

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: P561812

Luminaire Tested: FSR-12-4-LD4-2STD-40-UNV-82-86-EDD-90

Issue Date: 7/20/2021

Test Information

Test Method: LM-79-2019
Report Number: P561812
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-LD4-2STD-40-UNV-82-86-EDD-90
Description: 1X4 FSR TROFFER WITH .187 CLEAR PC FIXTURE SIDE AND .250 CLEAR PC ENVIRONMENTAL SI
LENSES WITH, 90 CRI AND 4000K CCT LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 5081.0 lumens
Efficiency: N/A
Efficacy: 76.3 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

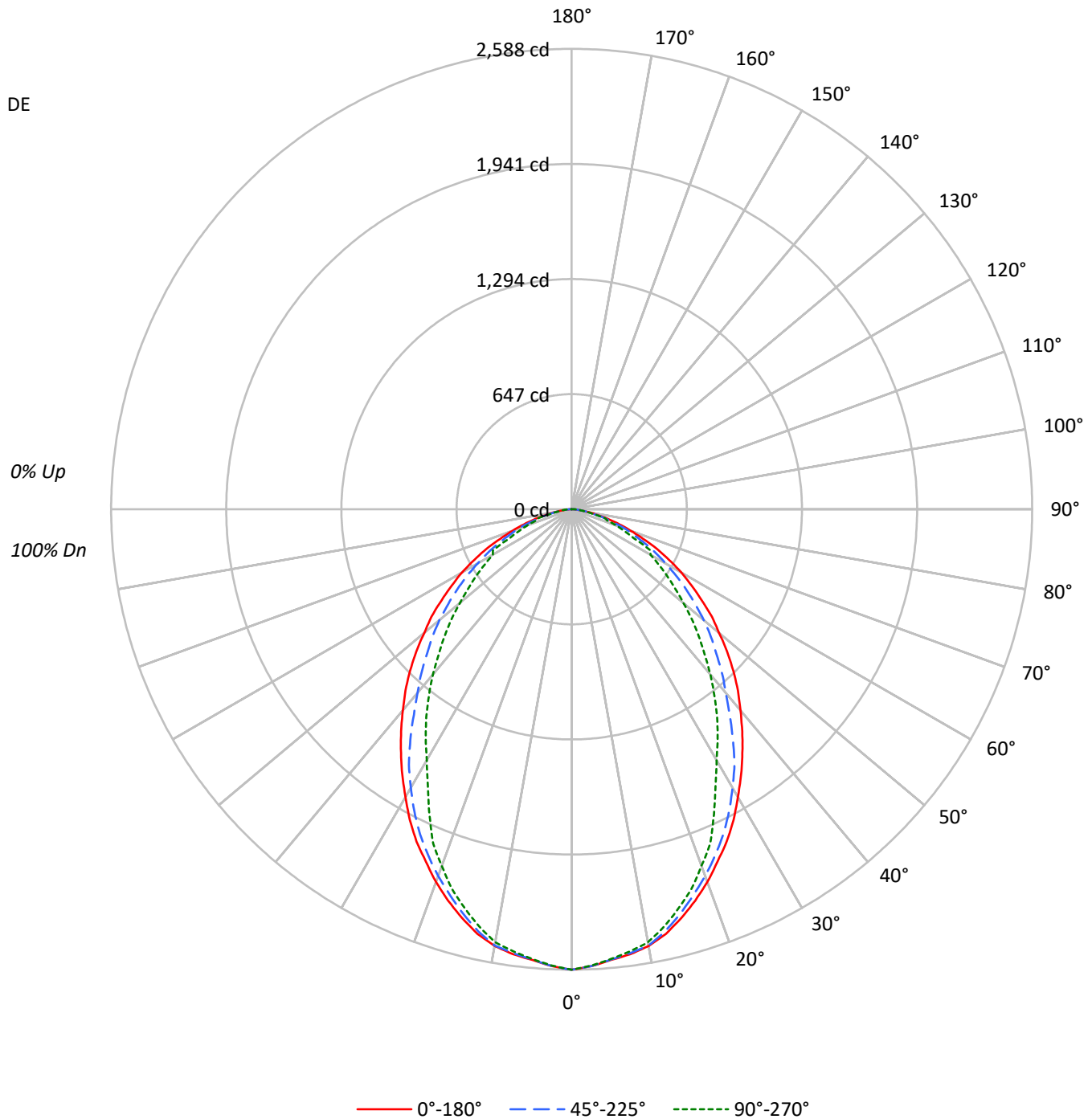
Input Watts (W): 66.6
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT



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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									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°	6965	6965	6965
5°	6870	6862	6854
10°	6810	6803	6753
15°	6627	6560	6469
20°	6383	6281	6109
25°	6121	5988	5615
30°	5802	5615	5058
35°	5495	5190	4679
40°	5182	4730	4257
45°	4885	4373	3849
50°	4522	4059	3432
55°	4183	3678	3074
60°	3832	3285	2754
65°	3372	2877	2439
70°	2778	2519	2072
75°	2208	1929	2022
80°	1483	1392	1299
85°	923	1108	1294

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 4885 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	240.9	4.7
10°-20°	661.2	13.0
20°-30°	915.4	18.0
30°-40°	976.1	19.2
40°-50°	890.5	17.5
50°-60°	697.6	13.7
60°-70°	454.7	8.9
70°-80°	201.4	4.0
80°-90°	43.3	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°	1817.5	35.8
0°-40°	2793.6	55.0
0°-60°	4381.7	86.2
0°-90°	5081.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	5081.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2588	2588	2588	2588	2588	
5°	2543	2540	2540	2537	2537	241
15°	2379	2379	2355	2331	2322	669
25°	2062	2050	2017	1945	1891	946
35°	1673	1661	1580	1460	1424	1046
45°	1284	1257	1149	1053	1011	989
55°	892	865	784	691	655	800
65°	530	500	452	461	383	522
75°	212	198	186	176	194	228
85°	30	33	36	39	42	42
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2588.2	2588.2	2588.2	2588.2	2588.2
2.5°	2570.2	2570.2	2570.2	2567.2	2567.2
5°	2543.3	2540.3	2540.3	2537.3	2537.3
7.5°	2522.4	2519.4	2516.4	2513.4	2507.4
10°	2492.4	2492.4	2489.5	2474.5	2471.5
12.5°	2444.6	2441.6	2429.6	2408.7	2402.7
15°	2378.7	2378.7	2354.8	2330.9	2321.9
17.5°	2306.9	2303.9	2274.0	2250.1	2238.1
20°	2229.1	2223.2	2193.2	2154.3	2133.4
22.5°	2142.4	2142.4	2106.5	2055.6	2034.6
25°	2061.6	2049.6	2016.7	1944.9	1891.0
27.5°	1968.8	1950.9	1915.0	1813.2	1750.4
30°	1867.1	1858.1	1807.2	1675.6	1627.7
32.5°	1771.3	1756.4	1702.5	1564.9	1526.0
35°	1672.6	1660.6	1579.8	1460.2	1424.3
37.5°	1573.9	1558.9	1457.2	1361.4	1316.5
40°	1475.1	1457.2	1346.5	1259.7	1211.8
42.5°	1382.4	1358.4	1250.7	1158.0	1104.1
45°	1283.6	1256.7	1149.0	1053.2	1011.3
47.5°	1184.9	1160.9	1062.2	963.5	915.6
50°	1080.2	1059.2	969.5	870.7	819.8
52.5°	993.4	960.5	873.7	775.0	733.1
55°	891.7	864.7	783.9	691.2	655.3
57.5°	798.9	772.0	697.2	610.4	580.5
60°	712.1	673.2	610.4	535.6	511.7
62.5°	616.4	586.5	532.6	469.8	499.7
65°	529.6	499.7	451.8	460.8	383.0
67.5°	433.9	418.9	377.0	335.1	323.2
70°	353.1	335.1	320.2	275.3	263.3
72.5°	281.3	263.3	242.4	218.4	209.4
75°	212.4	197.5	185.5	176.5	194.5
77.5°	146.6	140.6	131.7	122.7	119.7
80°	95.7	92.8	89.8	86.8	83.8
82.5°	56.9	56.9	56.9	56.9	56.9
85°	29.9	32.9	35.9	38.9	41.9
87.5°	18.0	18.0	20.9	23.9	26.9
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)