

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: P561440

Luminaire Tested: FSR-12-4-LD4-2HI-40-UNV-93-84-EDD-90

Issue Date: 7/20/2021

Test Information

Test Method: LM-79-2019
Report Number: P561440
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-LD4-2HI-40-UNV-93-84-EDD-90
Description: 1X4 FSR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .125 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 4000K CCT LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 6928.0 lumens
Efficiency: N/A
Efficacy: 80.2 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

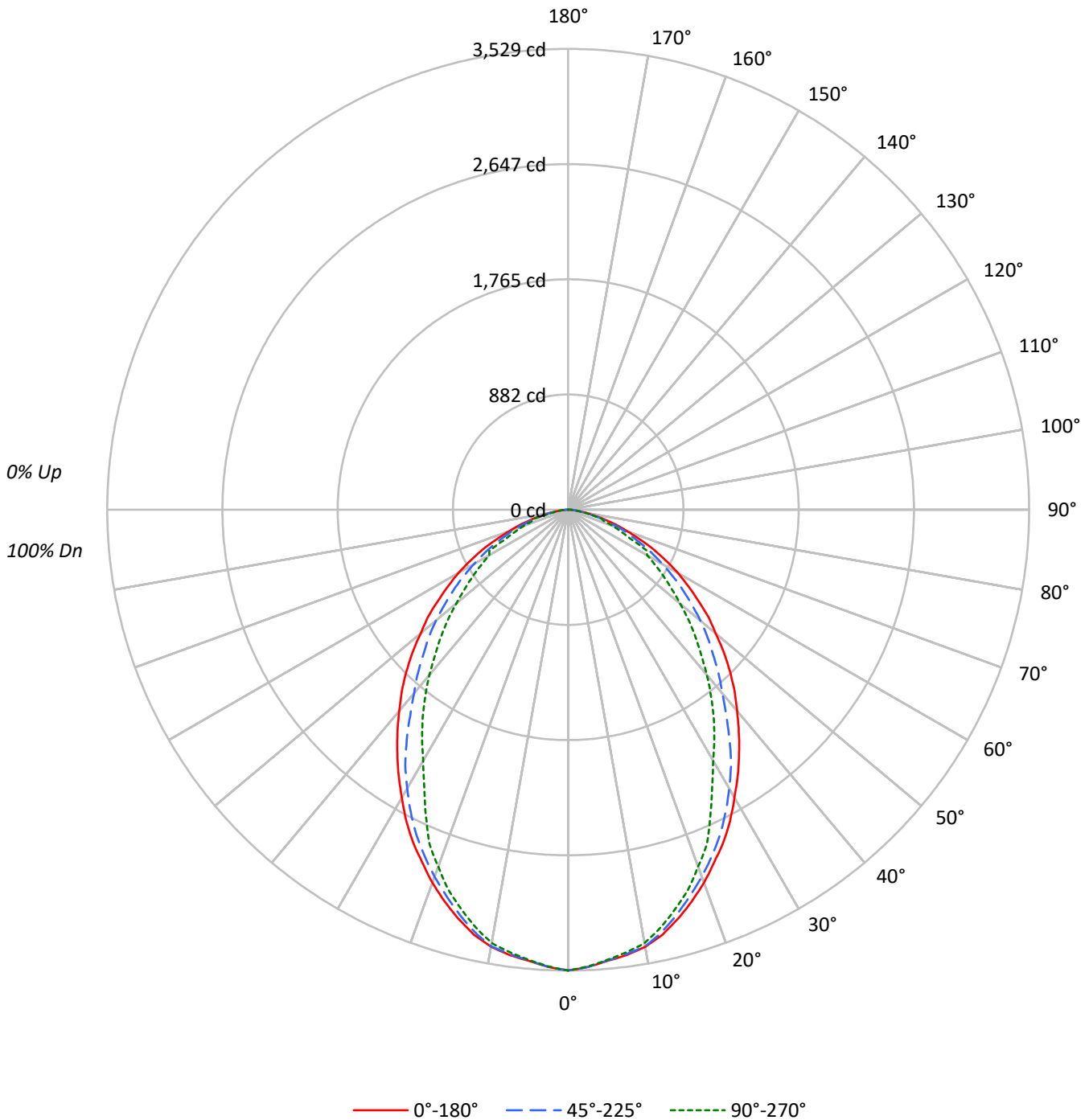
Input Watts (W): 86.4
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT



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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°	9496	9496	9496
5°	9367	9357	9346
10°	9286	9275	9208
15°	9036	8945	8820
20°	8704	8564	8330
25°	8346	8165	7656
30°	7910	7657	6896
35°	7492	7076	6380
40°	7065	6449	5804
45°	6661	5962	5248
50°	6166	5534	4680
55°	5704	5015	4192
60°	5226	4479	3754
65°	4598	3923	3325
70°	3788	3434	2825
75°	3012	2629	2757
80°	2024	1897	1770
85°	1260	1513	1763

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 6661 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	328.5	4.7
10°-20°	901.6	13.0
20°-30°	1248.1	18.0
30°-40°	1330.9	19.2
40°-50°	1214.2	17.5
50°-60°	951.2	13.7
60°-70°	619.9	8.9
70°-80°	274.7	4.0
80°-90°	59.0	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°	2478.2	35.8
0°-40°	3809.1	55.0
0°-60°	5974.4	86.2
0°-90°	6928.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	6928.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	3529	3529	3529	3529	3529	
5°	3468	3464	3464	3460	3460	329
15°	3243	3243	3211	3178	3166	912
25°	2811	2795	2750	2652	2578	1291
35°	2281	2264	2154	1991	1942	1426
45°	1750	1714	1567	1436	1379	1348
55°	1216	1179	1069	942	894	1090
65°	722	681	616	628	522	712
75°	290	269	253	241	265	310
85°	41	45	49	53	57	57
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	3529.0	3529.0	3529.0	3529.0	3529.0
2.5°	3504.6	3504.6	3504.6	3500.5	3500.5
5°	3467.8	3463.8	3463.8	3459.7	3459.7
7.5°	3439.3	3435.2	3431.1	3427.0	3418.9
10°	3398.5	3398.5	3394.4	3374.0	3369.9
12.5°	3333.2	3329.1	3312.8	3284.2	3276.1
15°	3243.4	3243.4	3210.8	3178.2	3165.9
17.5°	3145.5	3141.4	3100.7	3068.0	3051.7
20°	3039.5	3031.3	2990.5	2937.5	2908.9
22.5°	2921.1	2921.1	2872.2	2802.8	2774.3
25°	2811.0	2794.7	2749.8	2651.9	2578.4
27.5°	2684.5	2660.0	2611.1	2472.4	2386.7
30°	2545.8	2533.6	2464.2	2284.7	2219.4
32.5°	2415.2	2394.8	2321.4	2133.7	2080.7
35°	2280.6	2264.3	2154.1	1990.9	1942.0
37.5°	2146.0	2125.6	1986.9	1856.3	1795.1
40°	2011.3	1986.9	1835.9	1717.6	1652.3
42.5°	1884.9	1852.2	1705.4	1578.9	1505.4
45°	1750.2	1713.5	1566.6	1436.1	1379.0
47.5°	1615.6	1583.0	1448.3	1313.7	1248.4
50°	1472.8	1444.3	1321.9	1187.2	1117.9
52.5°	1354.5	1309.6	1191.3	1056.7	999.6
55°	1215.8	1179.1	1068.9	942.4	893.5
57.5°	1089.3	1052.6	950.6	832.3	791.5
60°	971.0	918.0	832.3	730.3	697.6
62.5°	840.4	799.6	726.2	640.5	681.3
65°	722.1	681.3	616.1	628.3	522.2
67.5°	591.6	571.2	514.1	456.9	440.6
70°	481.4	456.9	436.5	375.3	359.0
72.5°	383.5	359.0	330.5	297.8	285.6
75°	289.7	269.3	252.9	240.7	265.2
77.5°	199.9	191.8	179.5	167.3	163.2
80°	130.6	126.5	122.4	118.3	114.2
82.5°	77.5	77.5	77.5	77.5	77.5
85°	40.8	44.9	49.0	53.0	57.1
87.5°	24.5	24.5	28.6	32.6	36.7
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)