

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: P563830

Luminaire Tested: FSR-24-4-LD4-4LO-35-UNV-80-87-EDD-90

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P563830  
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-LD4-4LO-35-UNV-80-87-EDD-90  
Description: 2X4 FSR TROFFER WITH .125 PRISMATIC ACRYLIC FIXTURE SIDE AND .375 CLEAR PC ENVIRON  
SIDE LENSES WITH, 90 CRI AND 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

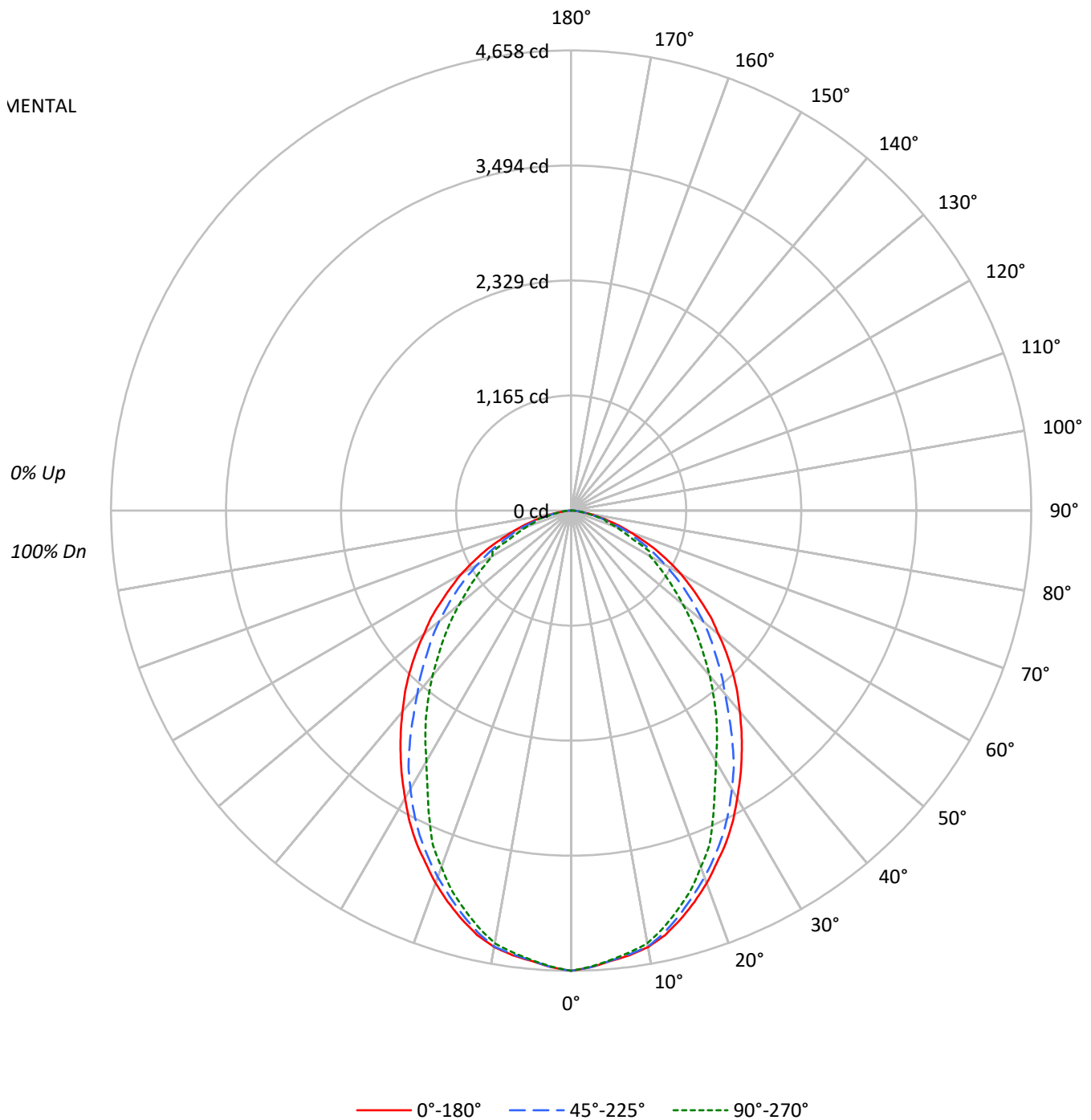
Lumens per Lamp: N/A  
Luminaire Lumens: 9145.0 lumens  
Efficiency: N/A  
Efficacy: 97.7 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 93.6  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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	50	30	10	0																			
RCR																																														
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	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°	6268	6268	6268
5°	6183	6175	6168
10°	6129	6122	6077
15°	5964	5904	5821
20°	5745	5652	5498
25°	5509	5389	5053
30°	5221	5054	4552
35°	4945	4671	4210
40°	4663	4256	3831
45°	4396	3935	3464
50°	4069	3652	3089
55°	3765	3310	2767
60°	3449	2956	2478
65°	3035	2589	2195
70°	2500	2267	1864
75°	1988	1736	1820
80°	1335	1252	1168
85°	832	997	1164

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 4396 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	433.6	4.7
10°-20°	1190.1	13.0
20°-30°	1647.6	18.0
30°-40°	1756.8	19.2
40°-50°	1602.7	17.5
50°-60°	1255.6	13.7
60°-70°	818.3	8.9
70°-80°	362.5	4.0
80°-90°	77.8	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°	3271.2	35.8
0°-40°	5028.0	55.0
0°-60°	7886.3	86.2
0°-90°	9145.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	9145.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	4658	4658	4658	4658	4658	
5°	4578	4572	4572	4567	4567	435
15°	4281	4281	4238	4195	4179	1204
25°	3710	3689	3630	3500	3404	1703
35°	3010	2989	2844	2628	2563	1882
45°	2310	2262	2068	1896	1820	1780
55°	1605	1556	1411	1244	1179	1439
65°	953	899	813	829	689	939
75°	382	355	334	318	350	410
85°	54	59	65	70	75	75
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	4658.3	4658.3	4658.3	4658.3	4658.3
2.5°	4626.0	4626.0	4626.0	4620.6	4620.6
5°	4577.6	4572.2	4572.2	4566.8	4566.8
7.5°	4539.9	4534.5	4529.1	4523.7	4512.9
10°	4486.0	4486.0	4480.6	4453.7	4448.3
12.5°	4399.8	4394.5	4372.9	4335.2	4324.4
15°	4281.4	4281.4	4238.3	4195.2	4179.0
17.5°	4152.1	4146.7	4092.9	4049.8	4028.3
20°	4012.1	4001.3	3947.5	3877.5	3839.8
22.5°	3855.9	3855.9	3791.3	3699.7	3662.0
25°	3710.5	3689.0	3629.7	3500.5	3403.6
27.5°	3543.6	3511.3	3446.6	3263.5	3150.4
30°	3360.5	3344.3	3252.8	3015.8	2929.6
32.5°	3188.1	3161.2	3064.3	2816.5	2746.5
35°	3010.4	2988.9	2843.5	2628.1	2563.4
37.5°	2832.7	2805.8	2622.7	2450.3	2369.6
40°	2655.0	2622.7	2423.4	2267.2	2181.1
42.5°	2488.0	2445.0	2251.1	2084.1	1987.2
45°	2310.3	2261.9	2068.0	1895.6	1820.3
47.5°	2132.6	2089.5	1911.8	1734.1	1647.9
50°	1944.1	1906.4	1744.9	1567.1	1475.6
52.5°	1787.9	1728.7	1572.5	1394.8	1319.4
55°	1604.8	1556.4	1411.0	1244.0	1179.4
57.5°	1437.9	1389.4	1254.8	1098.6	1044.8
60°	1281.7	1211.7	1098.6	964.0	920.9
62.5°	1109.4	1055.5	958.6	845.5	899.4
65°	953.2	899.4	813.2	829.3	689.3
67.5°	780.9	754.0	678.6	603.2	581.6
70°	635.5	603.2	576.2	495.5	473.9
72.5°	506.2	473.9	436.2	393.1	377.0
75°	382.4	355.4	333.9	317.7	350.0
77.5°	263.9	253.1	237.0	220.8	215.4
80°	172.3	166.9	161.6	156.2	150.8
82.5°	102.3	102.3	102.3	102.3	102.3
85°	53.9	59.2	64.6	70.0	75.4
87.5°	32.3	32.3	37.7	43.1	48.5
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)