

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: P560849

Luminaire Tested: FSR-12-4-LD4-1HI-40-UNV-82-84-EDD

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P560849  
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-82-84-EDD  
Description: 1X4 FSR TROFFER WITH .187 CLEAR PC FIXTURE SIDE AND .125 CLEAR PC ENVIRONMENTAL SI  
LENSES WITH, 80 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

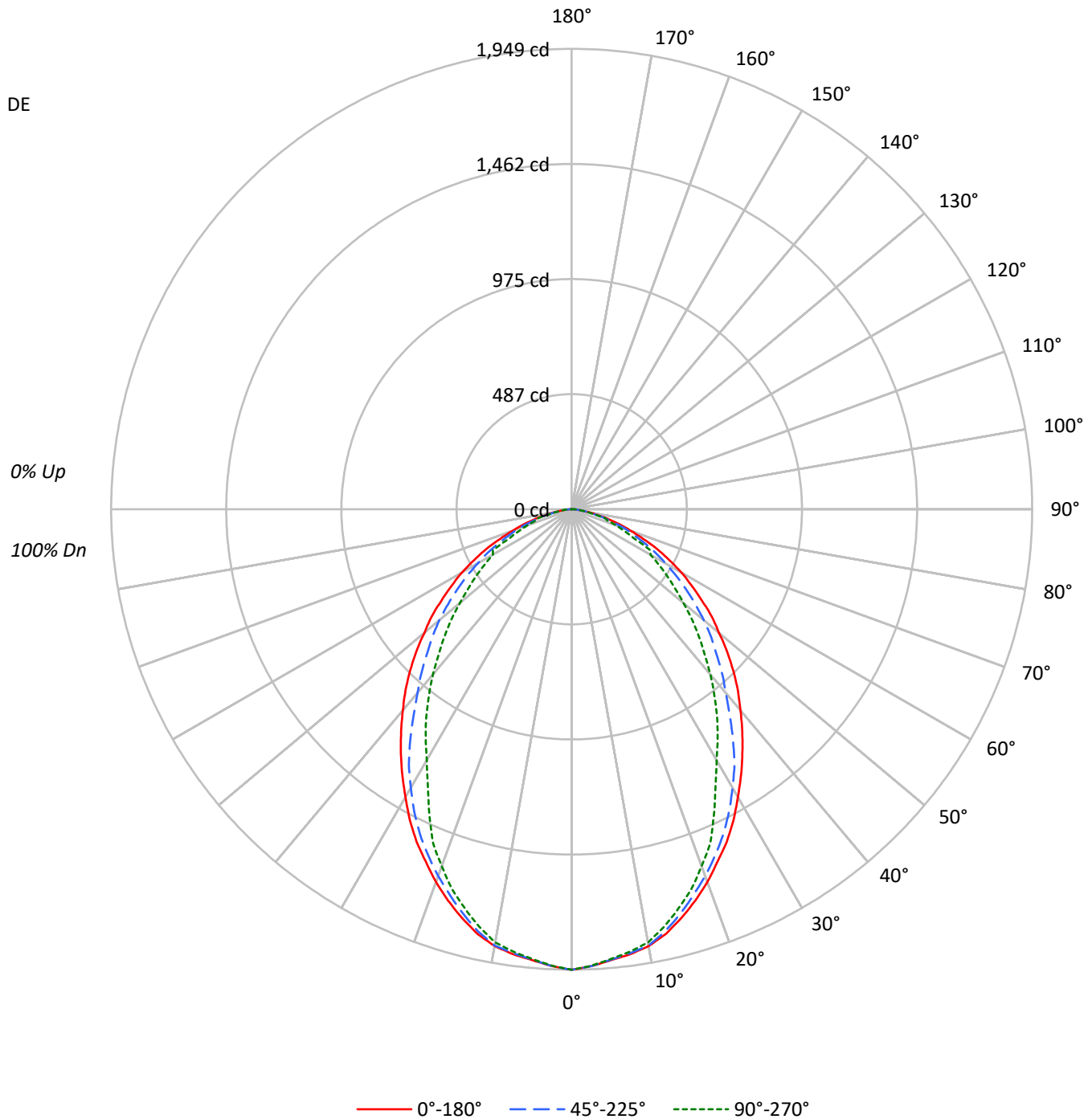
Lumens per Lamp: N/A  
Luminaire Lumens: 3827.0 lumens  
Efficiency: N/A  
Efficacy: 88.6 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 43.2  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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°	5246	5246	5246
5°	5175	5169	5162
10°	5130	5124	5087
15°	4992	4941	4872
20°	4808	4731	4602
25°	4611	4510	4229
30°	4370	4230	3810
35°	4139	3909	3524
40°	3903	3563	3206
45°	3679	3293	2899
50°	3406	3057	2585
55°	3151	2770	2316
60°	2887	2474	2074
65°	2540	2167	1837
70°	2092	1897	1560
75°	1664	1452	1523
80°	1117	1048	978
85°	695	834	976

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 3679 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	181.5	4.7
10°-20°	498.0	13.0
20°-30°	689.5	18.0
30°-40°	735.2	19.2
40°-50°	670.7	17.5
50°-60°	525.4	13.7
60°-70°	342.5	8.9
70°-80°	151.7	4.0
80°-90°	32.6	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°	1368.9	35.8
0°-40°	2104.1	55.0
0°-60°	3300.2	86.2
0°-90°	3827.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3827.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1949	1949	1949	1949	1949	
5°	1916	1913	1913	1911	1911	182
15°	1792	1792	1774	1756	1749	504
25°	1553	1544	1519	1465	1424	713
35°	1260	1251	1190	1100	1073	788
45°	967	946	865	793	762	745
55°	672	651	590	521	494	602
65°	399	376	340	347	288	393
75°	160	149	140	133	146	171
85°	22	25	27	29	32	31
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1949.4	1949.4	1949.4	1949.4	1949.4
2.5°	1935.9	1935.9	1935.9	1933.6	1933.6
5°	1915.6	1913.4	1913.4	1911.1	1911.1
7.5°	1899.8	1897.6	1895.3	1893.1	1888.6
10°	1877.3	1877.3	1875.1	1863.8	1861.5
12.5°	1841.2	1839.0	1830.0	1814.2	1809.7
15°	1791.7	1791.7	1773.6	1755.6	1748.8
17.5°	1737.6	1735.3	1712.8	1694.8	1685.7
20°	1679.0	1674.5	1651.9	1622.6	1606.9
22.5°	1613.6	1613.6	1586.6	1548.3	1532.5
25°	1552.8	1543.8	1519.0	1464.9	1424.3
27.5°	1482.9	1469.4	1442.3	1365.7	1318.4
30°	1406.3	1399.5	1361.2	1262.1	1226.0
32.5°	1334.2	1322.9	1282.3	1178.7	1149.4
35°	1259.8	1250.8	1189.9	1099.8	1072.7
37.5°	1185.4	1174.2	1097.5	1025.4	991.6
40°	1111.1	1097.5	1014.2	948.8	912.7
42.5°	1041.2	1023.2	942.0	872.2	831.6
45°	966.8	946.5	865.4	793.3	761.7
47.5°	892.5	874.4	800.1	725.7	689.6
50°	813.6	797.8	730.2	655.8	617.5
52.5°	748.2	723.4	658.1	583.7	552.1
55°	671.6	651.3	590.5	520.6	493.6
57.5°	601.7	581.4	525.1	459.7	437.2
60°	536.4	507.1	459.7	403.4	385.4
62.5°	464.3	441.7	401.2	353.8	376.4
65°	398.9	376.4	340.3	347.1	288.5
67.5°	326.8	315.5	284.0	252.4	243.4
70°	265.9	252.4	241.1	207.3	198.3
72.5°	211.8	198.3	182.5	164.5	157.8
75°	160.0	148.7	139.7	133.0	146.5
77.5°	110.4	105.9	99.2	92.4	90.1
80°	72.1	69.9	67.6	65.4	63.1
82.5°	42.8	42.8	42.8	42.8	42.8
85°	22.5	24.8	27.0	29.3	31.6
87.5°	13.5	13.5	15.8	18.0	20.3
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)