

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: P561633

Luminaire Tested: FSR-12-4-LD4-2LO-40-UNV-93-84-EDD

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P561633  
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-12-4-LD4-2LO-40-UNV-93-84-EDD  
Description: 1X4 FSR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .125 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 80 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

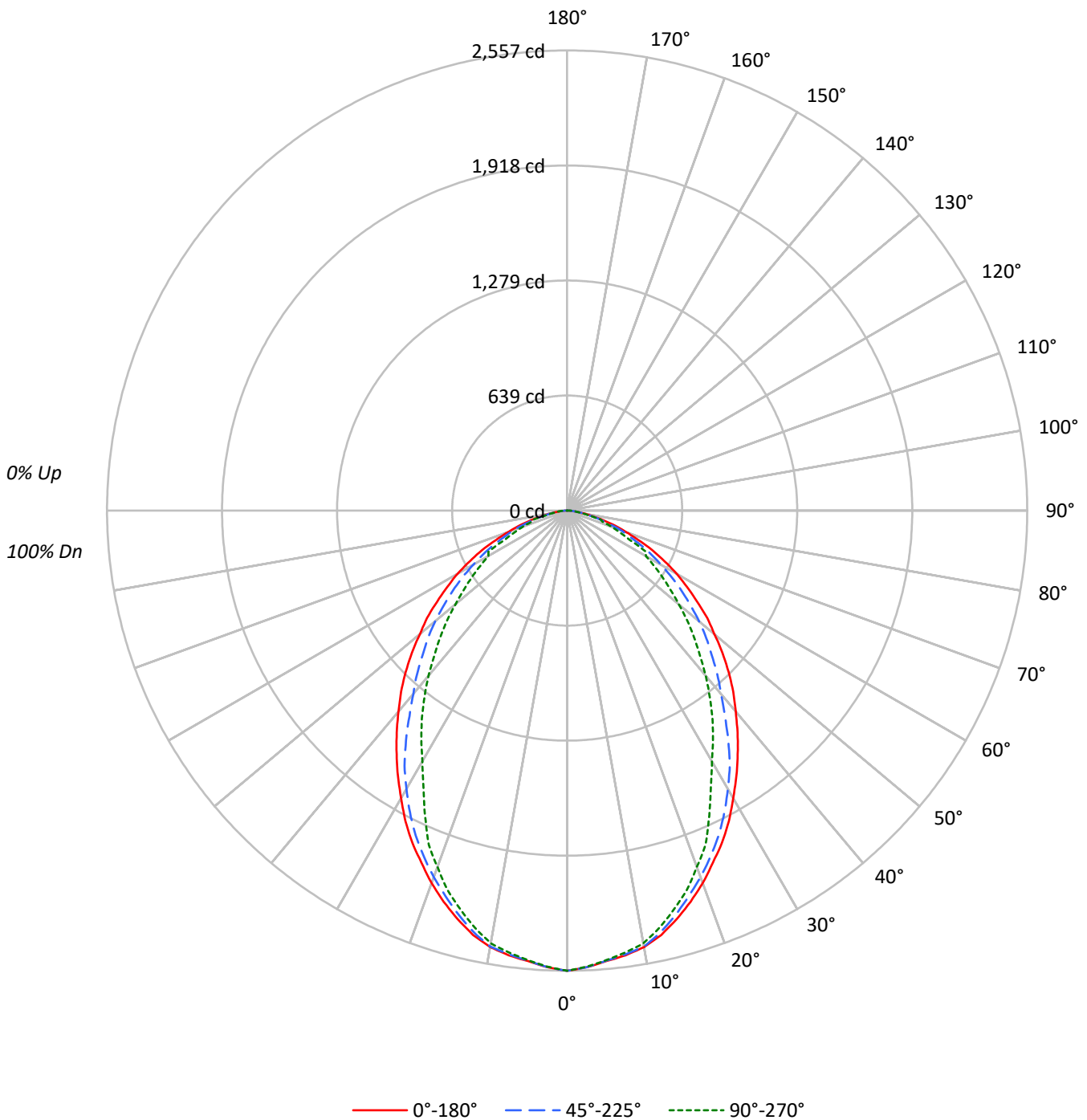
Lumens per Lamp: N/A  
Luminaire Lumens: 5020.0 lumens  
Efficiency: N/A  
Efficacy: 107.3 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 46.8  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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	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°	6881	6881	6881
5°	6788	6780	6772
10°	6729	6721	6672
15°	6547	6481	6391
20°	6307	6205	6036
25°	6048	5916	5547
30°	5732	5548	4997
35°	5429	5128	4623
40°	5120	4673	4206
45°	4826	4320	3803
50°	4468	4010	3391
55°	4133	3634	3037
60°	3787	3246	2721
65°	3331	2842	2409
70°	2744	2489	2046
75°	2182	1906	1998
80°	1466	1375	1283
85°	914	1096	1278

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 4826 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	238.0	4.7
10°-20°	653.3	13.0
20°-30°	904.4	18.0
30°-40°	964.4	19.2
40°-50°	879.8	17.5
50°-60°	689.2	13.7
60°-70°	449.2	8.9
70°-80°	199.0	4.0
80°-90°	42.7	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°	1795.7	35.8
0°-40°	2760.1	55.0
0°-60°	4329.1	86.2
0°-90°	5020.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	5020.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2557	2557	2557	2557	2557	
5°	2513	2510	2510	2507	2507	239
15°	2350	2350	2326	2303	2294	661
25°	2037	2025	1992	1922	1868	935
35°	1652	1641	1561	1443	1407	1033
45°	1268	1242	1135	1041	999	977
55°	881	854	774	683	647	790
65°	523	494	446	455	378	516
75°	210	195	183	174	192	225
85°	30	32	36	38	41	41
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	2557.1	2557.1	2557.1	2557.1	2557.1
2.5°	2539.4	2539.4	2539.4	2536.4	2536.4
5°	2512.8	2509.8	2509.8	2506.9	2506.9
7.5°	2492.1	2489.1	2486.2	2483.2	2477.3
10°	2462.5	2462.5	2459.6	2444.8	2441.8
12.5°	2415.2	2412.3	2400.4	2379.7	2373.8
15°	2350.2	2350.2	2326.5	2302.9	2294.0
17.5°	2279.2	2276.3	2246.7	2223.1	2211.2
20°	2202.4	2196.5	2166.9	2128.5	2107.8
22.5°	2116.6	2116.6	2081.2	2030.9	2010.2
25°	2036.8	2025.0	1992.5	1921.5	1868.3
27.5°	1945.2	1927.4	1892.0	1791.5	1729.4
30°	1844.7	1835.8	1785.6	1655.5	1608.2
32.5°	1750.1	1735.3	1682.1	1546.1	1507.7
35°	1652.5	1640.7	1560.9	1442.6	1407.2
37.5°	1555.0	1540.2	1439.7	1345.1	1300.7
40°	1457.4	1439.7	1330.3	1244.6	1197.3
42.5°	1365.8	1342.1	1235.7	1144.1	1090.8
45°	1268.2	1241.6	1135.2	1040.6	999.2
47.5°	1170.7	1147.0	1049.5	951.9	904.6
50°	1067.2	1046.5	957.8	860.3	810.0
52.5°	981.5	948.9	863.2	765.7	724.3
55°	881.0	854.3	774.5	682.9	647.4
57.5°	789.3	762.7	688.8	603.1	573.5
60°	703.6	665.1	603.1	529.2	505.5
62.5°	609.0	579.4	526.2	464.1	493.7
65°	523.2	493.7	446.4	455.3	378.4
67.5°	428.7	413.9	372.5	331.1	319.3
70°	348.8	331.1	316.3	272.0	260.1
72.5°	277.9	260.1	239.5	215.8	206.9
75°	209.9	195.1	183.3	174.4	192.2
77.5°	144.9	138.9	130.1	121.2	118.2
80°	94.6	91.6	88.7	85.7	82.8
82.5°	56.2	56.2	56.2	56.2	56.2
85°	29.6	32.5	35.5	38.4	41.4
87.5°	17.7	17.7	20.7	23.6	26.6
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)