

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: P563467

Luminaire Tested: FSR-24-4-LD4-3STD-35-UNV-81-94-EDD

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P563467  
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-LD4-3STD-35-UNV-81-94-EDD  
Description: 2X4 FSR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .187 CLEAR TEMPERED GLASS ENVIRONMENTAL SIDE LENSES WITH, 80 CRI AND 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

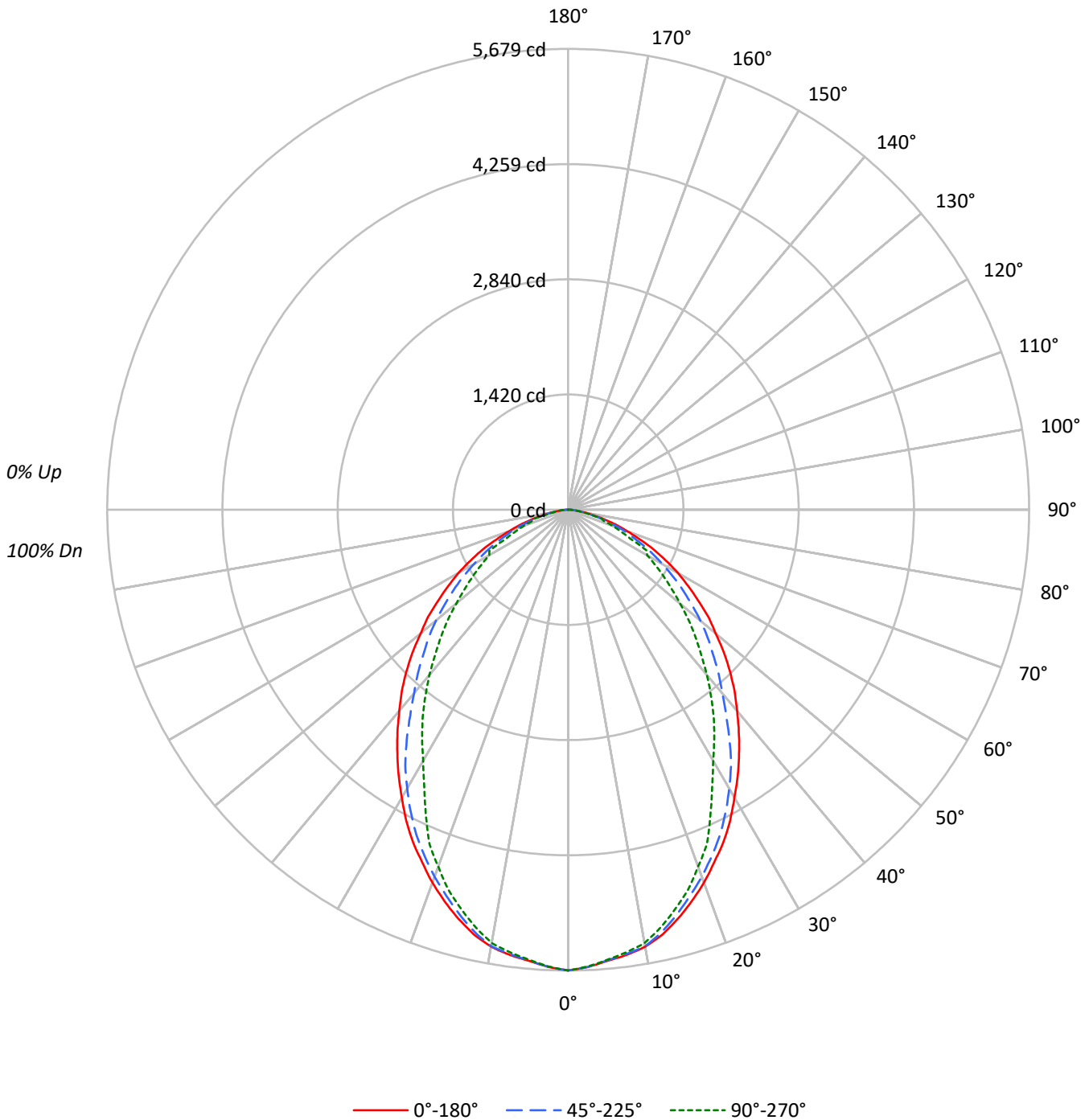
Lumens per Lamp: N/A  
Luminaire Lumens: 11148.0 lumens  
Efficiency: N/A  
Efficacy: 111.6 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 99.9  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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°	7640	7640	7640
5°	7537	7528	7519
10°	7471	7462	7409
15°	7270	7197	7096
20°	7003	6890	6702
25°	6715	6569	6160
30°	6364	6160	5549
35°	6028	5694	5133
40°	5685	5189	4670
45°	5359	4797	4222
50°	4961	4452	3765
55°	4589	4035	3373
60°	4204	3604	3021
65°	3699	3156	2675
70°	3048	2763	2273
75°	2423	2116	2218
80°	1628	1526	1424
85°	1013	1216	1419

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 5359 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	528.6	4.7
10°-20°	1450.7	13.0
20°-30°	2008.4	18.0
30°-40°	2141.5	19.2
40°-50°	1953.7	17.5
50°-60°	1530.6	13.7
60°-70°	997.6	8.9
70°-80°	442.0	4.0
80°-90°	94.9	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°	3987.7	35.8
0°-40°	6129.3	55.0
0°-60°	9613.6	86.2
0°-90°	11148.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	11148.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	5679	5679	5679	5679	5679	
5°	5580	5574	5574	5567	5567	530
15°	5219	5219	5167	5114	5094	1467
25°	4523	4497	4425	4267	4149	2077
35°	3670	3644	3466	3204	3125	2294
45°	2816	2757	2521	2311	2219	2169
55°	1956	1897	1720	1516	1438	1755
65°	1162	1096	991	1011	840	1145
75°	466	433	407	387	427	500
85°	66	72	79	85	92	91
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	5678.6	5678.6	5678.6	5678.6	5678.6
2.5°	5639.3	5639.3	5639.3	5632.7	5632.7
5°	5580.2	5573.6	5573.6	5567.0	5567.0
7.5°	5534.2	5527.6	5521.1	5514.5	5501.4
10°	5468.6	5468.6	5462.0	5429.2	5422.6
12.5°	5363.5	5357.0	5330.7	5284.7	5271.6
15°	5219.1	5219.1	5166.6	5114.1	5094.4
17.5°	5061.5	5055.0	4989.3	4936.8	4910.5
20°	4890.9	4877.7	4812.1	4726.7	4680.8
22.5°	4700.5	4700.5	4621.7	4510.1	4464.1
25°	4523.2	4497.0	4424.7	4267.2	4149.0
27.5°	4319.7	4280.3	4201.5	3978.3	3840.5
30°	4096.5	4076.8	3965.2	3676.3	3571.3
32.5°	3886.4	3853.6	3735.4	3433.4	3348.1
35°	3669.8	3643.5	3466.3	3203.7	3124.9
37.5°	3453.1	3420.3	3197.1	2987.0	2888.6
40°	3236.5	3197.1	2954.2	2763.8	2658.8
42.5°	3033.0	2980.5	2744.1	2540.6	2422.4
45°	2816.3	2757.3	2520.9	2310.8	2218.9
47.5°	2599.7	2547.2	2330.5	2113.9	2008.9
50°	2369.9	2324.0	2127.0	1910.4	1798.8
52.5°	2179.5	2107.3	1917.0	1700.3	1608.4
55°	1956.3	1897.3	1720.0	1516.5	1437.7
57.5°	1752.8	1693.7	1529.6	1339.2	1273.6
60°	1562.4	1477.1	1339.2	1175.1	1122.6
62.5°	1352.4	1286.7	1168.6	1030.7	1096.3
65°	1162.0	1096.3	991.3	1011.0	840.3
67.5°	951.9	919.1	827.2	735.3	709.0
70°	774.7	735.3	702.4	604.0	577.7
72.5°	617.1	577.7	531.8	479.2	459.5
75°	466.1	433.3	407.0	387.3	426.7
77.5°	321.7	308.6	288.9	269.2	262.6
80°	210.1	203.5	196.9	190.4	183.8
82.5°	124.7	124.7	124.7	124.7	124.7
85°	65.6	72.2	78.8	85.3	91.9
87.5°	39.4	39.4	46.0	52.5	59.1
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)