

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: P561446

Luminaire Tested: FSR-12-4-LD4-2HI-40-UNV-93-87-EDD-90

Issue Date: 7/20/2021

Test Information

Test Method: LM-79-2019
Report Number: P561446
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-93-87-EDD-90
Description: 1X4 FSR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .375 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 4000K CCT LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 6496.0 lumens
Efficiency: N/A
Efficacy: 75.2 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

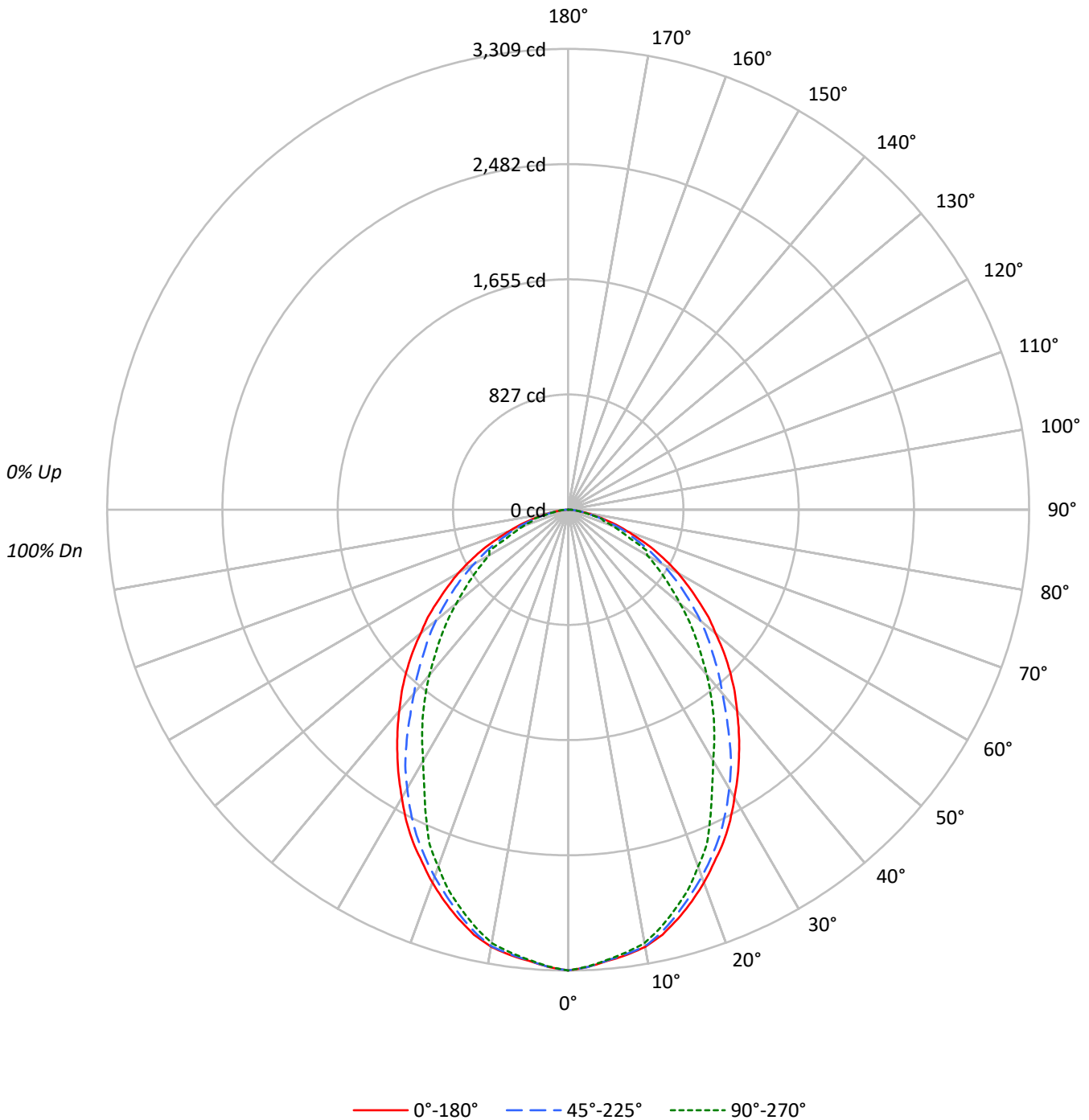
Input Watts (W): 86.4
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT



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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°	8904	8904	8904
5°	8783	8773	8763
10°	8707	8697	8634
15°	8472	8387	8270
20°	8161	8030	7811
25°	7826	7655	7179
30°	7417	7179	6466
35°	7025	6635	5982
40°	6625	6047	5442
45°	6245	5590	4921
50°	5781	5189	4388
55°	5348	4702	3931
60°	4900	4200	3520
65°	4311	3678	3118
70°	3552	3220	2648
75°	2824	2466	2586
80°	1897	1779	1660
85°	1183	1417	1655

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 6245 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	308.0	4.7
10°-20°	845.3	13.0
20°-30°	1170.3	18.0
30°-40°	1247.9	19.2
40°-50°	1138.4	17.5
50°-60°	891.9	13.7
60°-70°	581.3	8.9
70°-80°	257.5	4.0
80°-90°	55.3	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°	2323.7	35.8
0°-40°	3571.6	55.0
0°-60°	5601.9	86.2
0°-90°	6496.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	6496.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	3309	3309	3309	3309	3309	
5°	3252	3248	3248	3244	3244	309
15°	3041	3041	3011	2980	2968	855
25°	2636	2620	2578	2486	2418	1210
35°	2138	2123	2020	1867	1821	1337
45°	1641	1607	1469	1346	1293	1264
55°	1140	1106	1002	884	838	1022
65°	677	639	578	589	490	667
75°	272	252	237	226	249	291
85°	38	42	46	50	54	53
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	3309.0	3309.0	3309.0	3309.0	3309.0
2.5°	3286.0	3286.0	3286.0	3282.2	3282.2
5°	3251.6	3247.8	3247.8	3243.9	3243.9
7.5°	3224.8	3221.0	3217.2	3213.3	3205.7
10°	3186.6	3186.6	3182.7	3163.6	3159.8
12.5°	3125.4	3121.5	3106.2	3079.5	3071.8
15°	3041.2	3041.2	3010.6	2980.0	2968.5
17.5°	2949.4	2945.6	2907.3	2876.7	2861.4
20°	2849.9	2842.3	2804.0	2754.3	2727.5
22.5°	2739.0	2739.0	2693.1	2628.1	2601.3
25°	2635.7	2620.4	2578.3	2486.5	2417.7
27.5°	2517.1	2494.2	2448.3	2318.2	2237.9
30°	2387.1	2375.6	2310.5	2142.2	2081.0
32.5°	2264.6	2245.5	2176.7	2000.7	1951.0
35°	2138.4	2123.1	2019.8	1866.8	1820.9
37.5°	2012.2	1993.0	1863.0	1740.6	1683.2
40°	1885.9	1863.0	1721.4	1610.5	1549.3
42.5°	1767.3	1736.7	1599.0	1480.4	1411.6
45°	1641.1	1606.7	1469.0	1346.5	1293.0
47.5°	1514.9	1484.3	1358.0	1231.8	1170.6
50°	1381.0	1354.2	1239.4	1113.2	1048.2
52.5°	1270.0	1228.0	1117.0	990.8	937.2
55°	1140.0	1105.5	1002.3	883.7	837.8
57.5°	1021.4	987.0	891.3	780.4	742.1
60°	910.4	860.7	780.4	684.7	654.1
62.5°	788.0	749.8	680.9	600.6	638.8
65°	677.1	638.8	577.6	589.1	489.7
67.5°	554.7	535.6	482.0	428.4	413.1
70°	451.4	428.4	409.3	351.9	336.6
72.5°	359.6	336.6	309.9	279.3	267.8
75°	271.6	252.5	237.2	225.7	248.7
77.5°	187.4	179.8	168.3	156.8	153.0
80°	122.4	118.6	114.8	110.9	107.1
82.5°	72.7	72.7	72.7	72.7	72.7
85°	38.3	42.1	45.9	49.7	53.6
87.5°	23.0	23.0	26.8	30.6	34.4
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)