

Scaled data based on original data using
LM-79-08 Approved Method: Electrical and Photometric Measurements of Solid-State
Lighting Products

Test Report Prepared for

Cooper Lighting Solutions

(formerly Eaton)

Brand: FAIL-SAFE

Report Number: P834512

Luminaire Tested: **ORLG-24-4-INS-ASY2-LD4-3STD-20-120-EDD**

Issue Date: 5/16/2024



Test Information

Test Method: LM-79-08
Report Number: P834512
Test Lab: INNOVATION CENTER(G2)
Issue Date: 5/16/2024
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: FAIL-SAFE
Catalog Number: ORLG-24-4-INS-ASY2-LD4-3STD-20-120-EDD
Description: 2FT x 4FT ORL LED LUMINAIRE WITH asymmetric/symmetric lens v2
Light Source: 2000K CCT, 80 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

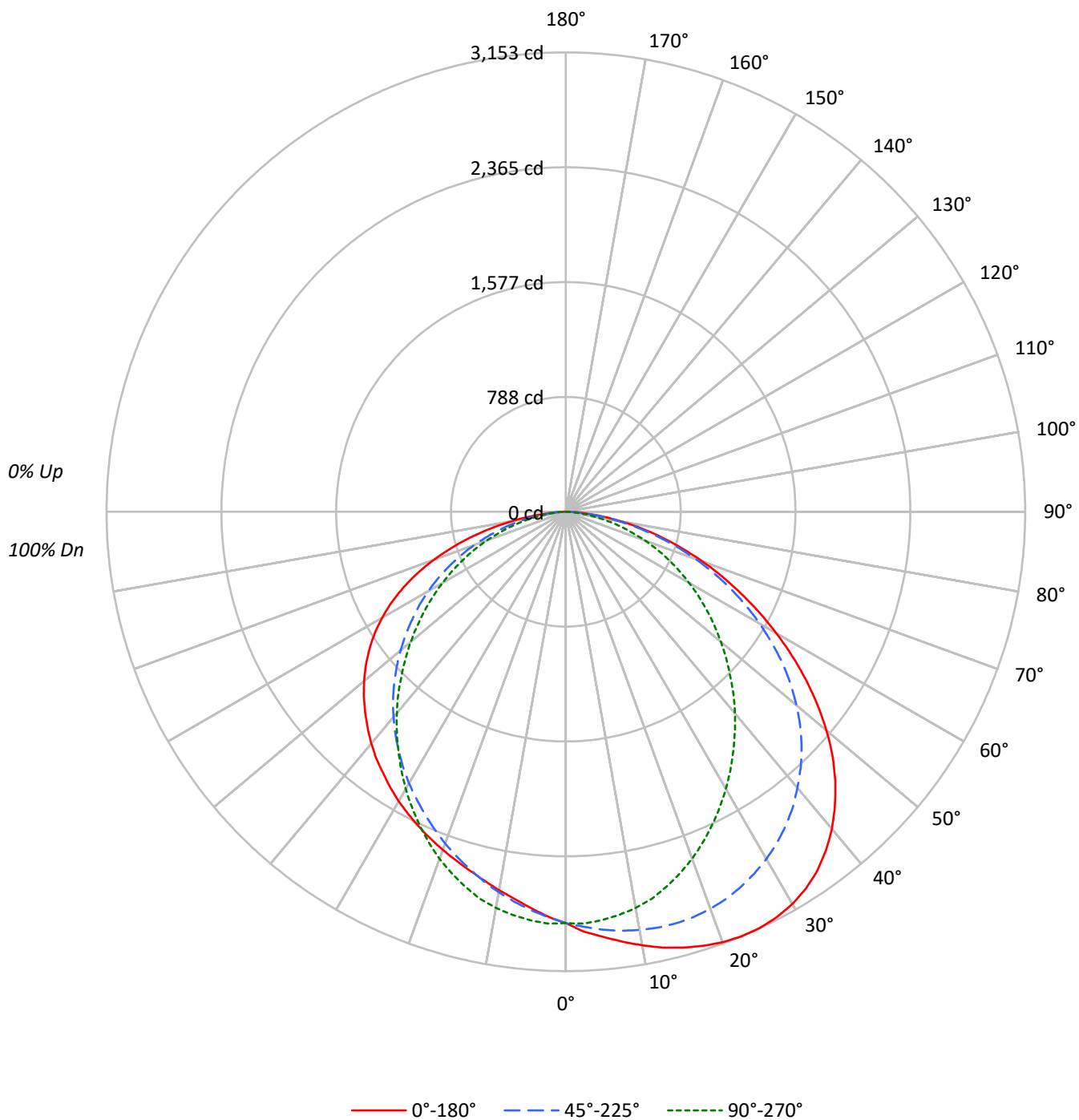
Lumens per Lamp: N/A
Luminaire Lumens: 8304.5 lumens
Efficiency: N/A
Efficacy: 83.1 lumens/watt
Spacing Criteria (0/90/45): 1.41 / 1.17 / 1.4
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')
CIE Type: Direct

Input Watts (W): 99.9
Input Voltage (V): 120
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: 28.75 FT

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Luminous Intensity Polar Plot



Cooper Lighting Solutions Photometric Lab

1121 Highway 74 South

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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20				20					20					20					20
RC	80				70					50					30					10
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10
RCR																				
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100		
1	109	104	100	96	106	102	98	94	97	94	91	94	91	88	90	88	86	84		
2	99	90	84	78	96	89	82	77	85	80	75	82	77	73	79	75	72	70		
3	90	79	71	65	87	78	70	64	75	68	63	72	66	62	69	65	61	58		
4	82	70	61	55	80	69	61	54	66	59	53	64	58	53	62	56	52	50		
5	76	63	54	47	73	61	53	47	59	52	46	57	51	46	55	50	45	43		
6	70	56	47	41	68	55	47	41	54	46	40	52	45	40	50	44	40	37		
7	65	51	42	36	63	50	42	36	49	41	36	47	40	35	46	40	35	33		
8	60	46	38	32	59	46	38	32	44	37	32	43	36	31	42	36	31	29		
9	56	43	34	29	55	42	34	29	41	34	29	40	33	28	39	33	28	26		
10	53	39	31	26	51	39	31	26	38	31	26	37	30	26	36	30	26	24		

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	3799	3799	3799
5°	3955	3801	3688
10°	4128	3772	3603
15°	4313	3712	3551
20°	4502	3630	3536
25°	4679	3524	3542
30°	4831	3414	3565
35°	4941	3292	3594
40°	4991	3170	3647
45°	4977	3037	3707
50°	4889	2909	3783
55°	4722	2775	3862
60°	4492	2632	3921
65°	4218	2472	3916
70°	3925	2279	3799
75°	3564	2002	3503
80°	3060	1645	2955
85°	2334	1124	2029

Classified

Scaled Data Report

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	267.8	3.2
10°-20°	773.2	9.3
20°-30°	1184.6	14.3
30°-40°	1445.7	17.4
40°-50°	1511.8	18.2
50°-60°	1368.3	16.5
60°-70°	1036.3	12.5
70°-80°	577.5	7.0
80°-90°	139.3	1.7
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°	2225.6	26.8
0°-40°	3671.3	44.2
0°-60°	6551.4	78.9
0°-90°	8304.5	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	8304.5	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	2823	2823	2823	2823	2823	
5°	2928	2879	2814	2745	2731	282
15°	3097	2924	2665	2541	2549	878
25°	3152	2842	2374	2290	2386	1454
35°	3008	2631	2004	2002	2188	1878
45°	2616	2288	1596	1666	1948	2013
55°	2013	1817	1183	1287	1646	1796
65°	1325	1246	776	882	1230	1314
75°	686	647	385	460	674	727
85°	151	133	73	98	131	182
90°	0	0	0	0	0	

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CANDELA DISTRIBUTION (FULL):

	0°	10°	20°	22.5°	30°	40°	45°	50°	60°	67.5°	70°
0°	2823.2	2823.2	2823.2	2823.2	2823.2	2823.2	2823.2	2823.2	2823.2	2823.2	2823.2
2.5°	2885.5	2871.9	2860.8	2865.2	2867.6	2859.0	2851.6	2852.8	2845.4	2859.6	2826.3
5°	2928.1	2915.8	2902.8	2907.7	2902.8	2889.8	2879.3	2876.3	2856.5	2864.5	2830.6
7.5°	2975.6	2962.0	2942.9	2948.5	2938.0	2913.9	2900.3	2892.3	2862.1	2862.7	2825.0
10°	3021.3	3009.6	2983.6	2987.3	2968.2	2936.1	2914.5	2903.4	2860.8	2854.7	2815.8
12.5°	3063.9	3047.8	3020.0	3021.9	2994.1	2951.5	2923.8	2907.7	2852.2	2833.7	2795.4
15°	3096.6	3081.1	3047.8	3047.2	3011.4	2955.9	2924.4	2902.2	2831.8	2802.8	2762.7
17.5°	3124.3	3110.1	3068.8	3067.6	3024.4	2954.0	2916.4	2888.6	2802.2	2766.4	2722.0
20°	3144.1	3129.9	3083.6	3079.3	3027.4	2944.8	2899.7	2864.5	2763.3	2720.8	2671.4
22.5°	3153.3	3139.1	3086.7	3080.5	3020.0	2926.2	2875.6	2834.3	2718.9	2663.4	2612.1
25°	3151.5	3137.9	3078.7	3072.5	3005.9	2898.5	2841.7	2794.2	2662.7	2597.3	2546.7
27.5°	3136.1	3125.6	3063.2	3055.2	2979.9	2860.8	2800.4	2747.9	2600.4	2527.6	2472.7
30°	3109.5	3101.5	3035.5	3028.1	2947.8	2819.5	2752.2	2691.8	2533.2	2451.1	2395.5
32.5°	3066.9	3059.5	2992.9	2986.1	2904.6	2766.4	2696.1	2633.7	2459.7	2369.0	2313.5
35°	3008.3	3004.0	2939.2	2931.8	2849.1	2705.9	2631.3	2562.8	2383.2	2280.8	2227.7
37.5°	2931.2	2931.2	2868.9	2860.8	2780.0	2631.9	2558.5	2485.6	2296.8	2188.2	2135.8
40°	2841.7	2849.7	2786.2	2778.1	2699.8	2552.3	2472.1	2395.5	2203.6	2090.7	2039.5
42.5°	2734.3	2741.7	2688.7	2681.3	2607.8	2460.3	2385.7	2302.4	2106.1	1991.4	1938.3
45°	2615.8	2625.7	2578.2	2572.7	2504.2	2359.8	2288.2	2203.6	2004.3	1887.7	1835.8
47.5°	2483.8	2496.8	2455.4	2452.3	2388.8	2256.7	2182.0	2096.3	1897.6	1779.7	1730.9
50°	2335.7	2354.2	2320.3	2320.3	2263.5	2132.0	2067.3	1981.5	1786.5	1668.6	1620.5
52.5°	2177.1	2200.5	2175.2	2175.9	2129.6	2011.7	1944.5	1860.5	1670.5	1554.5	1510.0
55°	2013.0	2035.8	2019.7	2022.2	1985.8	1878.4	1817.3	1734.0	1552.0	1439.1	1397.1
57.5°	1841.4	1866.1	1855.6	1860.5	1835.2	1739.0	1675.4	1602.6	1429.8	1318.1	1282.3
60°	1669.2	1692.7	1687.1	1693.9	1677.9	1594.6	1536.6	1461.3	1307.0	1199.6	1168.2
62.5°	1495.2	1516.8	1515.6	1523.0	1514.3	1445.2	1393.4	1329.2	1179.9	1081.1	1052.1
65°	1324.9	1343.4	1342.2	1350.2	1348.3	1292.8	1245.9	1187.3	1052.8	962.0	936.7
67.5°	1159.5	1174.9	1170.6	1179.9	1182.3	1137.9	1097.2	1044.7	931.8	843.6	822.0
70°	997.8	1008.3	1002.8	1008.9	1014.5	981.2	946.6	900.3	802.8	725.1	707.2
72.5°	839.2	846.6	838.0	844.2	849.1	825.1	796.7	756.6	675.7	608.5	593.6
75°	685.6	696.1	678.2	684.4	688.1	664.0	647.3	614.6	544.9	493.1	483.2
77.5°	536.9	543.0	533.2	530.7	533.2	515.9	502.9	477.6	425.2	382.6	376.4
80°	394.9	398.6	388.8	386.3	388.2	375.8	365.9	347.4	310.4	278.3	275.8
82.5°	264.7	266.6	257.9	255.5	256.7	253.0	241.3	228.3	211.0	183.9	183.3
85°	151.2	151.2	145.0	142.5	143.8	137.6	133.3	126.5	119.7	101.2	102.4
87.5°	55.5	55.5	52.5	51.8	58.0	51.2	49.4	46.3	48.1	38.3	40.7
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

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CANDELA DISTRIBUTION (continued):

	80°	90°	100°	110°	112.5°	120°	130°	135°	140°	150°	157.5°
0°	2823.2	2823.2	2823.2	2823.2	2823.2	2823.2	2823.2	2823.2	2823.2	2823.2	2823.2
2.5°	2835.5	2829.4	2823.8	2804.7	2812.7	2793.0	2791.7	2784.3	2778.8	2768.3	2781.8
5°	2826.3	2813.9	2797.9	2775.1	2781.8	2758.4	2753.5	2744.8	2737.4	2723.8	2734.3
7.5°	2811.5	2791.1	2765.8	2736.8	2746.1	2717.1	2709.6	2700.4	2694.2	2678.2	2687.4
10°	2789.9	2760.9	2731.2	2696.1	2702.9	2671.4	2662.1	2652.3	2646.7	2632.5	2641.8
12.5°	2756.5	2721.4	2681.3	2643.0	2650.4	2620.8	2608.4	2598.0	2596.1	2584.4	2595.5
15°	2713.3	2664.6	2623.3	2582.5	2591.2	2556.6	2551.1	2540.6	2543.6	2535.6	2549.2
17.5°	2658.4	2602.3	2557.2	2513.4	2522.1	2493.0	2488.7	2483.8	2486.9	2485.6	2500.5
20°	2596.7	2535.0	2483.2	2440.0	2444.9	2422.1	2423.9	2422.7	2428.9	2435.7	2456.0
22.5°	2527.0	2457.3	2403.0	2358.5	2365.9	2346.2	2354.8	2357.3	2367.8	2383.2	2409.1
25°	2448.6	2373.9	2317.2	2275.2	2282.0	2269.0	2283.9	2290.0	2306.7	2332.6	2359.1
27.5°	2366.5	2287.6	2227.1	2187.0	2199.9	2187.0	2209.2	2221.5	2246.8	2275.2	2307.9
30°	2279.5	2197.5	2135.1	2099.3	2111.7	2100.0	2135.8	2152.4	2177.7	2216.6	2255.5
32.5°	2188.2	2101.8	2040.7	2013.0	2021.6	2019.7	2059.8	2078.4	2112.3	2156.7	2198.1
35°	2094.4	2004.3	1942.6	1919.2	1929.6	1932.1	1980.2	2001.8	2038.9	2092.6	2137.0
37.5°	1997.5	1905.6	1845.1	1826.0	1835.2	1844.5	1900.6	1922.2	1964.2	2022.8	2071.6
40°	1896.9	1805.0	1745.8	1730.3	1739.6	1749.5	1810.5	1840.2	1885.8	1949.4	2002.5
42.5°	1795.1	1703.2	1645.8	1634.7	1643.9	1663.1	1727.9	1755.6	1803.8	1874.1	1932.7
45°	1691.4	1595.8	1545.8	1537.2	1547.0	1569.3	1632.8	1666.1	1717.4	1794.5	1857.4
47.5°	1586.5	1493.4	1445.8	1440.3	1450.2	1474.8	1545.2	1575.4	1629.7	1711.8	1779.7
50°	1480.4	1389.7	1344.0	1342.2	1351.4	1378.0	1445.2	1481.0	1537.2	1629.1	1698.9
52.5°	1373.0	1286.0	1244.7	1244.7	1253.3	1280.5	1348.3	1385.4	1443.4	1540.3	1617.4
55°	1265.7	1183.0	1143.5	1146.6	1158.9	1182.3	1248.4	1287.3	1345.9	1446.5	1527.9
57.5°	1158.3	1079.9	1044.1	1048.4	1060.2	1083.6	1148.4	1192.2	1245.3	1349.6	1432.9
60°	1052.1	978.1	946.6	951.6	962.0	985.5	1052.8	1090.4	1143.5	1249.6	1332.9
62.5°	944.8	877.5	847.9	854.1	863.3	886.8	950.3	986.7	1039.2	1143.5	1227.4
65°	838.6	776.3	751.0	757.2	765.8	787.4	847.3	882.4	932.4	1034.2	1114.5
67.5°	733.7	676.9	656.0	662.1	668.9	689.3	738.7	776.9	823.8	920.7	996.6
70°	630.0	579.4	560.9	567.1	573.3	591.8	635.0	670.2	713.4	802.2	872.6
72.5°	527.6	478.2	469.0	474.5	479.5	495.5	536.9	564.6	602.3	681.3	741.7
75°	427.6	385.1	378.9	384.4	388.8	401.1	435.7	459.7	491.2	559.7	609.1
77.5°	331.4	295.6	293.1	297.4	301.8	310.4	337.5	362.8	387.5	438.1	481.9
80°	241.3	212.3	212.3	216.6	215.4	225.9	245.0	265.3	283.2	319.7	351.7
82.5°	159.2	136.4	139.5	142.5	144.4	148.7	160.4	175.9	187.0	209.2	230.2
85°	88.2	72.8	75.9	78.4	77.1	82.1	88.2	97.5	103.1	113.5	124.7
87.5°	32.7	27.2	27.8	29.6	30.9	33.3	33.3	38.9	39.5	40.7	43.2
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

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CANDELA DISTRIBUTION (continued):

	160°	170°	180°
0°	2823.2	2823.2	2823.2
2.5°	2755.9	2770.7	2781.8
5°	2708.4	2720.8	2730.6
7.5°	2662.1	2673.2	2681.9
10°	2618.3	2630.7	2636.8
12.5°	2573.3	2587.5	2592.4
15°	2528.8	2543.0	2549.2
17.5°	2483.2	2501.7	2508.5
20°	2440.6	2464.0	2469.6
22.5°	2397.4	2421.5	2428.3
25°	2350.5	2378.9	2385.7
27.5°	2300.5	2334.5	2341.2
30°	2250.5	2287.6	2294.3
32.5°	2196.8	2237.0	2243.1
35°	2140.7	2180.8	2188.2
37.5°	2078.4	2122.2	2137.0
40°	2013.6	2061.1	2076.5
42.5°	1945.7	1997.5	2013.6
45°	1872.9	1929.6	1948.2
47.5°	1799.4	1863.6	1879.7
50°	1719.8	1788.3	1807.5
52.5°	1636.5	1711.2	1730.3
55°	1550.1	1625.4	1646.4
57.5°	1456.3	1534.1	1556.3
60°	1358.2	1436.0	1457.0
62.5°	1257.6	1328.0	1348.3
65°	1145.3	1211.3	1229.9
67.5°	1026.2	1086.7	1102.1
70°	899.7	952.2	965.7
72.5°	767.7	804.1	822.0
75°	631.3	660.3	673.9
77.5°	494.3	514.7	525.8
80°	360.4	372.1	381.4
82.5°	235.7	240.7	247.5
85°	127.1	127.1	131.4
87.5°	43.2	41.3	43.2
90°	0.0	0.0	0.0

(END OF REPORT)