

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: P560845

Luminaire Tested: FSR-12-4-LD4-1HI-40-UNV-81-96-EDD

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P560845  
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-LD4-1HI-40-UNV-81-96-EDD  
Description: 1X4 FSR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .250 CLEAR TEMPERED GLASS ENVIRONMENTAL SIDE LENSES WITH, 80 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

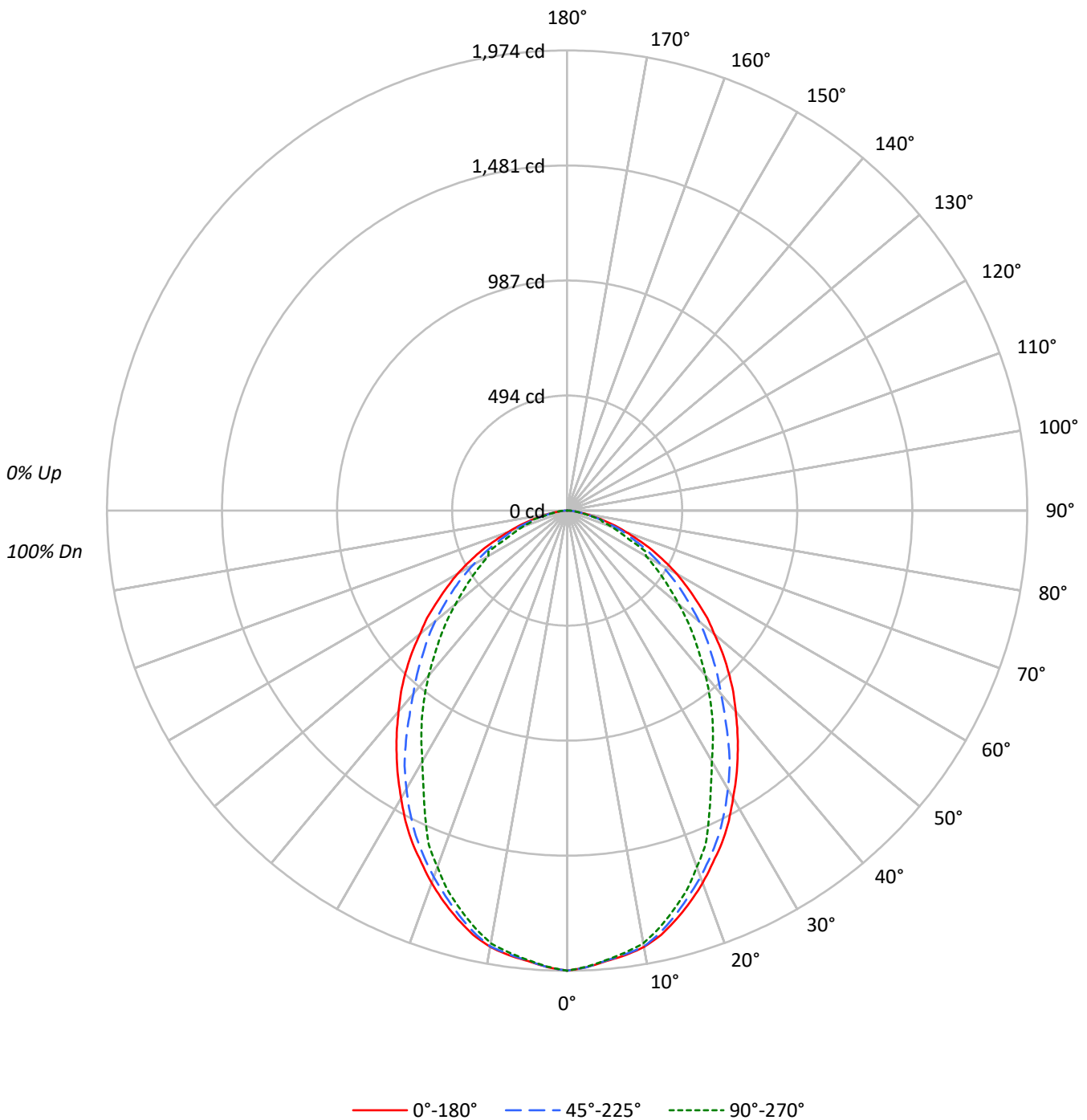
Lumens per Lamp: N/A  
Luminaire Lumens: 3875.0 lumens  
Efficiency: N/A  
Efficacy: 89.7 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 43.2  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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	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°	5312	5312	5312
5°	5239	5233	5227
10°	5194	5188	5150
15°	5054	5003	4933
20°	4868	4790	4659
25°	4668	4567	4282
30°	4424	4283	3857
35°	4190	3958	3568
40°	3952	3607	3247
45°	3725	3335	2935
50°	3449	3095	2618
55°	3190	2805	2344
60°	2923	2505	2100
65°	2572	2194	1860
70°	2119	1921	1580
75°	1684	1471	1542
80°	1131	1062	990
85°	704	846	985

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 3725 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	183.7	4.7
10°-20°	504.3	13.0
20°-30°	698.1	18.0
30°-40°	744.4	19.2
40°-50°	679.1	17.5
50°-60°	532.0	13.7
60°-70°	346.8	8.9
70°-80°	153.6	4.0
80°-90°	33.0	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°	1386.1	35.8
0°-40°	2130.5	55.0
0°-60°	3341.7	86.2
0°-90°	3875.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3875.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1974	1974	1974	1974	1974	
5°	1940	1937	1937	1935	1935	184
15°	1814	1814	1796	1778	1771	510
25°	1572	1563	1538	1483	1442	722
35°	1276	1266	1205	1114	1086	797
45°	979	958	876	803	771	754
55°	680	660	598	527	500	610
65°	404	381	345	351	292	398
75°	162	151	142	135	148	174
85°	23	25	27	30	32	32
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1973.9	1973.9	1973.9	1973.9	1973.9
2.5°	1960.2	1960.2	1960.2	1957.9	1957.9
5°	1939.6	1937.4	1937.4	1935.1	1935.1
7.5°	1923.7	1921.4	1919.1	1916.8	1912.3
10°	1900.9	1900.9	1898.6	1887.2	1884.9
12.5°	1864.3	1862.1	1852.9	1837.0	1832.4
15°	1814.1	1814.1	1795.9	1777.6	1770.8
17.5°	1759.4	1757.1	1734.3	1716.0	1706.9
20°	1700.0	1695.5	1672.7	1643.0	1627.0
22.5°	1633.9	1633.9	1606.5	1567.7	1551.7
25°	1572.3	1563.1	1538.0	1483.3	1442.2
27.5°	1501.5	1487.8	1460.4	1382.9	1334.9
30°	1423.9	1417.1	1378.3	1277.9	1241.4
32.5°	1350.9	1339.5	1298.4	1193.5	1163.8
35°	1275.6	1266.5	1204.9	1113.6	1086.2
37.5°	1200.3	1188.9	1111.3	1038.3	1004.1
40°	1125.0	1111.3	1026.9	960.7	924.2
42.5°	1054.3	1036.0	953.8	883.1	842.0
45°	978.9	958.4	876.3	803.2	771.3
47.5°	903.6	885.4	810.1	734.8	698.3
50°	823.8	807.8	739.3	664.0	625.3
52.5°	757.6	732.5	666.3	591.0	559.1
55°	680.0	659.5	597.9	527.1	499.7
57.5°	609.3	588.7	531.7	465.5	442.7
60°	543.1	513.4	465.5	408.5	390.2
62.5°	470.1	447.3	406.2	358.3	381.1
65°	403.9	381.1	344.6	351.4	292.1
67.5°	330.9	319.5	287.5	255.6	246.4
70°	269.3	255.6	244.2	209.9	200.8
72.5°	214.5	200.8	184.8	166.6	159.7
75°	162.0	150.6	141.5	134.6	148.3
77.5°	111.8	107.3	100.4	93.6	91.3
80°	73.0	70.7	68.5	66.2	63.9
82.5°	43.4	43.4	43.4	43.4	43.4
85°	22.8	25.1	27.4	29.7	31.9
87.5°	13.7	13.7	16.0	18.3	20.5
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)