

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: P563381

Luminaire Tested: FSR-24-4-LD4-3LO-50-UNV-80-86-EDD

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P563381  
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-24-4-LD4-3LO-50-UNV-80-86-EDD  
Description: 2X4 FSR TROFFER WITH .125 PRISMATIC ACRYLIC FIXTURE SIDE AND .250 CLEAR PC ENVIRON  
SIDE LENSES WITH, 80 CRI AND 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

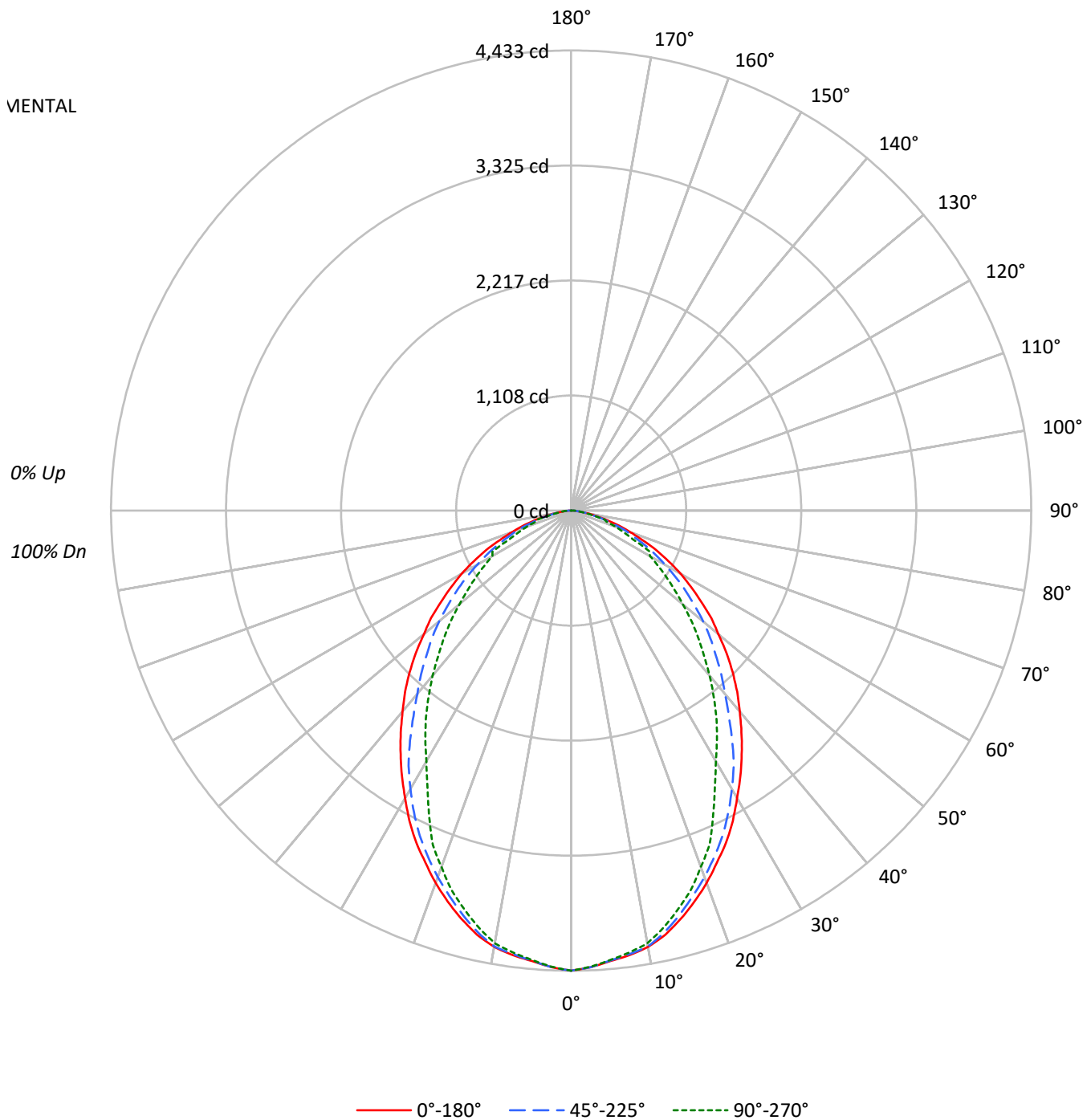
Lumens per Lamp: N/A  
Luminaire Lumens: 8702.0 lumens  
Efficiency: N/A  
Efficacy: 124.0 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 70.2  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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°	5964	5964	5964
5°	5883	5876	5869
10°	5832	5825	5783
15°	5675	5618	5539
20°	5466	5378	5232
25°	5242	5128	4808
30°	4968	4809	4331
35°	4705	4444	4007
40°	4437	4050	3645
45°	4183	3744	3296
50°	3872	3475	2939
55°	3582	3149	2633
60°	3282	2813	2358
65°	2888	2464	2088
70°	2379	2157	1774
75°	1891	1652	1732
80°	1271	1191	1112
85°	790	949	1107

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 4183 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	412.6	4.7
10°-20°	1132.4	13.0
20°-30°	1567.7	18.0
30°-40°	1671.7	19.2
40°-50°	1525.0	17.5
50°-60°	1194.8	13.7
60°-70°	778.7	8.9
70°-80°	345.0	4.0
80°-90°	74.1	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°	3112.8	35.8
0°-40°	4784.5	55.0
0°-60°	7504.3	86.2
0°-90°	8702.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	8702.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	4433	4433	4433	4433	4433	
5°	4356	4351	4351	4346	4346	413
15°	4074	4074	4033	3992	3977	1145
25°	3531	3510	3454	3331	3239	1621
35°	2865	2844	2706	2501	2439	1791
45°	2198	2152	1968	1804	1732	1693
55°	1527	1481	1343	1184	1122	1370
65°	907	856	774	789	656	894
75°	364	338	318	302	333	390
85°	51	56	62	67	72	71
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	4432.7	4432.7	4432.7	4432.7	4432.7
2.5°	4401.9	4401.9	4401.9	4396.8	4396.8
5°	4355.8	4350.7	4350.7	4345.6	4345.6
7.5°	4319.9	4314.8	4309.7	4304.6	4294.3
10°	4268.7	4268.7	4263.6	4238.0	4232.8
12.5°	4186.7	4181.6	4161.1	4125.2	4115.0
15°	4074.0	4074.0	4033.0	3992.0	3976.6
17.5°	3951.0	3945.9	3894.6	3853.6	3833.1
20°	3817.7	3807.5	3756.3	3689.6	3653.8
22.5°	3669.1	3669.1	3607.6	3520.5	3484.7
25°	3530.8	3510.3	3453.9	3330.9	3238.7
27.5°	3371.9	3341.2	3279.7	3105.4	2997.8
30°	3197.7	3182.3	3095.2	2869.7	2787.7
32.5°	3033.7	3008.1	2915.8	2680.1	2613.5
35°	2864.6	2844.1	2705.7	2500.8	2439.3
37.5°	2695.5	2669.9	2495.6	2331.6	2254.8
40°	2526.4	2495.6	2306.0	2157.4	2075.4
42.5°	2367.5	2326.5	2142.0	1983.2	1890.9
45°	2198.4	2152.3	1967.8	1803.8	1732.1
47.5°	2029.3	1988.3	1819.2	1650.1	1568.1
50°	1849.9	1814.1	1660.3	1491.2	1404.1
52.5°	1701.3	1645.0	1496.4	1327.2	1255.5
55°	1527.1	1481.0	1342.6	1183.8	1122.3
57.5°	1368.2	1322.1	1194.0	1045.4	994.2
60°	1219.6	1153.0	1045.4	917.3	876.3
62.5°	1055.6	1004.4	912.2	804.5	855.8
65°	907.0	855.8	773.8	789.2	655.9
67.5°	743.1	717.4	645.7	573.9	553.4
70°	604.7	573.9	548.3	471.5	451.0
72.5°	481.7	451.0	415.1	374.1	358.7
75°	363.8	338.2	317.7	302.3	333.1
77.5°	251.1	240.9	225.5	210.1	205.0
80°	164.0	158.9	153.7	148.6	143.5
82.5°	97.4	97.4	97.4	97.4	97.4
85°	51.2	56.4	61.5	66.6	71.7
87.5°	30.7	30.7	35.9	41.0	46.1
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)