

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: P562713

Luminaire Tested: FSR-24-4-LD4-2LO-35-UNV-82-88-EDD

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P562713  
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-LD4-2LO-35-UNV-82-88-EDD  
Description: 2X4 FSR TROFFER WITH .187 CLEAR PC FIXTURE SIDE AND .500 CLEAR PC ENVIRONMENTAL SI  
LENSES WITH, 80 CRI AND 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

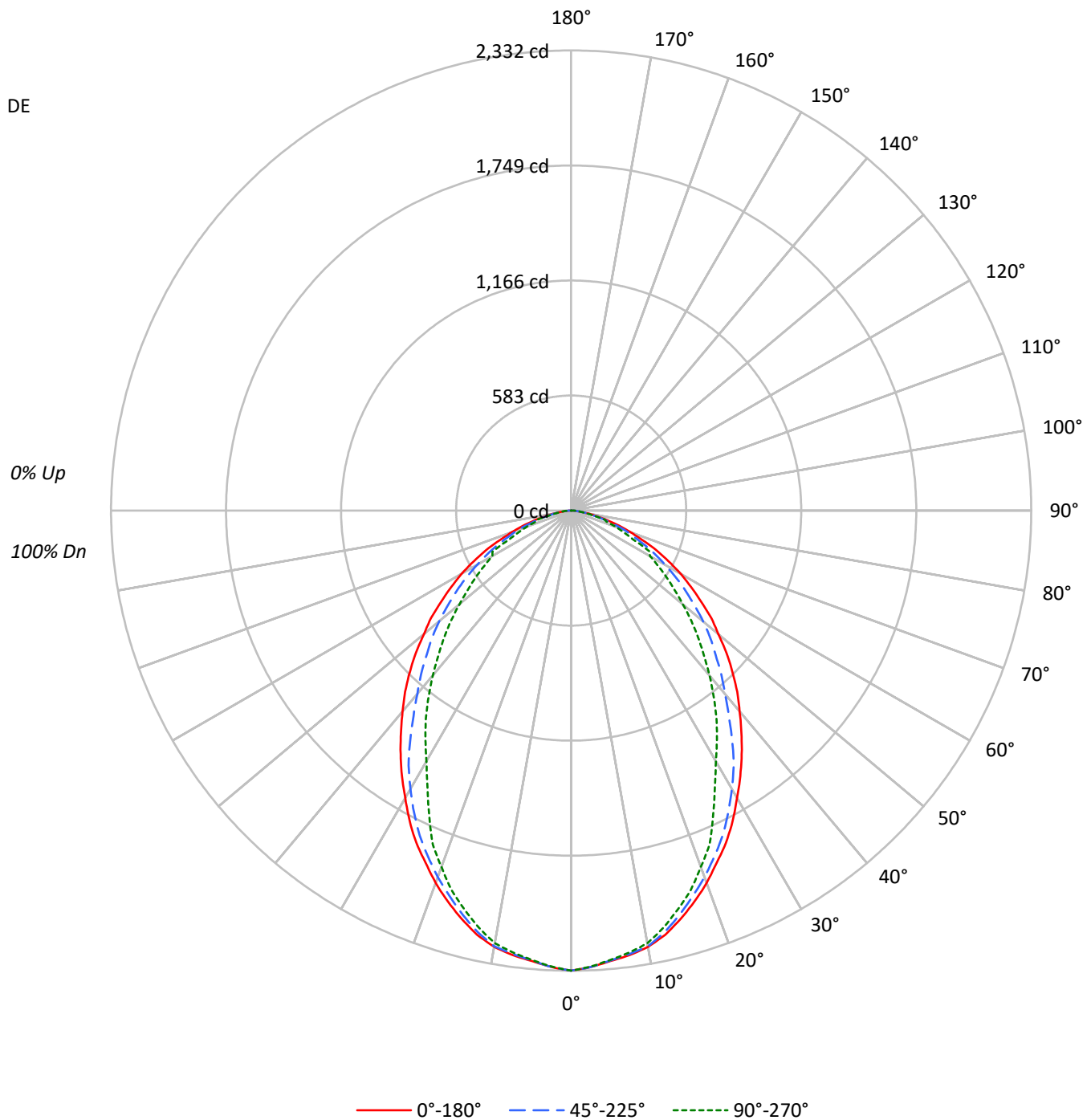
Lumens per Lamp: N/A  
Luminaire Lumens: 4577.0 lumens  
Efficiency: N/A  
Efficacy: 97.8 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 46.8  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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	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													100															
1	110	106	102	99	108	104	100	97	100	97	94	96	94	91	92	90	89	87													87															
2	101	94	88	83	99	92	87	82	89	84	80	86	82	78	83	79	77	75													75															
3	93	84	77	71	91	82	76	70	79	74	69	77	72	68	74	70	67	65													65															
4	86	75	67	61	84	74	66	61	72	65	60	69	64	59	67	62	58	56													56															
5	80	68	60	54	78	67	59	53	65	58	53	63	57	52	61	56	52	50													50															
6	74	62	53	48	72	61	53	47	59	52	47	57	51	47	56	50	46	44													44															
7	69	56	48	43	67	56	48	42	54	47	42	53	46	42	51	46	42	40													40															
8	65	52	44	38	63	51	44	38	50	43	38	49	42	38	48	42	38	36													36															
9	61	48	40	35	59	47	40	35	46	39	35	45	39	34	44	38	34	33													33															
10	57	44	37	32	56	44	37	32	43	36	32	42	36	32	41	36	32	30													30															

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

	0°	45°	90°
0°	3137	3137	3137
5°	3094	3091	3087
10°	3067	3064	3042
15°	2985	2955	2914
20°	2875	2829	2752
25°	2757	2697	2529
30°	2613	2529	2278
35°	2475	2337	2107
40°	2334	2130	1917
45°	2200	1969	1733
50°	2037	1828	1546
55°	1884	1657	1385
60°	1726	1480	1240
65°	1519	1296	1098
70°	1251	1135	933
75°	995	869	911
80°	669	627	585
85°	417	499	582

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 2200 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	217.0	4.7
10°-20°	595.6	13.0
20°-30°	824.6	18.0
30°-40°	879.2	19.2
40°-50°	802.1	17.5
50°-60°	628.4	13.7
60°-70°	409.6	8.9
70°-80°	181.5	4.0
80°-90°	39.0	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°	1637.2	35.8
0°-40°	2516.5	55.0
0°-60°	3947.0	86.2
0°-90°	4577.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4577.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2332	2332	2332	2332	2332	
5°	2291	2288	2288	2286	2286	217
15°	2143	2143	2121	2100	2092	602
25°	1857	1846	1817	1752	1704	853
35°	1507	1496	1423	1315	1283	942
45°	1156	1132	1035	949	911	891
55°	803	779	706	623	590	720
65°	477	450	407	415	345	470
75°	191	178	167	159	175	205
85°	27	30	32	35	38	37
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	2331.5	2331.5	2331.5	2331.5	2331.5
2.5°	2315.3	2315.3	2315.3	2312.6	2312.6
5°	2291.0	2288.3	2288.3	2285.6	2285.6
7.5°	2272.2	2269.5	2266.8	2264.1	2258.7
10°	2245.2	2245.2	2242.5	2229.0	2226.3
12.5°	2202.1	2199.4	2188.6	2169.7	2164.4
15°	2142.8	2142.8	2121.2	2099.7	2091.6
17.5°	2078.1	2075.4	2048.5	2026.9	2016.1
20°	2008.0	2002.6	1975.7	1940.6	1921.8
22.5°	1929.9	1929.9	1897.5	1851.7	1832.8
25°	1857.1	1846.3	1816.7	1752.0	1703.5
27.5°	1773.5	1757.4	1725.0	1633.4	1576.8
30°	1681.9	1673.8	1628.0	1509.4	1466.3
32.5°	1595.6	1582.2	1533.6	1409.7	1374.6
35°	1506.7	1495.9	1423.1	1315.3	1283.0
37.5°	1417.7	1404.3	1312.6	1226.4	1185.9
40°	1328.8	1312.6	1212.9	1134.7	1091.6
42.5°	1245.2	1223.7	1126.6	1043.1	994.6
45°	1156.3	1132.0	1035.0	948.8	911.0
47.5°	1067.4	1045.8	956.8	867.9	824.8
50°	973.0	954.1	873.3	784.3	738.5
52.5°	894.9	865.2	787.0	698.1	660.4
55°	803.2	779.0	706.2	622.6	590.3
57.5°	719.7	695.4	628.0	549.8	522.9
60°	641.5	606.4	549.8	482.5	460.9
62.5°	555.2	528.3	479.8	423.2	450.1
65°	477.1	450.1	407.0	415.1	345.0
67.5°	390.8	377.3	339.6	301.9	291.1
70°	318.0	301.9	288.4	248.0	237.2
72.5°	253.4	237.2	218.3	196.8	188.7
75°	191.4	177.9	167.1	159.0	175.2
77.5°	132.1	126.7	118.6	110.5	107.8
80°	86.3	83.6	80.9	78.2	75.5
82.5°	51.2	51.2	51.2	51.2	51.2
85°	27.0	29.6	32.3	35.0	37.7
87.5°	16.2	16.2	18.9	21.6	24.3
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)