

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: P560867

Luminaire Tested: FSR-12-4-LD4-1HI-40-UNV-93-85-EDD

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P560867  
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-93-85-EDD  
Description: 1X4 FSR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .187 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 80 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

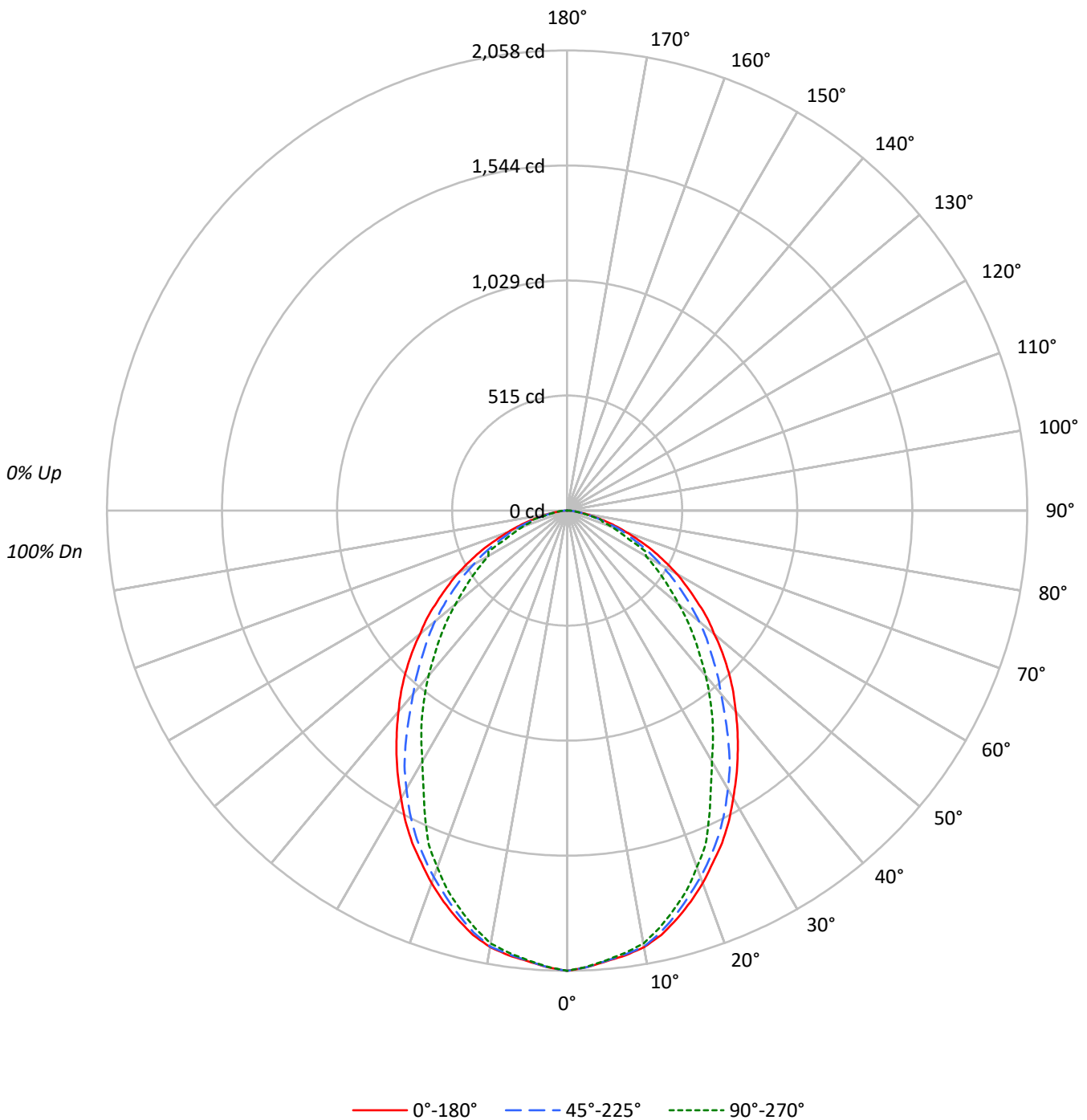
Lumens per Lamp: N/A  
Luminaire Lumens: 4041.0 lumens  
Efficiency: N/A  
Efficacy: 93.5 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 43.2  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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	0		
RCR																										
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100	100	100	100	100	100	100		
1	110	106	102	99	108	104	100	97	100	97	94	96	94	91	92	90	89	87	87	87	87	87	87	87		
2	101	94	88	83	99	92	87	82	89	84	80	86	82	78	83	79	77	75	75	75	75	75	75	75		
3	93	84	77	71	91	82	76	70	79	74	69	77	72	68	74	70	67	65	65	65	65	65	65	65		
4	86	75	67	61	84	74	66	61	72	65	60	69	64	59	67	62	58	56	56	56	56	56	56	56		
5	80	68	60	54	78	67	59	53	65	58	53	63	57	52	61	56	52	50	50	50	50	50	50	50		
6	74	62	53	48	72	61	53	47	59	52	47	57	51	47	56	50	46	44	44	44	44	44	44	44		
7	69	56	48	43	67	56	48	42	54	47	42	53	46	42	51	46	42	40	40	40	40	40	40	40		
8	65	52	44	38	63	51	44	38	50	43	38	49	42	38	48	42	38	36	36	36	36	36	36	36		
9	61	48	40	35	59	47	40	35	46	39	35	45	39	34	44	38	34	33	33	33	33	33	33	33		
10	57	44	37	32	56	44	37	32	43	36	32	42	36	32	41	36	32	30	30	30	30	30	30	30		

**AVERAGE LUMINANCE (cd/sqm):**

	0°	45°	90°
0°	5539	5539	5539
5°	5464	5458	5451
10°	5417	5410	5371
15°	5271	5217	5144
20°	5077	4995	4859
25°	4868	4762	4466
30°	4614	4466	4023
35°	4370	4128	3721
40°	4121	3762	3386
45°	3885	3478	3061
50°	3597	3228	2730
55°	3327	2925	2445
60°	3048	2613	2190
65°	2682	2288	1940
70°	2209	2003	1648
75°	1757	1534	1608
80°	1181	1106	1032
85°	735	883	1028

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 3885 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	191.6	4.7
10°-20°	525.9	13.0
20°-30°	728.0	18.0
30°-40°	776.3	19.2
40°-50°	708.2	17.5
50°-60°	554.8	13.7
60°-70°	361.6	8.9
70°-80°	160.2	4.0
80°-90°	34.4	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°	1445.5	35.8
0°-40°	2221.8	55.0
0°-60°	3484.8	86.2
0°-90°	4041.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4041.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2058	2058	2058	2058	2058	
5°	2023	2020	2020	2018	2018	192
15°	1892	1892	1873	1854	1847	532
25°	1640	1630	1604	1547	1504	753
35°	1330	1321	1256	1161	1133	832
45°	1021	1000	914	838	804	786
55°	709	688	624	550	521	636
65°	421	397	359	366	305	415
75°	169	157	148	140	155	181
85°	24	26	29	31	33	33
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	2058.4	2058.4	2058.4	2058.4	2058.4
2.5°	2044.2	2044.2	2044.2	2041.8	2041.8
5°	2022.7	2020.4	2020.4	2018.0	2018.0
7.5°	2006.1	2003.7	2001.3	1998.9	1994.2
10°	1982.3	1982.3	1979.9	1968.0	1965.6
12.5°	1944.2	1941.8	1932.3	1915.7	1910.9
15°	1891.9	1891.9	1872.8	1853.8	1846.6
17.5°	1834.7	1832.4	1808.6	1789.5	1780.0
20°	1772.9	1768.1	1744.3	1713.4	1696.7
22.5°	1703.9	1703.9	1675.3	1634.8	1618.2
25°	1639.6	1630.1	1603.9	1546.8	1504.0
27.5°	1565.8	1551.6	1523.0	1442.1	1392.1
30°	1484.9	1477.8	1437.3	1332.6	1294.6
32.5°	1408.8	1396.9	1354.0	1244.6	1213.6
35°	1330.2	1320.7	1256.5	1161.3	1132.7
37.5°	1251.7	1239.8	1158.9	1082.8	1047.1
40°	1173.2	1158.9	1070.9	1001.8	963.8
42.5°	1099.4	1080.4	994.7	920.9	878.1
45°	1020.9	999.5	913.8	837.7	804.3
47.5°	942.4	923.3	844.8	766.3	728.2
50°	859.1	842.4	771.0	692.5	652.0
52.5°	790.1	763.9	694.9	616.3	583.0
55°	709.1	687.7	623.5	549.7	521.2
57.5°	635.4	614.0	554.5	485.5	461.7
60°	566.4	535.4	485.5	426.0	406.9
62.5°	490.2	466.4	423.6	373.6	397.4
65°	421.2	397.4	359.3	366.5	304.6
67.5°	345.1	333.2	299.8	266.5	257.0
70°	280.8	266.5	254.6	218.9	209.4
72.5°	223.7	209.4	192.8	173.7	166.6
75°	169.0	157.1	147.5	140.4	154.7
77.5°	116.6	111.8	104.7	97.6	95.2
80°	76.2	73.8	71.4	69.0	66.6
82.5°	45.2	45.2	45.2	45.2	45.2
85°	23.8	26.2	28.6	30.9	33.3
87.5°	14.3	14.3	16.7	19.0	21.4
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)