

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: P560936

Luminaire Tested: FSR-12-4-LD4-1HI-50-UNV-93-88-EDD-90

Issue Date: 7/20/2021

Test Information

Test Method: LM-79-2019
Report Number: P560936
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-50-UNV-93-88-EDD-90
Description: 1X4 FSR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .500 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 5000K CCT LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 3080.0 lumens
Efficiency: N/A
Efficacy: 71.3 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

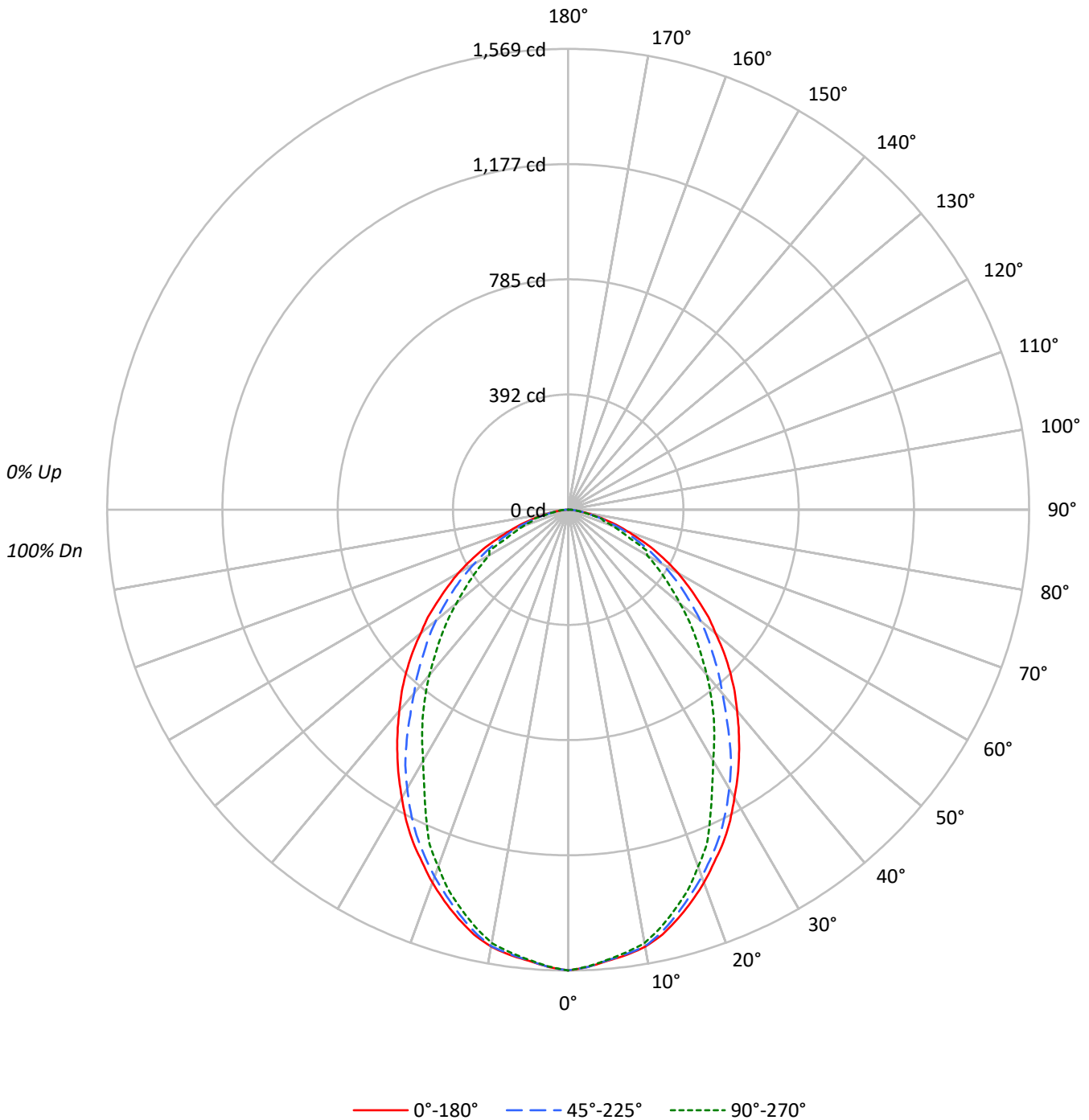
Input Watts (W): 43.2
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT



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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°	4222	4222	4222
5°	4165	4160	4155
10°	4129	4124	4094
15°	4017	3977	3921
20°	3870	3807	3703
25°	3711	3630	3404
30°	3517	3404	3066
35°	3331	3146	2836
40°	3141	2867	2581
45°	2961	2651	2333
50°	2741	2460	2081
55°	2536	2229	1863
60°	2323	1991	1669
65°	2044	1744	1479
70°	1684	1527	1256
75°	1339	1170	1226
80°	899	843	787
85°	559	673	784

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 2961 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	146.0	4.7
10°-20°	400.8	13.0
20°-30°	554.9	18.0
30°-40°	591.7	19.2
40°-50°	539.8	17.5
50°-60°	422.9	13.7
60°-70°	275.6	8.9
70°-80°	122.1	4.0
80°-90°	26.2	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°	1101.7	35.8
0°-40°	1693.4	55.0
0°-60°	2656.1	86.2
0°-90°	3080.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3080.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1569	1569	1569	1569	1569	
5°	1542	1540	1540	1538	1538	146
15°	1442	1442	1427	1413	1408	405
25°	1250	1242	1222	1179	1146	574
35°	1014	1007	958	885	863	634
45°	778	762	696	638	613	599
55°	540	524	475	419	397	485
65°	321	303	274	279	232	316
75°	129	120	112	107	118	138
85°	18	20	22	24	25	25
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1568.9	1568.9	1568.9	1568.9	1568.9
2.5°	1558.0	1558.0	1558.0	1556.2	1556.2
5°	1541.7	1539.9	1539.9	1538.1	1538.1
7.5°	1529.0	1527.2	1525.4	1523.6	1519.9
10°	1510.9	1510.9	1509.1	1500.0	1498.2
12.5°	1481.8	1480.0	1472.8	1460.1	1456.5
15°	1441.9	1441.9	1427.4	1412.9	1407.5
17.5°	1398.4	1396.6	1378.5	1364.0	1356.7
20°	1351.3	1347.6	1329.5	1305.9	1293.2
22.5°	1298.7	1298.7	1276.9	1246.1	1233.4
25°	1249.7	1242.4	1222.5	1179.0	1146.3
27.5°	1193.5	1182.6	1160.8	1099.1	1061.1
30°	1131.8	1126.4	1095.5	1015.7	986.7
32.5°	1073.8	1064.7	1032.0	948.6	925.0
35°	1013.9	1006.6	957.7	885.1	863.4
37.5°	954.0	945.0	883.3	825.3	798.1
40°	894.2	883.3	816.2	763.6	734.6
42.5°	838.0	823.5	758.2	701.9	669.3
45°	778.1	761.8	696.5	638.4	613.1
47.5°	718.3	703.7	643.9	584.0	555.0
50°	654.8	642.1	587.7	527.8	497.0
52.5°	602.2	582.2	529.6	469.8	444.4
55°	540.5	524.2	475.2	419.0	397.2
57.5°	484.3	468.0	422.6	370.0	351.9
60°	431.7	408.1	370.0	324.7	310.2
62.5°	373.6	355.5	322.9	284.8	302.9
65°	321.0	302.9	273.9	279.3	232.2
67.5°	263.0	253.9	228.5	203.1	195.9
70°	214.0	203.1	194.1	166.9	159.6
72.5°	170.5	159.6	146.9	132.4	127.0
75°	128.8	119.7	112.5	107.0	117.9
77.5°	88.9	85.2	79.8	74.4	72.6
80°	58.0	56.2	54.4	52.6	50.8
82.5°	34.5	34.5	34.5	34.5	34.5
85°	18.1	20.0	21.8	23.6	25.4
87.5°	10.9	10.9	12.7	14.5	16.3
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)