

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: P560910

Luminaire Tested: FSR-12-4-LD4-1HI-50-UNV-81-97-EDD-90

Issue Date: 7/20/2021

Test Information

Test Method: LM-79-2019
Report Number: P560910
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-50-UNV-81-97-EDD-90
Description: 1X4 FSR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .375 CLEAR TEMPERED GLASS ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 5000K CCT LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 3305.0 lumens
Efficiency: N/A
Efficacy: 76.5 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

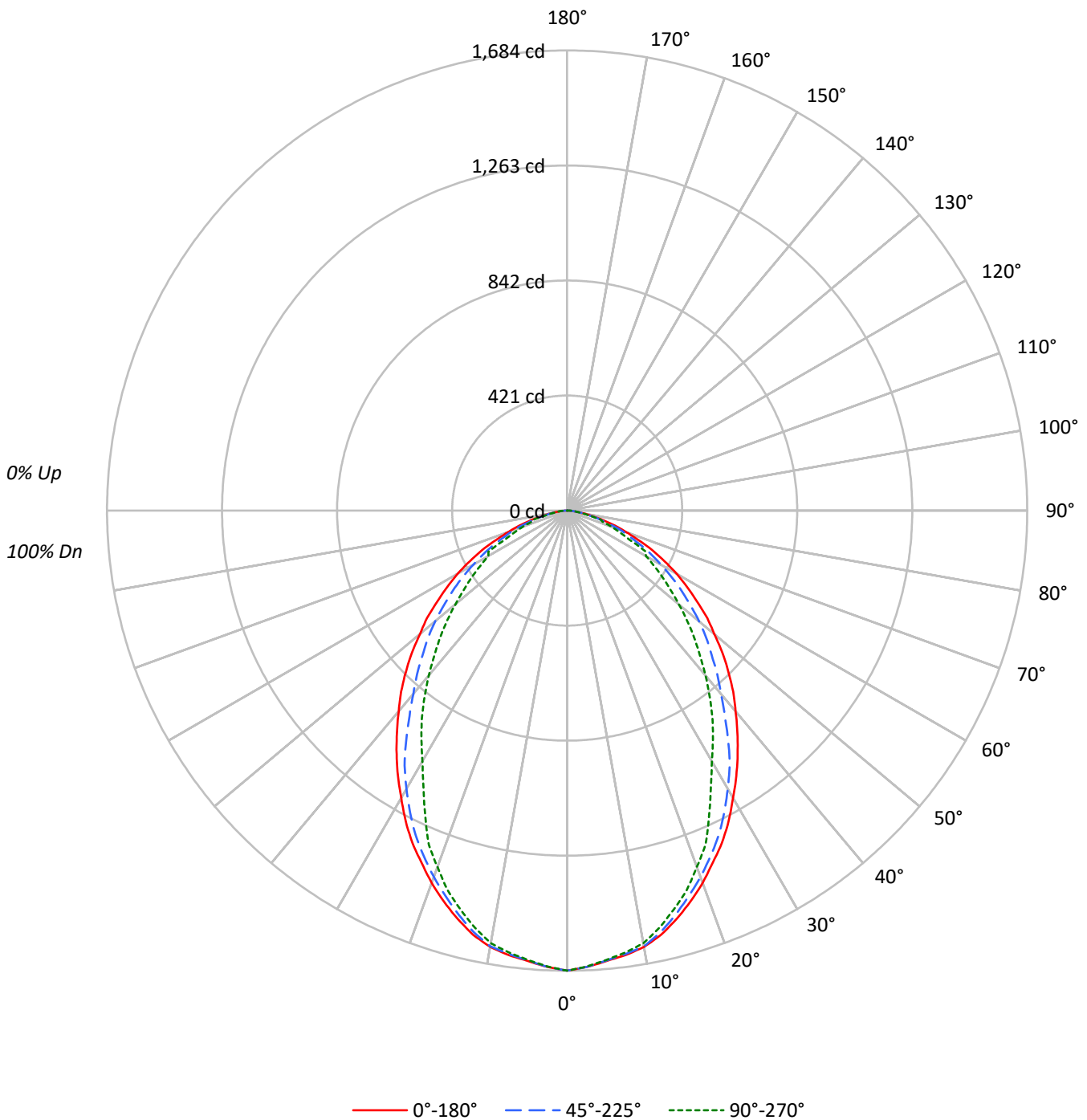
Input Watts (W): 43.2
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT



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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	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°	4530	4530	4530
5°	4469	4464	4458
10°	4430	4425	4393
15°	4311	4267	4208
20°	4152	4085	3974
25°	3982	3895	3652
30°	3774	3653	3290
35°	3574	3376	3043
40°	3371	3077	2769
45°	3177	2844	2503
50°	2941	2640	2233
55°	2721	2392	2000
60°	2493	2137	1791
65°	2194	1871	1586
70°	1807	1639	1348
75°	1437	1255	1315
80°	965	905	845
85°	602	722	840

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 3177 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	156.7	4.7
10°-20°	430.1	13.0
20°-30°	595.4	18.0
30°-40°	634.9	19.2
40°-50°	579.2	17.5
50°-60°	453.8	13.7
60°-70°	295.7	8.9
70°-80°	131.0	4.0
80°-90°	28.1	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°	1182.2	35.8
0°-40°	1817.1	55.0
0°-60°	2850.1	86.2
0°-90°	3305.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3305.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1684	1684	1684	1684	1684	
5°	1654	1652	1652	1650	1650	157
15°	1547	1547	1532	1516	1510	435
25°	1341	1333	1312	1265	1230	616
35°	1088	1080	1028	950	926	680
45°	835	817	747	685	658	643
55°	580	562	510	450	426	520
65°	344	325	294	300	249	339
75°	138	128	121	115	126	148
85°	20	21	23	25	27	27
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1683.5	1683.5	1683.5	1683.5	1683.5
2.5°	1671.8	1671.8	1671.8	1669.9	1669.9
5°	1654.3	1652.4	1652.4	1650.4	1650.4
7.5°	1640.7	1638.8	1636.8	1634.9	1631.0
10°	1621.2	1621.2	1619.3	1609.6	1607.6
12.5°	1590.1	1588.2	1580.4	1566.7	1562.9
15°	1547.3	1547.3	1531.7	1516.1	1510.3
17.5°	1500.6	1498.6	1479.2	1463.6	1455.8
20°	1450.0	1446.1	1426.6	1401.3	1387.7
22.5°	1393.5	1393.5	1370.2	1337.1	1323.5
25°	1341.0	1333.2	1311.8	1265.1	1230.0
27.5°	1280.6	1269.0	1245.6	1179.4	1138.6
30°	1214.5	1208.6	1175.5	1089.9	1058.8
32.5°	1152.2	1142.5	1107.4	1017.9	992.6
35°	1088.0	1080.2	1027.6	949.8	926.4
37.5°	1023.7	1014.0	947.8	885.6	856.4
40°	959.5	947.8	875.8	819.4	788.2
42.5°	899.2	883.6	813.5	753.2	718.2
45°	834.9	817.4	747.4	685.1	657.8
47.5°	770.7	755.2	690.9	626.7	595.6
50°	702.6	689.0	630.6	566.4	533.3
52.5°	646.2	624.8	568.3	504.1	476.8
55°	580.0	562.5	509.9	449.6	426.2
57.5°	519.7	502.1	453.5	397.0	377.6
60°	463.2	437.9	397.0	348.4	332.8
62.5°	400.9	381.5	346.4	305.6	325.0
65°	344.5	325.0	293.9	299.7	249.1
67.5°	282.2	272.5	245.2	218.0	210.2
70°	229.7	218.0	208.3	179.1	171.3
72.5°	182.9	171.3	157.6	142.1	136.2
75°	138.2	128.5	120.7	114.8	126.5
77.5°	95.4	91.5	85.6	79.8	77.9
80°	62.3	60.3	58.4	56.4	54.5
82.5°	37.0	37.0	37.0	37.0	37.0
85°	19.5	21.4	23.4	25.3	27.2
87.5°	11.7	11.7	13.6	15.6	17.5
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)