

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: P590479

Luminaire Tested: FSR-24-2-LD4-3HI-40-UNV-93-86-EDD

Issue Date: 12/8/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P590479  
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-LD4-3HI-40-UNV-93-86-EDD  
Description: 2X2 FSR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .250 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 80 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

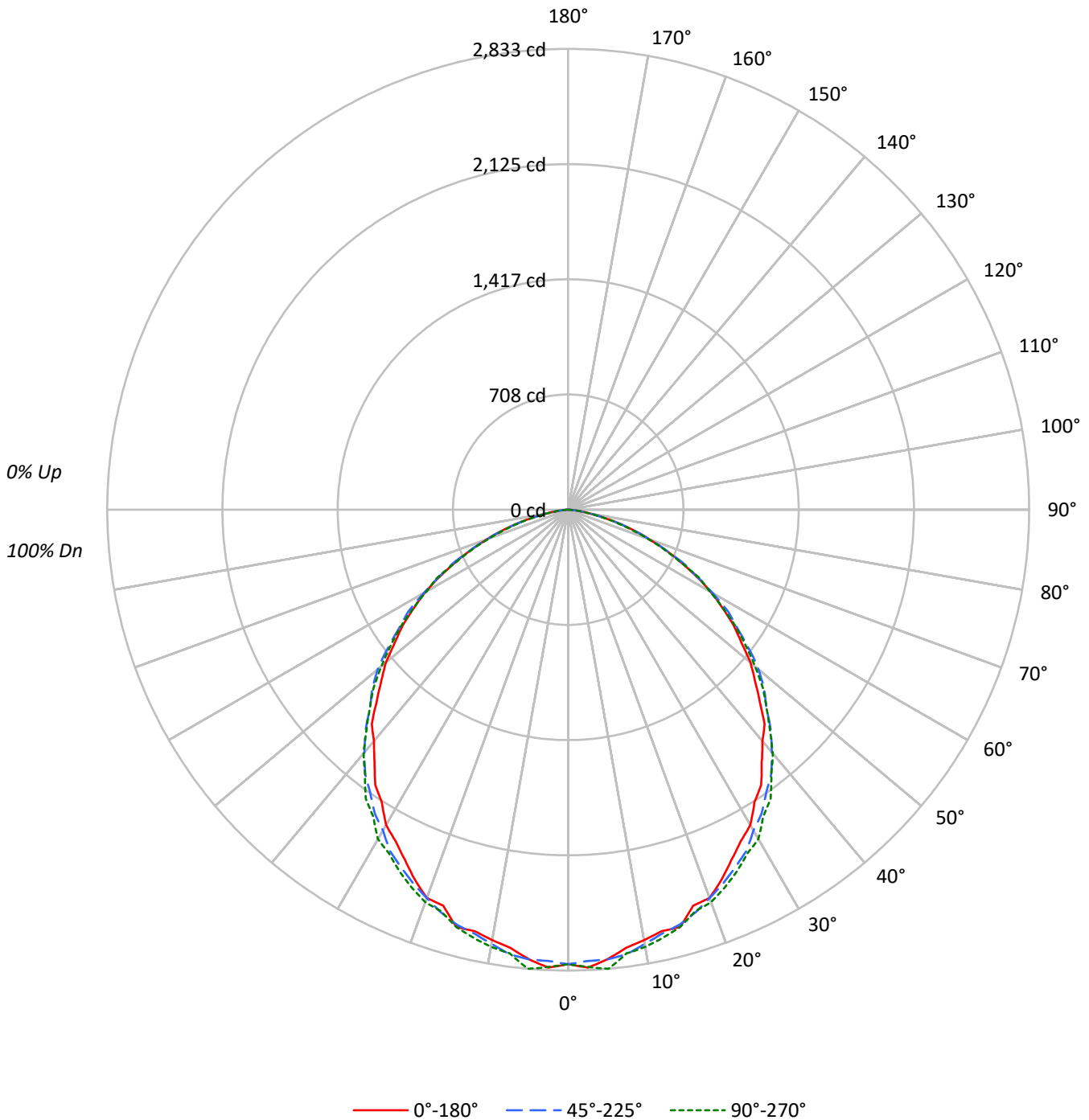
Lumens per Lamp: N/A  
Luminaire Lumens: 7041.0 lumens  
Efficiency: N/A  
Efficacy: 108.7 lumens/watt  
Spacing Criteria (0/90/45): 1.19 / 1.23 / 1.33  
Luminous Opening: Rectangular (W 2' x L: 2' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 64.8  
Input Voltage (V):  
Input Current (Ain): NR  
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°	7518	7518	7518
5°	7493	7496	7654
10°	7341	7405	7457
15°	7399	7359	7400
20°	7274	7274	7352
25°	7050	7205	7284
30°	6953	7076	7264
35°	6790	6968	7124
40°	6526	6840	6870
45°	6328	6553	6563
50°	6121	6397	6274
55°	5832	5945	5903
60°	5453	5507	5408
65°	4862	4986	4828
70°	4172	4186	4070
75°	3304	3297	3169
80°	2213	2152	2069
85°	1204	1192	1115

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 67.5°  
 Vertical Angle: 45°  
 Luminance: 6722 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	262.8	3.7
10°-20°	744.8	10.6
20°-30°	1115.8	15.8
30°-40°	1322.5	18.8
40°-50°	1324.9	18.8
50°-60°	1124.6	16.0
60°-70°	758.2	10.8
70°-80°	333.2	4.7
80°-90°	54.1	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°	2123.4	30.2
0°-40°	3445.9	48.9
0°-60°	5895.5	83.7
0°-90°	7041.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	7041.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2794	2794	2794	2794	2794	
5°	2774	2767	2775	2767	2833	262
15°	2656	2625	2642	2655	2656	740
25°	2374	2388	2426	2458	2453	1098
35°	2067	2073	2121	2170	2169	1283
45°	1663	1694	1722	1766	1724	1286
55°	1243	1235	1267	1258	1258	1106
65°	764	754	783	753	758	759
75°	318	311	317	295	305	341
85°	39	38	39	38	36	56
90°	0	0	0	0	0	

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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	2793.7	2793.7	2793.7	2793.7	2793.7
2.5°	2817.9	2796.6	2776.7	2799.8	2813.9
5°	2773.9	2767.4	2774.9	2766.6	2833.4
7.5°	2716.9	2741.7	2756.2	2747.2	2751.1
10°	2686.6	2677.9	2710.0	2732.4	2729.1
12.5°	2654.1	2667.1	2668.9	2693.1	2695.2
15°	2655.9	2625.2	2641.5	2655.2	2656.3
17.5°	2552.7	2585.9	2597.1	2628.5	2589.5
20°	2540.1	2515.9	2540.1	2572.2	2567.2
22.5°	2462.6	2435.5	2487.4	2515.9	2514.1
25°	2374.5	2387.5	2426.5	2458.2	2453.2
27.5°	2297.4	2312.5	2368.1	2411.7	2383.6
30°	2237.8	2230.3	2277.2	2316.1	2337.8
32.5°	2131.4	2158.8	2213.7	2252.3	2231.7
35°	2066.9	2073.0	2121.0	2170.0	2168.6
37.5°	1954.0	1982.5	2049.9	2063.6	2051.0
40°	1857.7	1886.1	1947.1	1961.9	1955.8
42.5°	1786.6	1791.6	1843.9	1860.9	1833.8
45°	1662.9	1693.9	1722.0	1766.4	1724.5
47.5°	1557.5	1572.0	1632.6	1644.5	1622.5
50°	1462.0	1467.0	1528.0	1513.2	1498.7
52.5°	1341.8	1363.1	1397.4	1394.5	1377.5
55°	1243.0	1234.7	1267.2	1258.5	1258.2
57.5°	1124.3	1138.8	1165.5	1151.7	1129.7
60°	1013.2	1013.6	1023.3	1007.8	1004.9
62.5°	889.5	893.8	896.0	876.9	907.9
65°	763.6	753.5	783.1	753.2	758.2
67.5°	647.8	652.9	650.0	631.2	638.5
70°	530.2	536.7	532.0	510.8	517.3
72.5°	422.8	414.8	419.9	393.2	405.4
75°	317.8	311.3	317.1	294.7	304.8
77.5°	216.4	221.5	217.9	206.0	212.8
80°	142.8	138.9	138.9	132.0	133.5
82.5°	83.3	79.4	78.3	76.1	79.4
85°	39.0	37.9	38.6	37.5	36.1
87.5°	14.1	14.4	14.4	13.7	13.0
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)