

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: P563525

Luminaire Tested: FSR-24-4-LD4-3STD-40-UNV-81-86-EDD

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P563525  
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-40-UNV-81-86-EDD  
Description: 2X4 FSR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .250 CLEAR PC ENVIRONMENTAL SI  
LENSES WITH, 80 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

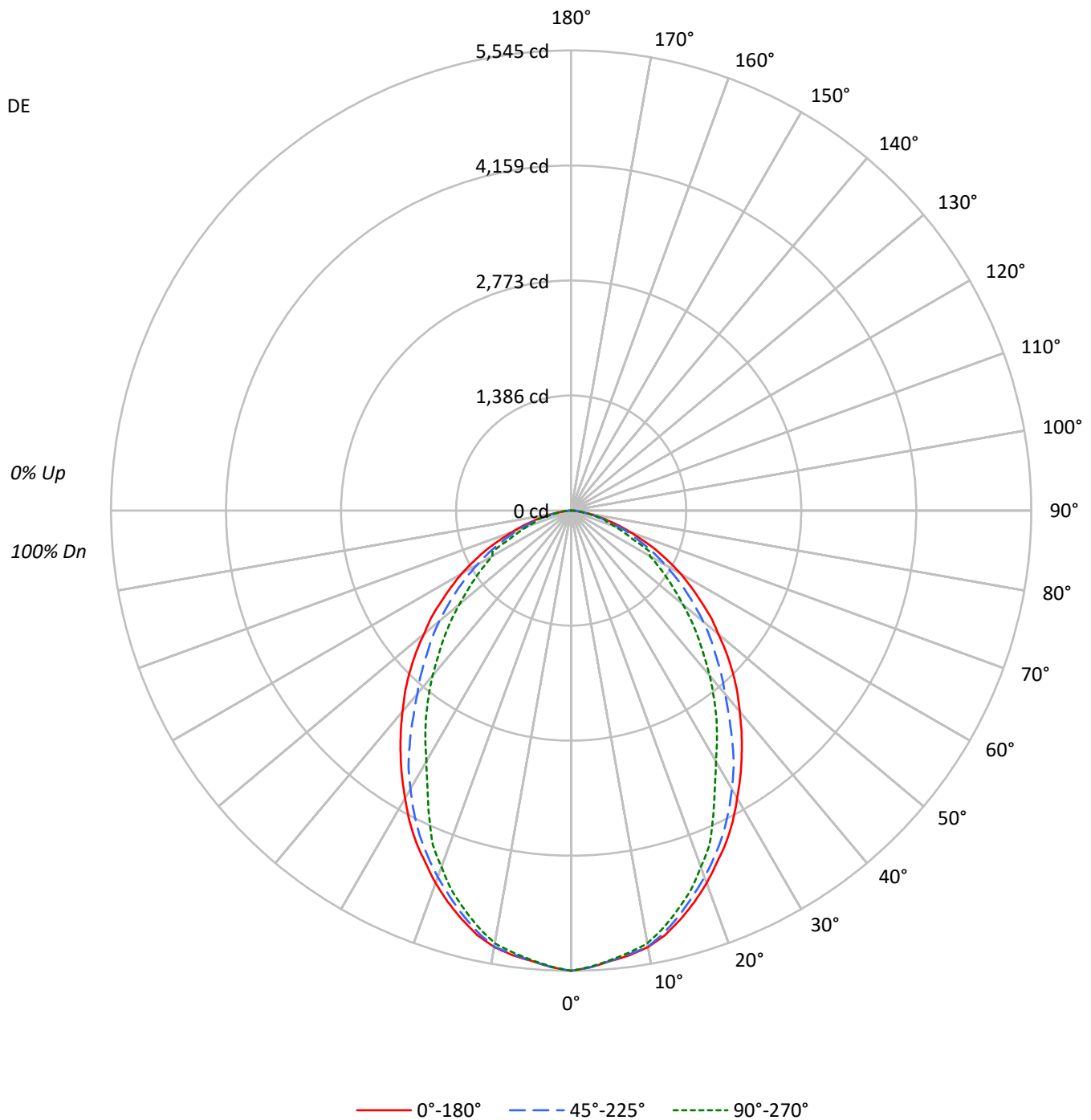
Lumens per Lamp: N/A  
Luminaire Lumens: 10886.0 lumens  
Efficiency: N/A  
Efficacy: 109.0 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 99.9  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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	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°	7461	7461	7461
5°	7360	7351	7342
10°	7296	7287	7235
15°	7099	7028	6929
20°	6838	6728	6545
25°	6557	6415	6015
30°	6215	6016	5418
35°	5886	5560	5012
40°	5551	5067	4560
45°	5233	4684	4123
50°	4844	4348	3677
55°	4481	3940	3293
60°	4106	3519	2950
65°	3613	3082	2613
70°	2976	2698	2219
75°	2366	2066	2166
80°	1589	1490	1391
85°	990	1187	1385

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 5233 cd/sqm

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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	516.2	4.7
10°-20°	1416.6	13.0
20°-30°	1961.2	18.0
30°-40°	2091.2	19.2
40°-50°	1907.8	17.5
50°-60°	1494.6	13.7
60°-70°	974.1	8.9
70°-80°	431.6	4.0
80°-90°	92.7	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°	3894.0	35.8
0°-40°	5985.2	55.0
0°-60°	9387.7	86.2
0°-90°	10886.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	10886.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	5545	5545	5545	5545	5545	
5°	5449	5443	5443	5436	5436	517
15°	5096	5096	5045	4994	4975	1433
25°	4417	4391	4321	4167	4052	2028
35°	3584	3558	3385	3128	3052	2240
45°	2750	2692	2462	2256	2167	2118
55°	1910	1853	1680	1481	1404	1713
65°	1135	1071	968	987	821	1118
75°	455	423	398	378	417	488
85°	64	70	77	83	90	89
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	5545.2	5545.2	5545.2	5545.2	5545.2
2.5°	5506.7	5506.7	5506.7	5500.3	5500.3
5°	5449.0	5442.6	5442.6	5436.2	5436.2
7.5°	5404.1	5397.7	5391.3	5384.9	5372.1
10°	5340.0	5340.0	5333.6	5301.6	5295.2
12.5°	5237.5	5231.1	5205.4	5160.5	5147.7
15°	5096.4	5096.4	5045.2	4993.9	4974.6
17.5°	4942.6	4936.2	4872.1	4820.8	4795.1
20°	4775.9	4763.1	4699.0	4615.6	4570.8
22.5°	4590.0	4590.0	4513.1	4404.1	4359.2
25°	4416.9	4391.3	4320.8	4166.9	4051.5
27.5°	4218.2	4179.7	4102.8	3884.8	3750.2
30°	4000.2	3981.0	3872.0	3589.9	3487.4
32.5°	3795.1	3763.0	3647.6	3352.8	3269.4
35°	3583.5	3557.9	3384.8	3128.4	3051.5
37.5°	3372.0	3339.9	3122.0	2916.8	2820.7
40°	3160.4	3122.0	2884.8	2698.9	2596.3
42.5°	2961.7	2910.4	2679.6	2480.9	2365.5
45°	2750.2	2692.5	2461.7	2256.5	2166.8
47.5°	2538.6	2487.3	2275.8	2064.2	1961.6
50°	2314.2	2269.4	2077.0	1865.5	1756.5
52.5°	2128.3	2057.8	1871.9	1660.3	1570.6
55°	1910.4	1852.7	1679.6	1480.9	1403.9
57.5°	1711.6	1653.9	1493.7	1307.8	1243.7
60°	1525.7	1442.4	1307.8	1147.5	1096.2
62.5°	1320.6	1256.5	1141.1	1006.5	1070.6
65°	1134.7	1070.6	968.0	987.2	820.6
67.5°	929.5	897.5	807.7	718.0	692.3
70°	756.5	718.0	685.9	589.8	564.1
72.5°	602.6	564.1	519.3	468.0	448.7
75°	455.2	423.1	397.5	378.2	416.7
77.5°	314.1	301.3	282.1	262.8	256.4
80°	205.1	198.7	192.3	185.9	179.5
82.5°	121.8	121.8	121.8	121.8	121.8
85°	64.1	70.5	76.9	83.3	89.7
87.5°	38.5	38.5	44.9	51.3	57.7
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)