

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: P561508

Luminaire Tested: FSR-12-4-LD4-2HI-50-UNV-93-86-EDD-90

Issue Date: 7/20/2021

Test Information

Test Method: LM-79-2019
Report Number: P561508
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-50-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 5000K CCT LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 7070.0 lumens
Efficiency: N/A
Efficacy: 81.8 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

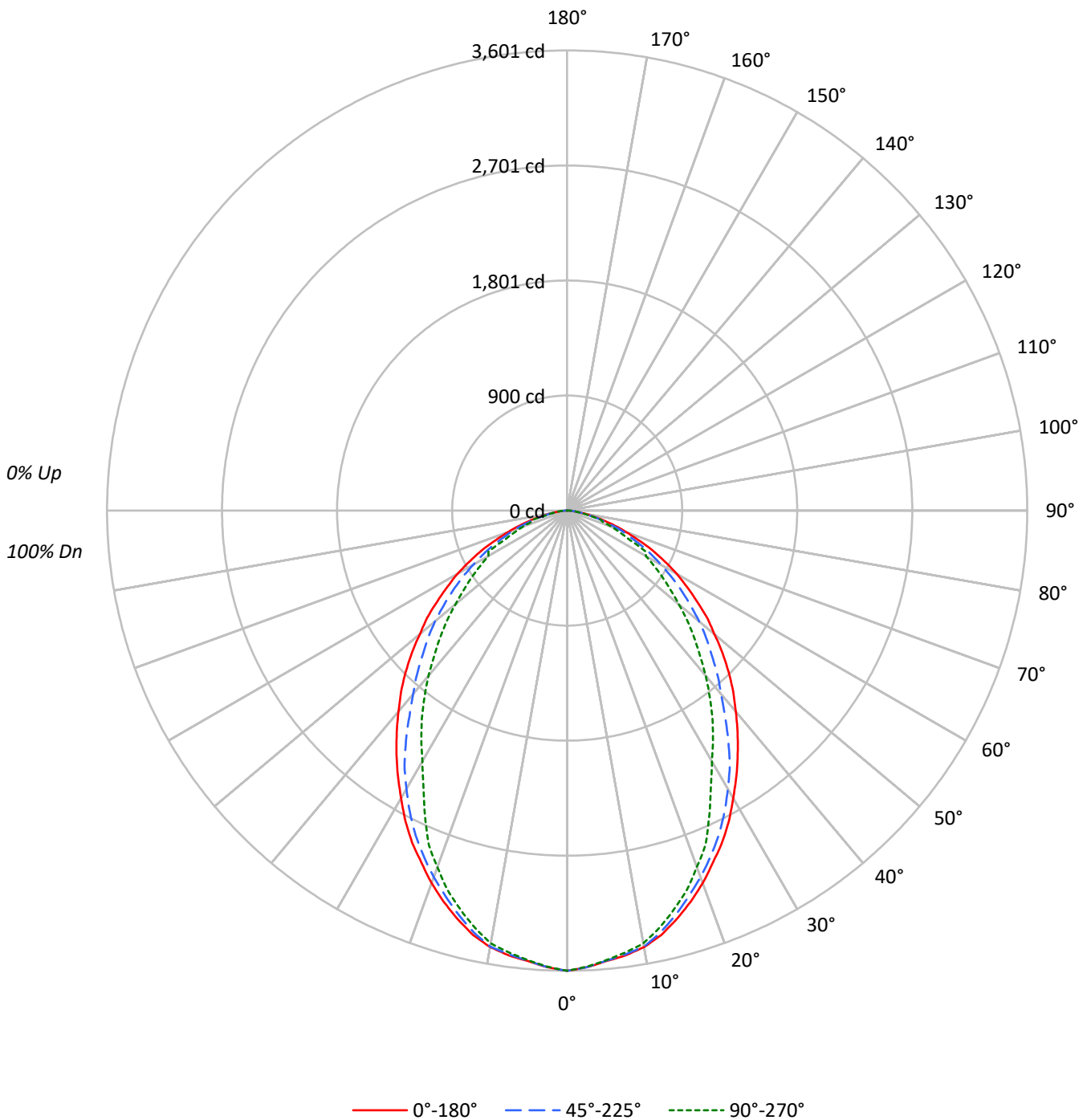
Input Watts (W): 86.4
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT



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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	50	30	10	0																
RCR																																														
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100	100	100	100	100	100	100	100	100	100	100	100	100																
1	110	106	102	99	108	104	100	97	100	97	94	96	94	91	92	90	89	87	87	87	87	87	87	87	87	87	87	87	87	87	87															
2	101	94	88	83	99	92	87	82	89	84	80	86	82	78	83	79	77	75	75	75	75	75	75	75	75	75	75	75	75	75	75															
3	93	84	77	71	91	82	76	70	79	74	69	77	72	68	74	70	67	65	65	65	65	65	65	65	65	65	65	65	65	65	65															
4	86	75	67	61	84	74	66	61	72	65	60	69	64	59	67	62	58	56	56	56	56	56	56	56	56	56	56	56	56	56	56															
5	80	68	60	54	78	67	59	53	65	58	53	63	57	52	61	56	52	50	50	50	50	50	50	50	50	50	50	50	50	50	50															
6	74	62	53	48	72	61	53	47	59	52	47	57	51	47	56	50	46	44	44	44	44	44	44	44	44	44	44	44	44	44	44															
7	69	56	48	43	67	56	48	42	54	47	42	53	46	42	51	46	42	40	40	40	40	40	40	40	40	40	40	40	40	40	40															
8	65	52	44	38	63	51	44	38	50	43	38	49	42	38	48	42	38	36	36	36	36	36	36	36	36	36	36	36	36	36	36															
9	61	48	40	35	59	47	40	35	46	39	35	45	39	34	44	38	34	33	33	33	33	33	33	33	33	33	33	33	33	33	33															
10	57	44	37	32	56	44	37	32	43	36	32	42	36	32	41	36	32	30	30	30	30	30	30	30	30	30	30	30	30	30	30															

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	9691	9691	9691
5°	9559	9548	9537
10°	9477	9465	9397
15°	9221	9128	9001
20°	8883	8739	8501
25°	8517	8332	7813
30°	8073	7814	7038
35°	7646	7222	6510
40°	7210	6581	5923
45°	6797	6084	5355
50°	6292	5647	4776
55°	5821	5118	4278
60°	5333	4571	3831
65°	4692	4003	3393
70°	3865	3505	2883
75°	3073	2684	2813
80°	2064	1936	1807
85°	1284	1544	1800

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 6797 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	335.2	4.7
10°-20°	920.0	13.0
20°-30°	1273.7	18.0
30°-40°	1358.2	19.2
40°-50°	1239.0	17.5
50°-60°	970.7	13.7
60°-70°	632.7	8.9
70°-80°	280.3	4.0
80°-90°	60.2	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°	2529.0	35.8
0°-40°	3887.2	55.0
0°-60°	6096.9	86.2
0°-90°	7070.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	7070.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	3601	3601	3601	3601	3601	
5°	3539	3535	3535	3531	3531	336
15°	3310	3310	3277	3243	3231	931
25°	2869	2852	2806	2706	2631	1317
35°	2327	2311	2198	2032	1982	1455
45°	1786	1749	1599	1466	1407	1376
55°	1241	1203	1091	962	912	1113
65°	737	695	629	641	533	726
75°	296	275	258	246	271	317
85°	42	46	50	54	58	58
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	3601.4	3601.4	3601.4	3601.4	3601.4
2.5°	3576.4	3576.4	3576.4	3572.2	3572.2
5°	3538.9	3534.7	3534.7	3530.6	3530.6
7.5°	3509.8	3505.6	3501.4	3497.3	3489.0
10°	3468.1	3468.1	3464.0	3443.2	3439.0
12.5°	3401.5	3397.4	3380.7	3351.6	3343.2
15°	3309.9	3309.9	3276.6	3243.3	3230.8
17.5°	3210.0	3205.8	3164.2	3130.9	3114.2
20°	3101.8	3093.4	3051.8	2997.7	2968.5
22.5°	2981.0	2981.0	2931.1	2860.3	2831.1
25°	2868.6	2851.9	2806.1	2706.2	2631.3
27.5°	2739.5	2714.6	2664.6	2523.0	2435.6
30°	2598.0	2585.5	2514.7	2331.5	2264.9
32.5°	2464.7	2443.9	2369.0	2177.5	2123.3
35°	2327.4	2310.7	2198.3	2031.8	1981.8
37.5°	2190.0	2169.1	2027.6	1894.4	1831.9
40°	2052.6	2027.6	1873.5	1752.8	1686.2
42.5°	1923.5	1890.2	1740.3	1611.2	1536.3
45°	1786.1	1748.6	1598.8	1465.5	1407.2
47.5°	1648.7	1615.4	1478.0	1340.6	1274.0
50°	1503.0	1473.9	1349.0	1211.6	1140.8
52.5°	1382.3	1336.5	1215.7	1078.3	1020.0
55°	1240.7	1203.2	1090.8	961.8	911.8
57.5°	1111.6	1074.2	970.1	849.3	807.7
60°	990.9	936.8	849.3	745.3	711.9
62.5°	857.7	816.0	741.1	653.7	695.3
65°	736.9	695.3	628.7	641.2	532.9
67.5°	603.7	582.9	524.6	466.3	449.7
70°	491.3	466.3	445.5	383.0	366.4
72.5°	391.4	366.4	337.2	303.9	291.4
75°	295.6	274.8	258.1	245.6	270.6
77.5°	204.0	195.7	183.2	170.7	166.5
80°	133.2	129.1	124.9	120.7	116.6
82.5°	79.1	79.1	79.1	79.1	79.1
85°	41.6	45.8	50.0	54.1	58.3
87.5°	25.0	25.0	29.1	33.3	37.5
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)