

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: P561692

Luminaire Tested: FSR-12-4-LD4-2LO-50-UNV-82-96-EDD-90

Issue Date: 7/20/2021

Test Information

Test Method: LM-79-2019
Report Number: P561692
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-LD4-2LO-50-UNV-82-96-EDD-90
Description: 1X4 FSR TROFFER WITH .187 CLEAR PC FIXTURE SIDE AND .250 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: 4086.0 lumens
Efficiency: N/A
Efficacy: 87.3 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

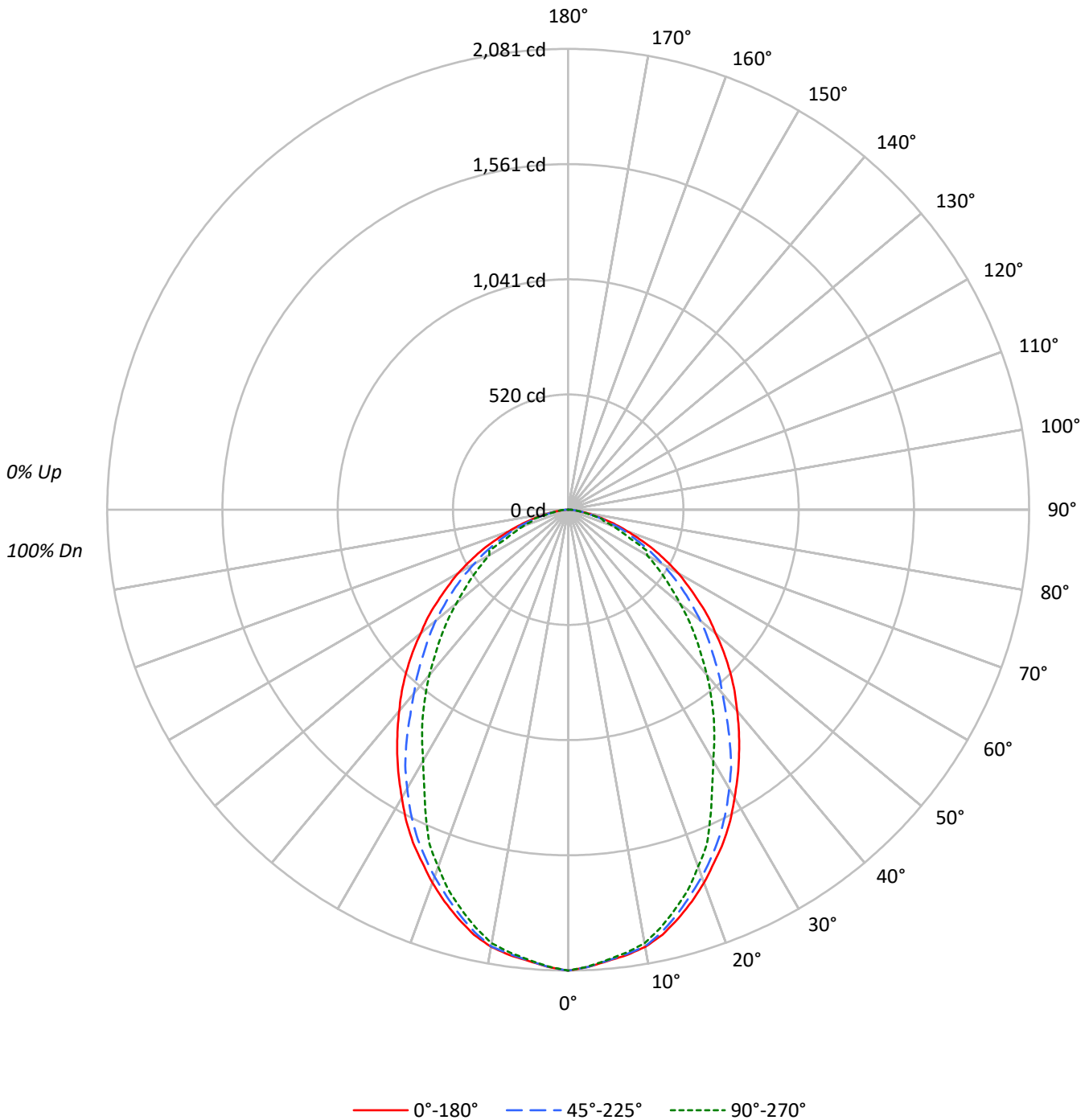
Input Watts (W): 46.8
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT



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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	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°	5601	5601	5601
5°	5525	5518	5512
10°	5477	5470	5431
15°	5329	5276	5202
20°	5133	5051	4913
25°	4923	4815	4515
30°	4666	4516	4067
35°	4419	4174	3762
40°	4167	3804	3423
45°	3929	3516	3095
50°	3636	3264	2760
55°	3364	2958	2472
60°	3082	2642	2215
65°	2712	2313	1961
70°	2234	2026	1666
75°	1776	1551	1626
80°	1193	1119	1044
85°	744	892	1041

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 3929 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	193.7	4.7
10°-20°	531.7	13.0
20°-30°	736.1	18.0
30°-40°	784.9	19.2
40°-50°	716.1	17.5
50°-60°	561.0	13.7
60°-70°	365.6	8.9
70°-80°	162.0	4.0
80°-90°	34.8	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°	1461.6	35.8
0°-40°	2246.5	55.0
0°-60°	3523.6	86.2
0°-90°	4086.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4086.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2081	2081	2081	2081	2081	
5°	2045	2043	2043	2040	2040	194
15°	1913	1913	1894	1874	1867	538
25°	1658	1648	1622	1564	1521	761
35°	1345	1335	1270	1174	1145	841
45°	1032	1011	924	847	813	795
55°	717	695	630	556	527	643
65°	426	402	363	371	308	420
75°	171	159	149	142	156	183
85°	24	26	29	31	34	33
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2081.4	2081.4	2081.4	2081.4	2081.4
2.5°	2066.9	2066.9	2066.9	2064.5	2064.5
5°	2045.3	2042.9	2042.9	2040.4	2040.4
7.5°	2028.4	2026.0	2023.6	2021.2	2016.4
10°	2004.4	2004.4	2001.9	1989.9	1987.5
12.5°	1965.9	1963.5	1953.8	1937.0	1932.2
15°	1912.9	1912.9	1893.7	1874.4	1867.2
17.5°	1855.2	1852.8	1828.7	1809.5	1799.8
20°	1792.6	1787.8	1763.7	1732.5	1715.6
22.5°	1722.8	1722.8	1694.0	1653.1	1636.2
25°	1657.9	1648.2	1621.8	1564.0	1520.7
27.5°	1583.3	1568.8	1540.0	1458.2	1407.6
30°	1501.5	1494.2	1453.3	1347.5	1309.0
32.5°	1424.5	1412.4	1369.1	1258.4	1227.2
35°	1345.1	1335.4	1270.5	1174.2	1145.3
37.5°	1265.7	1253.6	1171.8	1094.8	1058.7
40°	1186.3	1171.8	1082.8	1013.0	974.5
42.5°	1111.7	1092.4	1005.8	931.2	887.9
45°	1032.3	1010.6	924.0	847.0	813.3
47.5°	952.9	933.6	854.2	774.8	736.3
50°	868.6	851.8	779.6	700.2	659.3
52.5°	798.9	772.4	702.6	623.2	589.5
55°	717.0	695.4	630.4	555.8	527.0
57.5°	642.5	620.8	560.6	490.9	466.8
60°	572.7	541.4	490.9	430.7	411.5
62.5°	495.7	471.6	428.3	377.8	401.8
65°	425.9	401.8	363.3	370.6	308.0
67.5°	348.9	336.9	303.2	269.5	259.9
70°	283.9	269.5	257.5	221.4	211.7
72.5°	226.2	211.7	194.9	175.7	168.4
75°	170.8	158.8	149.2	142.0	156.4
77.5°	117.9	113.1	105.9	98.7	96.2
80°	77.0	74.6	72.2	69.8	67.4
82.5°	45.7	45.7	45.7	45.7	45.7
85°	24.1	26.5	28.9	31.3	33.7
87.5°	14.4	14.4	16.8	19.2	21.7
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)