

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: P560907

Luminaire Tested: FSR-12-4-LD4-1HI-50-UNV-81-94-EDD

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P560907  
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-50-UNV-81-94-EDD  
Description: 1X4 FSR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .187 CLEAR TEMPERED GLASS ENVIRONMENTAL SIDE LENSES WITH, 80 CRI AND 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

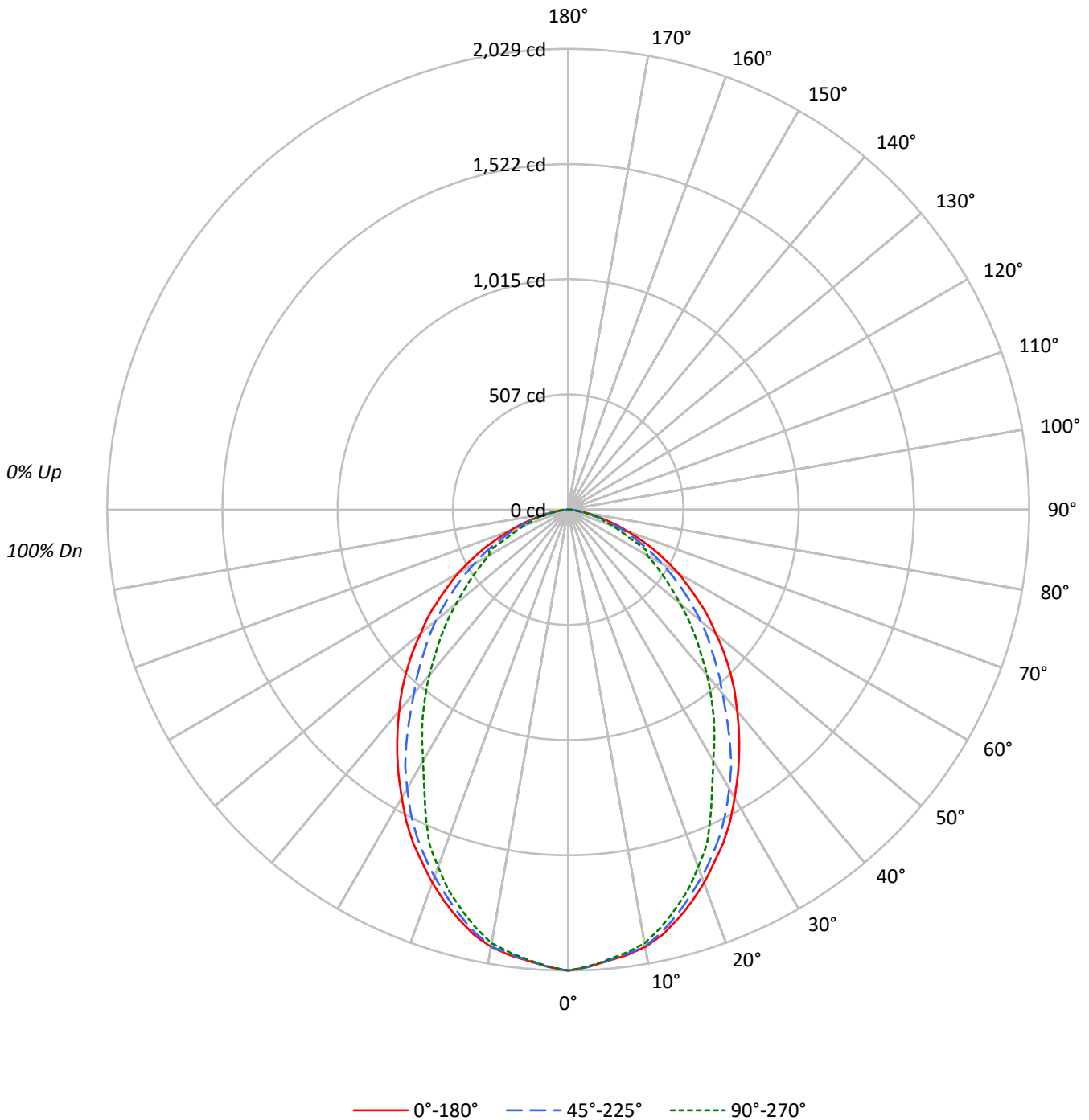
Lumens per Lamp: N/A  
Luminaire Lumens: 3984.0 lumens  
Efficiency: N/A  
Efficacy: 92.2 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 43.2  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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°	5461	5461	5461
5°	5387	5381	5374
10°	5340	5334	5295
15°	5196	5144	5072
20°	5005	4925	4790
25°	4800	4695	4402
30°	4549	4403	3966
35°	4308	4070	3669
40°	4063	3709	3338
45°	3830	3428	3018
50°	3546	3182	2691
55°	3280	2884	2411
60°	3005	2576	2159
65°	2644	2256	1912
70°	2178	1975	1625
75°	1732	1513	1586
80°	1164	1091	1018
85°	726	871	1013

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 3830 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	188.9	4.7
10°-20°	518.4	13.0
20°-30°	717.8	18.0
30°-40°	765.3	19.2
40°-50°	698.2	17.5
50°-60°	547.0	13.7
60°-70°	356.5	8.9
70°-80°	157.9	4.0
80°-90°	33.9	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°	1425.1	35.8
0°-40°	2190.5	55.0
0°-60°	3435.6	86.2
0°-90°	3984.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3984.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2029	2029	2029	2029	2029	
5°	1994	1992	1992	1990	1990	189
15°	1865	1865	1846	1828	1821	524
25°	1616	1607	1581	1525	1483	742
35°	1312	1302	1239	1145	1117	820
45°	1006	985	901	826	793	775
55°	699	678	615	542	514	627
65°	415	392	354	361	300	409
75°	167	155	146	138	152	179
85°	24	26	28	30	33	33
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	2029.4	2029.4	2029.4	2029.4	2029.4
2.5°	2015.3	2015.3	2015.3	2013.0	2013.0
5°	1994.2	1991.9	1991.9	1989.5	1989.5
7.5°	1977.8	1975.4	1973.1	1970.7	1966.1
10°	1954.3	1954.3	1952.0	1940.2	1937.9
12.5°	1916.8	1914.4	1905.1	1888.6	1883.9
15°	1865.2	1865.2	1846.4	1827.6	1820.6
17.5°	1808.9	1806.5	1783.1	1764.3	1754.9
20°	1747.9	1743.2	1719.7	1689.2	1672.8
22.5°	1679.8	1679.8	1651.7	1611.8	1595.4
25°	1616.5	1607.1	1581.3	1525.0	1482.7
27.5°	1543.7	1529.7	1501.5	1421.8	1372.5
30°	1464.0	1456.9	1417.1	1313.8	1276.3
32.5°	1388.9	1377.2	1334.9	1227.0	1196.5
35°	1311.5	1302.1	1238.8	1144.9	1116.8
37.5°	1234.1	1222.3	1142.6	1067.5	1032.3
40°	1156.6	1142.6	1055.8	987.7	950.2
42.5°	1083.9	1065.1	980.7	907.9	865.7
45°	1006.5	985.4	900.9	825.8	793.0
47.5°	929.1	910.3	832.9	755.5	717.9
50°	847.0	830.5	760.1	682.7	642.8
52.5°	778.9	753.1	685.1	607.6	574.8
55°	699.1	678.0	614.7	542.0	513.8
57.5°	626.4	605.3	546.6	478.6	455.1
60°	558.4	527.9	478.6	420.0	401.2
62.5°	483.3	459.8	417.6	368.3	391.8
65°	415.3	391.8	354.3	361.3	300.3
67.5°	340.2	328.5	295.6	262.8	253.4
70°	276.8	262.8	251.0	215.8	206.5
72.5°	220.5	206.5	190.0	171.3	164.2
75°	166.6	154.8	145.5	138.4	152.5
77.5°	115.0	110.3	103.2	96.2	93.8
80°	75.1	72.7	70.4	68.0	65.7
82.5°	44.6	44.6	44.6	44.6	44.6
85°	23.5	25.8	28.2	30.5	32.8
87.5°	14.1	14.1	16.4	18.8	21.1
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)