140.7	1057.6	1027.4
32.5°	1118.0	1108.6	1074.6	987.7	963.2
35°	1055.7	1048.1	997.2	921.6	899.0
37.5°	993.4	983.9	919.7	859.3	831.0
40°	931.1	919.7	849.9	795.1	764.9
42.5°	872.5	857.4	789.4	730.9	696.9
45°	810.2	793.2	725.2	664.8	638.3
47.5°	747.9	732.8	670.4	608.1	577.9
50°	681.8	668.5	611.9	549.6	517.5
52.5°	627.0	606.2	551.5	489.1	462.7
55°	562.8	545.8	494.8	436.3	413.6
57.5°	504.2	487.2	440.0	385.3	366.4
60°	449.5	424.9	385.3	338.1	322.9
62.5°	389.0	370.2	336.2	296.5	315.4
65°	334.3	315.4	285.2	290.8	241.7
67.5°	273.8	264.4	238.0	211.5	204.0
70°	222.8	211.5	202.1	173.7	166.2
72.5°	177.5	166.2	153.0	137.9	132.2
75°	134.1	124.6	117.1	111.4	122.8
77.5°	92.5	88.8	83.1	77.4	75.5
80°	60.4	58.5	56.7	54.8	52.9
82.5°	35.9	35.9	35.9	35.9	35.9
85°	18.9	20.8	22.7	24.6	26.4
87.5°	11.3	11.3	13.2	15.1	17.0
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)