

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: P561995

Luminaire Tested: FSR-24-4-LD4-1HI-35-UNV-81-94-EDD

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P561995  
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-LD4-1HI-35-UNV-81-94-EDD  
Description: 2X4 FSR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .187 CLEAR TEMPERED GLASS ENVIRONMENTAL SIDE LENSES WITH, 80 CRI AND 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

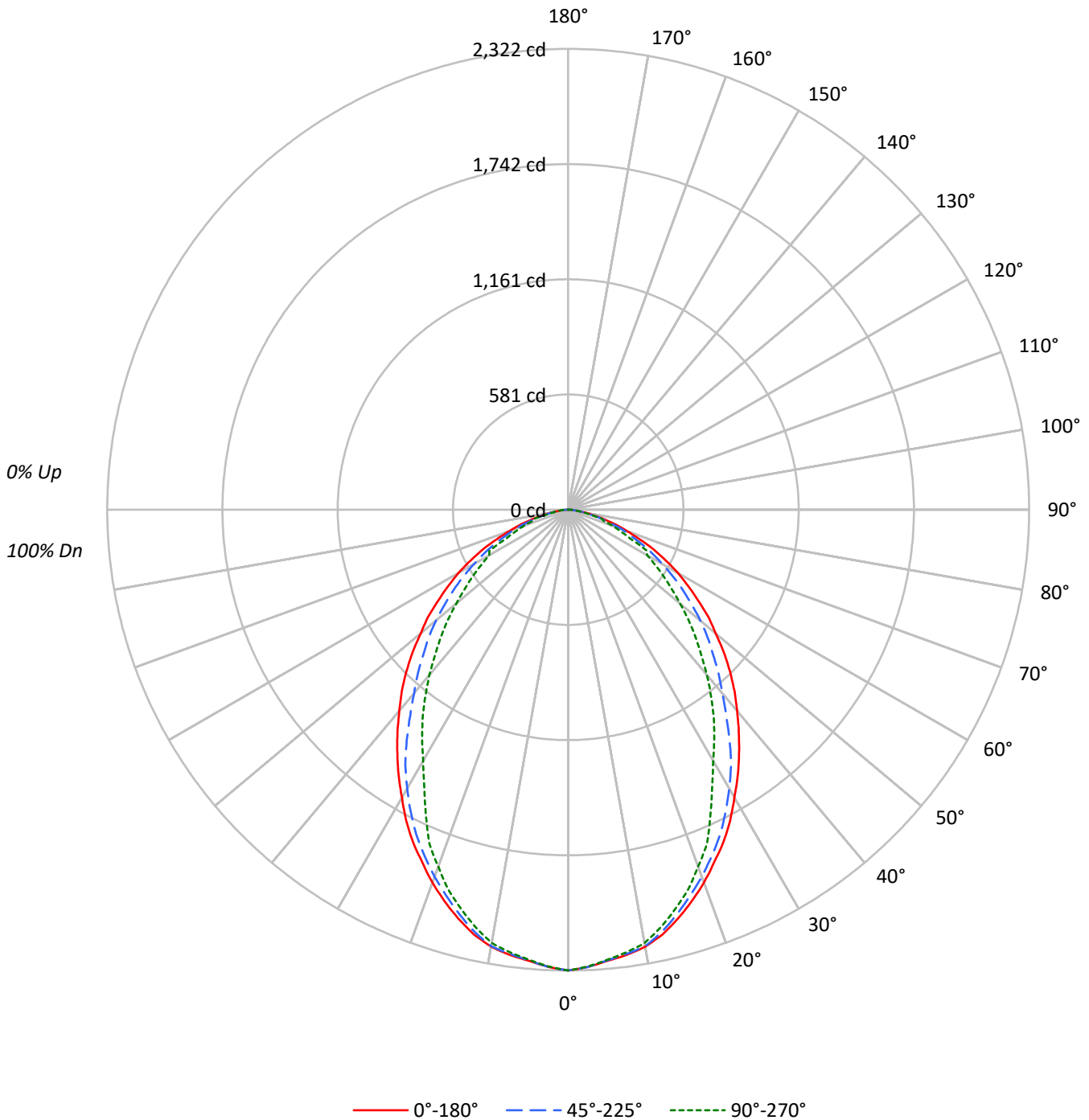
Lumens per Lamp: N/A  
Luminaire Lumens: 4558.0 lumens  
Efficiency: N/A  
Efficacy: 105.5 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 43.2  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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°	3124	3124	3124
5°	3081	3078	3074
10°	3055	3051	3029
15°	2972	2942	2901
20°	2863	2817	2740
25°	2746	2686	2518
30°	2602	2519	2269
35°	2464	2328	2099
40°	2324	2122	1909
45°	2191	1961	1726
50°	2028	1820	1540
55°	1876	1650	1379
60°	1719	1474	1235
65°	1513	1290	1094
70°	1246	1130	929
75°	991	865	907
80°	666	624	583
85°	414	497	580

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 2191 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	216.1	4.7
10°-20°	593.1	13.0
20°-30°	821.2	18.0
30°-40°	875.6	19.2
40°-50°	798.8	17.5
50°-60°	625.8	13.7
60°-70°	407.9	8.9
70°-80°	180.7	4.0
80°-90°	38.8	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°	1630.4	35.8
0°-40°	2506.0	55.0
0°-60°	3930.6	86.2
0°-90°	4558.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4558.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2322	2322	2322	2322	2322	
5°	2282	2279	2279	2276	2276	217
15°	2134	2134	2112	2091	2083	600
25°	1849	1839	1809	1745	1696	849
35°	1500	1490	1417	1310	1278	938
45°	1152	1127	1031	945	907	887
55°	800	776	703	620	588	717
65°	475	448	405	413	344	468
75°	191	177	166	158	174	204
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°	2321.8	2321.8	2321.8	2321.8	2321.8
2.5°	2305.7	2305.7	2305.7	2303.0	2303.0
5°	2281.5	2278.8	2278.8	2276.2	2276.2
7.5°	2262.7	2260.0	2257.4	2254.7	2249.3
10°	2235.9	2235.9	2233.2	2219.8	2217.1
12.5°	2192.9	2190.3	2179.5	2160.7	2155.4
15°	2133.9	2133.9	2112.4	2090.9	2082.9
17.5°	2069.5	2066.8	2039.9	2018.5	2007.7
20°	1999.7	1994.3	1967.5	1932.6	1913.8
22.5°	1921.8	1921.8	1889.6	1844.0	1825.2
25°	1849.4	1838.6	1809.1	1744.7	1696.4
27.5°	1766.2	1750.1	1717.9	1626.6	1570.2
30°	1674.9	1666.9	1621.2	1503.1	1460.2
32.5°	1589.0	1575.6	1527.3	1403.8	1368.9
35°	1500.4	1489.7	1417.2	1309.9	1277.7
37.5°	1411.9	1398.4	1307.2	1221.3	1181.0
40°	1323.3	1307.2	1207.9	1130.0	1087.1
42.5°	1240.1	1218.6	1122.0	1038.8	990.4
45°	1151.5	1127.3	1030.7	944.8	907.2
47.5°	1062.9	1041.4	952.9	864.3	821.3
50°	969.0	950.2	869.7	781.1	735.5
52.5°	891.1	861.6	783.8	695.2	657.6
55°	799.9	775.7	703.2	620.0	587.8
57.5°	716.7	692.5	625.4	547.6	520.7
60°	638.8	603.9	547.6	480.5	459.0
62.5°	552.9	526.1	477.8	421.4	448.3
65°	475.1	448.3	405.3	413.4	343.6
67.5°	389.2	375.8	338.2	300.6	289.9
70°	316.7	300.6	287.2	246.9	236.2
72.5°	252.3	236.2	217.4	195.9	187.9
75°	190.6	177.2	166.4	158.4	174.5
77.5°	131.5	126.2	118.1	110.0	107.4
80°	85.9	83.2	80.5	77.8	75.2
82.5°	51.0	51.0	51.0	51.0	51.0
85°	26.8	29.5	32.2	34.9	37.6
87.5°	16.1	16.1	18.8	21.5	24.2
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)