

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: P563698

Luminaire Tested: FSR-24-4-LD4-4HI-40-UNV-80-85-EDD-90

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P563698  
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-40-UNV-80-85-EDD-90  
Description: 2X4 FSR TROFFER WITH .125 PRISMATIC ACRYLIC FIXTURE SIDE AND .187 CLEAR PC ENVIRONM  
SIDE LENSES WITH, 90 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

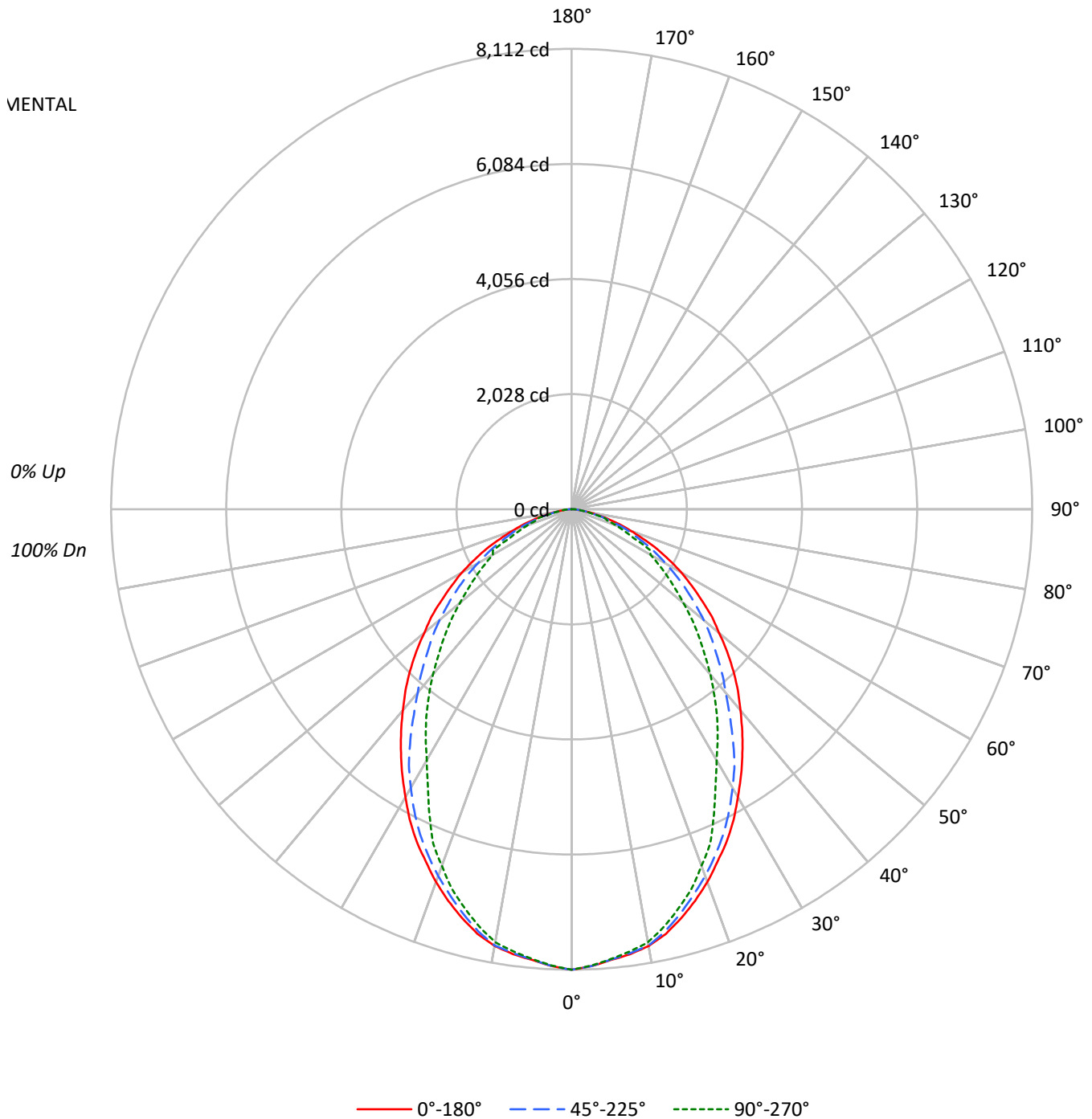
Lumens per Lamp: N/A  
Luminaire Lumens: 15926.0 lumens  
Efficiency: N/A  
Efficacy: 92.2 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 172.8  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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					87			
2	101	94	88	83	99	92	87	82	89	84	80	86	82	78	83	79	77	75					75			
3	93	84	77	71	91	82	76	70	79	74	69	77	72	68	74	70	67	65					65			
4	86	75	67	61	84	74	66	61	72	65	60	69	64	59	67	62	58	56					56			
5	80	68	60	54	78	67	59	53	65	58	53	63	57	52	61	56	52	50					50			
6	74	62	53	48	72	61	53	47	59	52	47	57	51	47	56	50	46	44					44			
7	69	56	48	43	67	56	48	42	54	47	42	53	46	42	51	46	42	40					40			
8	65	52	44	38	63	51	44	38	50	43	38	49	42	38	48	42	38	36					36			
9	61	48	40	35	59	47	40	35	46	39	35	45	39	34	44	38	34	33					33			
10	57	44	37	32	56	44	37	32	43	36	32	42	36	32	41	36	32	30					30			

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

	0°	45°	90°
0°	10915	10915	10915
5°	10767	10754	10742
10°	10674	10661	10584
15°	10386	10281	10138
20°	10004	9843	9575
25°	9593	9384	8800
30°	9092	8801	7927
35°	8611	8134	7333
40°	8121	7413	6671
45°	7656	6853	6032
50°	7087	6361	5379
55°	6556	5764	4818
60°	6007	5148	4316
65°	5285	4509	3822
70°	4354	3948	3247
75°	3462	3023	3169
80°	2325	2180	2035
85°	1448	1737	2027

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 7656 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	755.2	4.7
10°-20°	2072.5	13.0
20°-30°	2869.2	18.0
30°-40°	3059.4	19.2
40°-50°	2791.1	17.5
50°-60°	2186.6	13.7
60°-70°	1425.1	8.9
70°-80°	631.4	4.0
80°-90°	135.6	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°	5696.9	35.8
0°-40°	8756.3	55.0
0°-60°	13733.9	86.2
0°-90°	15926.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	15926.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	8112	8112	8112	8112	8112	
5°	7972	7962	7962	7953	7953	757
15°	7456	7456	7381	7306	7278	2096
25°	6462	6424	6321	6096	5927	2967
35°	5243	5205	4952	4577	4464	3278
45°	4023	3939	3601	3301	3170	3099
55°	2795	2710	2457	2166	2054	2507
65°	1660	1566	1416	1444	1200	1636
75°	666	619	582	553	610	714
85°	94	103	112	122	131	130
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	8112.5	8112.5	8112.5	8112.5	8112.5
2.5°	8056.2	8056.2	8056.2	8046.8	8046.8
5°	7971.8	7962.4	7962.4	7953.1	7953.1
7.5°	7906.2	7896.8	7887.4	7878.0	7859.3
10°	7812.4	7812.4	7803.0	7756.1	7746.7
12.5°	7662.3	7652.9	7615.4	7549.8	7531.0
15°	7456.0	7456.0	7381.0	7305.9	7277.8
17.5°	7230.9	7221.5	7127.7	7052.7	7015.2
20°	6987.1	6968.3	6874.5	6752.6	6686.9
22.5°	6715.1	6715.1	6602.5	6443.1	6377.5
25°	6461.9	6424.3	6321.2	6096.1	5927.3
27.5°	6171.1	6114.8	6002.3	5683.4	5486.5
30°	5852.2	5824.1	5664.7	5252.0	5102.0
32.5°	5552.1	5505.2	5336.4	4905.0	4783.1
35°	5242.6	5205.1	4951.9	4576.8	4464.2
37.5°	4933.1	4886.3	4567.4	4267.3	4126.6
40°	4623.7	4567.4	4220.4	3948.4	3798.3
42.5°	4332.9	4257.9	3920.3	3629.5	3460.7
45°	4023.4	3939.0	3601.4	3301.3	3170.0
47.5°	3713.9	3638.9	3329.4	3019.9	2869.9
50°	3385.7	3320.0	3038.7	2729.2	2569.7
52.5°	3113.7	3010.5	2738.6	2429.1	2297.8
55°	2794.8	2710.4	2457.2	2166.5	2053.9
57.5°	2504.1	2419.7	2185.2	1913.2	1819.4
60°	2232.1	2110.2	1913.2	1678.8	1603.7
62.5°	1932.0	1838.2	1669.4	1472.4	1566.2
65°	1660.0	1566.2	1416.2	1444.3	1200.5
67.5°	1359.9	1313.0	1181.7	1050.4	1012.9
70°	1106.7	1050.4	1003.5	862.8	825.3
72.5°	881.6	825.3	759.7	684.6	656.5
75°	665.9	619.0	581.5	553.3	609.6
77.5°	459.6	440.8	412.7	384.5	375.1
80°	300.1	290.7	281.4	272.0	262.6
82.5°	178.2	178.2	178.2	178.2	178.2
85°	93.8	103.2	112.5	121.9	131.3
87.5°	56.3	56.3	65.7	75.0	84.4
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)