

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: P561610

Luminaire Tested: FSR-12-4-LD4-2LO-40-UNV-81-94-EDD-90

Issue Date: 7/20/2021

Test Information

Test Method: LM-79-2019
Report Number: P561610
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-40-UNV-81-94-EDD-90
Description: 1X4 FSR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .187 CLEAR TEMPERED GLASS ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 4000K CCT LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 4008.0 lumens
Efficiency: N/A
Efficacy: 85.6 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

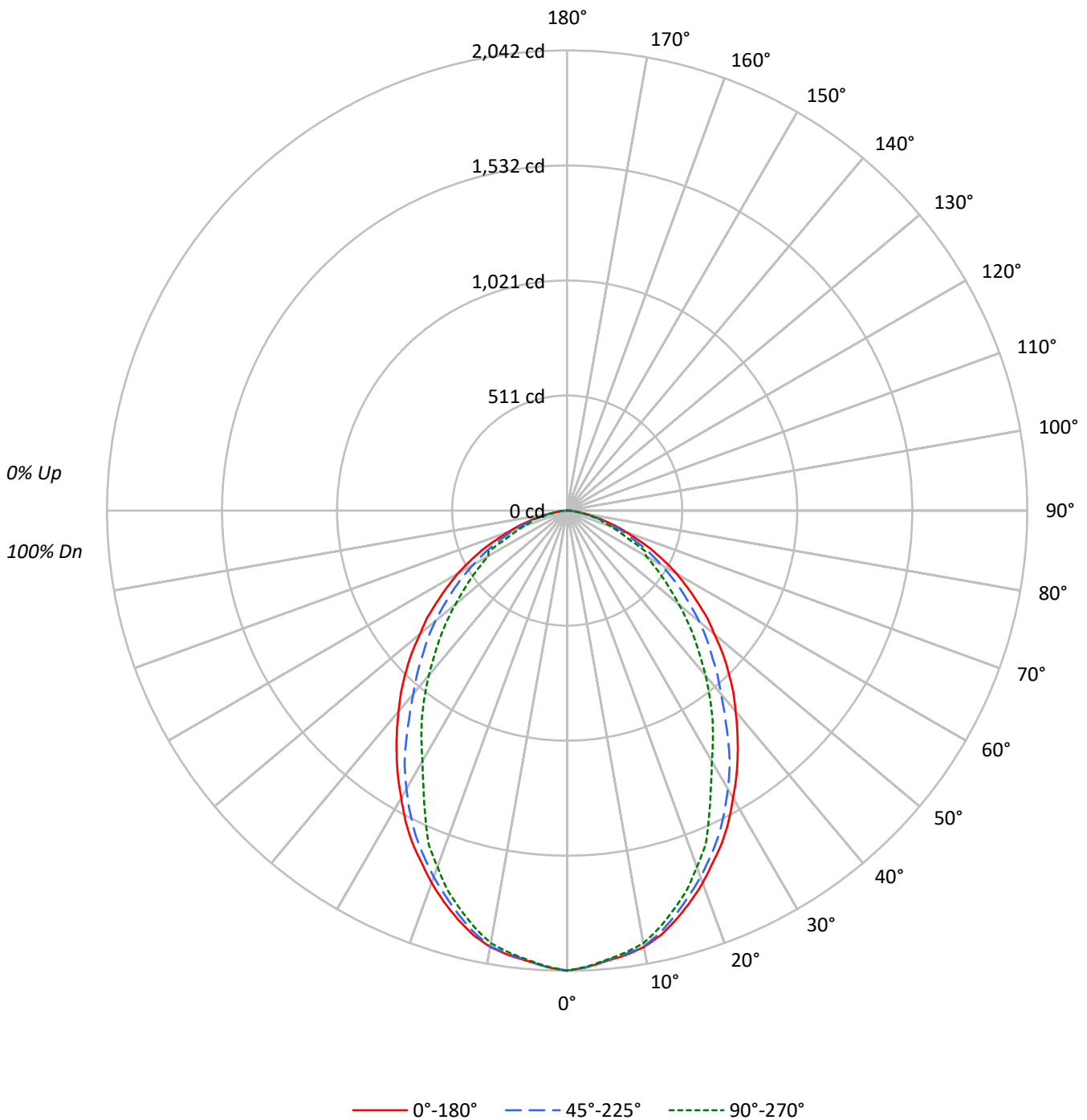
Input Watts (W): 46.8
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT



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

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	5494	5494	5494
5°	5419	5413	5407
10°	5372	5366	5327
15°	5227	5175	5103
20°	5035	4954	4819
25°	4828	4723	4429
30°	4576	4430	3990
35°	4334	4094	3691
40°	4088	3731	3358
45°	3853	3449	3036
50°	3567	3201	2707
55°	3300	2901	2425
60°	3023	2591	2172
65°	2660	2269	1924
70°	2191	1987	1634
75°	1743	1521	1595
80°	1170	1097	1024
85°	729	874	1019

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 3853 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	190.0	4.7
10°-20°	521.6	13.0
20°-30°	722.1	18.0
30°-40°	769.9	19.2
40°-50°	702.4	17.5
50°-60°	550.3	13.7
60°-70°	358.6	8.9
70°-80°	158.9	4.0
80°-90°	34.1	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°	1433.7	35.8
0°-40°	2203.6	55.0
0°-60°	3456.3	86.2
0°-90°	4008.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4008.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2042	2042	2042	2042	2042	
5°	2006	2004	2004	2002	2002	190
15°	1876	1876	1858	1839	1832	528
25°	1626	1617	1591	1534	1492	747
35°	1319	1310	1246	1152	1124	825
45°	1012	991	906	831	798	780
55°	703	682	618	545	517	631
65°	418	394	356	364	302	412
75°	168	156	146	139	153	180
85°	24	26	28	31	33	33
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2041.6	2041.6	2041.6	2041.6	2041.6
2.5°	2027.5	2027.5	2027.5	2025.1	2025.1
5°	2006.2	2003.9	2003.9	2001.5	2001.5
7.5°	1989.7	1987.3	1985.0	1982.6	1977.9
10°	1966.1	1966.1	1963.7	1951.9	1949.6
12.5°	1928.3	1926.0	1916.5	1900.0	1895.3
15°	1876.4	1876.4	1857.5	1838.6	1831.6
17.5°	1819.8	1817.4	1793.8	1774.9	1765.5
20°	1758.4	1753.7	1730.1	1699.4	1682.9
22.5°	1689.9	1689.9	1661.6	1621.5	1605.0
25°	1626.2	1616.8	1590.8	1534.2	1491.7
27.5°	1553.0	1538.9	1510.6	1430.3	1380.7
30°	1472.8	1465.7	1425.6	1321.7	1284.0
32.5°	1397.3	1385.5	1343.0	1234.4	1203.7
35°	1319.4	1309.9	1246.2	1151.8	1123.5
37.5°	1241.5	1229.7	1149.4	1073.9	1038.5
40°	1163.6	1149.4	1062.1	993.7	955.9
42.5°	1090.4	1071.6	986.6	913.4	870.9
45°	1012.5	991.3	906.3	830.8	797.8
47.5°	934.7	915.8	837.9	760.0	722.2
50°	852.1	835.5	764.7	686.8	646.7
52.5°	783.6	757.6	689.2	611.3	578.3
55°	703.4	682.1	618.4	545.2	516.9
57.5°	630.2	608.9	549.9	481.5	457.9
60°	561.7	531.1	481.5	422.5	403.6
62.5°	486.2	462.6	420.1	370.6	394.2
65°	417.8	394.2	356.4	363.5	302.1
67.5°	342.2	330.4	297.4	264.3	254.9
70°	278.5	264.3	252.5	217.1	207.7
72.5°	221.9	207.7	191.2	172.3	165.2
75°	167.6	155.8	146.3	139.3	153.4
77.5°	115.7	110.9	103.9	96.8	94.4
80°	75.5	73.2	70.8	68.4	66.1
82.5°	44.8	44.8	44.8	44.8	44.8
85°	23.6	26.0	28.3	30.7	33.0
87.5°	14.2	14.2	16.5	18.9	21.2
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)