

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: P560901

Luminaire Tested: FSR-12-4-LD4-1HI-50-UNV-81-86-EDD

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P560901  
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-81-86-EDD  
Description: 1X4 FSR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .250 CLEAR PC ENVIRONMENTAL SI  
LENSES WITH, 80 CRI AND 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

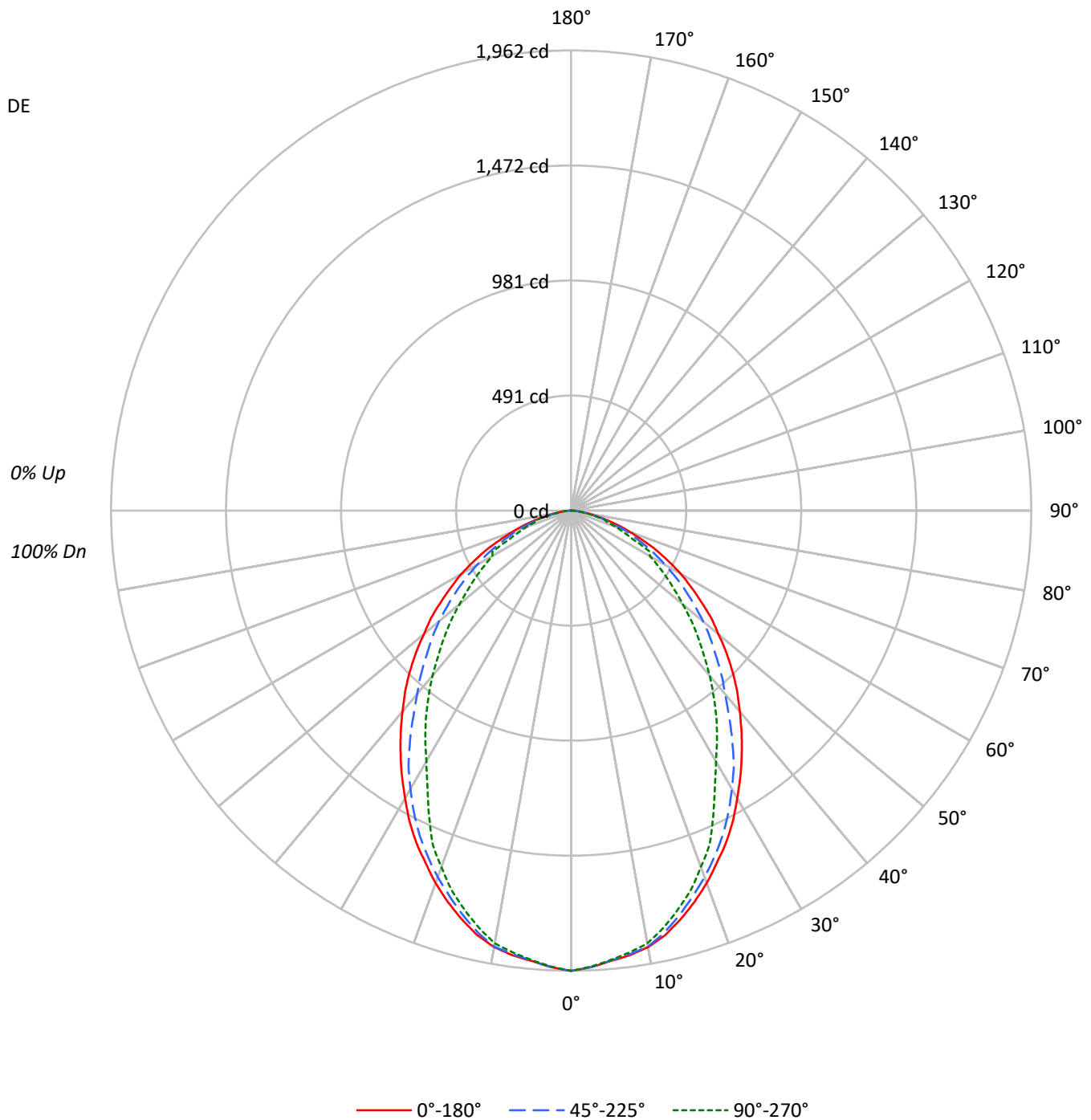
Lumens per Lamp: N/A  
Luminaire Lumens: 3852.0 lumens  
Efficiency: N/A  
Efficacy: 89.2 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 43.2  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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	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°	5280	5280	5280
5°	5208	5202	5196
10°	5163	5157	5120
15°	5024	4973	4904
20°	4840	4761	4632
25°	4641	4540	4257
30°	4398	4257	3834
35°	4165	3935	3547
40°	3928	3586	3227
45°	3703	3315	2918
50°	3428	3077	2602
55°	3172	2788	2331
60°	2906	2491	2088
65°	2557	2181	1849
70°	2106	1910	1570
75°	1675	1462	1533
80°	1125	1055	984
85°	701	840	982

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 3703 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	182.7	4.7
10°-20°	501.3	13.0
20°-30°	694.0	18.0
30°-40°	740.0	19.2
40°-50°	675.1	17.5
50°-60°	528.9	13.7
60°-70°	344.7	8.9
70°-80°	152.7	4.0
80°-90°	32.8	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°	1377.9	35.8
0°-40°	2117.9	55.0
0°-60°	3321.8	86.2
0°-90°	3852.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3852.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1962	1962	1962	1962	1962	
5°	1928	1926	1926	1924	1924	183
15°	1803	1803	1785	1767	1760	507
25°	1563	1554	1529	1474	1434	718
35°	1268	1259	1198	1107	1080	793
45°	973	953	871	798	767	750
55°	676	656	594	524	497	606
65°	402	379	342	349	290	396
75°	161	150	141	134	147	173
85°	23	25	27	30	32	31
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1962.2	1962.2	1962.2	1962.2	1962.2
2.5°	1948.5	1948.5	1948.5	1946.3	1946.3
5°	1928.1	1925.9	1925.9	1923.6	1923.6
7.5°	1912.3	1910.0	1907.7	1905.4	1900.9
10°	1889.6	1889.6	1887.3	1876.0	1873.7
12.5°	1853.3	1851.0	1841.9	1826.1	1821.5
15°	1803.4	1803.4	1785.2	1767.1	1760.3
17.5°	1748.9	1746.7	1724.0	1705.8	1696.8
20°	1690.0	1685.4	1662.7	1633.2	1617.4
22.5°	1624.2	1624.2	1596.9	1558.4	1542.5
25°	1562.9	1553.8	1528.9	1474.5	1433.6
27.5°	1492.6	1479.0	1451.8	1374.6	1327.0
30°	1415.5	1408.7	1370.1	1270.3	1234.0
32.5°	1342.9	1331.5	1290.7	1186.4	1156.9
35°	1268.0	1259.0	1197.7	1107.0	1079.8
37.5°	1193.2	1181.8	1104.7	1032.1	998.1
40°	1118.3	1104.7	1020.8	955.0	918.7
42.5°	1048.0	1029.8	948.2	877.9	837.0
45°	973.1	952.7	871.1	798.5	766.7
47.5°	898.3	880.1	805.3	730.4	694.1
50°	818.9	803.0	735.0	660.1	621.5
52.5°	753.1	728.2	662.4	587.5	555.8
55°	676.0	655.6	594.3	524.0	496.8
57.5°	605.7	585.2	528.5	462.8	440.1
60°	539.9	510.4	462.8	406.0	387.9
62.5°	467.3	444.6	403.8	356.1	378.8
65°	401.5	378.8	342.5	349.3	290.4
67.5°	328.9	317.6	285.8	254.1	245.0
70°	267.7	254.1	242.7	208.7	199.6
72.5°	213.2	199.6	183.7	165.6	158.8
75°	161.1	149.7	140.6	133.8	147.4
77.5°	111.2	106.6	99.8	93.0	90.7
80°	72.6	70.3	68.1	65.8	63.5
82.5°	43.1	43.1	43.1	43.1	43.1
85°	22.7	25.0	27.2	29.5	31.8
87.5°	13.6	13.6	15.9	18.1	20.4
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)