

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: P561572

Luminaire Tested: FSR-12-4-LD4-2LO-35-UNV-93-86-EDD-90

Issue Date: 7/20/2021

Test Information

Test Method: LM-79-2019
Report Number: P561572
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-35-UNV-93-86-EDD-90
Description: 1X4 FSR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .250 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 3500K CCT LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 4030.0 lumens
Efficiency: N/A
Efficacy: 86.1 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

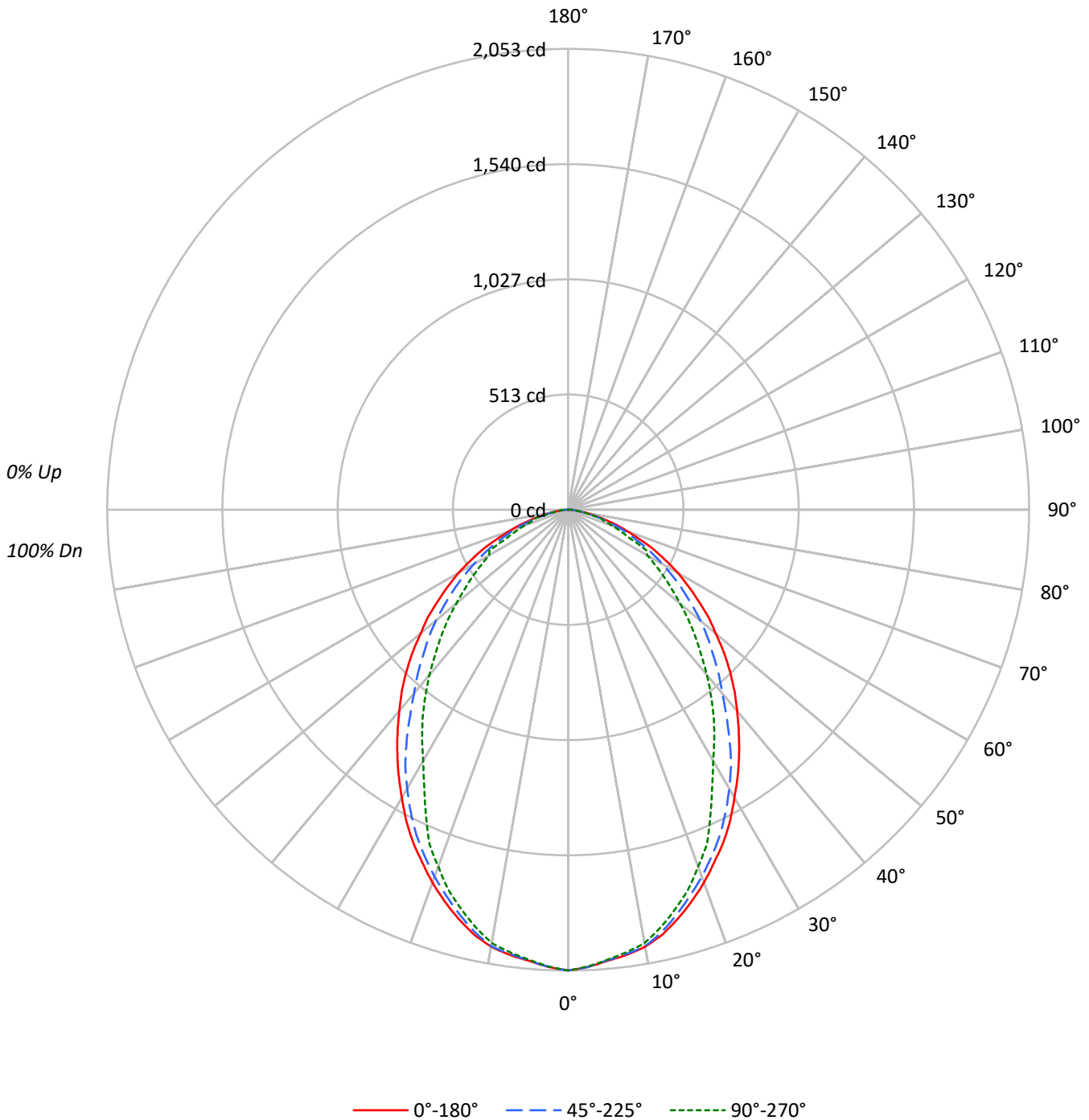
Input Watts (W): 46.8
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT



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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°	5524	5524	5524
5°	5449	5443	5436
10°	5402	5395	5357
15°	5256	5203	5131
20°	5063	4982	4846
25°	4855	4749	4453
30°	4602	4454	4011
35°	4358	4117	3711
40°	4110	3751	3377
45°	3875	3468	3052
50°	3587	3219	2722
55°	3318	2917	2438
60°	3040	2605	2184
65°	2675	2282	1934
70°	2203	1998	1643
75°	1752	1529	1604
80°	1176	1103	1029
85°	732	880	1025

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 3875 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	191.1	4.7
10°-20°	524.4	13.0
20°-30°	726.0	18.0
30°-40°	774.2	19.2
40°-50°	706.3	17.5
50°-60°	553.3	13.7
60°-70°	360.6	8.9
70°-80°	159.7	4.0
80°-90°	34.3	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°	1441.6	35.8
0°-40°	2215.7	55.0
0°-60°	3475.3	86.2
0°-90°	4030.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4030.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2053	2053	2053	2053	2053	
5°	2017	2015	2015	2012	2012	191
15°	1887	1887	1868	1849	1842	530
25°	1635	1626	1600	1543	1500	751
35°	1327	1317	1253	1158	1130	829
45°	1018	997	911	835	802	784
55°	707	686	622	548	520	634
65°	420	396	358	366	304	414
75°	168	157	147	140	154	181
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°	2052.8	2052.8	2052.8	2052.8	2052.8
2.5°	2038.6	2038.6	2038.6	2036.2	2036.2
5°	2017.2	2014.9	2014.9	2012.5	2012.5
7.5°	2000.6	1998.2	1995.9	1993.5	1988.8
10°	1976.9	1976.9	1974.5	1962.6	1960.3
12.5°	1938.9	1936.5	1927.0	1910.4	1905.7
15°	1886.7	1886.7	1867.7	1848.7	1841.6
17.5°	1829.7	1827.4	1803.6	1784.7	1775.2
20°	1768.0	1763.3	1739.6	1708.7	1692.1
22.5°	1699.2	1699.2	1670.7	1630.4	1613.8
25°	1635.1	1625.7	1599.5	1542.6	1499.9
27.5°	1561.6	1547.3	1518.9	1438.2	1388.3
30°	1480.9	1473.8	1433.4	1329.0	1291.0
32.5°	1404.9	1393.1	1350.4	1241.2	1210.3
35°	1326.6	1317.1	1253.1	1158.1	1129.6
37.5°	1248.3	1236.4	1155.8	1079.8	1044.2
40°	1170.0	1155.8	1067.9	999.1	961.2
42.5°	1096.4	1077.4	992.0	918.4	875.7
45°	1018.1	996.7	911.3	835.4	802.1
47.5°	939.8	920.8	842.5	764.2	726.2
50°	856.7	840.1	768.9	690.6	650.3
52.5°	787.9	761.8	693.0	614.7	581.4
55°	707.2	685.9	621.8	548.2	519.7
57.5°	633.6	612.3	553.0	484.1	460.4
60°	564.8	534.0	484.1	424.8	405.8
62.5°	488.9	465.1	422.4	372.6	396.3
65°	420.1	396.3	358.4	365.5	303.8
67.5°	344.1	332.2	299.0	265.8	256.3
70°	280.0	265.8	253.9	218.3	208.8
72.5°	223.1	208.8	192.2	173.2	166.1
75°	168.5	156.6	147.1	140.0	154.3
77.5°	116.3	111.5	104.4	97.3	94.9
80°	75.9	73.6	71.2	68.8	66.4
82.5°	45.1	45.1	45.1	45.1	45.1
85°	23.7	26.1	28.5	30.9	33.2
87.5°	14.2	14.2	16.6	19.0	21.4
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)