

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: P562499

Luminaire Tested: FSR-24-4-LD4-2HI-35-UNV-81-85-EDD

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P562499  
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-81-85-EDD  
Description: 2X4 FSR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .187 CLEAR PC ENVIRONMENTAL SI  
LENSES WITH, 80 CRI AND 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

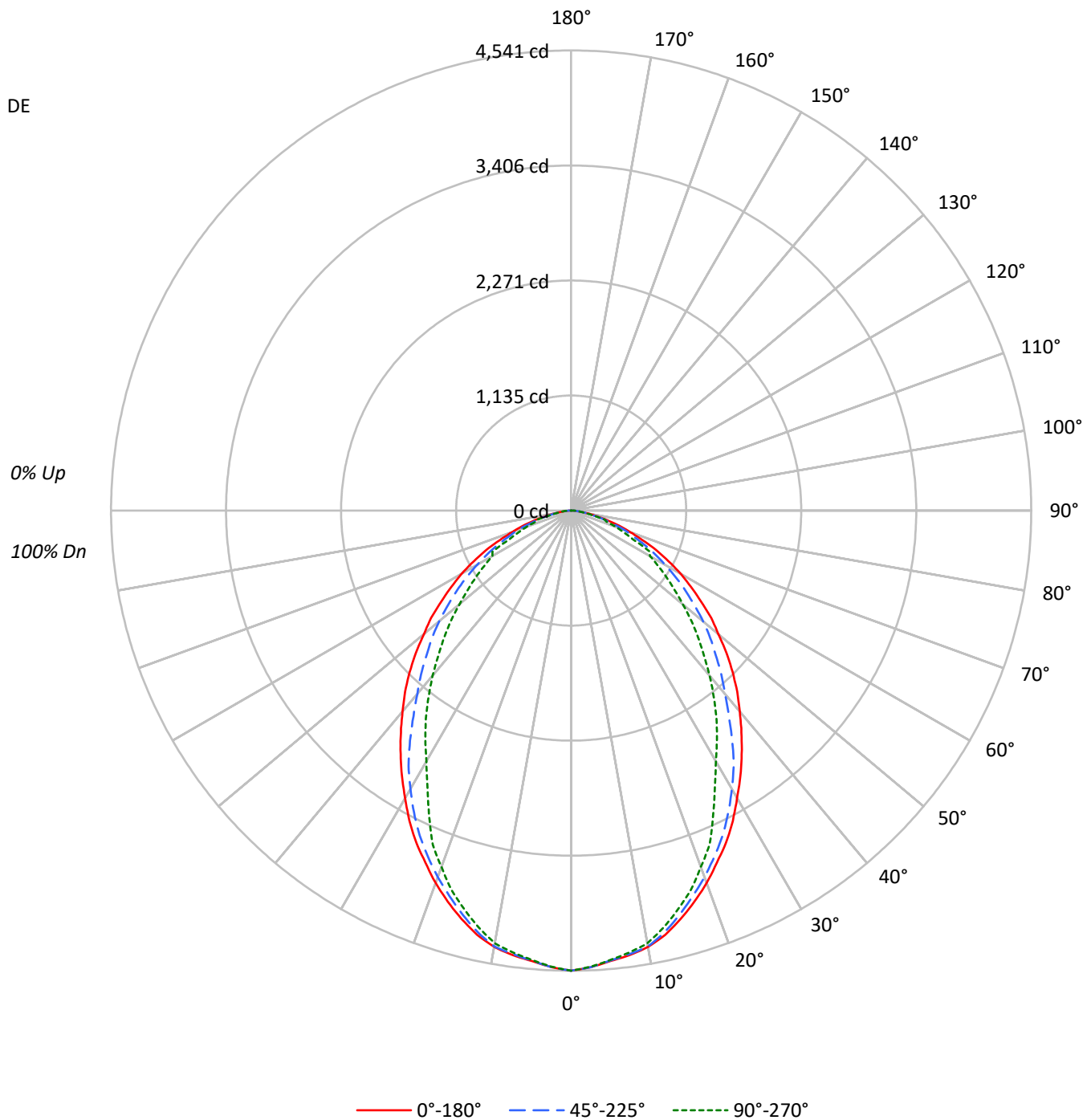
Lumens per Lamp: N/A  
Luminaire Lumens: 8914.0 lumens  
Efficiency: N/A  
Efficacy: 103.2 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 86.4  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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	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°	6109	6109	6109
5°	6026	6019	6012
10°	5974	5967	5924
15°	5813	5755	5674
20°	5600	5509	5359
25°	5369	5253	4925
30°	5089	4926	4437
35°	4820	4552	4104
40°	4545	4149	3734
45°	4285	3835	3376
50°	3967	3560	3011
55°	3670	3226	2697
60°	3362	2882	2415
65°	2958	2523	2139
70°	2437	2210	1817
75°	1938	1692	1774
80°	1302	1220	1139
85°	810	973	1135

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 4285 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	422.7	4.7
10°-20°	1160.0	13.0
20°-30°	1605.9	18.0
30°-40°	1712.4	19.2
40°-50°	1562.2	17.5
50°-60°	1223.9	13.7
60°-70°	797.6	8.9
70°-80°	353.4	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°	3188.6	35.8
0°-40°	4901.0	55.0
0°-60°	7687.1	86.2
0°-90°	8914.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	8914.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	4541	4541	4541	4541	4541	
5°	4462	4457	4457	4451	4451	424
15°	4173	4173	4131	4089	4074	1173
25°	3617	3596	3538	3412	3318	1660
35°	2934	2913	2772	2562	2499	1835
45°	2252	2205	2016	1848	1774	1735
55°	1564	1517	1375	1213	1150	1403
65°	929	877	793	808	672	916
75°	373	346	326	310	341	399
85°	52	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°	4540.7	4540.7	4540.7	4540.7	4540.7
2.5°	4509.2	4509.2	4509.2	4503.9	4503.9
5°	4461.9	4456.7	4456.7	4451.4	4451.4
7.5°	4425.2	4419.9	4414.7	4409.4	4398.9
10°	4372.7	4372.7	4367.4	4341.2	4335.9
12.5°	4288.7	4283.5	4262.5	4225.7	4215.2
15°	4173.2	4173.2	4131.2	4089.2	4073.5
17.5°	4047.2	4042.0	3989.5	3947.5	3926.5
20°	3910.8	3900.3	3847.8	3779.5	3742.8
22.5°	3758.5	3758.5	3695.5	3606.3	3569.5
25°	3616.8	3595.8	3538.1	3412.1	3317.6
27.5°	3454.1	3422.6	3359.6	3181.1	3070.9
30°	3275.6	3259.8	3170.6	2939.6	2855.6
32.5°	3107.6	3081.4	2986.9	2745.4	2677.2
35°	2934.4	2913.4	2771.6	2561.7	2498.7
37.5°	2761.1	2734.9	2556.4	2388.4	2309.7
40°	2587.9	2556.4	2362.2	2210.0	2126.0
42.5°	2425.2	2383.2	2194.2	2031.5	1937.0
45°	2252.0	2204.7	2015.7	1847.8	1774.3
47.5°	2078.7	2036.7	1863.5	1690.3	1606.3
50°	1895.0	1858.3	1700.8	1527.6	1438.3
52.5°	1742.8	1685.0	1532.8	1359.6	1286.1
55°	1564.3	1517.1	1375.3	1212.6	1149.6
57.5°	1401.6	1354.3	1223.1	1070.9	1018.4
60°	1249.3	1181.1	1070.9	939.6	897.6
62.5°	1081.4	1028.9	934.4	824.1	876.6
65°	929.1	876.6	792.6	808.4	671.9
67.5°	761.2	734.9	661.4	587.9	566.9
70°	619.4	587.9	561.7	482.9	461.9
72.5°	493.4	461.9	425.2	383.2	367.5
75°	372.7	346.5	325.5	309.7	341.2
77.5°	257.2	246.7	231.0	215.2	210.0
80°	168.0	162.7	157.5	152.2	147.0
82.5°	99.7	99.7	99.7	99.7	99.7
85°	52.5	57.7	63.0	68.2	73.5
87.5°	31.5	31.5	36.7	42.0	47.2
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)