

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: P561768

Luminaire Tested: FSR-12-4-LD4-2STD-35-UNV-93-88-EDD-90

Issue Date: 7/20/2021

Test Information

Test Method: LM-79-2019
Report Number: P561768
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-LD4-2STD-35-UNV-93-88-EDD-90
Description: 1X4 FSR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .500 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 3500K CCT LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 4703.0 lumens
Efficiency: N/A
Efficacy: 70.6 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

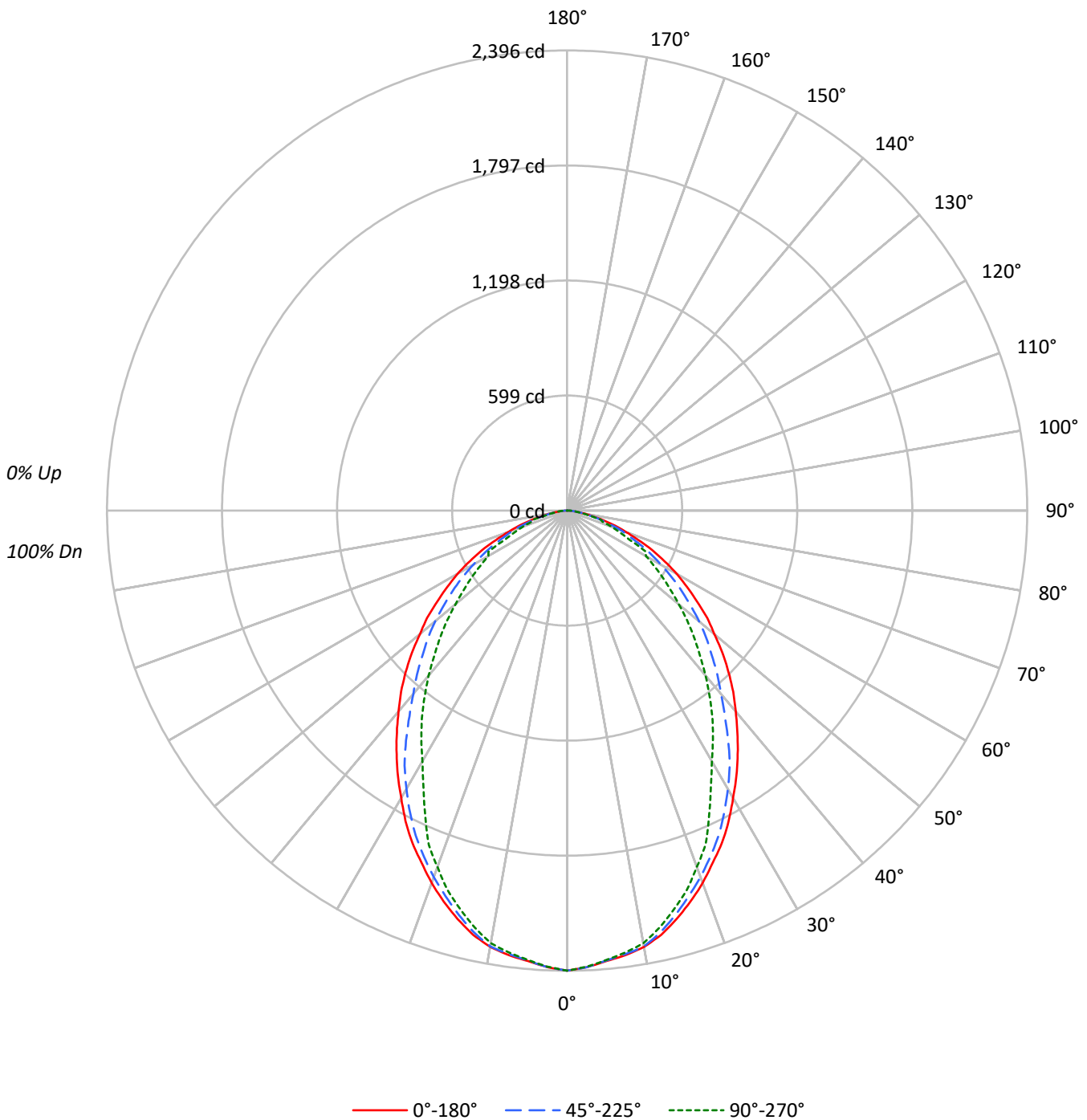
Input Watts (W): 66.6
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT



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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°	6447	6447	6447
5°	6359	6351	6344
10°	6304	6296	6251
15°	6134	6072	5987
20°	5909	5814	5655
25°	5666	5543	5197
30°	5370	5198	4681
35°	5086	4804	4331
40°	4796	4378	3940
45°	4521	4047	3562
50°	4186	3756	3177
55°	3872	3404	2845
60°	3547	3041	2549
65°	3121	2663	2257
70°	2571	2331	1917
75°	2044	1785	1871
80°	1373	1288	1201
85°	855	1025	1198

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 4521 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	223.0	4.7
10°-20°	612.0	13.0
20°-30°	847.3	18.0
30°-40°	903.5	19.2
40°-50°	824.2	17.5
50°-60°	645.7	13.7
60°-70°	420.8	8.9
70°-80°	186.5	4.0
80°-90°	40.0	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°	1682.3	35.8
0°-40°	2585.8	55.0
0°-60°	4055.7	86.2
0°-90°	4703.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4703.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2396	2396	2396	2396	2396	
5°	2354	2351	2351	2349	2349	223
15°	2202	2202	2180	2158	2149	619
25°	1908	1897	1867	1800	1750	876
35°	1548	1537	1462	1352	1318	968
45°	1188	1163	1064	975	936	915
55°	825	800	726	640	606	740
65°	490	462	418	426	354	483
75°	197	183	172	163	180	211
85°	28	30	33	36	39	38
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2395.6	2395.6	2395.6	2395.6	2395.6
2.5°	2379.0	2379.0	2379.0	2376.3	2376.3
5°	2354.1	2351.3	2351.3	2348.6	2348.6
7.5°	2334.7	2331.9	2329.2	2326.4	2320.9
10°	2307.0	2307.0	2304.3	2290.4	2287.6
12.5°	2262.7	2259.9	2248.9	2229.5	2223.9
15°	2201.8	2201.8	2179.6	2157.5	2149.2
17.5°	2135.3	2132.5	2104.8	2082.7	2071.6
20°	2063.3	2057.8	2030.1	1994.1	1974.7
22.5°	1983.0	1983.0	1949.8	1902.7	1883.3
25°	1908.2	1897.1	1866.7	1800.2	1750.3
27.5°	1822.4	1805.7	1772.5	1678.3	1620.2
30°	1728.2	1719.9	1672.8	1550.9	1506.6
32.5°	1639.6	1625.7	1575.9	1448.5	1412.5
35°	1548.2	1537.1	1462.3	1351.5	1318.3
37.5°	1456.8	1442.9	1348.8	1260.1	1218.6
40°	1365.4	1348.8	1246.3	1166.0	1121.7
42.5°	1279.5	1257.4	1157.7	1071.8	1022.0
45°	1188.1	1163.2	1063.5	974.9	936.1
47.5°	1096.7	1074.6	983.2	891.8	847.5
50°	999.8	980.4	897.3	805.9	758.9
52.5°	919.5	889.0	808.7	717.3	678.5
55°	825.3	800.4	725.6	639.8	606.5
57.5°	739.5	714.5	645.3	565.0	537.3
60°	659.1	623.1	565.0	495.7	473.6
62.5°	570.5	542.8	493.0	434.8	462.5
65°	490.2	462.5	418.2	426.5	354.5
67.5°	401.6	387.7	349.0	310.2	299.1
70°	326.8	310.2	296.3	254.8	243.7
72.5°	260.3	243.7	224.3	202.2	193.9
75°	196.6	182.8	171.7	163.4	180.0
77.5°	135.7	130.2	121.9	113.6	110.8
80°	88.6	85.9	83.1	80.3	77.5
82.5°	52.6	52.6	52.6	52.6	52.6
85°	27.7	30.5	33.2	36.0	38.8
87.5°	16.6	16.6	19.4	22.2	24.9
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)