

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: P560804

Luminaire Tested: FSR-12-4-LD4-1HI-35-UNV-93-86-EDD-90

Issue Date: 7/20/2021

Test Information

Test Method: LM-79-2019
Report Number: P560804
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-LD4-1HI-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: 3310.0 lumens
Efficiency: N/A
Efficacy: 76.6 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

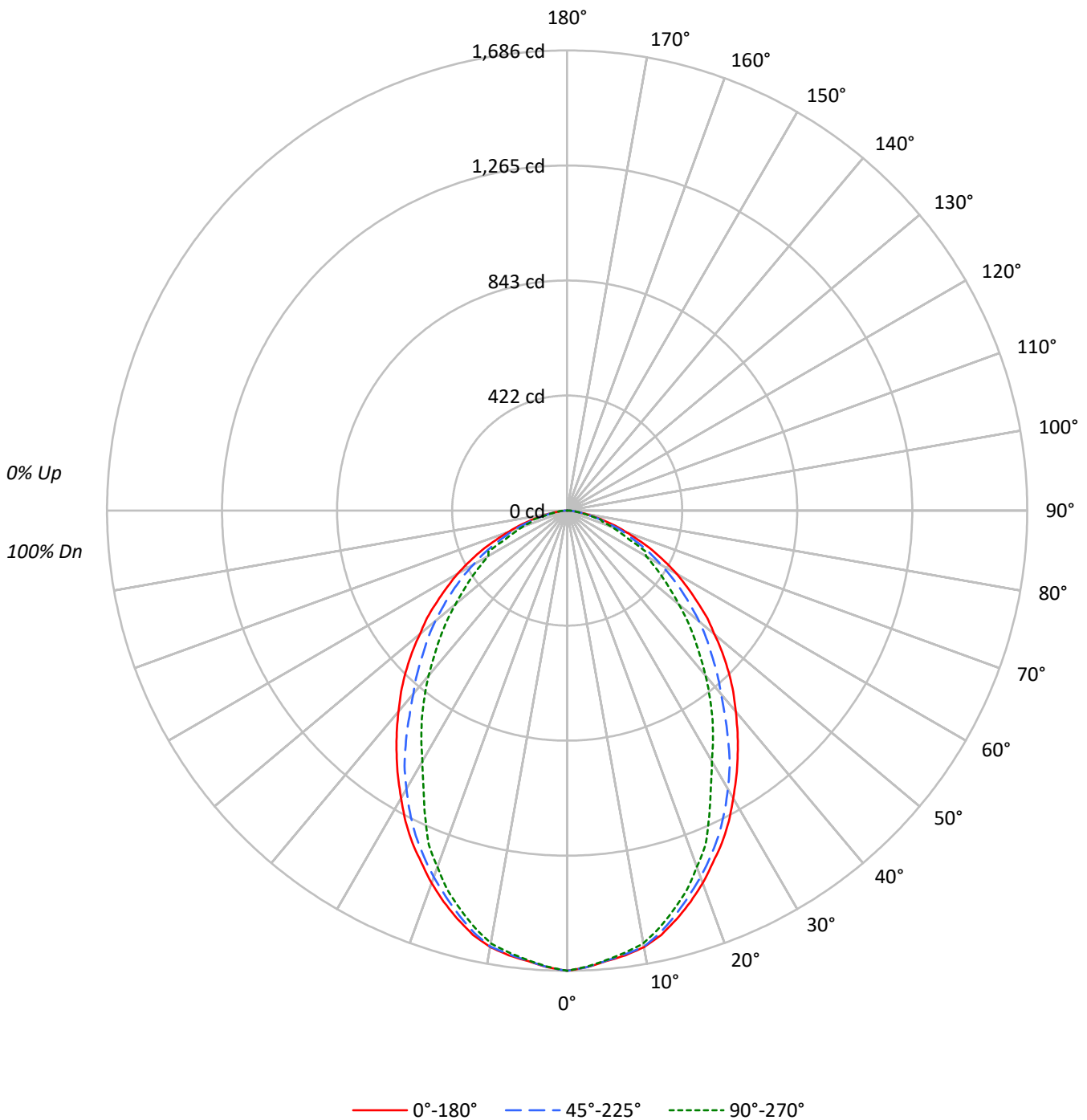
Input Watts (W): 43.2
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT



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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°	4537	4537	4537
5°	4475	4470	4465
10°	4437	4431	4400
15°	4317	4274	4214
20°	4159	4092	3980
25°	3988	3901	3658
30°	3779	3658	3295
35°	3579	3381	3048
40°	3376	3081	2773
45°	3182	2849	2507
50°	2946	2644	2236
55°	2725	2396	2003
60°	2497	2140	1794
65°	2197	1874	1589
70°	1810	1641	1349
75°	1439	1257	1317
80°	967	907	846
85°	602	722	843

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 3182 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	156.9	4.7
10°-20°	430.7	13.0
20°-30°	596.3	18.0
30°-40°	635.9	19.2
40°-50°	580.1	17.5
50°-60°	454.4	13.7
60°-70°	296.2	8.9
70°-80°	131.2	4.0
80°-90°	28.2	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°	1184.0	35.8
0°-40°	1819.9	55.0
0°-60°	2854.4	86.2
0°-90°	3310.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3310.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1686	1686	1686	1686	1686	
5°	1657	1655	1655	1653	1653	157
15°	1550	1550	1534	1518	1513	436
25°	1343	1335	1314	1267	1232	617
35°	1090	1082	1029	951	928	681
45°	836	819	748	686	659	644
55°	581	563	511	450	427	521
65°	345	326	294	300	250	340
75°	138	129	121	115	127	148
85°	20	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°	1686.1	1686.1	1686.1	1686.1	1686.1
2.5°	1674.4	1674.4	1674.4	1672.4	1672.4
5°	1656.8	1654.9	1654.9	1652.9	1652.9
7.5°	1643.2	1641.2	1639.3	1637.3	1633.4
10°	1623.7	1623.7	1621.7	1612.0	1610.1
12.5°	1592.5	1590.6	1582.8	1569.1	1565.2
15°	1549.6	1549.6	1534.0	1518.4	1512.6
17.5°	1502.8	1500.9	1481.4	1465.8	1458.0
20°	1452.2	1448.3	1428.8	1403.4	1389.8
22.5°	1395.6	1395.6	1372.2	1339.1	1325.5
25°	1343.0	1335.2	1313.8	1267.0	1231.9
27.5°	1282.6	1270.9	1247.5	1181.2	1140.3
30°	1216.3	1210.5	1177.3	1091.6	1060.4
32.5°	1153.9	1144.2	1109.1	1019.4	994.1
35°	1089.6	1081.8	1029.2	951.2	927.8
37.5°	1025.3	1015.5	949.3	886.9	857.7
40°	961.0	949.3	877.1	820.6	789.4
42.5°	900.5	884.9	814.8	754.3	719.3
45°	836.2	818.7	748.5	686.1	658.8
47.5°	771.9	756.3	692.0	627.6	596.5
50°	703.7	690.0	631.5	567.2	534.1
52.5°	647.1	625.7	569.2	504.8	477.6
55°	580.9	563.3	510.7	450.3	426.9
57.5°	520.4	502.9	454.2	397.6	378.1
60°	463.9	438.6	397.6	348.9	333.3
62.5°	401.5	382.0	347.0	306.0	325.5
65°	345.0	325.5	294.3	300.2	249.5
67.5°	282.6	272.9	245.6	218.3	210.5
70°	230.0	218.3	208.6	179.3	171.5
72.5°	183.2	171.5	157.9	142.3	136.4
75°	138.4	128.6	120.9	115.0	126.7
77.5°	95.5	91.6	85.8	79.9	78.0
80°	62.4	60.4	58.5	56.5	54.6
82.5°	37.0	37.0	37.0	37.0	37.0
85°	19.5	21.4	23.4	25.3	27.3
87.5°	11.7	11.7	13.6	15.6	17.5
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)