

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: P561350

Luminaire Tested: FSR-12-4-LD4-2HI-35-UNV-81-87-EDD-90

Issue Date: 7/20/2021

Test Information

Test Method: LM-79-2019
Report Number: P561350
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-LD4-2HI-35-UNV-81-87-EDD-90
Description: 1X4 FSR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .375 CLEAR PC ENVIRONMENTAL SI
LENSES WITH, 90 CRI AND 3500K CCT LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 6073.0 lumens
Efficiency: N/A
Efficacy: 70.3 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

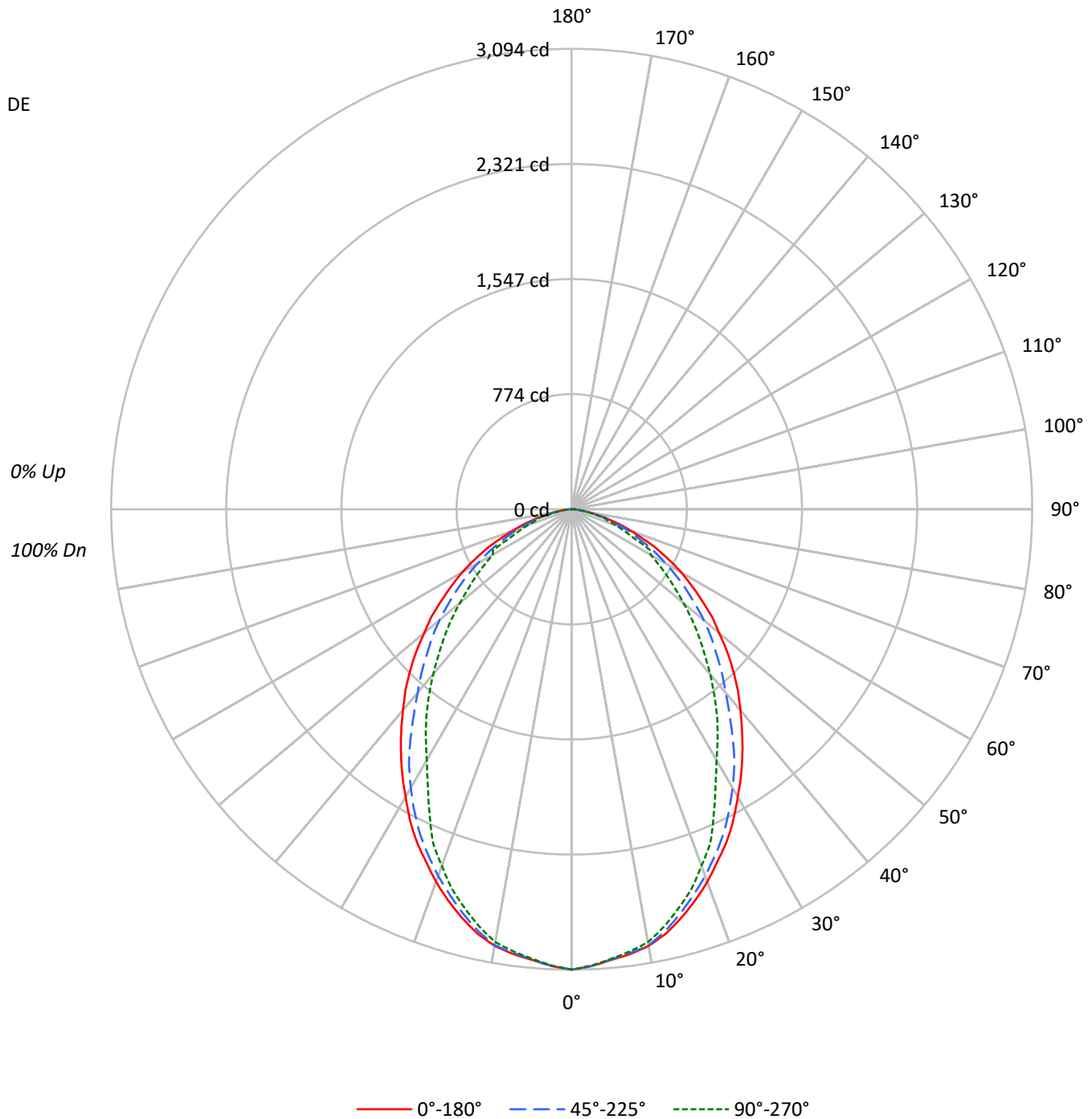
Input Watts (W): 86.4
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT



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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																												
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°	8325	8325	8325
5°	8212	8202	8192
10°	8140	8131	8072
15°	7921	7841	7731
20°	7630	7507	7302
25°	7316	7157	6711
30°	6934	6712	6045
35°	6568	6203	5592
40°	6193	5653	5088
45°	5839	5226	4600
50°	5405	4851	4102
55°	5000	4396	3674
60°	4581	3927	3291
65°	4031	3438	2915
70°	3320	3011	2476
75°	2640	2305	2417
80°	1773	1663	1551
85°	1105	1325	1547

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 5839 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	288.0	4.7
10°-20°	790.3	13.0
20°-30°	1094.1	18.0
30°-40°	1166.6	19.2
40°-50°	1064.3	17.5
50°-60°	833.8	13.7
60°-70°	543.4	8.9
70°-80°	240.8	4.0
80°-90°	51.7	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°	2172.4	35.8
0°-40°	3339.0	55.0
0°-60°	5237.1	86.2
0°-90°	6073.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	6073.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	3094	3094	3094	3094	3094	
5°	3040	3036	3036	3033	3033	289
15°	2843	2843	2815	2786	2775	799
25°	2464	2450	2410	2325	2260	1131
35°	1999	1985	1888	1745	1702	1250
45°	1534	1502	1373	1259	1209	1182
55°	1066	1034	937	826	783	956
65°	633	597	540	551	458	624
75°	254	236	222	211	232	272
85°	36	39	43	46	50	50
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	3093.5	3093.5	3093.5	3093.5	3093.5
2.5°	3072.0	3072.0	3072.0	3068.5	3068.5
5°	3039.9	3036.3	3036.3	3032.7	3032.7
7.5°	3014.8	3011.3	3007.7	3004.1	2996.9
10°	2979.1	2979.1	2975.5	2957.6	2954.0
12.5°	2921.8	2918.3	2904.0	2878.9	2871.8
15°	2843.2	2843.2	2814.6	2785.9	2775.2
17.5°	2757.3	2753.8	2718.0	2689.4	2675.1
20°	2664.3	2657.2	2621.4	2574.9	2549.9
22.5°	2560.6	2560.6	2517.7	2456.9	2431.9
25°	2464.1	2449.8	2410.4	2324.6	2260.2
27.5°	2353.2	2331.8	2288.8	2167.2	2092.1
30°	2231.6	2220.9	2160.1	2002.7	1945.5
32.5°	2117.2	2099.3	2034.9	1870.4	1823.9
35°	1999.2	1984.9	1888.3	1745.2	1702.3
37.5°	1881.1	1863.3	1741.7	1627.2	1573.6
40°	1763.1	1741.7	1609.3	1505.6	1448.4
42.5°	1652.3	1623.6	1494.9	1384.0	1319.7
45°	1534.2	1502.0	1373.3	1258.9	1208.8
47.5°	1416.2	1387.6	1269.6	1151.6	1094.3
50°	1291.0	1266.0	1158.7	1040.7	979.9
52.5°	1187.3	1148.0	1044.3	926.3	876.2
55°	1065.7	1033.6	937.0	826.1	783.2
57.5°	954.9	922.7	833.3	729.6	693.8
60°	851.2	804.7	729.6	640.2	611.5
62.5°	736.7	701.0	636.6	561.5	597.2
65°	633.0	597.2	540.0	550.8	457.8
67.5°	518.6	500.7	450.6	400.5	386.2
70°	422.0	400.5	382.7	329.0	314.7
72.5°	336.2	314.7	289.7	261.1	250.3
75°	253.9	236.0	221.7	211.0	232.5
77.5°	175.2	168.1	157.4	146.6	143.1
80°	114.4	110.9	107.3	103.7	100.1
82.5°	67.9	67.9	67.9	67.9	67.9
85°	35.8	39.3	42.9	46.5	50.1
87.5°	21.5	21.5	25.0	28.6	32.2
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)