

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: P561454

Luminaire Tested: FSR-12-4-LD4-2HI-40-UNV-93-97-EDD-90

Issue Date: 7/20/2021

Test Information

Test Method: LM-79-2019
Report Number: P561454
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-93-97-EDD-90
Description: 1X4 FSR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .375 CLEAR TEMPER
GLASS ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 4000K CCT LEDS
Light Source: -
Ballast/Driver: -

Summary

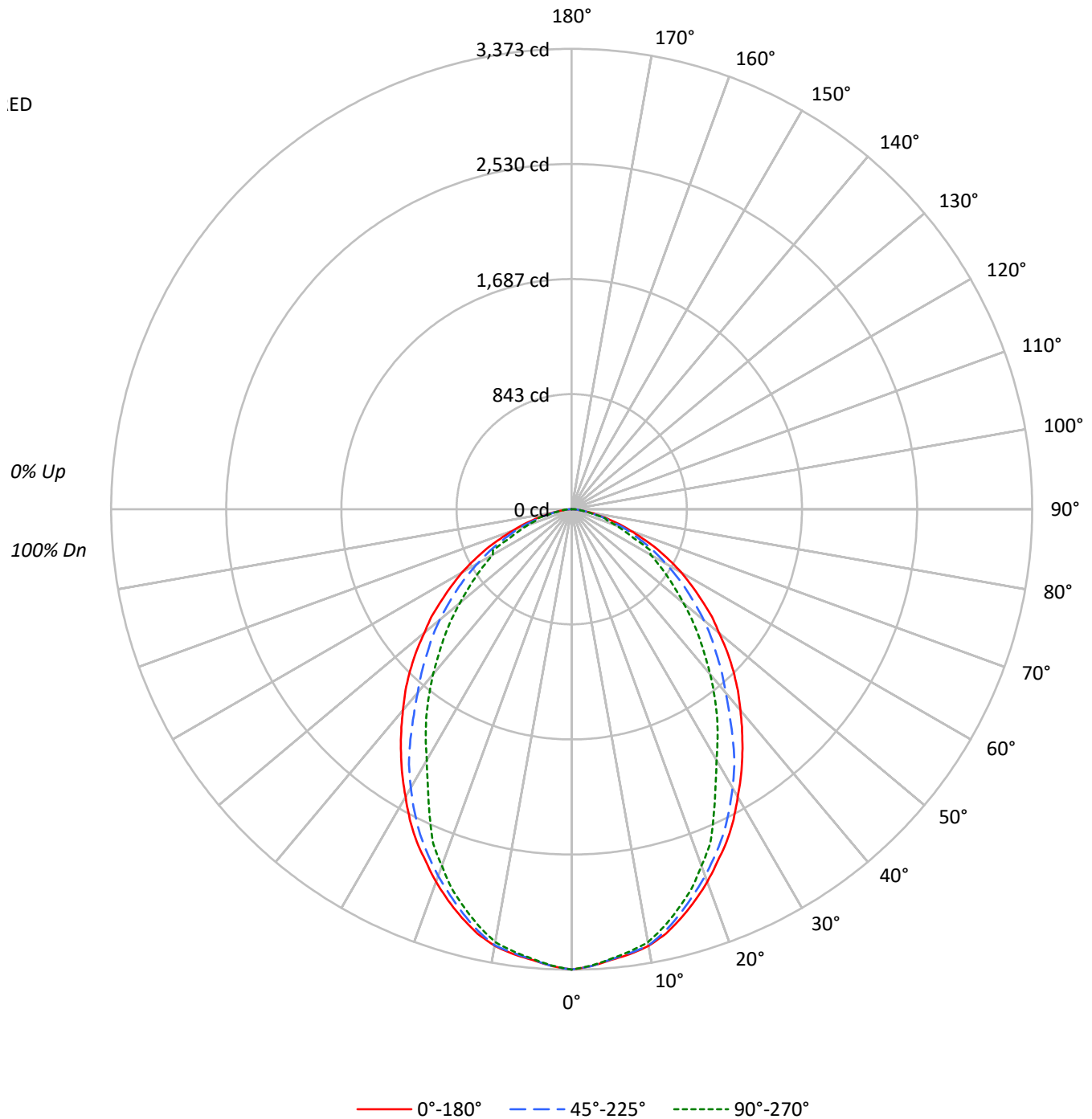
Lumens per Lamp: N/A
Luminaire Lumens: 6621.0 lumens
Efficiency: N/A
Efficacy: 76.6 lumens/watt
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')
CIE Type: Direct

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°	9076	9076	9076
5°	8953	8942	8931
10°	8875	8864	8800
15°	8635	8549	8429
20°	8318	8184	7961
25°	7976	7803	7317
30°	7560	7318	6591
35°	7160	6763	6097
40°	6752	6164	5547
45°	6366	5698	5015
50°	5892	5289	4472
55°	5451	4792	4006
60°	4994	4281	3588
65°	4394	3749	3178
70°	3620	3282	2699
75°	2878	2513	2635
80°	1934	1813	1692
85°	1204	1445	1686

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 6366 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	314.0	4.7
10°-20°	861.6	13.0
20°-30°	1192.8	18.0
30°-40°	1271.9	19.2
40°-50°	1160.4	17.5
50°-60°	909.0	13.7
60°-70°	592.5	8.9
70°-80°	262.5	4.0
80°-90°	56.4	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°	2368.4	35.8
0°-40°	3640.3	55.0
0°-60°	5709.7	86.2
0°-90°	6621.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	6621.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	3373	3373	3373	3373	3373	
5°	3314	3310	3310	3306	3306	315
15°	3100	3100	3068	3037	3026	871
25°	2686	2671	2628	2534	2464	1233
35°	2180	2164	2059	1903	1856	1363
45°	1673	1638	1497	1372	1318	1288
55°	1162	1127	1022	901	854	1042
65°	690	651	589	600	499	680
75°	277	257	242	230	253	297
85°	39	43	47	51	55	54
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	3372.6	3372.6	3372.6	3372.6	3372.6
2.5°	3349.3	3349.3	3349.3	3345.4	3345.4
5°	3314.2	3310.3	3310.3	3306.4	3306.4
7.5°	3286.9	3283.0	3279.1	3275.2	3267.4
10°	3247.9	3247.9	3244.0	3224.5	3220.6
12.5°	3185.5	3181.6	3166.0	3138.7	3130.9
15°	3099.7	3099.7	3068.5	3037.3	3025.6
17.5°	3006.1	3002.2	2963.3	2932.1	2916.5
20°	2904.8	2897.0	2858.0	2807.3	2780.0
22.5°	2791.7	2791.7	2744.9	2678.6	2651.3
25°	2686.4	2670.8	2627.9	2534.4	2464.2
27.5°	2565.6	2542.2	2495.4	2362.8	2280.9
30°	2433.0	2421.3	2355.0	2183.4	2121.1
32.5°	2308.2	2288.7	2218.5	2039.2	1988.5
35°	2179.6	2164.0	2058.7	1902.7	1855.9
37.5°	2050.9	2031.4	1898.8	1774.1	1715.6
40°	1922.2	1898.8	1754.6	1641.5	1579.1
42.5°	1801.3	1770.2	1629.8	1508.9	1438.7
45°	1672.7	1637.6	1497.2	1372.5	1317.9
47.5°	1544.0	1512.8	1384.2	1255.5	1193.1
50°	1407.5	1380.3	1263.3	1134.6	1068.3
52.5°	1294.5	1251.6	1138.5	1009.8	955.3
55°	1161.9	1126.8	1021.5	900.7	853.9
57.5°	1041.0	1005.9	908.5	795.4	756.4
60°	928.0	877.3	795.4	697.9	666.7
62.5°	803.2	764.2	694.0	612.1	651.1
65°	690.1	651.1	588.8	600.4	499.1
67.5°	565.4	545.9	491.3	436.7	421.1
70°	460.1	436.7	417.2	358.7	343.1
72.5°	366.5	343.1	315.8	284.6	272.9
75°	276.8	257.3	241.7	230.0	253.4
77.5°	191.1	183.3	171.6	159.9	156.0
80°	124.8	120.9	117.0	113.1	109.2
82.5°	74.1	74.1	74.1	74.1	74.1
85°	39.0	42.9	46.8	50.7	54.6
87.5°	23.4	23.4	27.3	31.2	35.1
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)