

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: P561196

Luminaire Tested: FSR-12-4-LD4-1STD-35-UNV-93-96-EDD-90

Issue Date: 7/20/2021

Test Information

Test Method: LM-79-2019
Report Number: P561196
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-90
Description: 1X4 FSR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .250 CLEAR TEMPER GLASS ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 3500K CCT LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 2760.0 lumens
Efficiency: N/A
Efficacy: 82.9 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

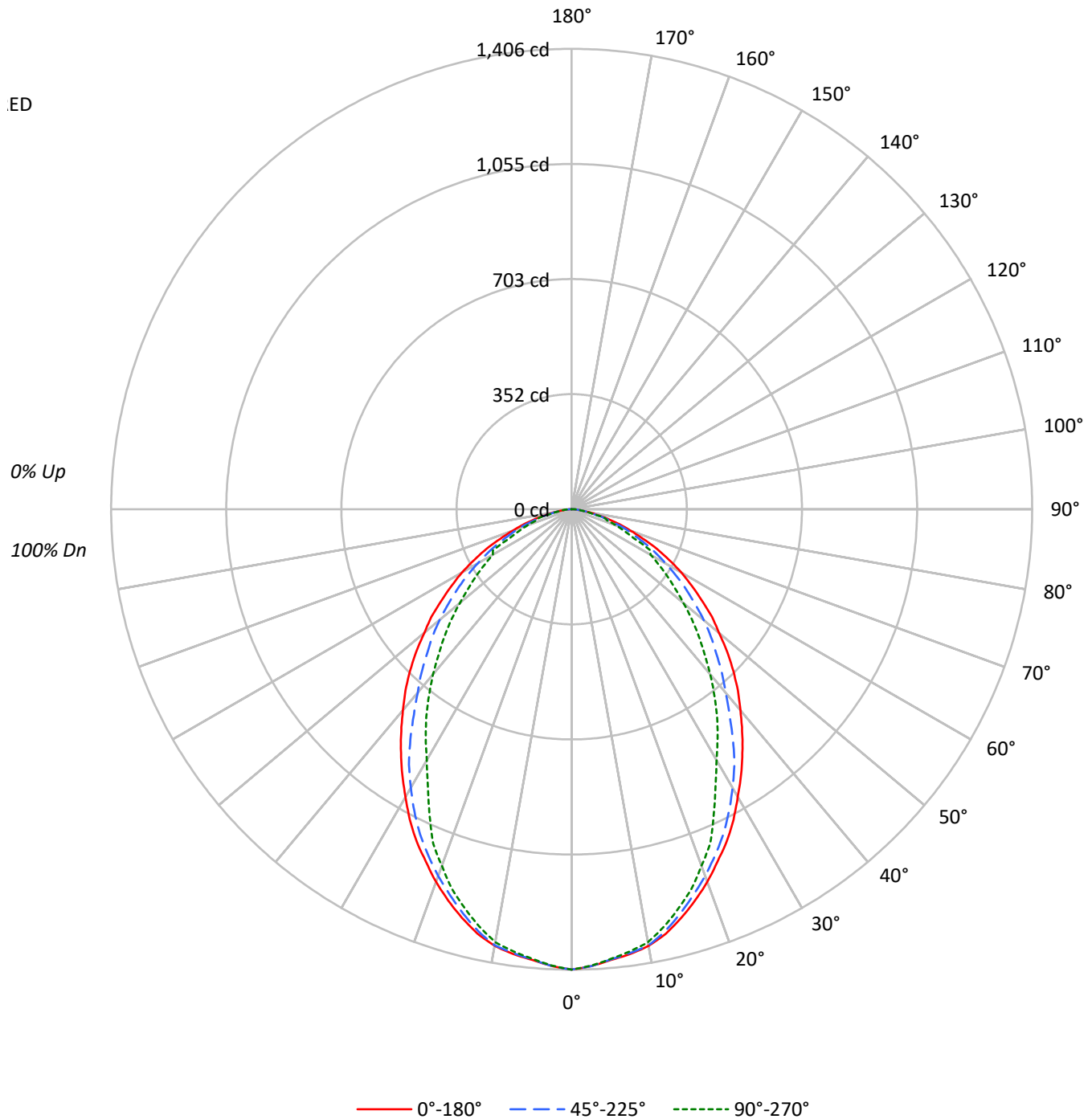
Input Watts (W): 33.3
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT



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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	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°	3783	3783	3783
5°	3732	3727	3723
10°	3700	3695	3668
15°	3600	3563	3514
20°	3468	3412	3319
25°	3325	3253	3050
30°	3151	3050	2747
35°	2985	2819	2542
40°	2815	2569	2312
45°	2654	2375	2091
50°	2456	2205	1864
55°	2272	1998	1670
60°	2082	1785	1496
65°	1832	1563	1324
70°	1509	1368	1125
75°	1200	1048	1098
80°	806	756	705
85°	503	602	704

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 2654 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	130.9	4.7
10°-20°	359.2	13.0
20°-30°	497.2	18.0
30°-40°	530.2	19.2
40°-50°	483.7	17.5
50°-60°	378.9	13.7
60°-70°	247.0	8.9
70°-80°	109.4	4.0
80°-90°	23.5	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°	987.3	35.8
0°-40°	1517.5	55.0
0°-60°	2380.1	86.2
0°-90°	2760.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2760.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1406	1406	1406	1406	1406	
5°	1382	1380	1380	1378	1378	131
15°	1292	1292	1279	1266	1261	363
25°	1120	1113	1096	1056	1027	514
35°	909	902	858	793	774	568
45°	697	683	624	572	549	537
55°	484	470	426	376	356	434
65°	288	271	245	250	208	284
75°	115	107	101	96	106	124
85°	16	18	20	21	23	23
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1405.9	1405.9	1405.9	1405.9	1405.9
2.5°	1396.2	1396.2	1396.2	1394.5	1394.5
5°	1381.5	1379.9	1379.9	1378.3	1378.3
7.5°	1370.1	1368.5	1366.9	1365.3	1362.0
10°	1353.9	1353.9	1352.3	1344.1	1342.5
12.5°	1327.9	1326.3	1319.8	1308.4	1305.1
15°	1292.1	1292.1	1279.1	1266.1	1261.3
17.5°	1253.1	1251.5	1235.2	1222.2	1215.7
20°	1210.9	1207.6	1191.4	1170.2	1158.9
22.5°	1163.7	1163.7	1144.2	1116.6	1105.2
25°	1119.8	1113.3	1095.5	1056.5	1027.2
27.5°	1069.5	1059.7	1040.2	984.9	950.8
30°	1014.2	1009.3	981.7	910.2	884.2
32.5°	962.2	954.1	924.8	850.0	828.9
35°	908.6	902.1	858.2	793.2	773.7
37.5°	854.9	846.8	791.5	739.5	715.1
40°	801.3	791.5	731.4	684.3	658.3
42.5°	750.9	737.9	679.4	629.0	599.7
45°	697.3	682.6	624.1	572.1	549.4
47.5°	643.6	630.6	577.0	523.4	497.3
50°	586.7	575.4	526.6	473.0	445.3
52.5°	539.6	521.7	474.6	421.0	398.2
55°	484.3	469.7	425.8	375.5	355.9
57.5°	434.0	419.3	378.7	331.6	315.3
60°	386.8	365.7	331.6	290.9	277.9
62.5°	334.8	318.6	289.3	255.2	271.4
65°	287.7	271.4	245.4	250.3	208.0
67.5°	235.7	227.5	204.8	182.0	175.5
70°	191.8	182.0	173.9	149.5	143.0
72.5°	152.8	143.0	131.7	118.6	113.8
75°	115.4	107.3	100.8	95.9	105.6
77.5°	79.6	76.4	71.5	66.6	65.0
80°	52.0	50.4	48.8	47.1	45.5
82.5°	30.9	30.9	30.9	30.9	30.9
85°	16.3	17.9	19.5	21.1	22.8
87.5°	9.8	9.8	11.4	13.0	14.6
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)