

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: P561436

Luminaire Tested: FSR-12-4-LD4-2HI-40-UNV-82-96-EDD-90

Issue Date: 7/20/2021

Test Information

Test Method: LM-79-2019
Report Number: P561436
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-40-UNV-82-96-EDD-90
Description: 1X4 FSR TROFFER WITH .187 CLEAR PC FIXTURE SIDE AND .250 CLEAR TEMPERED GLASS ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 4000K CCT LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 6374.0 lumens
Efficiency: N/A
Efficacy: 73.8 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

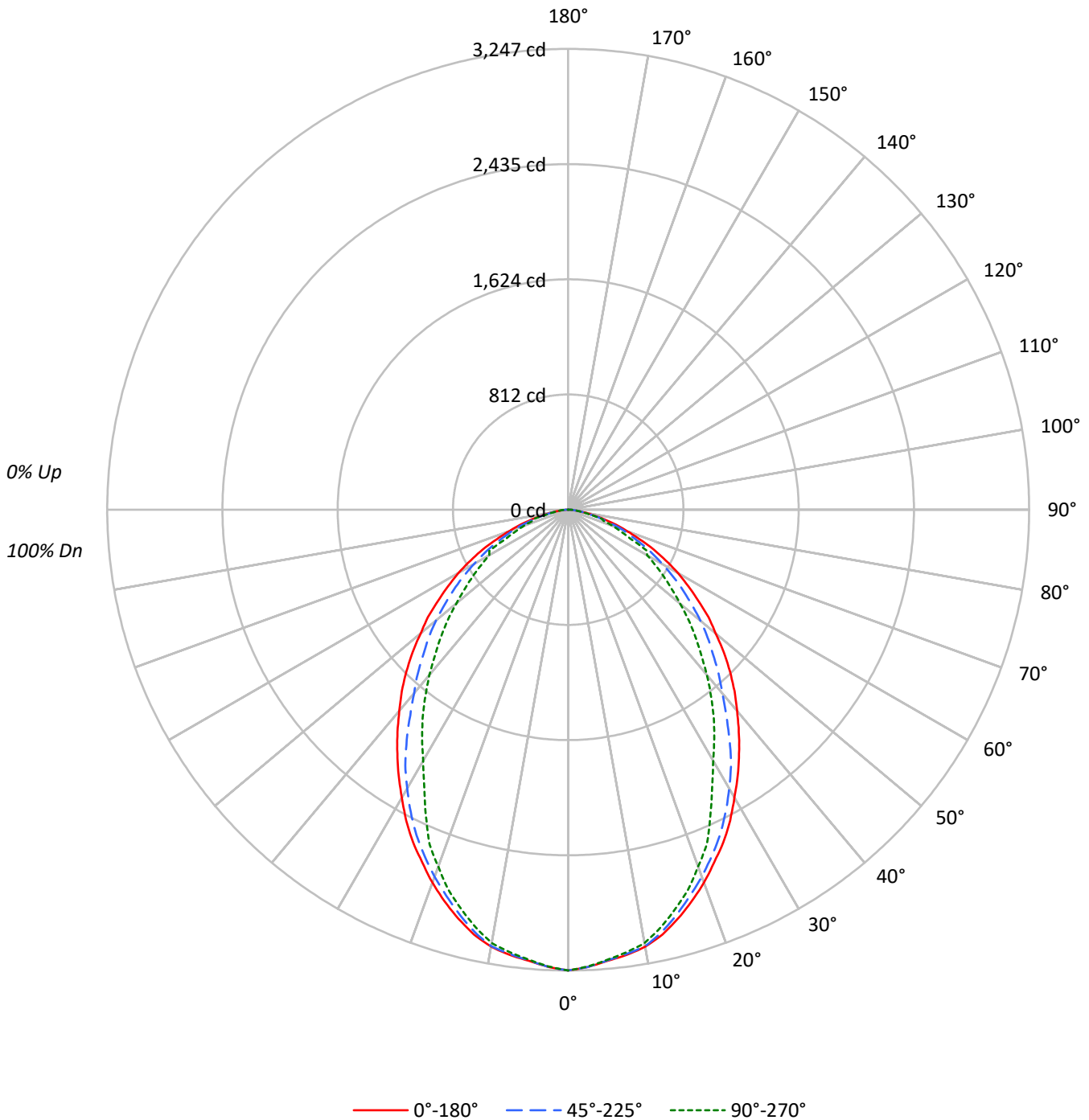
Input Watts (W): 86.4
Input Voltage (V):
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT



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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°	8737	8737	8737
5°	8618	8608	8598
10°	8544	8534	8472
15°	8313	8230	8115
20°	8008	7879	7664
25°	7679	7512	7044
30°	7278	7045	6345
35°	6893	6511	5869
40°	6500	5934	5340
45°	6128	5485	4828
50°	5673	5092	4306
55°	5248	4614	3856
60°	4808	4121	3455
65°	4230	3609	3060
70°	3485	3160	2599
75°	2771	2419	2537
80°	1861	1745	1629
85°	1158	1389	1621

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 6128 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	302.2	4.7
10°-20°	829.5	13.0
20°-30°	1148.3	18.0
30°-40°	1224.5	19.2
40°-50°	1117.1	17.5
50°-60°	875.1	13.7
60°-70°	570.4	8.9
70°-80°	252.7	4.0
80°-90°	54.2	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°	2280.0	35.8
0°-40°	3504.5	55.0
0°-60°	5496.7	86.2
0°-90°	6374.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	6374.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	3247	3247	3247	3247	3247	
5°	3190	3187	3187	3183	3183	303
15°	2984	2984	2954	2924	2913	839
25°	2586	2571	2530	2440	2372	1187
35°	2098	2083	1982	1832	1787	1312
45°	1610	1576	1441	1321	1269	1240
55°	1119	1085	983	867	822	1003
65°	664	627	567	578	480	655
75°	266	248	233	222	244	286
85°	38	41	45	49	52	52
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	3246.8	3246.8	3246.8	3246.8	3246.8
2.5°	3224.3	3224.3	3224.3	3220.6	3220.6
5°	3190.5	3186.8	3186.8	3183.0	3183.0
7.5°	3164.3	3160.5	3156.7	3153.0	3145.5
10°	3126.7	3126.7	3123.0	3104.2	3100.4
12.5°	3066.7	3062.9	3047.9	3021.6	3014.1
15°	2984.1	2984.1	2954.1	2924.0	2912.8
17.5°	2894.0	2890.2	2852.7	2822.7	2807.7
20°	2796.4	2788.9	2751.4	2702.6	2676.3
22.5°	2687.5	2687.5	2642.5	2578.7	2552.4
25°	2586.2	2571.2	2529.9	2439.8	2372.3
27.5°	2469.8	2447.3	2402.3	2274.7	2195.8
30°	2342.2	2331.0	2267.2	2102.0	2041.9
32.5°	2222.1	2203.3	2135.8	1963.1	1914.3
35°	2098.2	2083.2	1981.9	1831.7	1786.7
37.5°	1974.4	1955.6	1828.0	1707.9	1651.6
40°	1850.5	1828.0	1689.1	1580.2	1520.2
42.5°	1734.1	1704.1	1569.0	1452.6	1385.1
45°	1610.3	1576.5	1441.4	1321.3	1268.7
47.5°	1486.4	1456.4	1332.5	1208.6	1148.6
50°	1355.0	1328.8	1216.2	1092.3	1028.5
52.5°	1246.2	1204.9	1096.0	972.2	919.6
55°	1118.6	1084.8	983.4	867.1	822.0
57.5°	1002.2	968.4	874.6	765.7	728.2
60°	893.3	844.6	765.7	671.9	641.9
62.5°	773.2	735.7	668.1	589.3	626.8
65°	664.4	626.8	566.8	578.0	480.5
67.5°	544.3	525.5	472.9	420.4	405.4
70°	442.9	420.4	401.6	345.3	330.3
72.5°	352.8	330.3	304.0	274.0	262.7
75°	266.5	247.7	232.7	221.5	244.0
77.5°	183.9	176.4	165.2	153.9	150.1
80°	120.1	116.4	112.6	108.9	105.1
82.5°	71.3	71.3	71.3	71.3	71.3
85°	37.5	41.3	45.0	48.8	52.5
87.5°	22.5	22.5	26.3	30.0	33.8
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)