

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: P561638

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

Issue Date: 7/20/2021

Test Information

Test Method: LM-79-2019
Report Number: P561638
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-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: 3955.0 lumens
Efficiency: N/A
Efficacy: 84.5 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

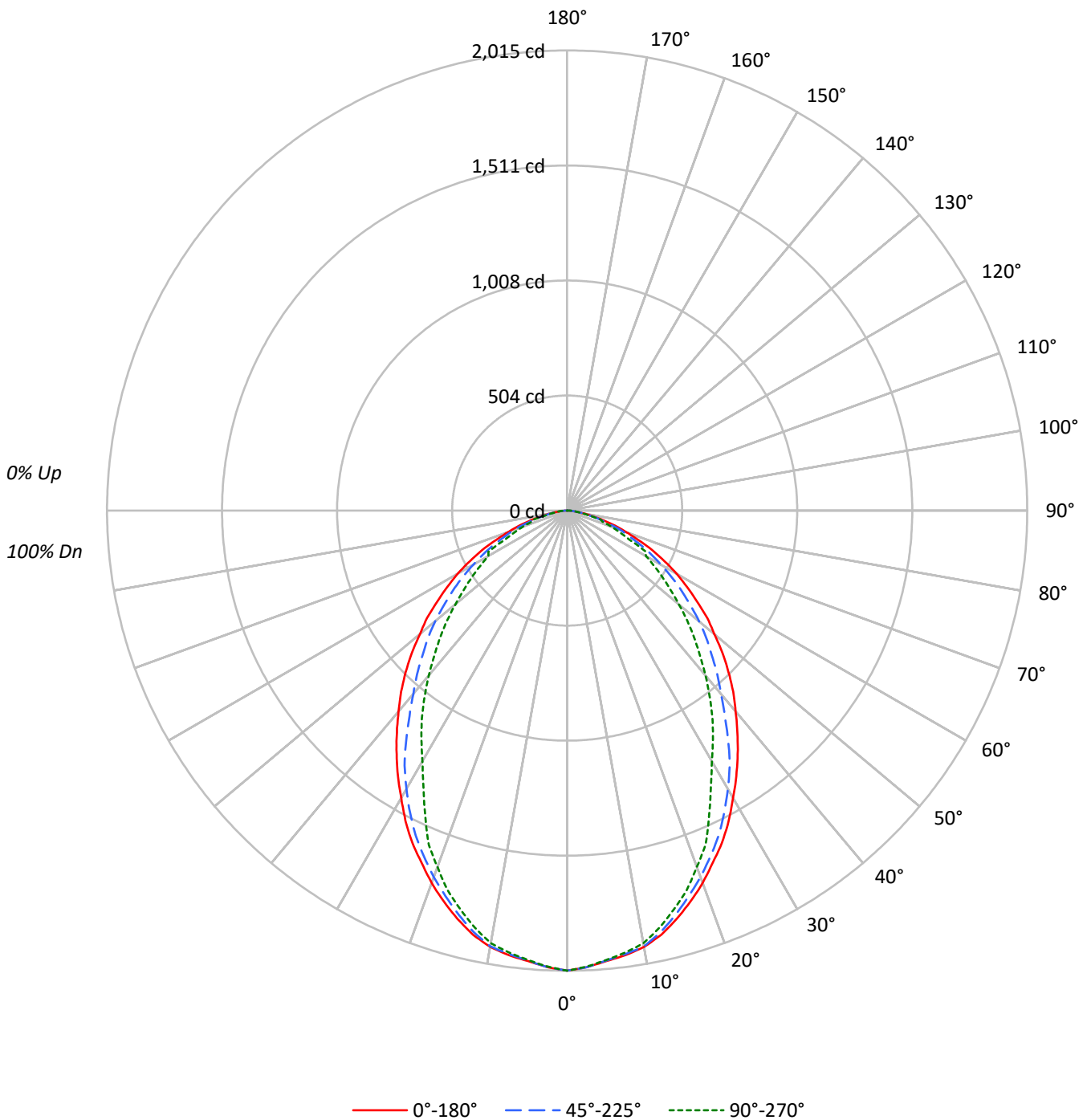
Input Watts (W): 46.8
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT



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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	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°	5421	5421	5421
5°	5348	5341	5335
10°	5301	5295	5257
15°	5158	5107	5035
20°	4969	4889	4755
25°	4765	4661	4371
30°	4516	4371	3937
35°	4277	4040	3642
40°	4033	3682	3314
45°	3803	3404	2996
50°	3520	3159	2672
55°	3256	2863	2393
60°	2983	2557	2144
65°	2625	2239	1898
70°	2162	1961	1613
75°	1720	1501	1574
80°	1155	1083	1010
85°	719	861	1007

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 3803 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	187.5	4.7
10°-20°	514.7	13.0
20°-30°	712.5	18.0
30°-40°	759.8	19.2
40°-50°	693.1	17.5
50°-60°	543.0	13.7
60°-70°	353.9	8.9
70°-80°	156.8	4.0
80°-90°	33.7	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°	1414.7	35.8
0°-40°	2174.5	55.0
0°-60°	3410.6	86.2
0°-90°	3955.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3955.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2015	2015	2015	2015	2015	
5°	1980	1977	1977	1975	1975	188
15°	1852	1852	1833	1814	1807	521
25°	1605	1595	1570	1514	1472	737
35°	1302	1293	1230	1137	1109	814
45°	999	978	894	820	787	770
55°	694	673	610	538	510	623
65°	412	389	352	359	298	406
75°	165	154	144	137	151	177
85°	23	26	28	30	33	32
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2014.6	2014.6	2014.6	2014.6	2014.6
2.5°	2000.6	2000.6	2000.6	1998.3	1998.3
5°	1979.7	1977.4	1977.4	1975.0	1975.0
7.5°	1963.4	1961.1	1958.7	1956.4	1951.7
10°	1940.1	1940.1	1937.8	1926.1	1923.8
12.5°	1902.8	1900.5	1891.2	1874.9	1870.2
15°	1851.6	1851.6	1833.0	1814.3	1807.3
17.5°	1795.7	1793.4	1770.1	1751.4	1742.1
20°	1735.1	1730.5	1707.2	1676.9	1660.6
22.5°	1667.6	1667.6	1639.6	1600.1	1583.8
25°	1604.7	1595.4	1569.8	1513.9	1472.0
27.5°	1532.5	1518.5	1490.6	1411.4	1362.5
30°	1453.3	1446.3	1406.7	1304.3	1267.0
32.5°	1378.8	1367.1	1325.2	1218.1	1187.8
35°	1301.9	1292.6	1229.7	1136.6	1108.6
37.5°	1225.1	1213.4	1134.2	1059.7	1024.8
40°	1148.2	1134.2	1048.1	980.5	943.3
42.5°	1076.0	1057.4	973.5	901.3	859.4
45°	999.2	978.2	894.4	819.8	787.2
47.5°	922.3	903.7	826.8	750.0	712.7
50°	840.8	824.5	754.6	677.8	638.2
52.5°	773.2	747.6	680.1	603.2	570.6
55°	694.1	673.1	610.2	538.0	510.1
57.5°	621.9	600.9	542.7	475.1	451.8
60°	554.3	524.0	475.1	416.9	398.3
62.5°	479.8	456.5	414.6	365.7	389.0
65°	412.2	389.0	351.7	358.7	298.1
67.5°	337.7	326.1	293.5	260.9	251.5
70°	274.8	260.9	249.2	214.3	205.0
72.5°	218.9	205.0	188.7	170.0	163.0
75°	165.4	153.7	144.4	137.4	151.4
77.5°	114.1	109.5	102.5	95.5	93.2
80°	74.5	72.2	69.9	67.5	65.2
82.5°	44.3	44.3	44.3	44.3	44.3
85°	23.3	25.6	27.9	30.3	32.6
87.5°	14.0	14.0	16.3	18.6	21.0
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)