

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: P562020

Luminaire Tested: FSR-24-4-LD4-1HI-35-UNV-93-86-EDD-90

Issue Date: 7/20/2021

Test Information

Test Method: LM-79-2019
Report Number: P562020
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-LD4-1HI-35-UNV-93-86-EDD-90
Description: 2X4 FSR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .250 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 3500K CCT LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 3889.0 lumens
Efficiency: N/A
Efficacy: 90.0 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

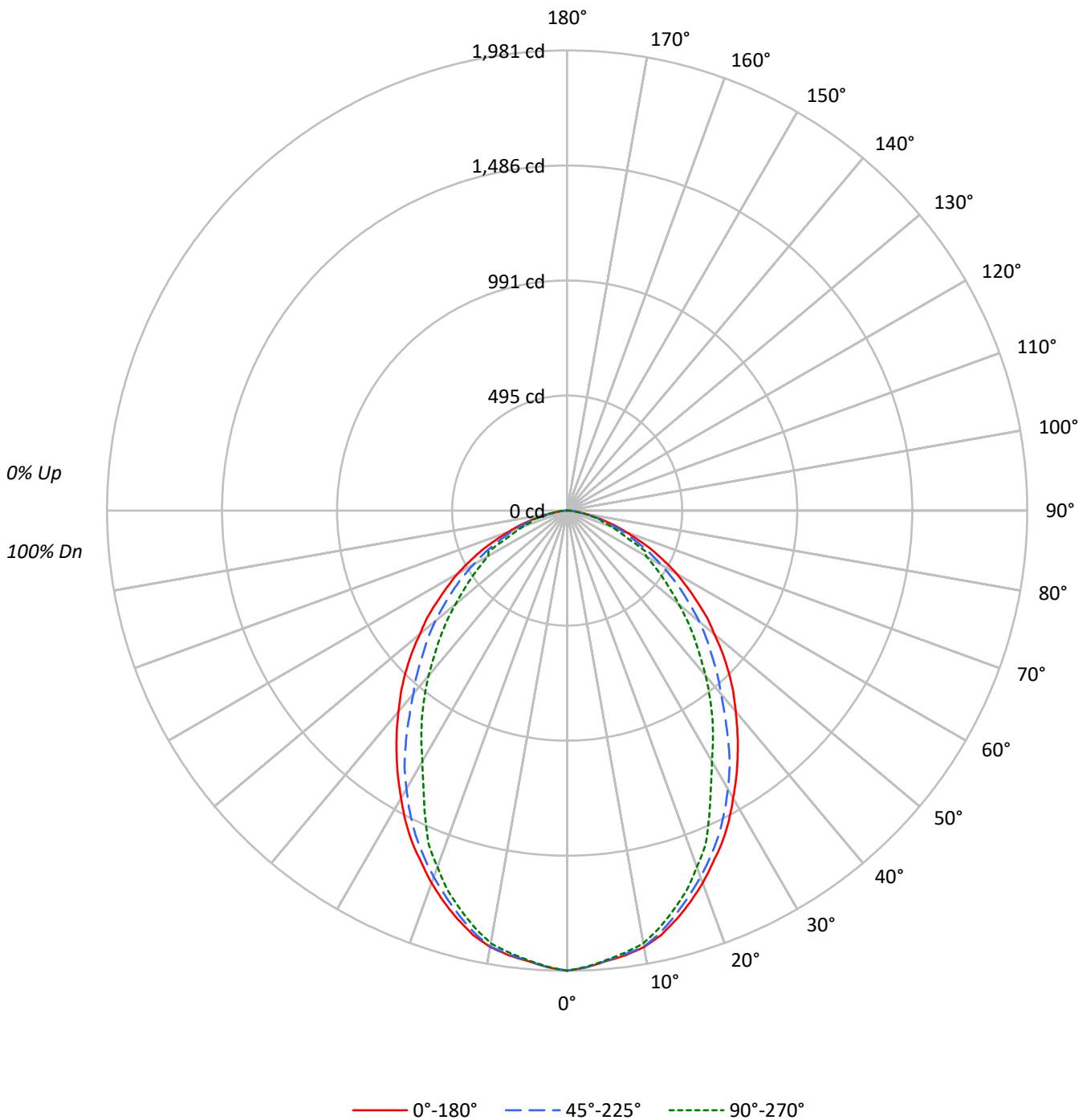
Input Watts (W): 43.2
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT



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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																												
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°	2665	2665	2665
5°	2629	2626	2623
10°	2606	2603	2585
15°	2536	2511	2476
20°	2443	2404	2338
25°	2343	2292	2149
30°	2220	2149	1936
35°	2103	1986	1791
40°	1983	1810	1629
45°	1870	1673	1473
50°	1731	1553	1313
55°	1601	1407	1176
60°	1467	1257	1054
65°	1291	1101	933
70°	1063	964	793
75°	845	738	774
80°	568	532	497
85°	354	425	496

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 1870 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	184.4	4.7
10°-20°	506.1	13.0
20°-30°	700.6	18.0
30°-40°	747.1	19.2
40°-50°	681.6	17.5
50°-60°	533.9	13.7
60°-70°	348.0	8.9
70°-80°	154.2	4.0
80°-90°	33.1	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°	1391.1	35.8
0°-40°	2138.2	55.0
0°-60°	3353.7	86.2
0°-90°	3889.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3889.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1981	1981	1981	1981	1981	
5°	1947	1944	1944	1942	1942	185
15°	1821	1821	1802	1784	1777	512
25°	1578	1569	1544	1489	1447	724
35°	1280	1271	1209	1118	1090	800
45°	982	962	879	806	774	757
55°	682	662	600	529	502	612
65°	405	382	346	353	293	400
75°	163	151	142	135	149	174
85°	23	25	28	30	32	32
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1981.0	1981.0	1981.0	1981.0	1981.0
2.5°	1967.3	1967.3	1967.3	1965.0	1965.0
5°	1946.7	1944.4	1944.4	1942.1	1942.1
7.5°	1930.6	1928.3	1926.0	1923.8	1919.2
10°	1907.7	1907.7	1905.4	1894.0	1891.7
12.5°	1871.1	1868.8	1859.6	1843.6	1839.0
15°	1820.7	1820.7	1802.4	1784.0	1777.2
17.5°	1765.7	1763.4	1740.5	1722.2	1713.1
20°	1706.2	1701.6	1678.7	1648.9	1632.9
22.5°	1639.8	1639.8	1612.3	1573.4	1557.3
25°	1577.9	1568.8	1543.6	1488.6	1447.4
27.5°	1506.9	1493.2	1465.7	1387.8	1339.8
30°	1429.1	1422.2	1383.3	1282.5	1245.9
32.5°	1355.8	1344.3	1303.1	1197.8	1168.0
35°	1280.2	1271.0	1209.2	1117.6	1090.1
37.5°	1204.6	1193.2	1115.3	1042.0	1007.7
40°	1129.1	1115.3	1030.6	964.2	927.5
42.5°	1058.1	1039.7	957.3	886.3	845.1
45°	982.5	961.9	879.4	806.1	774.1
47.5°	906.9	888.6	813.0	737.4	700.8
50°	826.8	810.7	742.0	666.4	627.5
52.5°	760.3	735.1	668.7	593.2	561.1
55°	682.5	661.9	600.0	529.0	501.5
57.5°	611.5	590.9	533.6	467.2	444.3
60°	545.1	515.3	467.2	409.9	391.6
62.5°	471.8	448.9	407.7	359.6	382.5
65°	405.4	382.5	345.8	352.7	293.1
67.5°	332.1	320.6	288.6	256.5	247.3
70°	270.2	256.5	245.0	210.7	201.5
72.5°	215.3	201.5	185.5	167.2	160.3
75°	162.6	151.2	142.0	135.1	148.9
77.5°	112.2	107.6	100.8	93.9	91.6
80°	73.3	71.0	68.7	66.4	64.1
82.5°	43.5	43.5	43.5	43.5	43.5
85°	22.9	25.2	27.5	29.8	32.1
87.5°	13.7	13.7	16.0	18.3	20.6
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)