

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: P834663

Luminaire Tested: **ORLG-24-4-INS-ASY2-LD4-5HI-30-120-EDD-90**

Issue Date: 5/16/2024

Cooper Lighting Solutions Photometric Lab
1121 Highway 74 South
Peachtree City, GA 30269

**Test Information**

Test Method: LM-79-08
Report Number: P834663
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-LD4-5HI-30-120-EDD-90
Description: 2FT x 4FT ORL LED LUMINAIRE WITH asymmetric/symmetric lens v2
Light Source: 3000K CCT, 90 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

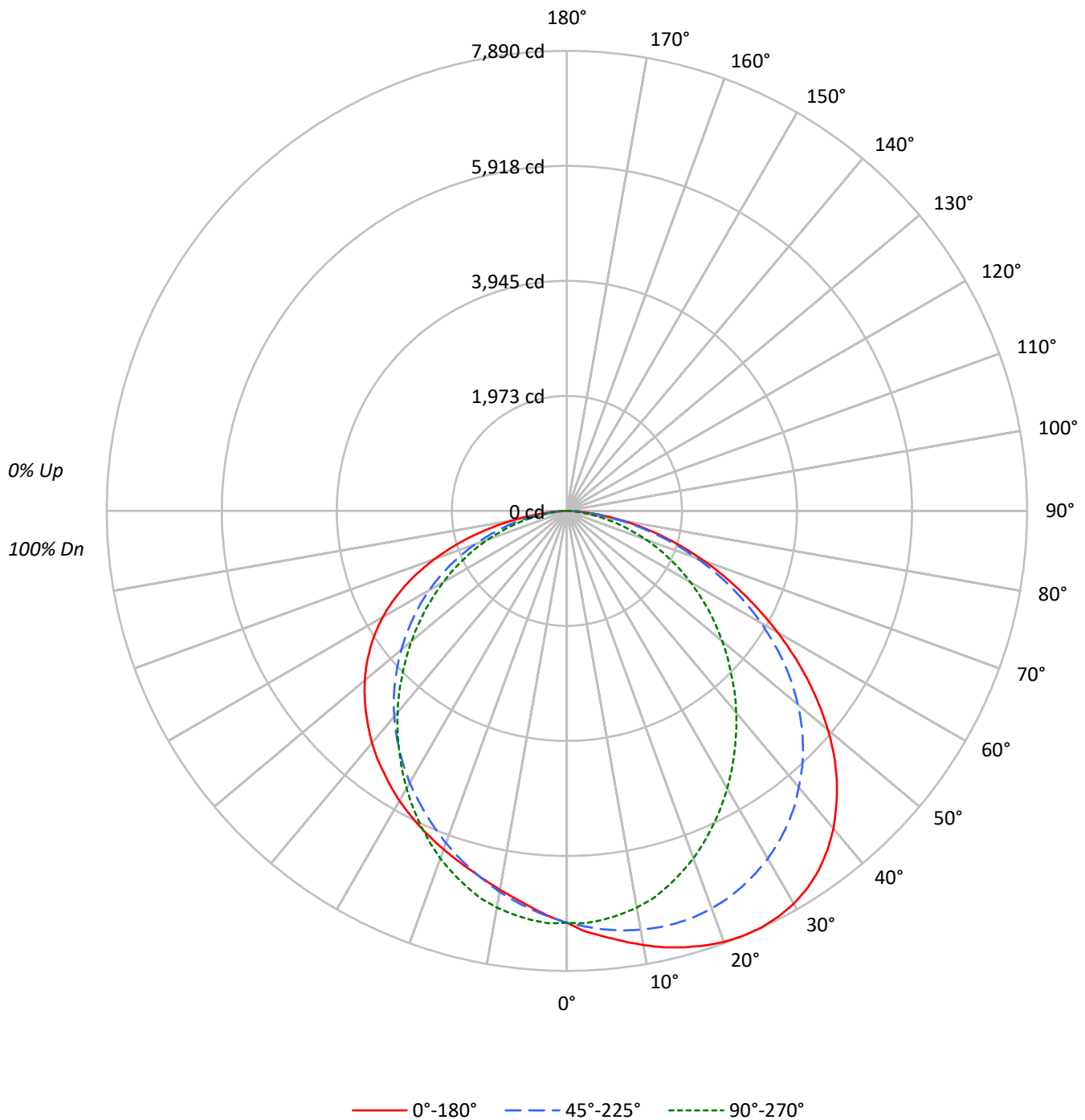
Lumens per Lamp: N/A
Luminaire Lumens: 20778.9 lumens
Efficiency: N/A
Efficacy: 94.4 lumens/watt
Spacing Criteria (0/90/45): 1.41 / 1.17 / 1.4
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')
CIE Type: Direct

Input Watts (W): 220
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

TEST NUMBER: P834663

CATALOG NUMBER: ORLG-24-4-INS-ASY2-LD4-5HI-30-120-EDD-90

Luminous Intensity Polar Plot



Cooper Lighting Solutions Photometric Lab

1121 Highway 74 South

Peachtree City, GA 30269



TEST NUMBER: P834663

CATALOG NUMBER: ORLG-24-4-INS-ASY2-LD4-5HI-30-120-EDD-90

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

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	9505	9505	9505
5°	9895	9510	9228
10°	10328	9438	9014
15°	10793	9287	8885
20°	11264	9082	8848
25°	11707	8818	8862
30°	12088	8542	8919
35°	12364	8237	8993
40°	12489	7932	9126
45°	12454	7598	9275
50°	12233	7279	9467
55°	11815	6943	9663
60°	11239	6586	9810
65°	10554	6184	9797
70°	9822	5704	9506
75°	8918	5009	8765
80°	7657	4115	7393
85°	5840	2813	5077

TEST NUMBER: P834663

CATALOG NUMBER: ORLG-24-4-INS-ASY2-LD4-5HI-30-120-EDD-90

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	670.0	3.2
10°-20°	1934.7	9.3
20°-30°	2964.0	14.3
30°-40°	3617.2	17.4
40°-50°	3782.8	18.2
50°-60°	3423.7	16.5
60°-70°	2592.9	12.5
70°-80°	1445.0	7.0
80°-90°	348.5	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°	5568.7	26.8
0°-40°	9186.0	44.2
0°-60°	16392.5	78.9
0°-90°	20778.9	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	20778.9	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	7064	7064	7064	7064	7064	
5°	7326	7204	7041	6868	6832	706
15°	7748	7317	6667	6357	6378	2197
25°	7885	7110	5940	5730	5969	3638
35°	7527	6584	5015	5009	5475	4700
45°	6545	5725	3993	4169	4874	5036
55°	5037	4547	2960	3221	4120	4494
65°	3315	3117	1942	2208	3077	3288
75°	1715	1620	964	1150	1686	1819
85°	378	334	182	244	329	455
90°	0	0	0	0	0	

Cooper Lighting Solutions Photometric Lab

1121 Highway 74 South

Peachtree City, GA 30269



TEST NUMBER: P834663

CATALOG NUMBER: ORLG-24-4-INS-ASY2-LD4-5HI-30-120-EDD-90

CANDELA DISTRIBUTION (FULL):

	0°	10°	20°	22.5°	30°	40°	45°	50°	60°	67.5°	70°
0°	7064.0	7064.0	7064.0	7064.0	7064.0	7064.0	7064.0	7064.0	7064.0	7064.0	7064.0
2.5°	7219.9	7186.0	7158.2	7169.0	7175.2	7153.5	7135.0	7138.1	7119.6	7155.1	7071.7
5°	7326.5	7295.6	7263.2	7275.5	7263.2	7230.7	7204.5	7196.8	7147.4	7167.4	7082.5
7.5°	7445.4	7411.4	7363.5	7377.4	7351.2	7291.0	7257.0	7236.9	7161.3	7162.8	7068.6
10°	7559.6	7530.3	7465.4	7474.7	7426.8	7346.5	7292.5	7264.7	7158.2	7142.7	7045.5
12.5°	7666.2	7626.0	7556.5	7561.2	7491.7	7385.1	7315.7	7275.5	7136.6	7090.2	6994.5
15°	7748.0	7709.4	7626.0	7624.5	7534.9	7396.0	7317.2	7261.6	7085.6	7013.0	6912.7
17.5°	7817.5	7782.0	7678.5	7675.4	7567.3	7391.3	7297.1	7227.7	7011.5	6921.9	6810.8
20°	7866.9	7831.4	7715.6	7704.8	7575.1	7368.2	7255.4	7167.4	6914.2	6807.7	6684.2
22.5°	7890.0	7854.5	7723.3	7707.9	7556.5	7321.8	7195.2	7091.8	6803.0	6664.1	6535.9
25°	7885.4	7851.4	7703.2	7687.8	7521.0	7252.4	7110.3	6991.4	6662.5	6498.9	6372.3
27.5°	7846.8	7820.6	7664.6	7644.5	7456.2	7158.2	7006.9	6875.6	6506.6	6324.4	6187.0
30°	7780.4	7760.3	7595.1	7576.6	7375.9	7054.7	6886.4	6735.1	6338.3	6132.9	5994.0
32.5°	7673.9	7655.4	7488.6	7471.6	7267.8	6921.9	6745.9	6590.0	6154.5	5927.6	5788.6
35°	7527.2	7516.4	7354.3	7335.7	7128.8	6770.6	6583.8	6412.4	5963.1	5706.8	5574.0
37.5°	7334.2	7334.2	7178.2	7158.2	6955.9	6585.3	6401.6	6219.4	5746.9	5475.2	5343.9
40°	7110.3	7130.4	6971.3	6951.3	6755.2	6386.2	6185.4	5994.0	5513.8	5231.2	5103.1
42.5°	6841.6	6860.2	6727.4	6708.9	6525.1	6156.1	5969.3	5760.8	5269.8	4982.6	4849.8
45°	6545.2	6569.9	6451.0	6437.1	6265.7	5904.4	5725.3	5513.8	5015.0	4723.2	4593.5
47.5°	6214.8	6247.2	6143.7	6136.0	5977.0	5646.6	5459.7	5245.1	4747.9	4453.0	4331.0
50°	5844.2	5890.5	5805.6	5805.6	5663.5	5334.7	5172.5	4957.9	4470.0	4175.1	4054.7
52.5°	5447.4	5506.0	5442.7	5444.3	5328.5	5033.6	4865.3	4655.3	4179.7	3889.4	3778.3
55°	5036.7	5093.8	5053.6	5059.8	4968.7	4700.1	4547.2	4338.8	3883.3	3600.7	3495.7
57.5°	4607.4	4669.2	4642.9	4655.3	4592.0	4351.1	4192.1	4009.9	3577.5	3298.1	3208.5
60°	4176.6	4235.3	4221.4	4238.4	4198.2	3989.8	3844.7	3656.3	3270.3	3001.6	2922.9
62.5°	3741.2	3795.3	3792.2	3810.7	3789.1	3616.1	3486.4	3325.9	2952.2	2705.2	2632.6
65°	3315.1	3361.4	3358.3	3378.4	3373.7	3234.8	3117.4	2970.7	2634.1	2407.2	2343.9
67.5°	2901.3	2939.9	2929.0	2952.2	2958.4	2847.2	2745.3	2614.1	2331.5	2110.7	2056.7
70°	2496.7	2523.0	2509.1	2524.5	2538.4	2455.0	2368.6	2252.8	2008.8	1814.2	1769.5
72.5°	2099.9	2118.4	2096.8	2112.2	2124.6	2064.4	1993.4	1893.0	1690.7	1522.4	1485.4
75°	1715.4	1741.7	1696.9	1712.3	1721.6	1661.4	1619.7	1537.9	1363.4	1233.7	1209.0
77.5°	1343.3	1358.8	1334.1	1327.9	1334.1	1290.8	1258.4	1195.1	1063.8	957.3	941.9
80°	988.2	997.5	972.7	966.6	971.2	940.3	915.6	869.3	776.7	696.4	690.2
82.5°	662.4	667.0	645.4	639.2	642.3	633.1	603.7	571.3	528.1	460.1	458.6
85°	378.3	378.3	362.8	356.7	359.8	344.3	333.5	316.5	299.5	253.2	256.3
87.5°	139.0	139.0	131.2	129.7	145.1	128.2	123.5	115.8	120.4	95.7	101.9
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Cooper Lighting Solutions Photometric Lab

1121 Highway 74 South

Peachtree City, GA 30269



TEST NUMBER: P834663

CATALOG NUMBER: ORLG-24-4-INS-ASY2-LD4-5HI-30-120-EDD-90

CANDELA DISTRIBUTION (continued):

	80°	90°	100°	110°	112.5°	120°	130°	135°	140°	150°	157.5°
0°	7064.0	7064.0	7064.0	7064.0	7064.0	7064.0	7064.0	7064.0	7064.0	7064.0	7064.0
2.5°	7094.9	7079.4	7065.5	7017.7	7037.7	6988.3	6985.2	6966.7	6952.8	6926.6	6960.5
5°	7071.7	7040.8	7000.7	6943.6	6960.5	6901.9	6889.5	6867.9	6849.4	6815.4	6841.6
7.5°	7034.6	6983.7	6920.4	6847.8	6871.0	6798.4	6779.9	6756.7	6741.3	6701.1	6724.3
10°	6980.6	6908.0	6833.9	6745.9	6762.9	6684.2	6661.0	6636.3	6622.4	6586.9	6610.0
12.5°	6897.2	6809.2	6708.9	6613.1	6631.7	6557.5	6526.7	6500.4	6495.8	6466.4	6494.2
15°	6789.1	6667.2	6563.7	6461.8	6483.4	6397.0	6383.1	6356.8	6364.5	6344.5	6378.4
17.5°	6651.7	6511.2	6398.5	6288.9	6310.5	6237.9	6227.1	6214.8	6222.5	6219.4	6256.5
20°	6497.3	6342.9	6213.2	6105.1	6117.5	6060.4	6065.0	6061.9	6077.3	6094.3	6145.3
22.5°	6322.8	6148.4	6012.5	5901.3	5919.9	5870.4	5892.1	5898.2	5924.5	5963.1	6027.9
25°	6126.8	5939.9	5797.9	5692.9	5709.9	5677.4	5714.5	5729.9	5771.6	5836.5	5902.9
27.5°	5921.4	5723.8	5572.4	5472.1	5504.5	5472.1	5527.7	5558.5	5621.9	5692.9	5774.7
30°	5703.7	5498.3	5342.4	5252.8	5283.7	5254.4	5343.9	5385.6	5448.9	5546.2	5643.5
32.5°	5475.2	5259.0	5106.1	5036.7	5058.3	5053.6	5154.0	5200.3	5285.3	5396.4	5499.9
35°	5240.5	5015.0	4860.6	4802.0	4828.2	4834.4	4954.8	5008.9	5101.5	5235.8	5347.0
37.5°	4998.1	4768.0	4616.7	4568.8	4592.0	4615.1	4755.6	4809.7	4914.7	5061.4	5183.3
40°	4746.4	4516.3	4368.1	4329.5	4352.7	4377.4	4530.2	4604.3	4718.6	4877.6	5010.4
42.5°	4491.6	4261.6	4118.0	4090.2	4113.3	4161.2	4323.3	4392.8	4513.2	4689.3	4835.9
45°	4232.2	3992.9	3867.8	3846.2	3870.9	3926.5	4085.5	4168.9	4297.1	4490.1	4647.6
47.5°	3969.7	3736.6	3617.7	3603.8	3628.5	3690.3	3866.3	3941.9	4077.8	4283.2	4453.0
50°	3704.2	3477.2	3362.9	3358.3	3381.4	3447.8	3616.1	3705.7	3846.2	4076.3	4250.7
52.5°	3435.5	3217.8	3114.3	3114.3	3135.9	3203.9	3373.7	3466.4	3611.5	3853.9	4046.9
55°	3166.8	2959.9	2861.1	2868.8	2899.7	2958.4	3123.6	3220.9	3367.6	3619.2	3823.0
57.5°	2898.2	2702.1	2612.5	2623.3	2652.7	2711.3	2873.5	2983.1	3115.9	3376.8	3585.3
60°	2632.6	2447.3	2368.6	2380.9	2407.2	2465.8	2634.1	2728.3	2861.1	3126.7	3335.1
62.5°	2363.9	2195.6	2121.5	2137.0	2160.1	2218.8	2377.8	2468.9	2600.2	2861.1	3071.1
65°	2098.4	1942.4	1879.1	1894.5	1916.2	1970.2	2120.0	2208.0	2333.0	2587.8	2788.5
67.5°	1835.9	1693.8	1641.3	1656.8	1673.7	1724.7	1848.2	1943.9	2061.3	2303.7	2493.6
70°	1576.5	1449.9	1403.5	1419.0	1434.4	1480.7	1588.8	1676.8	1784.9	2007.3	2183.3
72.5°	1320.2	1196.6	1173.5	1187.4	1199.7	1239.9	1343.3	1412.8	1507.0	1704.6	1855.9
75°	1070.0	963.5	948.0	961.9	972.7	1003.6	1090.1	1150.3	1229.1	1400.4	1524.0
77.5°	829.1	739.6	733.4	744.2	755.0	776.7	844.6	907.9	969.7	1096.3	1205.9
80°	603.7	531.1	531.1	542.0	538.9	565.1	613.0	663.9	708.7	799.8	880.1
82.5°	398.4	341.2	349.0	356.7	361.3	372.1	401.5	440.1	467.8	523.4	575.9
85°	220.8	182.2	189.9	196.1	193.0	205.4	220.8	244.0	257.9	284.1	311.9
87.5°	81.8	67.9	69.5	74.1	77.2	83.4	83.4	97.3	98.8	101.9	108.1
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Cooper Lighting Solutions Photometric Lab

1121 Highway 74 South

Peachtree City, GA 30269



TEST NUMBER: P834663

CATALOG NUMBER: ORLG-24-4-INS-ASY2-LD4-5HI-30-120-EDD-90

CANDELA DISTRIBUTION (continued):

	160°	170°	180°
0°	7064.0	7064.0	7064.0
2.5°	6895.7	6932.7	6960.5
5°	6776.8	6807.7	6832.4
7.5°	6661.0	6688.8	6710.4
10°	6551.4	6582.2	6597.7
12.5°	6438.6	6474.2	6486.5
15°	6327.5	6363.0	6378.4
17.5°	6213.2	6259.5	6276.5
20°	6106.7	6165.4	6179.3
22.5°	5998.6	6058.8	6075.8
25°	5881.3	5952.3	5969.3
27.5°	5756.2	5841.1	5858.1
30°	5631.1	5723.8	5740.7
32.5°	5496.8	5597.1	5612.6
35°	5356.3	5456.6	5475.2
37.5°	5200.3	5310.0	5347.0
40°	5038.2	5157.1	5195.7
42.5°	4868.4	4998.1	5038.2
45°	4686.2	4828.2	4874.5
47.5°	4502.4	4663.0	4703.1
50°	4303.2	4474.6	4522.5
52.5°	4094.8	4281.6	4329.5
55°	3878.6	4067.0	4119.5
57.5°	3643.9	3838.5	3894.1
60°	3398.4	3593.0	3645.5
62.5°	3146.8	3322.8	3373.7
65°	2865.7	3031.0	3077.3
67.5°	2567.7	2719.1	2757.7
70°	2251.2	2382.5	2416.4
72.5°	1920.8	2011.9	2056.7
75°	1579.6	1652.1	1686.1
77.5°	1236.8	1287.7	1315.5
80°	901.7	931.1	954.2
82.5°	589.8	602.2	619.2
85°	318.1	318.1	328.9
87.5°	108.1	103.5	108.1
90°	0.0	0.0	0.0

(END OF REPORT)