

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: P561309

Luminaire Tested: FSR-12-4-LD4-1STD-50-UNV-82-96-EDD

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P561309  
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-12-4-LD4-1STD-50-UNV-82-96-EDD  
Description: 1X4 FSR TROFFER WITH .187 CLEAR PC FIXTURE SIDE AND .250 CLEAR TEMPERED GLASS ENVIRONMENTAL SIDE LENSES WITH, 80 CRI AND 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

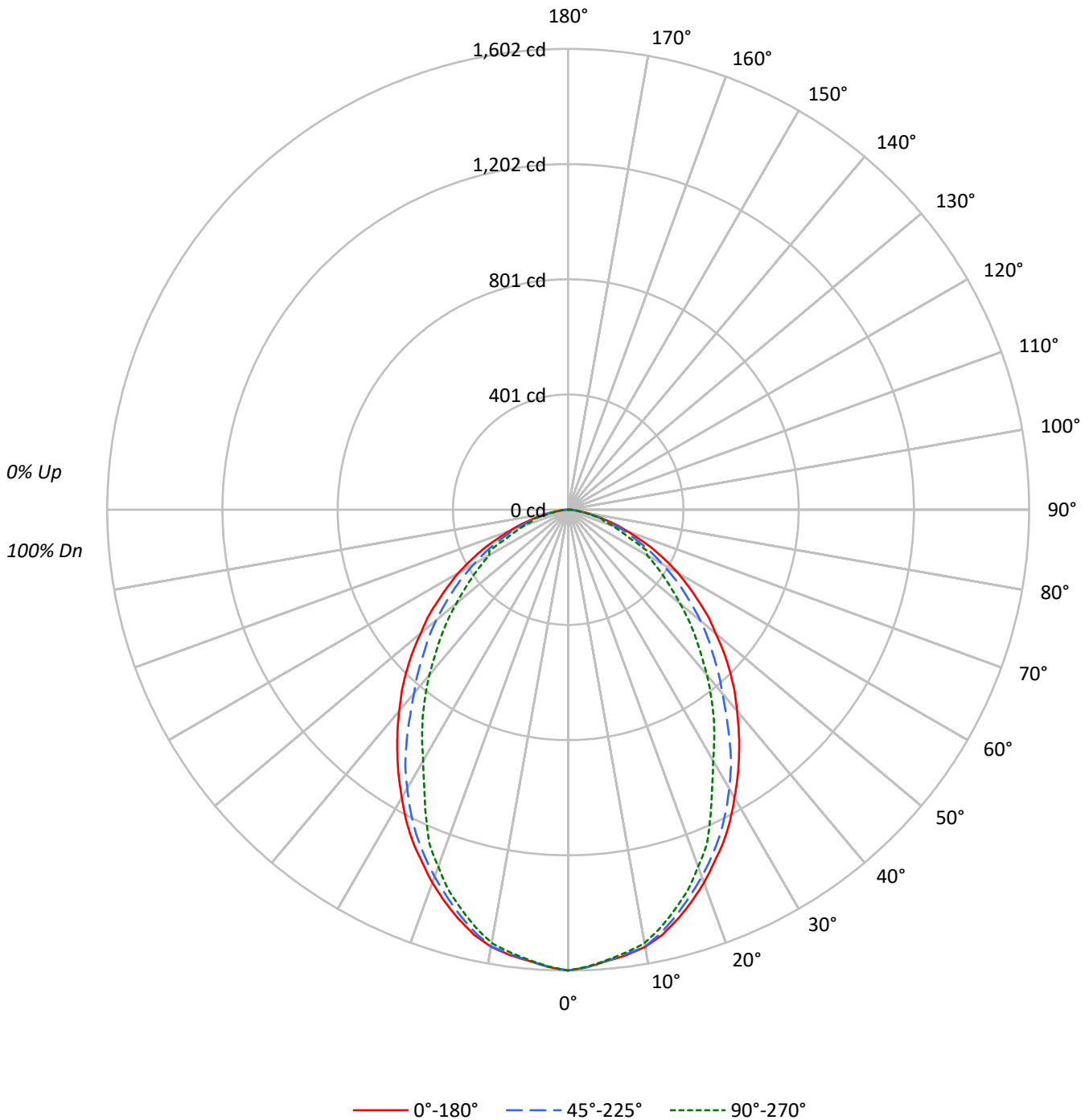
Lumens per Lamp: N/A  
Luminaire Lumens: 3145.0 lumens  
Efficiency: N/A  
Efficacy: 94.4 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 33.3  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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°	4311	4311	4311
5°	4252	4247	4242
10°	4216	4210	4180
15°	4102	4061	4004
20°	3951	3888	3781
25°	3789	3706	3475
30°	3591	3476	3131
35°	3401	3212	2896
40°	3208	2928	2635
45°	3024	2707	2382
50°	2799	2512	2125
55°	2589	2276	1903
60°	2372	2033	1704
65°	2087	1781	1510
70°	1719	1559	1282
75°	1367	1194	1252
80°	919	862	804
85°	571	685	800

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 3024 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	149.1	4.7
10°-20°	409.3	13.0
20°-30°	566.6	18.0
30°-40°	604.2	19.2
40°-50°	551.2	17.5
50°-60°	431.8	13.7
60°-70°	281.4	8.9
70°-80°	124.7	4.0
80°-90°	26.8	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°	1125.0	35.8
0°-40°	1729.2	55.0
0°-60°	2712.1	86.2
0°-90°	3145.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3145.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1602	1602	1602	1602	1602	
5°	1574	1572	1572	1570	1570	149
15°	1472	1472	1458	1443	1437	414
25°	1276	1269	1248	1204	1170	586
35°	1035	1028	978	904	882	647
45°	794	778	711	652	626	612
55°	552	535	485	428	406	495
65°	328	309	280	285	237	323
75°	132	122	115	109	120	141
85°	18	20	22	24	26	26
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1602.0	1602.0	1602.0	1602.0	1602.0
2.5°	1590.9	1590.9	1590.9	1589.1	1589.1
5°	1574.2	1572.4	1572.4	1570.5	1570.5
7.5°	1561.3	1559.4	1557.6	1555.7	1552.0
10°	1542.8	1542.8	1540.9	1531.6	1529.8
12.5°	1513.1	1511.3	1503.9	1490.9	1487.2
15°	1472.4	1472.4	1457.6	1442.7	1437.2
17.5°	1427.9	1426.1	1407.6	1392.7	1385.3
20°	1379.8	1376.1	1357.6	1333.5	1320.5
22.5°	1326.1	1326.1	1303.8	1272.4	1259.4
25°	1276.1	1268.7	1248.3	1203.8	1170.5
27.5°	1218.6	1207.5	1185.3	1122.3	1083.4
30°	1155.7	1150.1	1118.6	1037.1	1007.5
32.5°	1096.4	1087.2	1053.8	968.6	944.5
35°	1035.3	1027.9	977.9	903.8	881.6
37.5°	974.2	964.9	901.9	842.7	814.9
40°	913.1	901.9	833.4	779.7	750.1
42.5°	855.6	840.8	774.2	716.7	683.4
45°	794.5	777.9	711.2	651.9	626.0
47.5°	733.4	718.6	657.5	596.4	566.7
50°	668.6	655.6	600.1	538.9	507.5
52.5°	614.9	594.5	540.8	479.7	453.8
55°	551.9	535.2	485.2	427.8	405.6
57.5°	494.5	477.8	431.5	377.8	359.3
60°	440.8	416.7	377.8	331.5	316.7
62.5°	381.5	363.0	329.7	290.8	309.3
65°	327.8	309.3	279.7	285.2	237.1
67.5°	268.5	259.3	233.4	207.4	200.0
70°	218.5	207.4	198.2	170.4	163.0
72.5°	174.1	163.0	150.0	135.2	129.6
75°	131.5	122.2	114.8	109.3	120.4
77.5°	90.8	87.0	81.5	75.9	74.1
80°	59.3	57.4	55.6	53.7	51.9
82.5°	35.2	35.2	35.2	35.2	35.2
85°	18.5	20.4	22.2	24.1	25.9
87.5°	11.1	11.1	13.0	14.8	16.7
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)