

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: P563641

Luminaire Tested: FSR-24-4-LD4-4HI-35-UNV-80-88-EDD

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P563641  
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-LD4-4HI-35-UNV-80-88-EDD  
Description: 2X4 FSR TROFFER WITH .125 PRISMATIC ACRYLIC FIXTURE SIDE AND .500 CLEAR PC ENVIRON  
SIDE LENSES WITH, 80 CRI AND 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

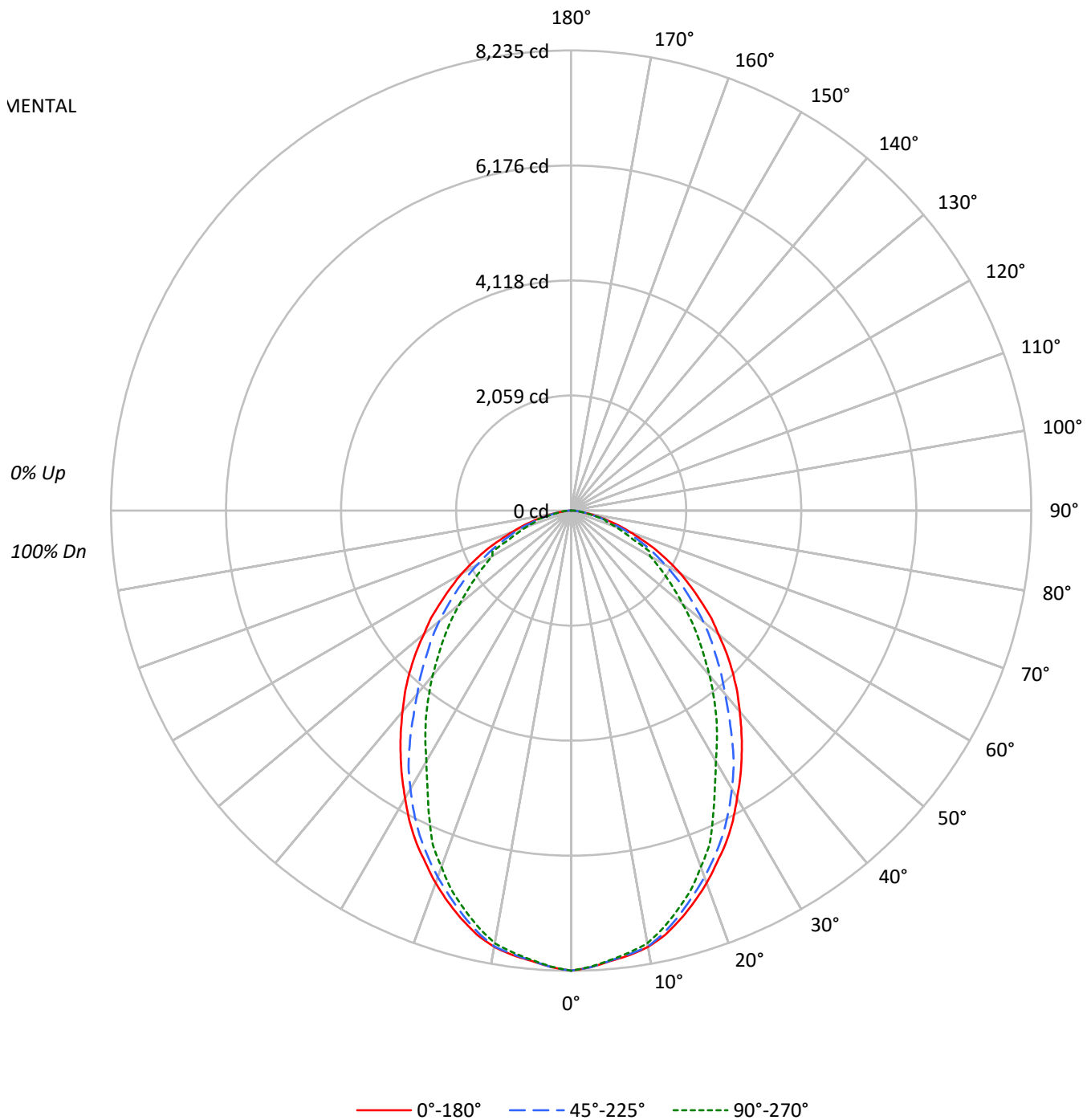
Lumens per Lamp: N/A  
Luminaire Lumens: 16166.0 lumens  
Efficiency: N/A  
Efficacy: 93.6 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 172.8  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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°	11080	11080	11080
5°	10929	10916	10903
10°	10834	10821	10743
15°	10542	10436	10290
20°	10155	9992	9719
25°	9738	9526	8932
30°	9229	8933	8046
35°	8741	8256	7443
40°	8243	7524	6772
45°	7771	6956	6123
50°	7194	6457	5460
55°	6655	5851	4891
60°	6097	5226	4381
65°	5365	4577	3880
70°	4419	4007	3296
75°	3514	3068	3217
80°	2360	2213	2066
85°	1470	1763	2058

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 7771 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	766.5	4.7
10°-20°	2103.7	13.0
20°-30°	2912.5	18.0
30°-40°	3105.5	19.2
40°-50°	2833.1	17.5
50°-60°	2219.5	13.7
60°-70°	1446.6	8.9
70°-80°	640.9	4.0
80°-90°	137.6	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°	5782.7	35.8
0°-40°	8888.2	55.0
0°-60°	13940.9	86.2
0°-90°	16166.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	16166.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	8235	8235	8235	8235	8235	
5°	8092	8082	8082	8073	8073	768
15°	7568	7568	7492	7416	7388	2128
25°	6559	6521	6416	6188	6017	3011
35°	5322	5284	5026	4646	4532	3327
45°	4084	3998	3656	3351	3218	3146
55°	2837	2751	2494	2199	2085	2545
65°	1685	1590	1438	1466	1219	1661
75°	676	628	590	562	619	724
85°	95	105	114	124	133	132
90°	0	0	0	0	0	

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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	8234.7	8234.7	8234.7	8234.7	8234.7
2.5°	8177.6	8177.6	8177.6	8168.1	8168.1
5°	8091.9	8082.4	8082.4	8072.9	8072.9
7.5°	8025.3	8015.8	8006.3	7996.7	7977.7
10°	7930.1	7930.1	7920.6	7873.0	7863.5
12.5°	7777.8	7768.3	7730.2	7663.5	7644.5
15°	7568.3	7568.3	7492.2	7416.0	7387.5
17.5°	7339.9	7330.4	7235.2	7159.0	7120.9
20°	7092.4	7073.3	6978.1	6854.4	6787.7
22.5°	6816.3	6816.3	6702.0	6540.2	6473.6
25°	6559.2	6521.2	6416.4	6188.0	6016.6
27.5°	6264.1	6207.0	6092.8	5769.1	5569.2
30°	5940.4	5911.9	5750.0	5331.2	5178.8
32.5°	5635.8	5588.2	5416.8	4978.9	4855.2
35°	5321.6	5283.6	5026.5	4645.7	4531.5
37.5°	5007.5	4959.9	4636.2	4331.6	4188.8
40°	4693.3	4636.2	4284.0	4007.9	3855.6
42.5°	4398.2	4322.1	3979.3	3684.2	3512.9
45°	4084.1	3998.4	3655.7	3351.0	3217.7
47.5°	3769.9	3693.7	3379.6	3065.4	2913.1
50°	3436.7	3370.1	3084.5	2770.3	2608.5
52.5°	3160.6	3055.9	2779.8	2465.7	2332.4
55°	2836.9	2751.3	2494.2	2199.1	2084.9
57.5°	2541.8	2456.1	2218.1	1942.1	1846.9
60°	2265.7	2142.0	1942.1	1704.1	1627.9
62.5°	1961.1	1865.9	1694.5	1494.6	1589.8
65°	1685.0	1589.8	1437.5	1466.1	1218.6
67.5°	1380.4	1332.8	1199.5	1066.2	1028.2
70°	1123.4	1066.2	1018.6	875.8	837.8
72.5°	894.9	837.8	771.1	695.0	666.4
75°	675.9	628.3	590.2	561.7	618.8
77.5°	466.5	447.4	418.9	390.3	380.8
80°	304.6	295.1	285.6	276.1	266.6
82.5°	180.9	180.9	180.9	180.9	180.9
85°	95.2	104.7	114.2	123.8	133.3
87.5°	57.1	57.1	66.6	76.2	85.7
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)