

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: P560868

Luminaire Tested: FSR-12-4-LD4-1HI-40-UNV-93-86-EDD-90

Issue Date: 7/20/2021

Test Information

Test Method: LM-79-2019
Report Number: P560868
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-LD4-1HI-40-UNV-93-86-EDD-90
Description: 1X4 FSR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .250 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 4000K CCT LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 3357.0 lumens
Efficiency: N/A
Efficacy: 77.7 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

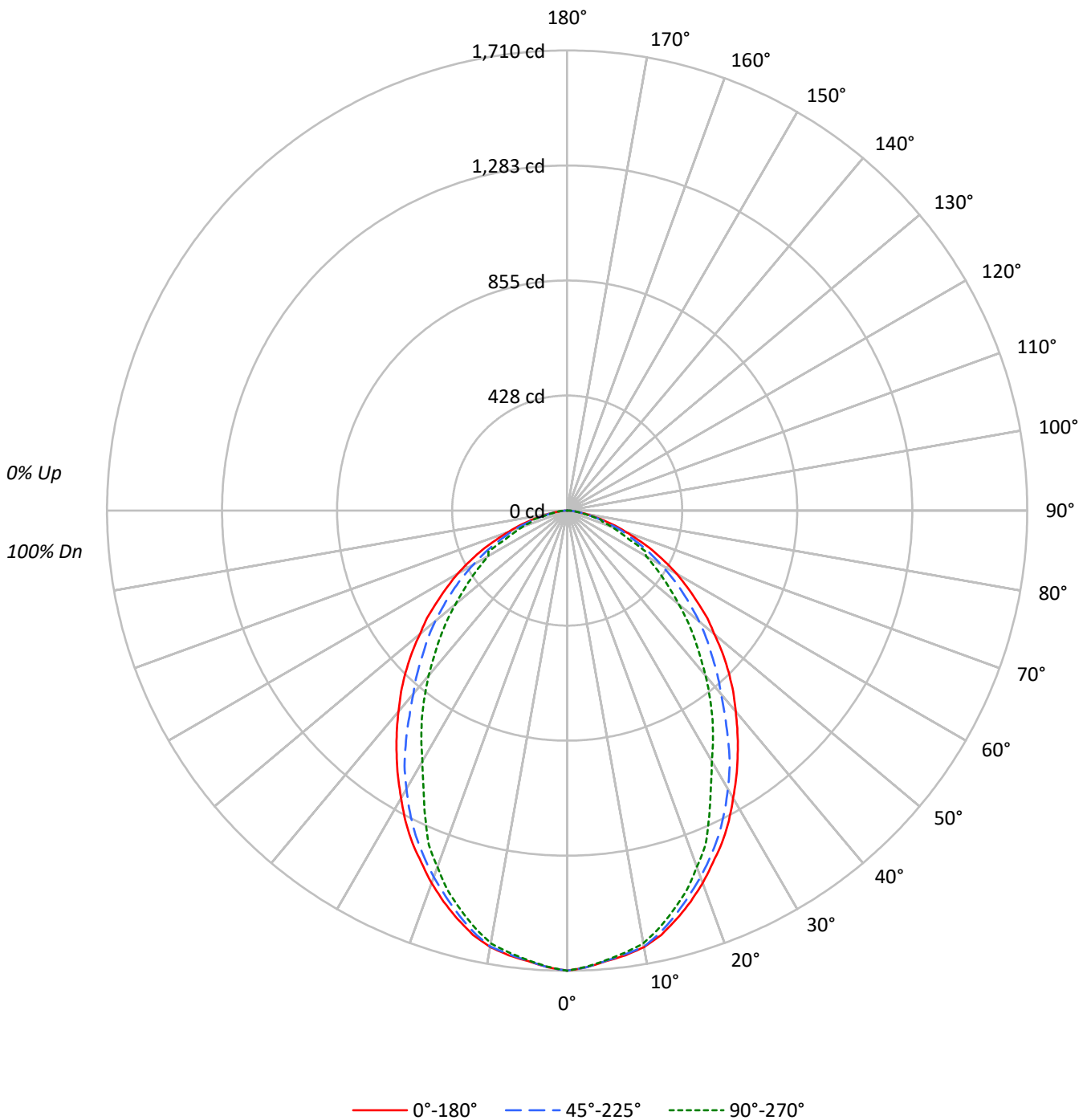
Input Watts (W): 43.2
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT



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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	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°	4602	4602	4602
5°	4539	4534	4528
10°	4500	4494	4462
15°	4378	4334	4274
20°	4218	4150	4036
25°	4044	3956	3710
30°	3833	3710	3342
35°	3630	3429	3091
40°	3424	3125	2812
45°	3228	2889	2543
50°	2988	2681	2268
55°	2764	2430	2031
60°	2532	2171	1819
65°	2228	1901	1611
70°	1836	1664	1369
75°	1460	1275	1336
80°	981	919	859
85°	611	732	855

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 3228 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	159.2	4.7
10°-20°	436.9	13.0
20°-30°	604.8	18.0
30°-40°	644.9	19.2
40°-50°	588.3	17.5
50°-60°	460.9	13.7
60°-70°	300.4	8.9
70°-80°	133.1	4.0
80°-90°	28.6	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°	1200.8	35.8
0°-40°	1845.7	55.0
0°-60°	2894.9	86.2
0°-90°	3357.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3357.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1710	1710	1710	1710	1710	
5°	1680	1678	1678	1676	1676	160
15°	1572	1572	1556	1540	1534	442
25°	1362	1354	1332	1285	1249	625
35°	1105	1097	1044	965	941	691
45°	848	830	759	696	668	653
55°	589	571	518	457	433	528
65°	350	330	298	304	253	345
75°	140	130	123	117	128	150
85°	20	22	24	26	28	27
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1710.0	1710.0	1710.0	1710.0	1710.0
2.5°	1698.1	1698.1	1698.1	1696.2	1696.2
5°	1680.4	1678.4	1678.4	1676.4	1676.4
7.5°	1666.5	1664.5	1662.6	1660.6	1656.6
10°	1646.8	1646.8	1644.8	1634.9	1632.9
12.5°	1615.1	1613.1	1605.2	1591.4	1587.4
15°	1571.6	1571.6	1555.8	1540.0	1534.1
17.5°	1524.2	1522.2	1502.4	1486.6	1478.7
20°	1472.8	1468.8	1449.1	1423.4	1409.5
22.5°	1415.5	1415.5	1391.7	1358.1	1344.3
25°	1362.1	1354.2	1332.4	1285.0	1249.4
27.5°	1300.8	1288.9	1265.2	1198.0	1156.5
30°	1233.6	1227.6	1194.0	1107.1	1075.4
32.5°	1170.3	1160.4	1124.9	1033.9	1008.2
35°	1105.1	1097.2	1043.8	964.7	941.0
37.5°	1039.8	1030.0	962.7	899.5	869.8
40°	974.6	962.7	889.6	832.3	800.6
42.5°	913.3	897.5	826.3	765.1	729.5
45°	848.1	830.3	759.1	695.9	668.2
47.5°	782.8	767.0	701.8	636.6	604.9
50°	713.7	699.8	640.5	575.3	541.7
52.5°	656.3	634.6	577.3	512.0	484.3
55°	589.1	571.3	517.9	456.7	432.9
57.5°	527.8	510.0	460.6	403.3	383.5
60°	470.5	444.8	403.3	353.9	338.0
62.5°	407.2	387.5	351.9	310.4	330.1
65°	349.9	330.1	298.5	304.4	253.0
67.5°	286.6	276.8	249.1	221.4	213.5
70°	233.3	221.4	211.5	181.9	174.0
72.5°	185.8	174.0	160.1	144.3	138.4
75°	140.4	130.5	122.6	116.6	128.5
77.5°	96.9	92.9	87.0	81.1	79.1
80°	63.3	61.3	59.3	57.3	55.4
82.5°	37.6	37.6	37.6	37.6	37.6
85°	19.8	21.7	23.7	25.7	27.7
87.5°	11.9	11.9	13.8	15.8	17.8
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)