

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: P561197

Luminaire Tested: FSR-12-4-LD4-1STD-35-UNV-93-96-EDD

Issue Date: 7/20/2021

Test Information

Test Method: LM-79-2019
Report Number: P561197
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-LD4-1STD-35-UNV-93-96-EDD
Description: 1X4 FSR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .250 CLEAR TEMPER
GLASS ENVIRONMENTAL SIDE LENSES WITH, 80 CRI AND 3500K CCT LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 3299.0 lumens
Efficiency: N/A
Efficacy: 99.1 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

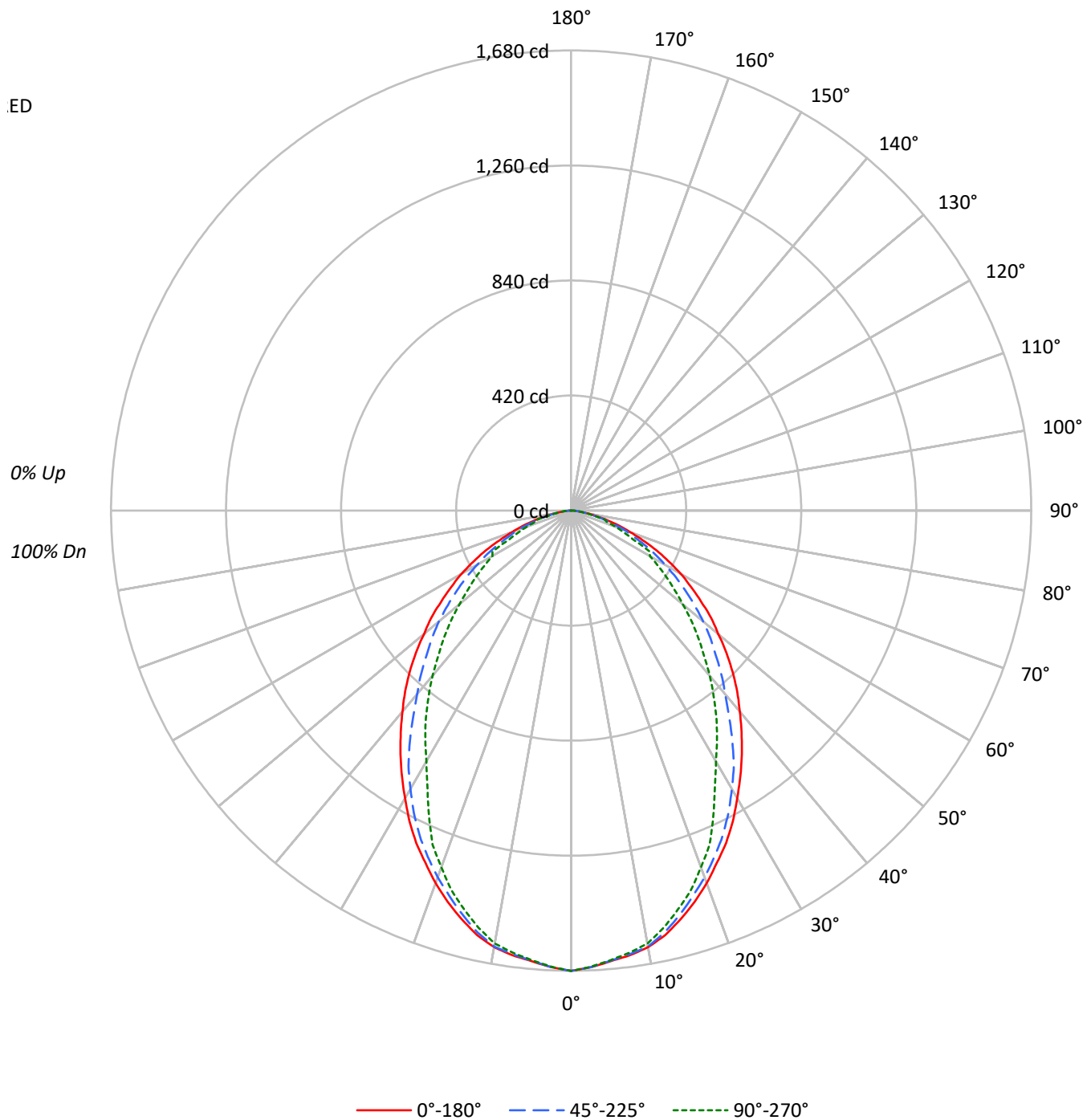
Input Watts (W): 33.3
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT



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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°	4522	4522	4522
5°	4461	4455	4450
10°	4422	4417	4385
15°	4303	4259	4200
20°	4145	4078	3967
25°	3974	3888	3646
30°	3767	3646	3284
35°	3568	3370	3038
40°	3365	3071	2764
45°	3172	2839	2499
50°	2936	2635	2228
55°	2716	2388	1996
60°	2489	2133	1788
65°	2190	1868	1584
70°	1803	1636	1345
75°	1434	1252	1313
80°	964	903	843
85°	599	719	840

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 3172 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	156.4	4.7
10°-20°	429.3	13.0
20°-30°	594.3	18.0
30°-40°	633.7	19.2
40°-50°	578.2	17.5
50°-60°	452.9	13.7
60°-70°	295.2	8.9
70°-80°	130.8	4.0
80°-90°	28.1	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°	1180.1	35.8
0°-40°	1813.8	55.0
0°-60°	2844.9	86.2
0°-90°	3299.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3299.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1680	1680	1680	1680	1680	
5°	1651	1649	1649	1647	1647	157
15°	1544	1544	1529	1513	1508	434
25°	1338	1331	1309	1263	1228	615
35°	1086	1078	1026	948	925	679
45°	833	816	746	684	657	642
55°	579	562	509	449	426	519
65°	344	324	293	299	249	339
75°	138	128	120	115	126	148
85°	19	21	23	25	27	27
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1680.5	1680.5	1680.5	1680.5	1680.5
2.5°	1668.8	1668.8	1668.8	1666.9	1666.9
5°	1651.3	1649.4	1649.4	1647.4	1647.4
7.5°	1637.7	1635.8	1633.8	1631.9	1628.0
10°	1618.3	1618.3	1616.4	1606.6	1604.7
12.5°	1587.2	1585.3	1577.5	1563.9	1560.0
15°	1544.5	1544.5	1528.9	1513.4	1507.6
17.5°	1497.8	1495.9	1476.5	1460.9	1453.2
20°	1447.3	1443.5	1424.0	1398.8	1385.2
22.5°	1391.0	1391.0	1367.7	1334.7	1321.1
25°	1338.5	1330.8	1309.4	1262.8	1227.8
27.5°	1278.3	1266.7	1243.4	1177.3	1136.5
30°	1212.3	1206.4	1173.4	1087.9	1056.8
32.5°	1150.1	1140.4	1105.4	1016.1	990.8
35°	1086.0	1078.2	1025.8	948.1	924.7
37.5°	1021.9	1012.2	946.1	883.9	854.8
40°	957.8	946.1	874.2	817.9	786.8
42.5°	897.5	882.0	812.1	751.8	716.9
45°	833.4	815.9	746.0	683.8	656.6
47.5°	769.3	753.8	689.7	625.6	594.5
50°	701.3	687.7	629.4	565.3	532.3
52.5°	645.0	623.6	567.3	503.2	476.0
55°	578.9	561.5	509.0	448.8	425.5
57.5°	518.7	501.2	452.7	396.3	376.9
60°	462.4	437.1	396.3	347.7	332.2
62.5°	400.2	380.8	345.8	305.0	324.4
65°	343.9	324.4	293.4	299.2	248.7
67.5°	281.7	272.0	244.8	217.6	209.8
70°	229.2	217.6	207.9	178.7	171.0
72.5°	182.6	171.0	157.4	141.8	136.0
75°	137.9	128.2	120.4	114.6	126.3
77.5°	95.2	91.3	85.5	79.7	77.7
80°	62.2	60.2	58.3	56.3	54.4
82.5°	36.9	36.9	36.9	36.9	36.9
85°	19.4	21.4	23.3	25.3	27.2
87.5°	11.7	11.7	13.6	15.5	17.5
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)