

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: P563633

Luminaire Tested: FSR-24-4-LD4-4HI-35-UNV-80-84-EDD

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P563633  
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-80-84-EDD  
Description: 2X4 FSR TROFFER WITH .125 PRISMATIC ACRYLIC FIXTURE SIDE AND .125 CLEAR PC ENVIRON  
SIDE LENSES WITH, 80 CRI AND 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

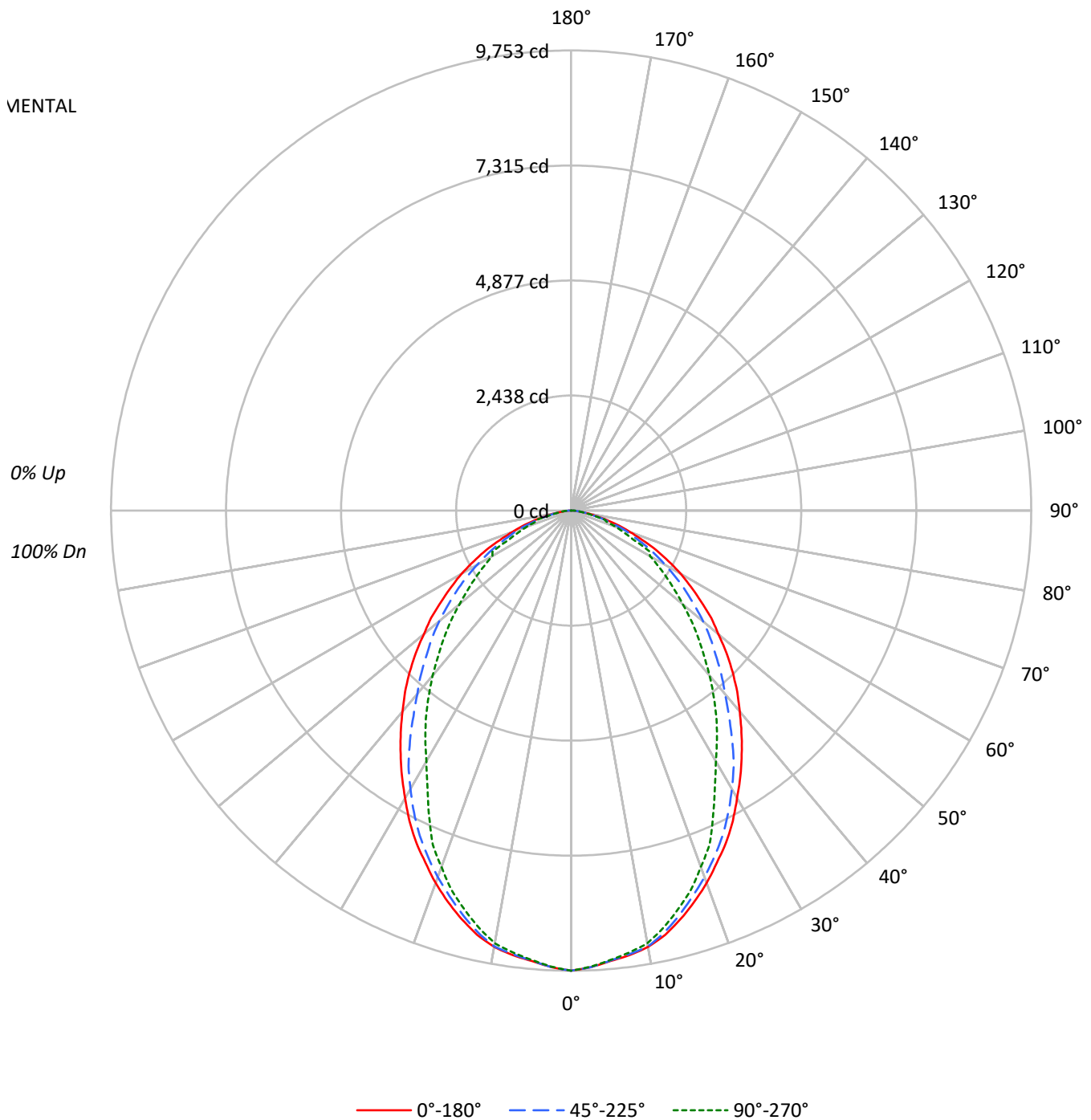
Lumens per Lamp: N/A  
Luminaire Lumens: 19146.0 lumens  
Efficiency: N/A  
Efficacy: 110.8 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 172.8  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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°	13122	13122	13122
5°	12944	12929	12913
10°	12832	12816	12724
15°	12486	12360	12187
20°	12027	11833	11510
25°	11533	11282	10579
30°	10931	10580	9529
35°	10352	9778	8815
40°	9763	8912	8020
45°	9204	8238	7251
50°	8520	7646	6467
55°	7882	6929	5792
60°	7221	6190	5188
65°	6353	5420	4595
70°	5234	4746	3903
75°	4161	3634	3810
80°	2796	2620	2446
85°	1740	2089	2436

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 9204 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	907.8	4.7
10°-20°	2491.5	13.0
20°-30°	3449.3	18.0
30°-40°	3678.0	19.2
40°-50°	3355.4	17.5
50°-60°	2628.7	13.7
60°-70°	1713.2	8.9
70°-80°	759.0	4.0
80°-90°	163.0	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°	6848.7	35.8
0°-40°	10526.7	55.0
0°-60°	16510.7	86.2
0°-90°	19146.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	19146.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	9753	9753	9753	9753	9753	
5°	9584	9572	9572	9561	9561	910
15°	8964	8964	8873	8783	8749	2520
25°	7768	7723	7599	7329	7126	3566
35°	6303	6258	5953	5502	5367	3940
45°	4837	4735	4330	3969	3811	3726
55°	3360	3258	2954	2604	2469	3014
65°	1996	1883	1702	1736	1443	1967
75°	800	744	699	665	733	858
85°	113	124	135	147	158	156
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	9752.7	9752.7	9752.7	9752.7	9752.7
2.5°	9685.1	9685.1	9685.1	9673.8	9673.8
5°	9583.6	9572.3	9572.3	9561.0	9561.0
7.5°	9504.7	9493.4	9482.1	9470.8	9448.3
10°	9391.9	9391.9	9380.6	9324.3	9313.0
12.5°	9211.5	9200.3	9155.2	9076.2	9053.7
15°	8963.5	8963.5	8873.3	8783.1	8749.3
17.5°	8692.9	8681.6	8568.9	8478.7	8433.6
20°	8399.7	8377.2	8264.4	8117.9	8038.9
22.5°	8072.8	8072.8	7937.5	7745.8	7666.9
25°	7768.3	7723.2	7599.2	7328.6	7125.7
27.5°	7418.8	7351.2	7215.9	6832.5	6595.8
30°	7035.5	7001.7	6810.0	6313.9	6133.5
32.5°	6674.7	6618.3	6415.4	5896.7	5750.2
35°	6302.6	6257.5	5953.1	5502.1	5366.8
37.5°	5930.6	5874.2	5490.8	5130.0	4960.9
40°	5558.5	5490.8	5073.7	4746.7	4566.3
42.5°	5209.0	5118.8	4712.9	4363.4	4160.4
45°	4836.9	4735.4	4329.5	3968.7	3810.9
47.5°	4464.8	4374.6	4002.6	3630.5	3450.1
50°	4070.2	3991.3	3653.0	3281.0	3089.3
52.5°	3743.2	3619.2	3292.2	2920.2	2762.3
55°	3359.9	3258.4	2954.0	2604.5	2469.2
57.5°	3010.4	2908.9	2627.0	2300.1	2187.3
60°	2683.4	2536.8	2300.1	2018.2	1928.0
62.5°	2322.6	2209.9	2006.9	1770.1	1882.9
65°	1995.6	1882.9	1702.5	1736.3	1443.2
67.5°	1634.8	1578.5	1420.6	1262.8	1217.7
70°	1330.4	1262.8	1206.4	1037.3	992.2
72.5°	1059.8	992.2	913.3	823.1	789.2
75°	800.5	744.1	699.0	665.2	732.9
77.5°	552.5	529.9	496.1	462.3	451.0
80°	360.8	349.5	338.2	327.0	315.7
82.5°	214.2	214.2	214.2	214.2	214.2
85°	112.7	124.0	135.3	146.6	157.8
87.5°	67.6	67.6	78.9	90.2	101.5
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)