

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: P560807

Luminaire Tested: FSR-12-4-LD4-1HI-35-UNV-93-87-EDD

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P560807  
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-35-UNV-93-87-EDD  
Description: 1X4 FSR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .375 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 80 CRI AND 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

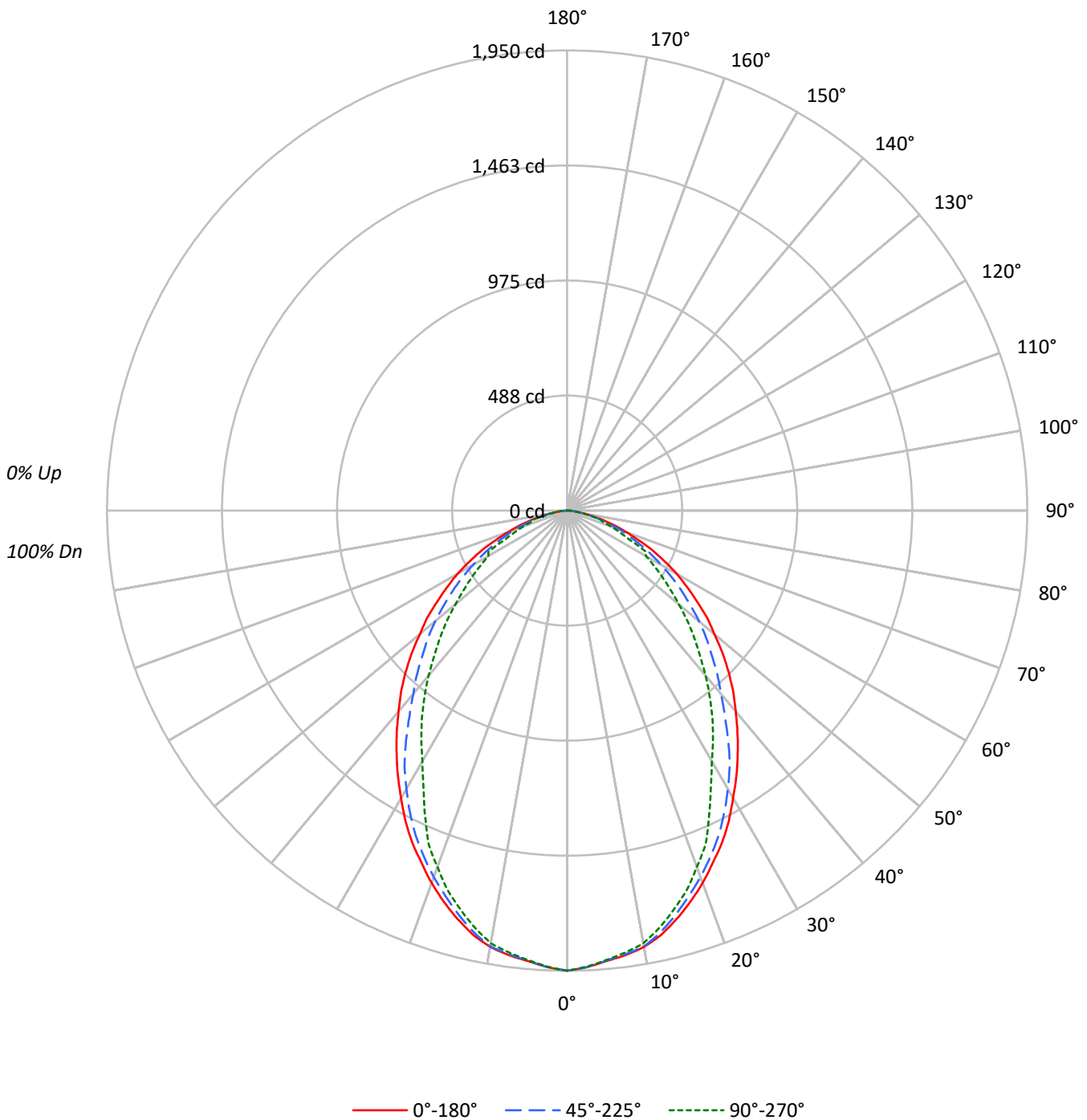
Lumens per Lamp: N/A  
Luminaire Lumens: 3828.0 lumens  
Efficiency: N/A  
Efficacy: 88.6 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 43.2  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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	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			
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°	5247	5247	5247
5°	5176	5170	5164
10°	5131	5125	5088
15°	4993	4942	4873
20°	4809	4732	4603
25°	4612	4511	4230
30°	4371	4231	3810
35°	4140	3910	3525
40°	3904	3563	3207
45°	3680	3294	2900
50°	3407	3058	2586
55°	3152	2771	2316
60°	2887	2475	2075
65°	2541	2167	1837
70°	2093	1898	1561
75°	1665	1454	1523
80°	1117	1048	978
85°	695	837	976

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 3680 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	181.5	4.7
10°-20°	498.1	13.0
20°-30°	689.7	18.0
30°-40°	735.4	19.2
40°-50°	670.9	17.5
50°-60°	525.6	13.7
60°-70°	342.6	8.9
70°-80°	151.8	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°	1369.3	35.8
0°-40°	2104.7	55.0
0°-60°	3301.1	86.2
0°-90°	3828.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3828.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1950	1950	1950	1950	1950	
5°	1916	1914	1914	1912	1912	182
15°	1792	1792	1774	1756	1749	504
25°	1553	1544	1519	1465	1425	713
35°	1260	1251	1190	1100	1073	788
45°	967	947	866	794	762	745
55°	672	652	591	521	494	603
65°	399	376	340	347	288	393
75°	160	149	140	133	146	172
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°	1949.9	1949.9	1949.9	1949.9	1949.9
2.5°	1936.4	1936.4	1936.4	1934.2	1934.2
5°	1916.1	1913.9	1913.9	1911.6	1911.6
7.5°	1900.3	1898.1	1895.8	1893.6	1889.1
10°	1877.8	1877.8	1875.5	1864.3	1862.0
12.5°	1841.7	1839.5	1830.5	1814.7	1810.2
15°	1792.1	1792.1	1774.1	1756.1	1749.3
17.5°	1738.0	1735.8	1713.2	1695.2	1686.2
20°	1679.4	1674.9	1652.4	1623.1	1607.3
22.5°	1614.0	1614.0	1587.0	1548.7	1532.9
25°	1553.2	1544.2	1519.4	1465.3	1424.7
27.5°	1483.3	1469.8	1442.7	1366.1	1318.7
30°	1406.7	1399.9	1361.6	1262.4	1226.3
32.5°	1334.5	1323.2	1282.7	1179.0	1149.7
35°	1260.1	1251.1	1190.2	1100.1	1073.0
37.5°	1185.7	1174.5	1097.8	1025.7	991.9
40°	1111.3	1097.8	1014.4	949.0	913.0
42.5°	1041.5	1023.4	942.3	872.4	831.8
45°	967.1	946.8	865.6	793.5	761.9
47.5°	892.7	874.7	800.3	725.9	689.8
50°	813.8	798.0	730.4	656.0	617.7
52.5°	748.4	723.6	658.2	583.9	552.3
55°	671.8	651.5	590.6	520.7	493.7
57.5°	601.9	581.6	525.2	459.9	437.3
60°	536.5	507.2	459.9	403.5	385.5
62.5°	464.4	441.8	401.3	353.9	376.5
65°	399.0	376.5	340.4	347.2	288.5
67.5°	326.9	315.6	284.0	252.5	243.5
70°	266.0	252.5	241.2	207.4	198.4
72.5°	211.9	198.4	182.6	164.6	157.8
75°	160.1	148.8	139.8	133.0	146.5
77.5°	110.5	106.0	99.2	92.4	90.2
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	27.1	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)