

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: P834642

Luminaire Tested: **ORLG-24-4-INS-ASY2-LD4-4HI-27-120-EDD-90**

Issue Date: 5/16/2024



Test Information

Test Method: LM-79-08
Report Number: P834642
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-LD4-4HI-27-120-EDD-90
Description: 2FT x 4FT ORL LED LUMINAIRE WITH asymmetric/symmetric lens v2
Light Source: 2700K CCT, 90 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

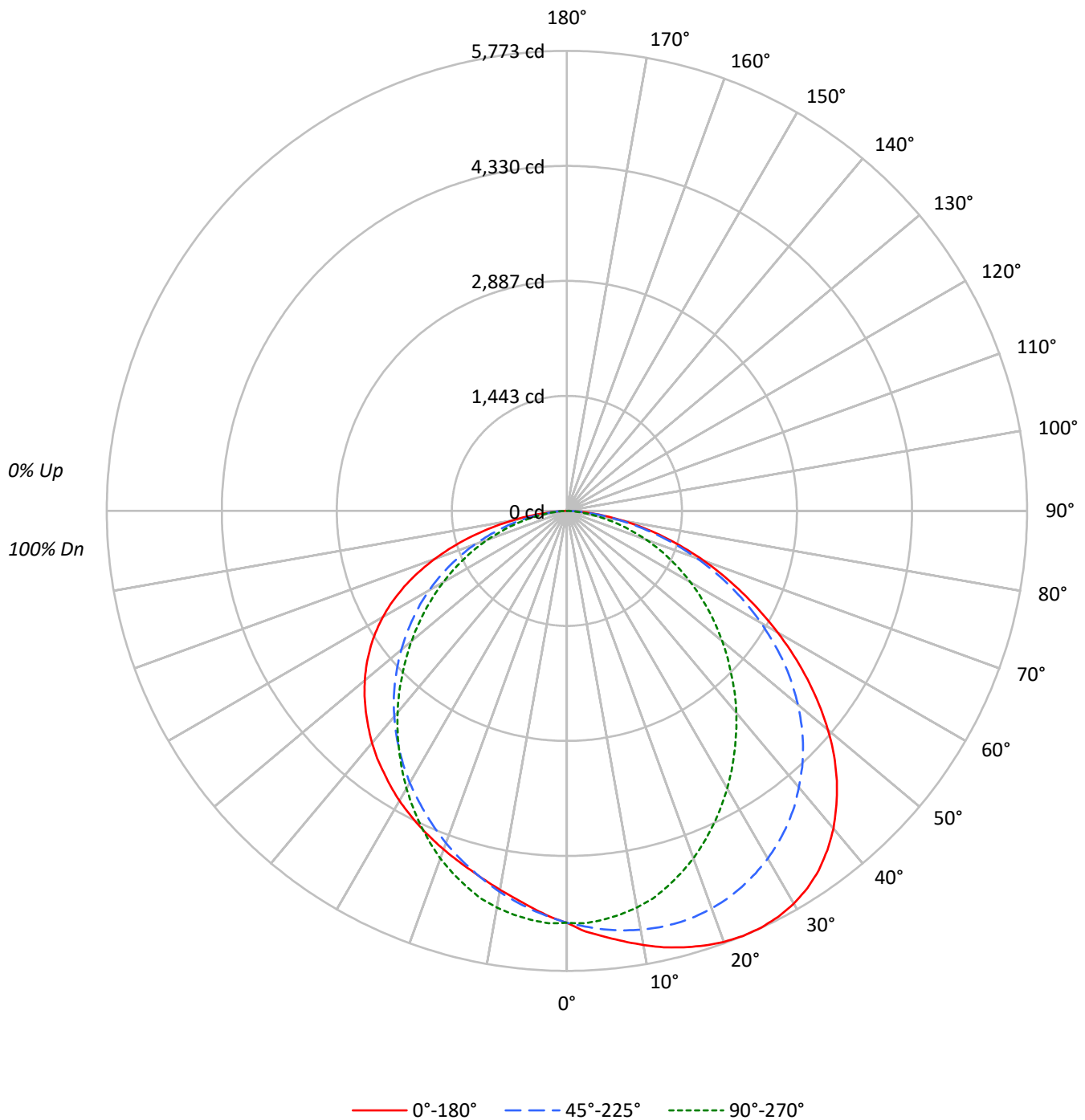
Lumens per Lamp: N/A
Luminaire Lumens: 15204.4 lumens
Efficiency: N/A
Efficacy: 86.4 lumens/watt
Spacing Criteria (0/90/45): 1.41 / 1.17 / 1.4
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')
CIE Type: Direct

Input Watts (W): 176
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	102	102	100
1	109	104	100	96	106	102	98	94	97	94	91	94	91	88	90	88	86	86	86	84
2	99	90	84	78	96	89	82	77	85	80	75	82	77	73	79	75	72	72	72	70
3	90	79	71	65	87	78	70	64	75	68	63	72	66	62	69	65	61	61	61	58
4	82	70	61	55	80	69	61	54	66	59	53	64	58	53	62	56	52	52	52	50
5	76	63	54	47	73	61	53	47	59	52	46	57	51	46	55	50	45	45	45	43
6	70	56	47	41	68	55	47	41	54	46	40	52	45	40	50	44	40	40	40	37
7	65	51	42	36	63	50	42	36	49	41	36	47	40	35	46	40	35	35	35	33
8	60	46	38	32	59	46	38	32	44	37	32	43	36	31	42	36	31	31	31	29
9	56	43	34	29	55	42	34	29	41	34	29	40	33	28	39	33	28	28	28	26
10	53	39	31	26	51	39	31	26	38	31	26	37	30	26	36	30	26	26	26	24

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	6955	6955	6955
5°	7241	6958	6752
10°	7557	6906	6596
15°	7897	6796	6501
20°	8242	6646	6474
25°	8566	6453	6484
30°	8845	6251	6526
35°	9047	6027	6581
40°	9138	5804	6678
45°	9113	5559	6787
50°	8951	5326	6927
55°	8645	5081	7071
60°	8224	4819	7178
65°	7723	4525	7169
70°	7187	4174	6956
75°	6525	3665	6414
80°	5603	3012	5410
85°	4273	2058	3714

Classified

Scaled Data Report

Cooper Lighting Solutions Photometric Lab

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	490.2	3.2
10°-20°	1415.7	9.3
20°-30°	2168.8	14.3
30°-40°	2646.8	17.4
40°-50°	2768.0	18.2
50°-60°	2505.2	16.5
60°-70°	1897.3	12.5
70°-80°	1057.3	7.0
80°-90°	255.0	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°	4074.8	26.8
0°-40°	6721.6	44.2
0°-60°	11994.7	78.9
0°-90°	15204.4	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	15204.4	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	5169	5169	5169	5169	5169	
5°	5361	5272	5152	5025	4999	517
15°	5669	5354	4878	4651	4667	1608
25°	5770	5203	4346	4193	4368	2662
35°	5508	4818	3670	3665	4006	3439
45°	4789	4189	2922	3050	3567	3685
55°	3685	3327	2166	2357	3014	3289
65°	2426	2281	1421	1616	2252	2406
75°	1255	1185	705	842	1234	1331
85°	277	244	133	178	241	333
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°	5168.9	5168.9	5168.9	5168.9	5168.9	5168.9	5168.9	5168.9	5168.9	5168.9	5168.9
2.5°	5283.0	5258.1	5237.8	5245.7	5250.2	5234.4	5220.8	5223.1	5209.5	5235.5	5174.5
5°	5360.9	5338.3	5314.6	5323.7	5314.6	5290.9	5271.7	5266.0	5229.9	5244.6	5182.4
7.5°	5447.9	5423.1	5388.1	5398.2	5379.0	5335.0	5310.1	5295.4	5240.0	5241.2	5172.3
10°	5531.5	5510.1	5462.6	5469.4	5434.4	5375.6	5336.1	5315.7	5237.8	5226.5	5155.3
12.5°	5609.5	5580.1	5529.3	5532.7	5481.8	5403.9	5353.0	5323.7	5222.0	5188.1	5118.0
15°	5669.4	5641.1	5580.1	5579.0	5513.5	5411.8	5354.2	5313.5	5184.7	5131.6	5058.1
17.5°	5720.2	5694.2	5618.5	5616.3	5537.2	5408.4	5339.5	5288.6	5130.5	5064.9	4983.6
20°	5756.4	5730.4	5645.6	5637.7	5542.8	5391.4	5309.0	5244.6	5059.3	4981.3	4890.9
22.5°	5773.3	5747.3	5651.3	5640.0	5529.3	5357.5	5264.9	5189.2	4977.9	4876.3	4782.5
25°	5769.9	5745.1	5636.6	5625.3	5503.3	5306.7	5202.8	5115.8	4875.1	4755.4	4662.7
27.5°	5741.7	5722.5	5608.4	5593.7	5455.8	5237.8	5127.1	5031.0	4761.0	4627.7	4527.1
30°	5693.1	5678.4	5557.5	5544.0	5397.1	5162.1	5038.9	4928.2	4637.9	4487.6	4385.9
32.5°	5615.1	5601.6	5479.6	5467.1	5318.0	5064.9	4936.1	4822.0	4503.4	4337.3	4235.6
35°	5507.8	5499.9	5381.3	5367.7	5216.3	4954.2	4817.5	4692.1	4363.3	4175.8	4078.6
37.5°	5366.6	5366.6	5252.5	5237.8	5089.8	4818.6	4684.2	4550.9	4205.1	4006.3	3910.3
40°	5202.8	5217.5	5101.1	5086.4	4942.9	4672.9	4526.0	4385.9	4034.5	3827.8	3734.0
42.5°	5006.2	5019.7	4922.6	4909.0	4774.6	4504.5	4367.8	4215.3	3856.0	3645.9	3548.7
45°	4789.3	4807.3	4720.3	4710.2	4584.8	4320.4	4189.3	4034.5	3669.6	3456.1	3361.2
47.5°	4547.5	4571.2	4495.5	4489.9	4373.5	4131.7	3995.0	3838.0	3474.2	3258.4	3169.1
50°	4276.3	4310.2	4248.1	4248.1	4144.1	3903.5	3784.9	3627.8	3270.8	3055.0	2966.9
52.5°	3986.0	4028.9	3982.6	3983.7	3899.0	3683.2	3560.0	3406.4	3058.4	2846.0	2764.6
55°	3685.4	3727.2	3697.9	3702.4	3635.7	3439.1	3327.3	3174.8	2841.5	2634.7	2557.9
57.5°	3371.3	3416.5	3397.3	3406.4	3360.0	3183.8	3067.4	2934.1	2617.8	2413.3	2347.7
60°	3056.1	3099.1	3088.9	3101.3	3071.9	2919.4	2813.2	2675.4	2392.9	2196.3	2138.7
62.5°	2737.5	2777.1	2774.8	2788.4	2772.5	2646.0	2551.1	2433.6	2160.2	1979.4	1926.3
65°	2425.7	2459.6	2457.3	2472.0	2468.6	2366.9	2281.1	2173.8	1927.5	1761.4	1715.0
67.5°	2122.9	2151.2	2143.2	2160.2	2164.7	2083.4	2008.8	1912.8	1706.0	1544.4	1504.9
70°	1826.9	1846.1	1835.9	1847.2	1857.4	1796.4	1733.1	1648.4	1469.9	1327.5	1294.8
72.5°	1536.5	1550.1	1534.3	1545.6	1554.6	1510.6	1458.6	1385.1	1237.1	1114.0	1086.9
75°	1255.2	1274.4	1241.7	1253.0	1259.7	1215.7	1185.2	1125.3	997.6	902.7	884.6
77.5°	982.9	994.2	976.2	971.6	976.2	944.5	920.8	874.5	778.4	700.5	689.2
80°	723.1	729.9	711.8	707.3	710.6	688.1	670.0	636.1	568.3	509.5	505.0
82.5°	484.7	488.1	472.3	467.7	470.0	463.2	441.8	418.0	386.4	336.7	335.6
85°	276.8	276.8	265.5	261.0	263.2	251.9	244.0	231.6	219.2	185.3	187.5
87.5°	101.7	101.7	96.0	94.9	106.2	93.8	90.4	84.7	88.1	70.0	74.6
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°	5168.9	5168.9	5168.9	5168.9	5168.9	5168.9	5168.9	5168.9	5168.9	5168.9	5168.9
2.5°	5191.5	5180.2	5170.0	5135.0	5149.7	5113.5	5111.3	5097.7	5087.5	5068.3	5093.2
5°	5174.5	5151.9	5122.5	5080.7	5093.2	5050.2	5041.2	5025.4	5011.8	4987.0	5006.2
7.5°	5147.4	5110.1	5063.8	5010.7	5027.6	4974.5	4961.0	4944.0	4932.7	4903.4	4920.3
10°	5107.9	5054.8	5000.5	4936.1	4948.6	4890.9	4874.0	4855.9	4845.7	4819.8	4836.7
12.5°	5046.9	4982.5	4909.0	4839.0	4852.5	4798.3	4775.7	4756.5	4753.1	4731.6	4752.0
15°	4967.8	4878.5	4802.8	4728.2	4744.1	4680.8	4670.6	4651.4	4657.1	4642.4	4667.2
17.5°	4867.2	4764.4	4681.9	4601.7	4617.5	4564.4	4556.5	4547.5	4553.1	4550.9	4578.0
20°	4754.2	4641.3	4546.3	4467.3	4476.3	4434.5	4437.9	4435.6	4446.9	4459.4	4496.6
22.5°	4626.6	4498.9	4399.5	4318.1	4331.7	4295.5	4311.3	4315.9	4335.1	4363.3	4410.8
25°	4483.1	4346.4	4242.4	4165.6	4178.0	4154.3	4181.4	4192.7	4223.2	4270.7	4319.3
27.5°	4332.8	4188.2	4077.5	4004.0	4027.8	4004.0	4044.7	4067.3	4113.6	4165.6	4225.5
30°	4173.5	4023.2	3909.1	3843.6	3866.2	3844.7	3910.3	3940.8	3987.1	4058.3	4129.4
32.5°	4006.3	3848.1	3736.3	3685.4	3701.3	3697.9	3771.3	3805.2	3867.3	3948.7	4024.4
35°	3834.6	3669.6	3556.6	3513.7	3532.9	3537.4	3625.6	3665.1	3732.9	3831.2	3912.5
37.5°	3657.2	3488.8	3378.1	3343.1	3360.0	3377.0	3479.8	3519.4	3596.2	3703.5	3792.8
40°	3473.0	3304.7	3196.2	3168.0	3184.9	3203.0	3314.9	3369.1	3452.7	3569.1	3666.2
42.5°	3286.6	3118.3	3013.2	2992.9	3009.8	3044.8	3163.5	3214.3	3302.4	3431.2	3538.6
45°	3096.8	2921.7	2830.2	2814.4	2832.4	2873.1	2989.5	3050.5	3144.3	3285.5	3400.7
47.5°	2904.7	2734.1	2647.1	2637.0	2655.0	2700.2	2829.0	2884.4	2983.8	3134.1	3258.4
50°	2710.4	2544.3	2460.7	2457.3	2474.3	2522.9	2646.0	2711.5	2814.4	2982.7	3110.4
52.5°	2513.8	2354.5	2278.8	2278.8	2294.6	2344.4	2468.6	2536.4	2642.6	2820.0	2961.2
55°	2317.2	2165.8	2093.5	2099.2	2121.8	2164.7	2285.6	2356.8	2464.1	2648.3	2797.4
57.5°	2120.6	1977.2	1911.6	1919.5	1941.0	1983.9	2102.6	2182.8	2280.0	2470.9	2623.4
60°	1926.3	1790.7	1733.1	1742.2	1761.4	1804.3	1927.5	1996.4	2093.5	2287.9	2440.4
62.5°	1729.7	1606.6	1552.4	1563.7	1580.6	1623.5	1739.9	1806.6	1902.6	2093.5	2247.2
65°	1535.4	1421.3	1375.0	1386.3	1402.1	1441.6	1551.2	1615.6	1707.1	1893.6	2040.4
67.5°	1343.3	1239.4	1201.0	1212.3	1224.7	1262.0	1352.4	1422.4	1508.3	1685.7	1824.6
70°	1153.5	1060.9	1027.0	1038.3	1049.6	1083.5	1162.6	1227.0	1306.1	1468.8	1597.5
72.5°	966.0	875.6	858.7	868.8	877.9	907.2	982.9	1033.8	1102.7	1247.3	1358.0
75°	783.0	705.0	693.7	703.9	711.8	734.4	797.6	841.7	899.3	1024.7	1115.1
77.5°	606.7	541.2	536.7	544.6	552.5	568.3	618.0	664.3	709.5	802.2	882.4
80°	441.8	388.7	388.7	396.6	394.3	413.5	448.5	485.8	518.6	585.2	644.0
82.5°	291.5	249.7	255.3	261.0	264.4	272.3	293.8	322.0	342.3	383.0	421.4
85°	161.6	133.3	139.0	143.5	141.2	150.3	161.6	178.5	188.7	207.9	228.2
87.5°	59.9	49.7	50.8	54.2	56.5	61.0	61.0	71.2	72.3	74.6	79.1
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°	5168.9	5168.9	5168.9
2.5°	5045.7	5072.8	5093.2
5°	4958.7	4981.3	4999.4
7.5°	4874.0	4894.3	4910.1
10°	4793.8	4816.4	4827.7
12.5°	4711.3	4737.3	4746.3
15°	4630.0	4655.9	4667.2
17.5°	4546.3	4580.2	4592.7
20°	4468.4	4511.3	4521.5
22.5°	4389.3	4433.4	4445.8
25°	4303.4	4355.4	4367.8
27.5°	4211.9	4274.1	4286.5
30°	4120.4	4188.2	4200.6
32.5°	4022.1	4095.6	4106.9
35°	3919.3	3992.7	4006.3
37.5°	3805.2	3885.4	3912.5
40°	3686.6	3773.6	3801.8
42.5°	3562.3	3657.2	3686.6
45°	3429.0	3532.9	3566.8
47.5°	3294.5	3412.0	3441.4
50°	3148.8	3274.2	3309.2
52.5°	2996.3	3133.0	3168.0
55°	2838.1	2975.9	3014.3
57.5°	2666.3	2808.7	2849.4
60°	2486.7	2629.1	2667.5
62.5°	2302.5	2431.3	2468.6
65°	2096.9	2217.8	2251.7
67.5°	1878.9	1989.6	2017.8
70°	1647.3	1743.3	1768.1
72.5°	1405.5	1472.1	1504.9
75°	1155.8	1208.9	1233.8
77.5°	905.0	942.3	962.6
80°	659.8	681.3	698.2
82.5°	431.6	440.6	453.1
85°	232.7	232.7	240.6
87.5°	79.1	75.7	79.1
90°	0.0	0.0	0.0

(END OF REPORT)