

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: P561178

Luminaire Tested: FSR-12-4-LD4-1STD-35-UNV-82-94-EDD-90

Issue Date: 7/20/2021

Test Information

Test Method: LM-79-2019
Report Number: P561178
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-35-UNV-82-94-EDD-90
Description: 1X4 FSR TROFFER WITH .187 CLEAR PC FIXTURE SIDE AND .187 CLEAR TEMPERED GLASS ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 3500K CCT LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 2591.0 lumens
Efficiency: N/A
Efficacy: 77.8 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

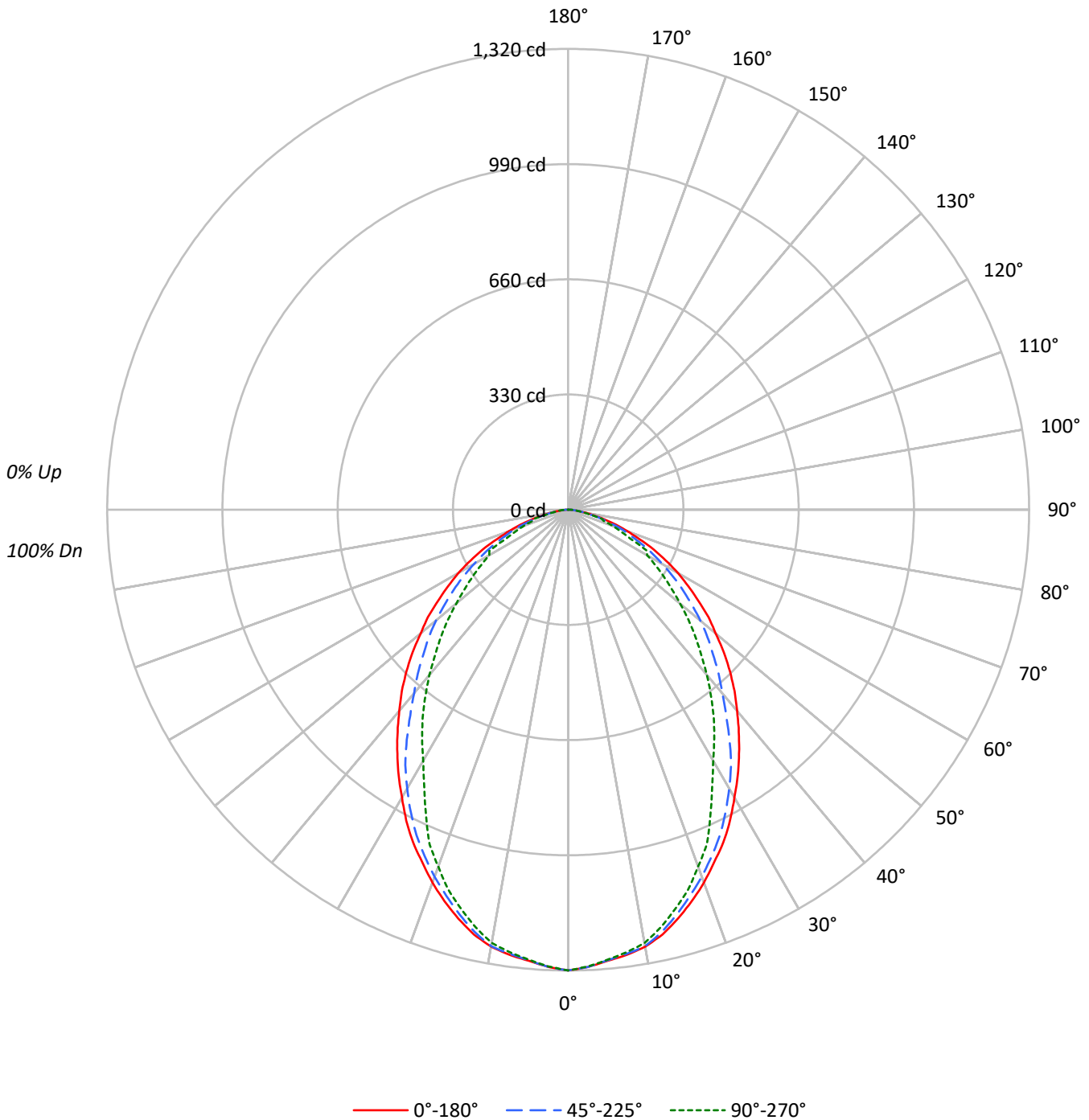
Input Watts (W): 33.3
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT



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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	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°	3552	3552	3552
5°	3503	3499	3495
10°	3473	3469	3444
15°	3379	3345	3299
20°	3255	3203	3115
25°	3121	3053	2863
30°	2958	2864	2579
35°	2802	2646	2386
40°	2642	2412	2171
45°	2491	2230	1963
50°	2306	2070	1750
55°	2133	1876	1568
60°	1954	1675	1404
65°	1720	1467	1244
70°	1416	1285	1057
75°	1126	984	1031
80°	756	710	662
85°	472	565	661

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 2491 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	122.9	4.7
10°-20°	337.2	13.0
20°-30°	466.8	18.0
30°-40°	497.7	19.2
40°-50°	454.1	17.5
50°-60°	355.7	13.7
60°-70°	231.9	8.9
70°-80°	102.7	4.0
80°-90°	22.1	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°	926.8	35.8
0°-40°	1424.6	55.0
0°-60°	2234.4	86.2
0°-90°	2591.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2591.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1320	1320	1320	1320	1320	
5°	1297	1295	1295	1294	1294	123
15°	1213	1213	1201	1189	1184	341
25°	1051	1045	1028	992	964	483
35°	853	847	806	745	726	533
45°	655	641	586	537	516	504
55°	455	441	400	352	334	408
65°	270	255	230	235	195	266
75°	108	101	95	90	99	116
85°	15	17	18	20	21	21
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	<i>1319.8</i>	<i>1319.8</i>	<i>1319.8</i>	<i>1319.8</i>	<i>1319.8</i>
2.5°	<i>1310.7</i>	1310.7	1310.7	1309.1	1309.1
5°	<i>1296.9</i>	1295.4	1295.4	1293.9	1293.9
7.5°	<i>1286.3</i>	1284.7	1283.2	1281.7	1278.6
10°	<i>1271.0</i>	1271.0	1269.5	1261.8	1260.3
12.5°	<i>1246.6</i>	1245.1	1239.0	1228.3	1225.2
15°	<i>1213.0</i>	1213.0	1200.8	1188.6	1184.0
17.5°	<i>1176.4</i>	1174.9	1159.6	1147.4	1141.3
20°	<i>1136.7</i>	1133.7	1118.4	1098.6	1087.9
22.5°	<i>1092.5</i>	1092.5	1074.2	1048.2	1037.5
25°	<i>1051.3</i>	1045.2	1028.4	991.8	964.3
27.5°	<i>1004.0</i>	994.8	976.5	924.6	892.6
30°	<i>952.1</i>	947.5	921.6	854.5	830.0
32.5°	<i>903.3</i>	895.6	868.2	798.0	778.2
35°	<i>852.9</i>	846.8	805.6	744.6	726.3
37.5°	<i>802.6</i>	794.9	743.1	694.2	671.4
40°	<i>752.2</i>	743.1	686.6	642.4	618.0
42.5°	<i>704.9</i>	692.7	637.8	590.5	563.0
45°	<i>654.6</i>	640.8	585.9	537.1	515.7
47.5°	<i>604.2</i>	592.0	541.7	491.3	466.9
50°	<i>550.8</i>	540.1	494.4	444.0	418.1
52.5°	<i>506.6</i>	489.8	445.5	395.2	373.8
55°	<i>454.7</i>	441.0	399.8	352.5	334.2
57.5°	<i>407.4</i>	393.7	355.5	311.3	296.0
60°	<i>363.1</i>	343.3	311.3	273.1	260.9
62.5°	<i>314.3</i>	299.1	271.6	239.6	254.8
65°	<i>270.1</i>	254.8	230.4	235.0	195.3
67.5°	<i>221.2</i>	213.6	192.3	170.9	164.8
70°	<i>180.0</i>	170.9	163.3	140.4	134.3
72.5°	<i>143.4</i>	134.3	123.6	111.4	106.8
75°	<i>108.3</i>	100.7	94.6	90.0	99.2
77.5°	<i>74.8</i>	71.7	67.1	62.6	61.0
80°	<i>48.8</i>	47.3	45.8	44.2	42.7
82.5°	<i>29.0</i>	29.0	29.0	29.0	29.0
85°	<i>15.3</i>	16.8	18.3	19.8	21.4
87.5°	<i>9.2</i>	9.2	10.7	12.2	13.7
90°	<i>0.0</i>	0.0	0.0	0.0	0.0

(END OF REPORT)