

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: P560858

Luminaire Tested: FSR-12-4-LD4-1HI-40-UNV-82-94-EDD-90

Issue Date: 7/20/2021

Test Information

Test Method: LM-79-2019
Report Number: P560858
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-40-UNV-82-94-EDD-90
Description: 1X4 FSR TROFFER WITH .187 CLEAR PC FIXTURE SIDE AND .187 CLEAR TEMPERED GLASS ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 4000K CCT LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 3223.0 lumens
Efficiency: N/A
Efficacy: 74.6 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

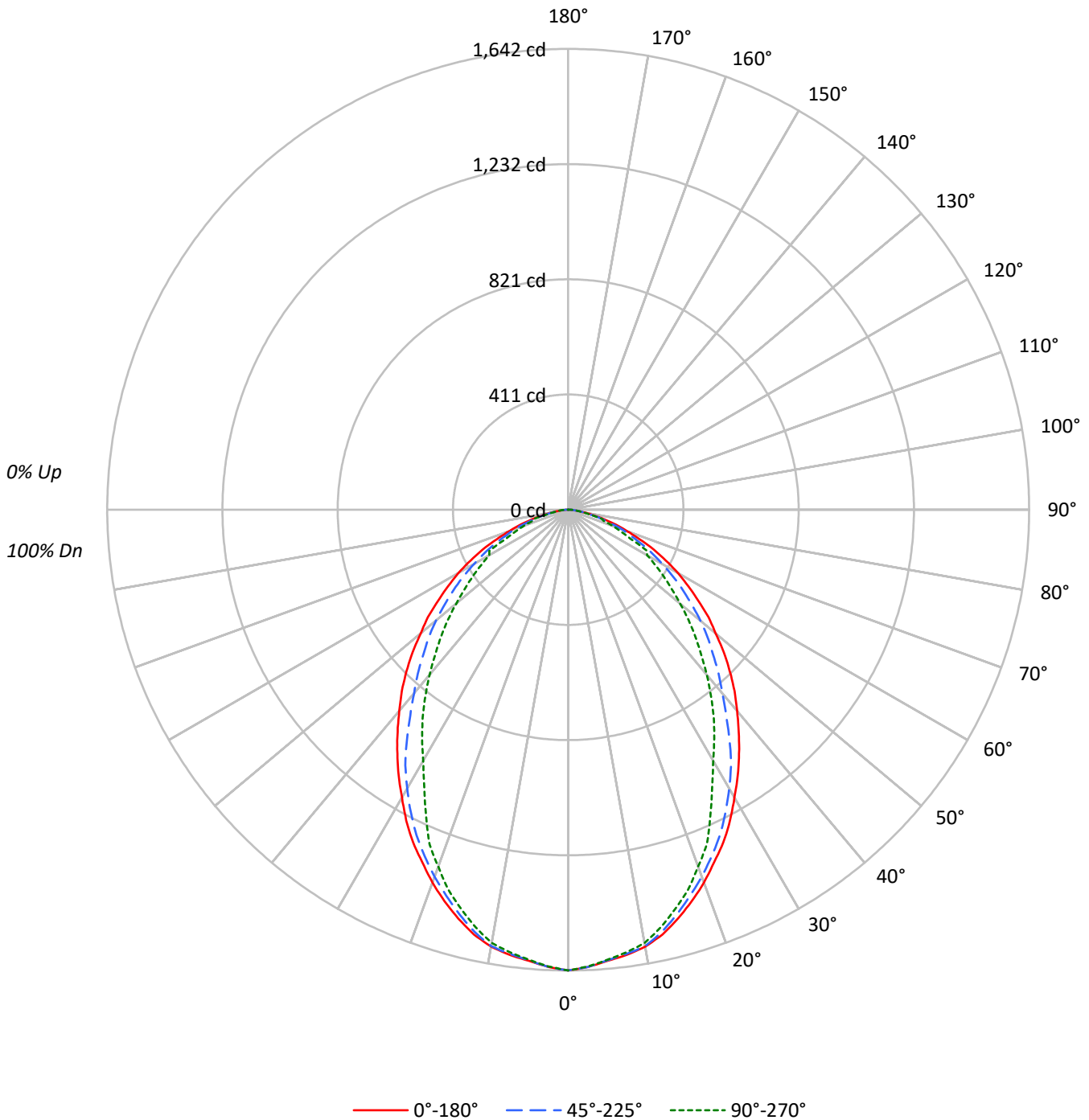
Input Watts (W): 43.2
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT



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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°	4418	4418	4418
5°	4358	4353	4348
10°	4320	4315	4284
15°	4204	4161	4103
20°	4049	3984	3875
25°	3883	3798	3562
30°	3680	3562	3208
35°	3485	3292	2968
40°	3287	3000	2700
45°	3099	2774	2441
50°	2869	2574	2177
55°	2654	2333	1950
60°	2431	2084	1747
65°	2139	1825	1547
70°	1762	1598	1314
75°	1402	1224	1283
80°	941	882	823
85°	587	704	821

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 3099 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	152.8	4.7
10°-20°	419.4	13.0
20°-30°	580.7	18.0
30°-40°	619.1	19.2
40°-50°	564.8	17.5
50°-60°	442.5	13.7
60°-70°	288.4	8.9
70°-80°	127.8	4.0
80°-90°	27.4	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°	1152.9	35.8
0°-40°	1772.0	55.0
0°-60°	2779.4	86.2
0°-90°	3223.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3223.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1642	1642	1642	1642	1642	
5°	1613	1611	1611	1610	1610	153
15°	1509	1509	1494	1478	1473	424
25°	1308	1300	1279	1234	1200	600
35°	1061	1053	1002	926	903	663
45°	814	797	729	668	642	627
55°	566	548	497	438	416	507
65°	336	317	287	292	243	331
75°	135	125	118	112	123	144
85°	19	21	23	25	27	26
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1641.8	1641.8	1641.8	1641.8	1641.8
2.5°	1630.4	1630.4	1630.4	1628.5	1628.5
5°	1613.3	1611.4	1611.4	1609.5	1609.5
7.5°	1600.0	1598.1	1596.2	1594.3	1590.5
10°	1581.0	1581.0	1579.1	1569.6	1567.7
12.5°	1550.7	1548.8	1541.2	1527.9	1524.1
15°	1508.9	1508.9	1493.7	1478.5	1472.8
17.5°	1463.3	1461.4	1442.5	1427.3	1419.7
20°	1414.0	1410.2	1391.2	1366.5	1353.3
22.5°	1359.0	1359.0	1336.2	1303.9	1290.6
25°	1307.7	1300.1	1279.2	1233.7	1199.5
27.5°	1248.9	1237.5	1214.7	1150.2	1110.3
30°	1184.3	1178.6	1146.4	1062.9	1032.5
32.5°	1123.6	1114.1	1080.0	992.6	968.0
35°	1061.0	1053.4	1002.1	926.2	903.4
37.5°	998.3	988.8	924.3	863.6	835.1
40°	935.7	924.3	854.1	799.0	768.7
42.5°	876.9	861.7	793.4	734.5	700.4
45°	814.2	797.2	728.8	668.1	641.5
47.5°	751.6	736.4	673.8	611.1	580.8
50°	685.2	671.9	614.9	552.3	520.0
52.5°	630.1	609.3	554.2	491.6	465.0
55°	565.6	548.5	497.3	438.4	415.7
57.5°	506.8	489.7	442.2	387.2	368.2
60°	451.7	427.0	387.2	339.7	324.6
62.5°	391.0	372.0	337.8	298.0	317.0
65°	335.9	317.0	286.6	292.3	242.9
67.5°	275.2	265.7	239.1	212.6	205.0
70°	224.0	212.6	203.1	174.6	167.0
72.5°	178.4	167.0	153.7	138.6	132.9
75°	134.8	125.3	117.7	112.0	123.4
77.5°	93.0	89.2	83.5	77.8	75.9
80°	60.7	58.8	56.9	55.0	53.1
82.5°	36.1	36.1	36.1	36.1	36.1
85°	19.0	20.9	22.8	24.7	26.6
87.5°	11.4	11.4	13.3	15.2	17.1
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)