

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: P561576

Luminaire Tested: FSR-12-4-LD4-2LO-35-UNV-93-88-EDD-90

Issue Date: 7/20/2021

Test Information

Test Method: LM-79-2019
Report Number: P561576
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-LD4-2LO-35-UNV-93-88-EDD-90
Description: 1X4 FSR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .500 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 3500K CCT LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 3512.0 lumens
Efficiency: N/A
Efficacy: 75.0 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

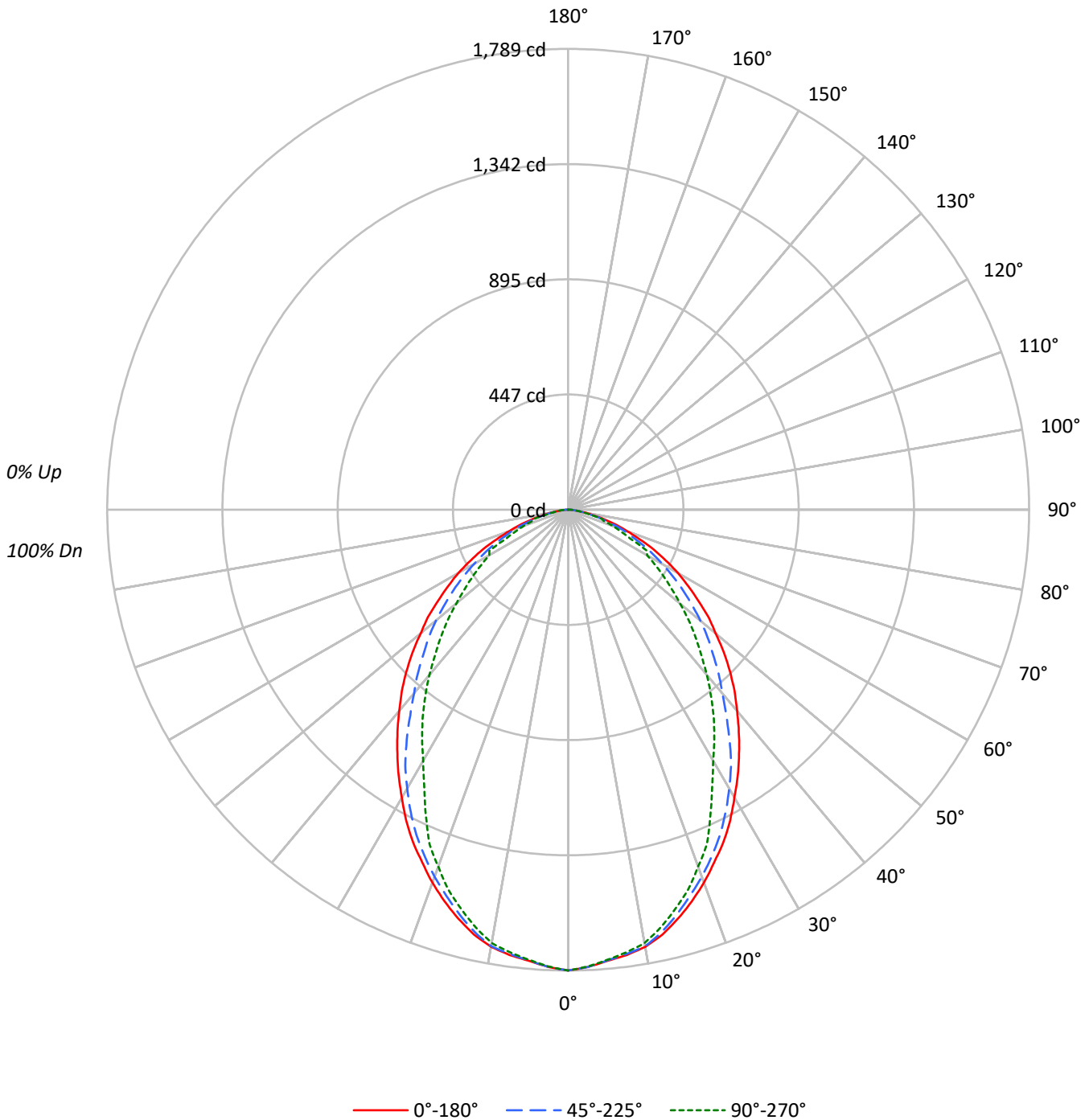
Input Watts (W): 46.8
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT



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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°	4814	4814	4814
5°	4749	4743	4737
10°	4708	4702	4668
15°	4581	4534	4471
20°	4412	4341	4223
25°	4231	4139	3881
30°	4010	3882	3496
35°	3798	3587	3234
40°	3582	3269	2942
45°	3376	3022	2660
50°	3126	2805	2372
55°	2891	2542	2125
60°	2649	2271	1904
65°	2331	1989	1685
70°	1920	1741	1432
75°	1526	1333	1397
80°	1026	961	897
85°	639	766	895

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 3376 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	166.5	4.7
10°-20°	457.0	13.0
20°-30°	632.7	18.0
30°-40°	674.7	19.2
40°-50°	615.5	17.5
50°-60°	482.2	13.7
60°-70°	314.3	8.9
70°-80°	139.2	4.0
80°-90°	29.9	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°	1256.3	35.8
0°-40°	1930.9	55.0
0°-60°	3028.6	86.2
0°-90°	3512.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3512.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1789	1789	1789	1789	1789	
5°	1758	1756	1756	1754	1754	167
15°	1644	1644	1628	1611	1605	462
25°	1425	1417	1394	1344	1307	654
35°	1156	1148	1092	1009	984	723
45°	887	869	794	728	699	683
55°	616	598	542	478	453	553
65°	366	345	312	318	265	361
75°	147	136	128	122	134	157
85°	21	23	25	27	29	29
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1789.0	1789.0	1789.0	1789.0	1789.0
2.5°	1776.6	1776.6	1776.6	1774.5	1774.5
5°	1757.9	1755.9	1755.9	1753.8	1753.8
7.5°	1743.5	1741.4	1739.3	1737.3	1733.1
10°	1722.8	1722.8	1720.7	1710.4	1708.3
12.5°	1689.7	1687.6	1679.4	1664.9	1660.7
15°	1644.2	1644.2	1627.6	1611.1	1604.9
17.5°	1594.6	1592.5	1571.8	1555.3	1547.0
20°	1540.8	1536.6	1516.0	1489.1	1474.6
22.5°	1480.8	1480.8	1456.0	1420.8	1406.4
25°	1425.0	1416.7	1393.9	1344.3	1307.1
27.5°	1360.9	1348.4	1323.6	1253.3	1209.9
30°	1290.5	1284.3	1249.2	1158.2	1125.1
32.5°	1224.4	1214.0	1176.8	1081.7	1054.8
35°	1156.1	1147.8	1092.0	1009.3	984.4
37.5°	1087.9	1077.5	1007.2	941.0	910.0
40°	1019.6	1007.2	930.7	870.7	837.6
42.5°	955.5	938.9	864.5	800.4	763.2
45°	887.2	868.6	794.2	728.0	699.0
47.5°	819.0	802.4	734.2	666.0	632.9
50°	746.6	732.1	670.1	601.8	566.7
52.5°	686.6	663.9	603.9	535.7	506.7
55°	616.3	597.7	541.9	477.7	452.9
57.5°	552.2	533.6	481.9	421.9	401.2
60°	492.2	465.3	421.9	370.2	353.7
62.5°	426.0	405.4	368.1	324.7	345.4
65°	366.1	345.4	312.3	318.5	264.7
67.5°	299.9	289.5	260.6	231.6	223.4
70°	244.0	231.6	221.3	190.3	182.0
72.5°	194.4	182.0	167.5	151.0	144.8
75°	146.8	136.5	128.2	122.0	134.4
77.5°	101.3	97.2	91.0	84.8	82.7
80°	66.2	64.1	62.0	60.0	57.9
82.5°	39.3	39.3	39.3	39.3	39.3
85°	20.7	22.7	24.8	26.9	29.0
87.5°	12.4	12.4	14.5	16.5	18.6
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)