

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: P590807

Luminaire Tested: FSR-24-2-LD4-4LO-35-UNV-80-86-EDD

Issue Date: 12/8/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P590807  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2102-135-1)  
Test Lab: INNOVATION CENTER  
Issue Date: 12/8/2021  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: FAIL-SAFE  
Catalog Number: FSR-24-2-LD4-4LO-35-UNV-80-86-EDD  
Description: 2X2 FSR TROFFER WITH .125 PRISMATIC ACRYLIC FIXTURE SIDE AND .250 CLEAR PC ENVIRON  
SIDE LENSES WITH, 80 CRI AND 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

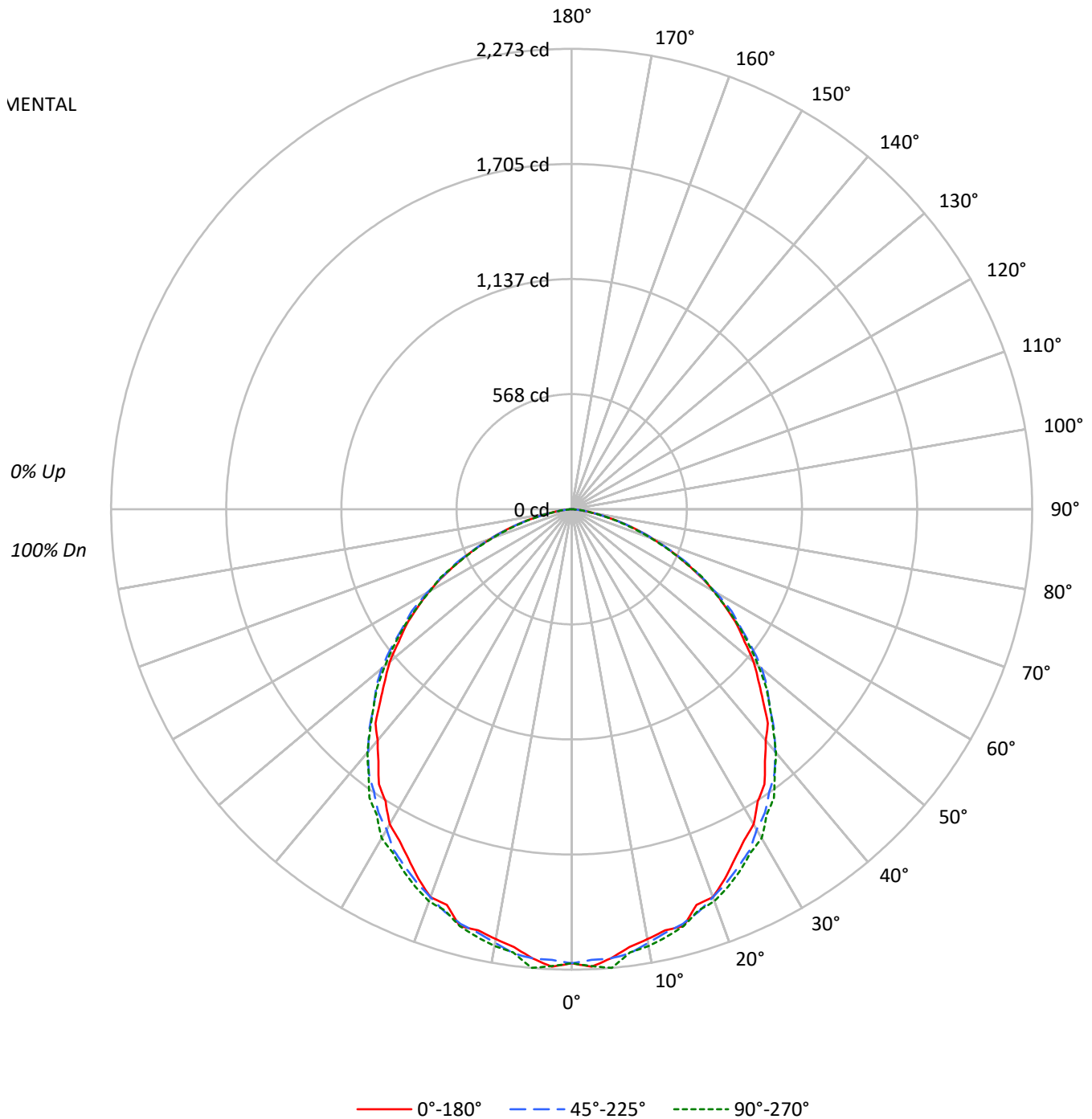
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 5648.0 lumens  
Efficiency: N/A  
Efficacy: 120.7 lumens/watt  
Spacing Criteria (0/90/45): 1.19 / 1.23 / 1.33  
Luminous Opening: Rectangular (W 2' x L: 2' 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	0
RCR																		
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100
1	110	105	101	98	107	103	100	96	99	96	93	95	93	90	91	90	88	86
2	100	93	86	81	98	91	85	80	87	82	78	84	80	76	81	78	75	73
3	92	82	74	68	89	80	73	67	77	71	66	75	69	65	72	68	64	62
4	84	73	64	58	82	71	64	58	69	62	57	67	61	56	65	59	55	53
5	78	65	57	50	76	64	56	50	62	55	49	60	54	49	58	53	48	46
6	72	59	50	44	70	58	50	44	56	49	43	54	48	43	53	47	43	41
7	67	53	45	39	65	53	45	39	51	44	39	50	43	38	48	42	38	36
8	62	49	41	35	61	48	40	35	47	40	34	46	39	34	44	39	34	32
9	58	45	37	31	57	44	37	31	43	36	31	42	36	31	41	35	31	29
10	54	41	34	29	53	41	33	28	40	33	28	39	33	28	38	32	28	26

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

	0°	45°	90°
0°	6030	6030	6030
5°	6011	6013	6139
10°	5889	5940	5982
15°	5935	5903	5936
20°	5835	5835	5897
25°	5656	5779	5843
30°	5578	5676	5827
35°	5447	5589	5714
40°	5234	5487	5511
45°	5076	5257	5265
50°	4909	5131	5033
55°	4678	4769	4735
60°	4374	4418	4338
65°	3900	4000	3873
70°	3346	3358	3264
75°	2650	2644	2542
80°	1776	1726	1660
85°	963	957	892

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 67.5°  
 Vertical Angle: 45°  
 Luminance: 5392 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	210.8	3.7
10°-20°	597.4	10.6
20°-30°	895.1	15.8
30°-40°	1060.8	18.8
40°-50°	1062.8	18.8
50°-60°	902.1	16.0
60°-70°	608.2	10.8
70°-80°	267.3	4.7
80°-90°	43.4	0.8
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°	1703.3	30.2
0°-40°	2764.1	48.9
0°-60°	4729.1	83.7
0°-90°	5648.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	5648.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2241	2241	2241	2241	2241	
5°	2225	2220	2226	2219	2273	210
15°	2130	2106	2119	2130	2131	594
25°	1905	1915	1946	1972	1968	881
35°	1658	1663	1701	1741	1740	1029
45°	1334	1359	1381	1417	1383	1032
55°	997	990	1016	1010	1009	887
65°	612	604	628	604	608	609
75°	255	250	254	236	244	273
85°	31	30	31	30	29	45
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	2241.0	2241.0	2241.0	2241.0	2241.0
2.5°	2260.4	2243.3	2227.4	2245.9	2257.2
5°	2225.1	2219.9	2225.9	2219.3	2272.8
7.5°	2179.4	2199.3	2210.9	2203.7	2206.8
10°	2155.0	2148.1	2173.9	2191.8	2189.2
12.5°	2129.0	2139.4	2140.9	2160.3	2162.0
15°	2130.5	2105.9	2118.9	2129.9	2130.7
17.5°	2047.7	2074.3	2083.3	2108.5	2077.2
20°	2037.6	2018.2	2037.6	2063.3	2059.3
22.5°	1975.4	1953.7	1995.3	2018.2	2016.7
25°	1904.8	1915.2	1946.4	1971.9	1967.8
27.5°	1842.8	1855.0	1899.6	1934.6	1912.0
30°	1795.1	1789.0	1826.6	1857.9	1875.3
32.5°	1709.7	1731.7	1775.7	1806.7	1790.2
35°	1658.0	1662.9	1701.4	1740.7	1739.5
37.5°	1567.4	1590.2	1644.4	1655.3	1645.2
40°	1490.1	1513.0	1561.9	1573.8	1568.8
42.5°	1433.1	1437.2	1479.1	1492.7	1471.0
45°	1333.9	1358.8	1381.3	1416.9	1383.4
47.5°	1249.4	1261.0	1309.6	1319.1	1301.5
50°	1172.7	1176.8	1225.7	1213.8	1202.2
52.5°	1076.4	1093.4	1120.9	1118.6	1105.0
55°	997.1	990.4	1016.5	1009.5	1009.2
57.5°	901.9	913.5	934.9	923.9	906.2
60°	812.8	813.1	820.9	808.4	806.1
62.5°	713.5	717.0	718.7	703.4	728.3
65°	612.5	604.4	628.2	604.2	608.2
67.5°	519.7	523.7	521.4	506.4	512.1
70°	425.3	430.5	426.8	409.7	414.9
72.5°	339.1	332.7	336.8	315.4	325.2
75°	254.9	249.7	254.3	236.4	244.5
77.5°	173.6	177.7	174.8	165.2	170.7
80°	114.6	111.4	111.4	105.9	107.1
82.5°	66.8	63.7	62.8	61.1	63.7
85°	31.2	30.4	31.0	30.1	28.9
87.5°	11.3	11.6	11.6	11.0	10.4
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)