

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: P561746

Luminaire Tested: FSR-12-4-LD4-2STD-35-UNV-82-85-EDD-90

Issue Date: 7/20/2021

Test Information

Test Method: LM-79-2019
Report Number: P561746
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-LD4-2STD-35-UNV-82-85-EDD-90
Description: 1X4 FSR TROFFER WITH .187 CLEAR PC FIXTURE SIDE AND .187 CLEAR PC ENVIRONMENTAL SI
LENSES WITH, 90 CRI AND 3500K CCT LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 5067.0 lumens
Efficiency: N/A
Efficacy: 76.1 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

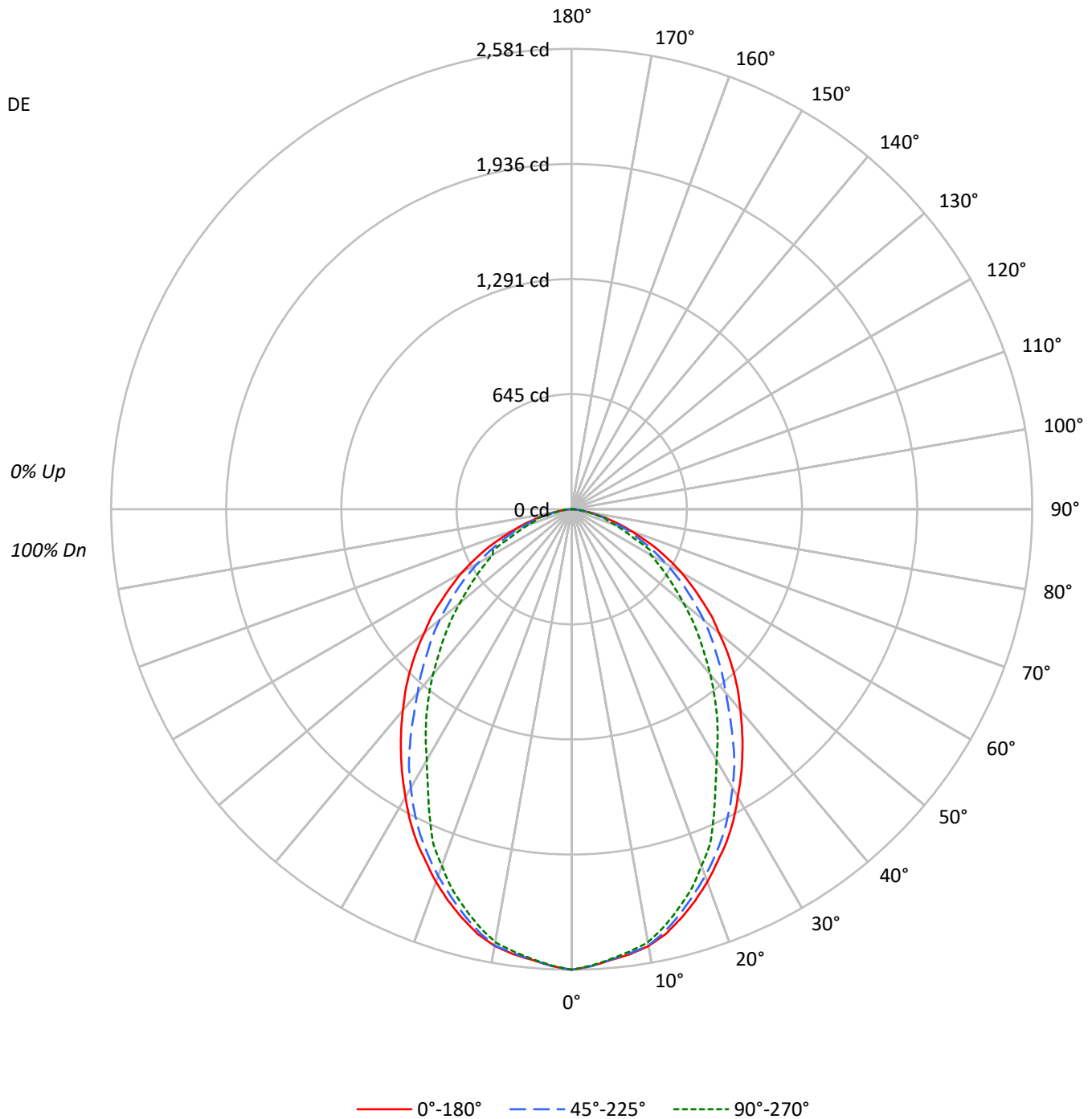
Input Watts (W): 66.6
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT



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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°	6946	6946	6946
5°	6851	6843	6835
10°	6792	6784	6735
15°	6609	6542	6451
20°	6366	6263	6092
25°	6104	5971	5599
30°	5785	5600	5044
35°	5480	5176	4666
40°	5168	4717	4245
45°	4872	4360	3838
50°	4510	4047	3423
55°	4172	3668	3066
60°	3822	3276	2746
65°	3363	2869	2432
70°	2770	2512	2066
75°	2203	1923	2017
80°	1480	1387	1294
85°	920	1105	1291

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 4872 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	240.3	4.7
10°-20°	659.4	13.0
20°-30°	912.9	18.0
30°-40°	973.4	19.2
40°-50°	888.0	17.5
50°-60°	695.7	13.7
60°-70°	453.4	8.9
70°-80°	200.9	4.0
80°-90°	43.1	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°	1812.5	35.8
0°-40°	2785.9	55.0
0°-60°	4369.6	86.2
0°-90°	5067.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	5067.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2581	2581	2581	2581	2581	
5°	2536	2533	2533	2530	2530	241
15°	2372	2372	2348	2324	2316	667
25°	2056	2044	2011	1940	1886	944
35°	1668	1656	1576	1456	1420	1043
45°	1280	1253	1146	1050	1009	986
55°	889	862	782	689	654	798
65°	528	498	451	460	382	520
75°	212	197	185	176	194	227
85°	30	33	36	39	42	41
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2581.1	2581.1	2581.1	2581.1	2581.1
2.5°	2563.2	2563.2	2563.2	2560.2	2560.2
5°	2536.3	2533.3	2533.3	2530.3	2530.3
7.5°	2515.4	2512.4	2509.4	2506.5	2500.5
10°	2485.6	2485.6	2482.6	2467.7	2464.7
12.5°	2437.8	2434.9	2422.9	2402.0	2396.1
15°	2372.2	2372.2	2348.3	2324.4	2315.5
17.5°	2300.6	2297.6	2267.8	2243.9	2231.9
20°	2223.0	2217.0	2187.2	2148.4	2127.5
22.5°	2136.5	2136.5	2100.7	2049.9	2029.0
25°	2055.9	2044.0	2011.1	1939.5	1885.8
27.5°	1963.4	1945.5	1909.7	1808.2	1745.6
30°	1861.9	1853.0	1802.3	1671.0	1623.2
32.5°	1766.5	1751.5	1697.8	1560.6	1521.8
35°	1668.0	1656.1	1575.5	1456.1	1420.3
37.5°	1569.5	1554.6	1453.2	1357.7	1312.9
40°	1471.1	1453.2	1342.7	1256.2	1208.5
42.5°	1378.6	1354.7	1247.3	1154.8	1101.1
45°	1280.1	1253.2	1145.8	1050.3	1008.6
47.5°	1181.6	1157.7	1059.3	960.8	913.1
50°	1077.2	1056.3	966.8	868.3	817.6
52.5°	990.7	957.8	871.3	772.8	731.1
55°	889.2	862.3	781.8	689.3	653.5
57.5°	796.7	769.8	695.2	608.7	578.9
60°	710.2	671.4	608.7	534.1	510.2
62.5°	614.7	584.8	531.1	468.5	498.3
65°	528.1	498.3	450.6	459.5	381.9
67.5°	432.7	417.7	376.0	334.2	322.3
70°	352.1	334.2	319.3	274.5	262.6
72.5°	280.5	262.6	241.7	217.8	208.9
75°	211.9	196.9	185.0	176.0	194.0
77.5°	146.2	140.2	131.3	122.3	119.4
80°	95.5	92.5	89.5	86.5	83.5
82.5°	56.7	56.7	56.7	56.7	56.7
85°	29.8	32.8	35.8	38.8	41.8
87.5°	17.9	17.9	20.9	23.9	26.9
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)