

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: P562523

Luminaire Tested: FSR-24-4-LD4-2HI-35-UNV-82-94-EDD

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P562523  
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-LD4-2HI-35-UNV-82-94-EDD  
Description: 2X4 FSR TROFFER WITH .187 CLEAR PC FIXTURE SIDE AND .187 CLEAR TEMPERED GLASS ENVIRONMENTAL SIDE LENSES WITH, 80 CRI AND 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

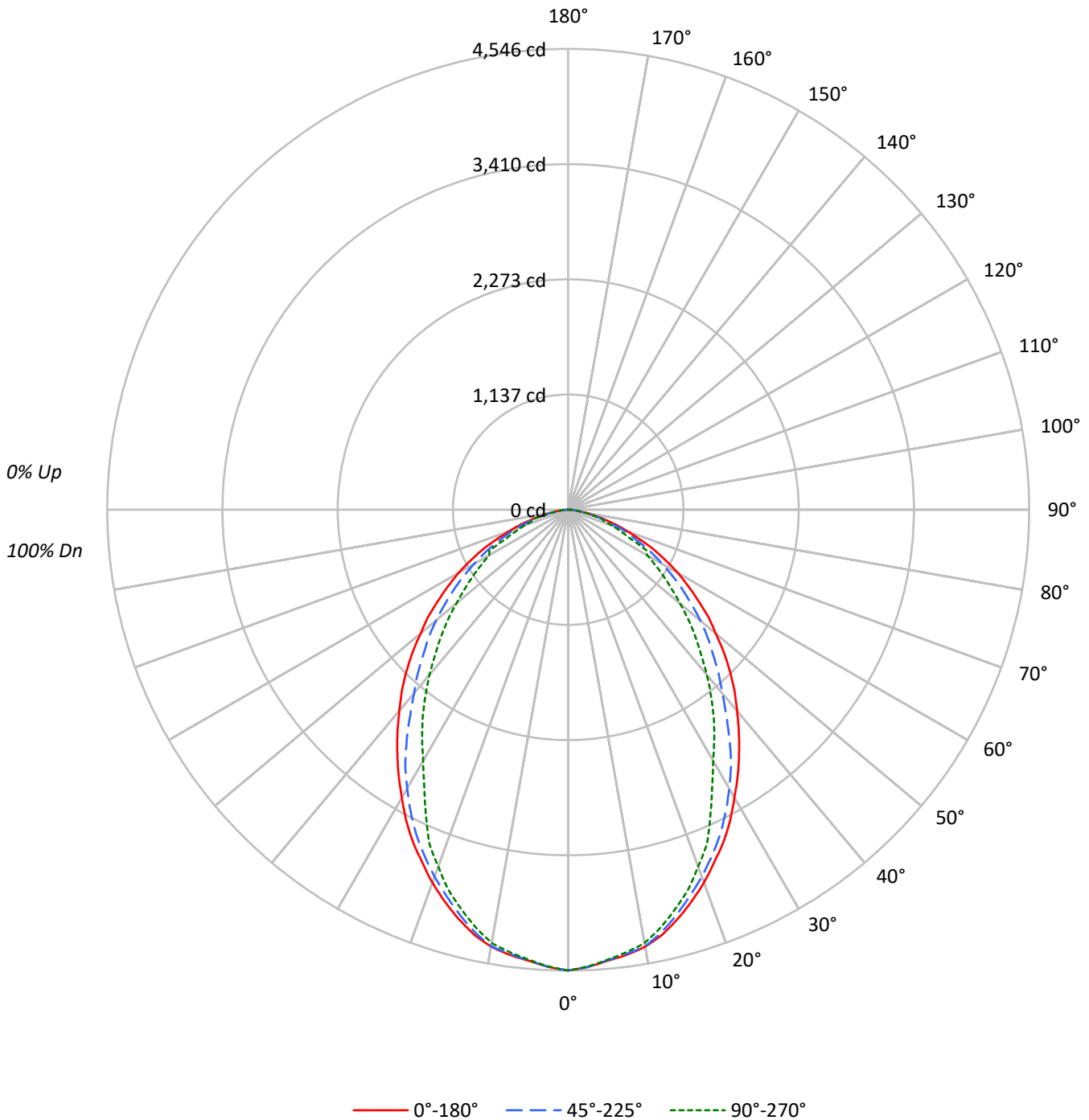
Lumens per Lamp: N/A  
Luminaire Lumens: 8924.0 lumens  
Efficiency: N/A  
Efficacy: 103.3 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 86.4  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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	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°	6116	6116	6116
5°	6033	6026	6019
10°	5981	5974	5931
15°	5820	5761	5681
20°	5606	5516	5365
25°	5375	5258	4931
30°	5095	4932	4442
35°	4825	4558	4109
40°	4551	4154	3738
45°	4290	3840	3380
50°	3971	3564	3014
55°	3674	3230	2700
60°	3366	2885	2418
65°	2961	2526	2142
70°	2439	2212	1819
75°	1940	1694	1776
80°	1303	1222	1140
85°	812	974	1136

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 4290 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	423.1	4.7
10°-20°	1161.3	13.0
20°-30°	1607.7	18.0
30°-40°	1714.3	19.2
40°-50°	1564.0	17.5
50°-60°	1225.2	13.7
60°-70°	798.5	8.9
70°-80°	353.8	4.0
80°-90°	75.9	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°	3192.2	35.8
0°-40°	4906.5	55.0
0°-60°	7695.7	86.2
0°-90°	8924.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	8924.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	4546	4546	4546	4546	4546	
5°	4467	4462	4462	4456	4456	424
15°	4178	4178	4136	4094	4078	1175
25°	3621	3600	3542	3416	3321	1662
35°	2938	2917	2775	2564	2502	1837
45°	2254	2207	2018	1850	1776	1737
55°	1566	1519	1377	1214	1151	1405
65°	930	878	794	809	673	917
75°	373	347	326	310	342	400
85°	53	58	63	68	74	73
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	4545.8	4545.8	4545.8	4545.8	4545.8
2.5°	4514.2	4514.2	4514.2	4509.0	4509.0
5°	4466.9	4461.7	4461.7	4456.4	4456.4
7.5°	4430.2	4424.9	4419.6	4414.4	4403.9
10°	4377.6	4377.6	4372.3	4346.1	4340.8
12.5°	4293.5	4288.3	4267.2	4230.5	4219.9
15°	4177.9	4177.9	4135.9	4093.8	4078.1
17.5°	4051.8	4046.5	3994.0	3951.9	3930.9
20°	3915.1	3904.6	3852.1	3783.8	3747.0
22.5°	3762.7	3762.7	3699.7	3610.3	3573.6
25°	3620.8	3599.8	3542.0	3415.9	3321.3
27.5°	3457.9	3426.4	3363.3	3184.7	3074.3
30°	3279.3	3263.5	3174.2	2942.9	2858.8
32.5°	3111.1	3084.8	2990.2	2748.5	2680.2
35°	2937.7	2916.6	2774.8	2564.5	2501.5
37.5°	2764.2	2738.0	2559.3	2391.1	2312.3
40°	2590.8	2559.3	2364.8	2212.4	2128.4
42.5°	2427.9	2385.9	2196.7	2033.8	1939.2
45°	2254.5	2207.2	2018.0	1849.8	1776.3
47.5°	2081.1	2039.0	1865.6	1692.2	1608.1
50°	1897.1	1860.3	1702.7	1529.3	1439.9
52.5°	1744.7	1686.9	1534.5	1361.1	1287.5
55°	1566.1	1518.8	1376.9	1214.0	1150.9
57.5°	1403.1	1355.8	1224.5	1072.1	1019.5
60°	1250.7	1182.4	1072.1	940.7	898.6
62.5°	1082.6	1030.0	935.4	825.1	877.6
65°	930.2	877.6	793.5	809.3	672.7
67.5°	762.0	735.7	662.2	588.6	567.6
70°	620.1	588.6	562.3	483.5	462.5
72.5°	494.0	462.5	425.7	383.6	367.9
75°	373.1	346.8	325.8	310.1	341.6
77.5°	257.5	247.0	231.2	215.5	210.2
80°	168.2	162.9	157.7	152.4	147.1
82.5°	99.8	99.8	99.8	99.8	99.8
85°	52.6	57.8	63.1	68.3	73.6
87.5°	31.5	31.5	36.8	42.0	47.3
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)