

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: P561189

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

Issue Date: 7/20/2021

Test Information

Test Method: LM-79-2019
Report Number: P561189
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-93-86-EDD
Description: 1X4 FSR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .250 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 80 CRI AND 3500K CCT LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 3225.0 lumens
Efficiency: N/A
Efficacy: 96.8 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

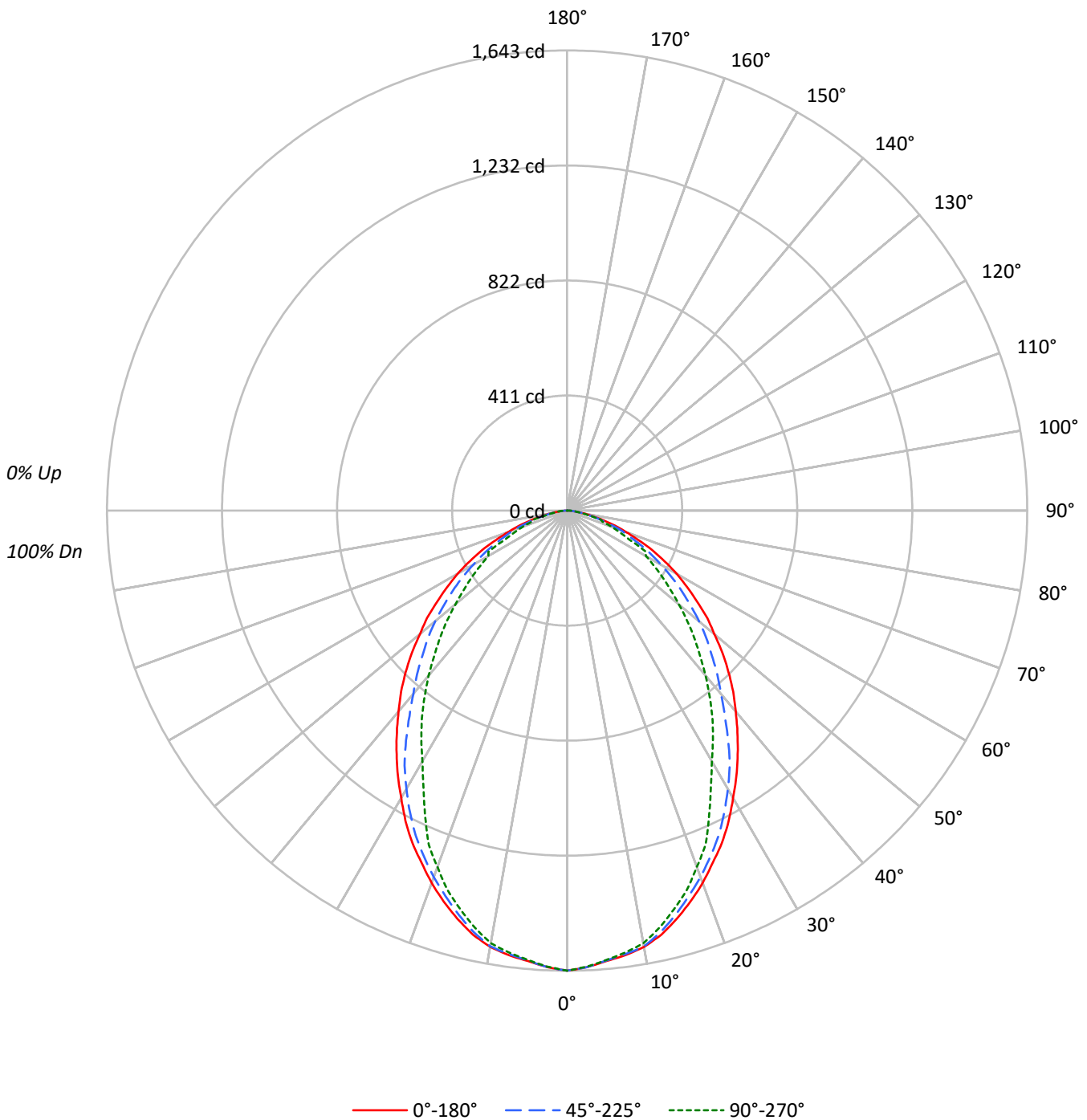
Input Watts (W): 33.3
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT



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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	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°	4421	4421	4421
5°	4361	4356	4350
10°	4323	4318	4286
15°	4206	4164	4106
20°	4052	3987	3878
25°	3885	3801	3564
30°	3682	3564	3210
35°	3487	3294	2970
40°	3289	3002	2702
45°	3100	2775	2443
50°	2870	2576	2179
55°	2655	2335	1951
60°	2433	2085	1748
65°	2141	1826	1548
70°	1763	1599	1315
75°	1402	1224	1283
80°	942	883	824
85°	587	704	821

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 3100 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	152.9	4.7
10°-20°	419.7	13.0
20°-30°	581.0	18.0
30°-40°	619.5	19.2
40°-50°	565.2	17.5
50°-60°	442.8	13.7
60°-70°	288.6	8.9
70°-80°	127.9	4.0
80°-90°	27.5	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°	1153.6	35.8
0°-40°	1773.1	55.0
0°-60°	2781.1	86.2
0°-90°	3225.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3225.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1643	1643	1643	1643	1643	
5°	1614	1612	1612	1610	1610	153
15°	1510	1510	1495	1479	1474	424
25°	1308	1301	1280	1234	1200	601
35°	1062	1054	1003	927	904	664
45°	815	798	729	668	642	628
55°	566	549	498	439	416	508
65°	336	317	287	292	243	331
75°	135	125	118	112	123	145
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°	1642.8	1642.8	1642.8	1642.8	1642.8
2.5°	1631.4	1631.4	1631.4	1629.5	1629.5
5°	1614.3	1612.4	1612.4	1610.5	1610.5
7.5°	1601.0	1599.1	1597.2	1595.3	1591.5
10°	1582.0	1582.0	1580.1	1570.6	1568.7
12.5°	1551.6	1549.7	1542.1	1528.8	1525.0
15°	1509.8	1509.8	1494.6	1479.4	1473.7
17.5°	1464.3	1462.4	1443.4	1428.2	1420.6
20°	1414.9	1411.1	1392.1	1367.4	1354.1
22.5°	1359.8	1359.8	1337.0	1304.7	1291.4
25°	1308.5	1300.9	1280.0	1234.5	1200.3
27.5°	1249.6	1238.3	1215.5	1150.9	1111.0
30°	1185.1	1179.4	1147.1	1063.5	1033.1
32.5°	1124.3	1114.8	1080.6	993.3	968.6
35°	1061.6	1054.0	1002.8	926.8	904.0
37.5°	999.0	989.5	924.9	864.1	835.6
40°	936.3	924.9	854.6	799.5	769.2
42.5°	877.4	862.2	793.8	735.0	700.8
45°	814.7	797.6	729.3	668.5	641.9
47.5°	752.1	736.9	674.2	611.5	581.1
50°	685.6	672.3	615.3	552.7	520.4
52.5°	630.5	609.6	554.6	491.9	465.3
55°	565.9	548.9	497.6	438.7	415.9
57.5°	507.1	490.0	442.5	387.4	368.4
60°	452.0	427.3	387.4	339.9	324.8
62.5°	391.2	372.2	338.1	298.2	317.2
65°	336.2	317.2	286.8	292.5	243.1
67.5°	275.4	265.9	239.3	212.7	205.1
70°	224.1	212.7	203.2	174.7	167.1
72.5°	178.5	167.1	153.8	138.6	132.9
75°	134.8	125.3	117.7	112.1	123.4
77.5°	93.1	89.3	83.6	77.9	76.0
80°	60.8	58.9	57.0	55.1	53.2
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)