

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: P561644

Luminaire Tested: FSR-12-4-LD4-2LO-40-UNV-93-96-EDD-90

Issue Date: 7/20/2021

Test Information

Test Method: LM-79-2019
Report Number: P561644
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-93-96-EDD-90
Description: 1X4 FSR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .250 CLEAR TEMPER
GLASS ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 4000K CCT LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 4181.0 lumens
Efficiency: N/A
Efficacy: 89.3 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

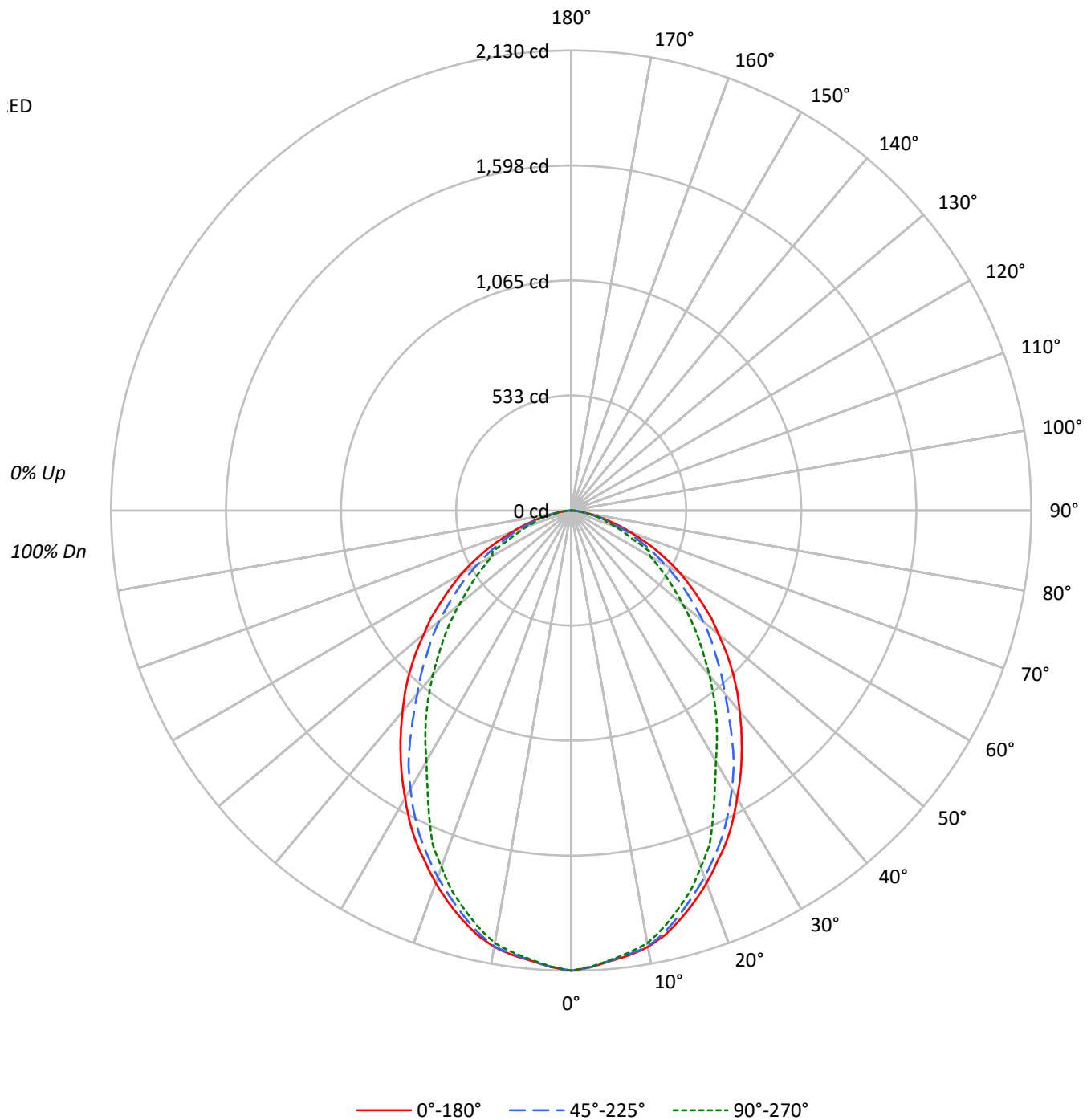
Input Watts (W): 46.8
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT



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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	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°	5731	5731	5731
5°	5653	5647	5640
10°	5604	5598	5557
15°	5453	5398	5323
20°	5253	5168	5027
25°	5037	4927	4620
30°	4774	4621	4162
35°	4521	4271	3850
40°	4264	3892	3503
45°	4020	3598	3167
50°	3721	3340	2824
55°	3442	3027	2530
60°	3154	2703	2266
65°	2775	2367	2007
70°	2286	2072	1705
75°	1817	1588	1664
80°	1221	1145	1068
85°	760	911	1065

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 4020 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	198.3	4.7
10°-20°	544.1	13.0
20°-30°	753.2	18.0
30°-40°	803.2	19.2
40°-50°	732.7	17.5
50°-60°	574.0	13.7
60°-70°	374.1	8.9
70°-80°	165.7	4.0
80°-90°	35.6	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°	1495.6	35.8
0°-40°	2298.8	55.0
0°-60°	3605.5	86.2
0°-90°	4181.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4181.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2130	2130	2130	2130	2130	
5°	2093	2090	2090	2088	2088	199
15°	1957	1957	1938	1918	1911	550
25°	1696	1687	1660	1600	1556	779
35°	1376	1366	1300	1202	1172	860
45°	1056	1034	946	867	832	814
55°	734	712	645	569	539	658
65°	436	411	372	379	315	429
75°	175	162	153	145	160	187
85°	25	27	30	32	34	34
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2129.7	2129.7	2129.7	2129.7	2129.7
2.5°	2115.0	2115.0	2115.0	2112.5	2112.5
5°	2092.8	2090.4	2090.4	2087.9	2087.9
7.5°	2075.6	2073.1	2070.7	2068.2	2063.3
10°	2051.0	2051.0	2048.5	2036.2	2033.7
12.5°	2011.6	2009.1	1999.3	1982.0	1977.1
15°	1957.4	1957.4	1937.7	1918.0	1910.6
17.5°	1898.3	1895.8	1871.2	1851.5	1841.7
20°	1834.3	1829.4	1804.7	1772.7	1755.5
22.5°	1762.9	1762.9	1733.3	1691.5	1674.3
25°	1696.4	1686.6	1659.5	1600.4	1556.1
27.5°	1620.1	1605.3	1575.8	1492.1	1440.3
30°	1536.4	1529.0	1487.1	1378.8	1339.4
32.5°	1457.6	1445.3	1401.0	1287.7	1255.7
35°	1376.3	1366.5	1300.0	1201.5	1172.0
37.5°	1295.1	1282.8	1199.1	1120.3	1083.3
40°	1213.8	1199.1	1108.0	1036.6	997.2
42.5°	1137.5	1117.8	1029.2	952.8	908.5
45°	1056.3	1034.1	945.5	866.7	832.2
47.5°	975.0	955.3	874.1	792.8	753.4
50°	888.8	871.6	797.7	716.5	674.6
52.5°	817.4	790.3	718.9	637.7	603.2
55°	733.7	711.6	645.1	568.8	539.2
57.5°	657.4	635.2	573.7	502.3	477.7
60°	586.0	554.0	502.3	440.7	421.0
62.5°	507.2	482.6	438.3	386.6	411.2
65°	435.8	411.2	371.8	379.2	315.2
67.5°	357.0	344.7	310.2	275.8	265.9
70°	290.5	275.8	263.4	226.5	216.7
72.5°	231.4	216.7	199.4	179.7	172.3
75°	174.8	162.5	152.7	145.3	160.0
77.5°	120.6	115.7	108.3	100.9	98.5
80°	78.8	76.3	73.9	71.4	68.9
82.5°	46.8	46.8	46.8	46.8	46.8
85°	24.6	27.1	29.5	32.0	34.5
87.5°	14.8	14.8	17.2	19.7	22.2
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)