

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: P

Luminaire Tested: **4APN-28L850-X-UNV-ASY**

Issue Date: 06/06/2024



Test Information

Test Method: LM-79-08
Report Number: P
Test Lab: INNOVATION CENTER(G2)
Issue Date: 06/06/2024
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: FAIL-SAFE
Catalog Number: 4APN-28L850-X-UNV-ASY
Description: ArcMed Patient Recessed 4 FT x6 IN Fixture Ambient Light w/
ASYMMETRIC Lens
Light Source: 5000K CCT, 80 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

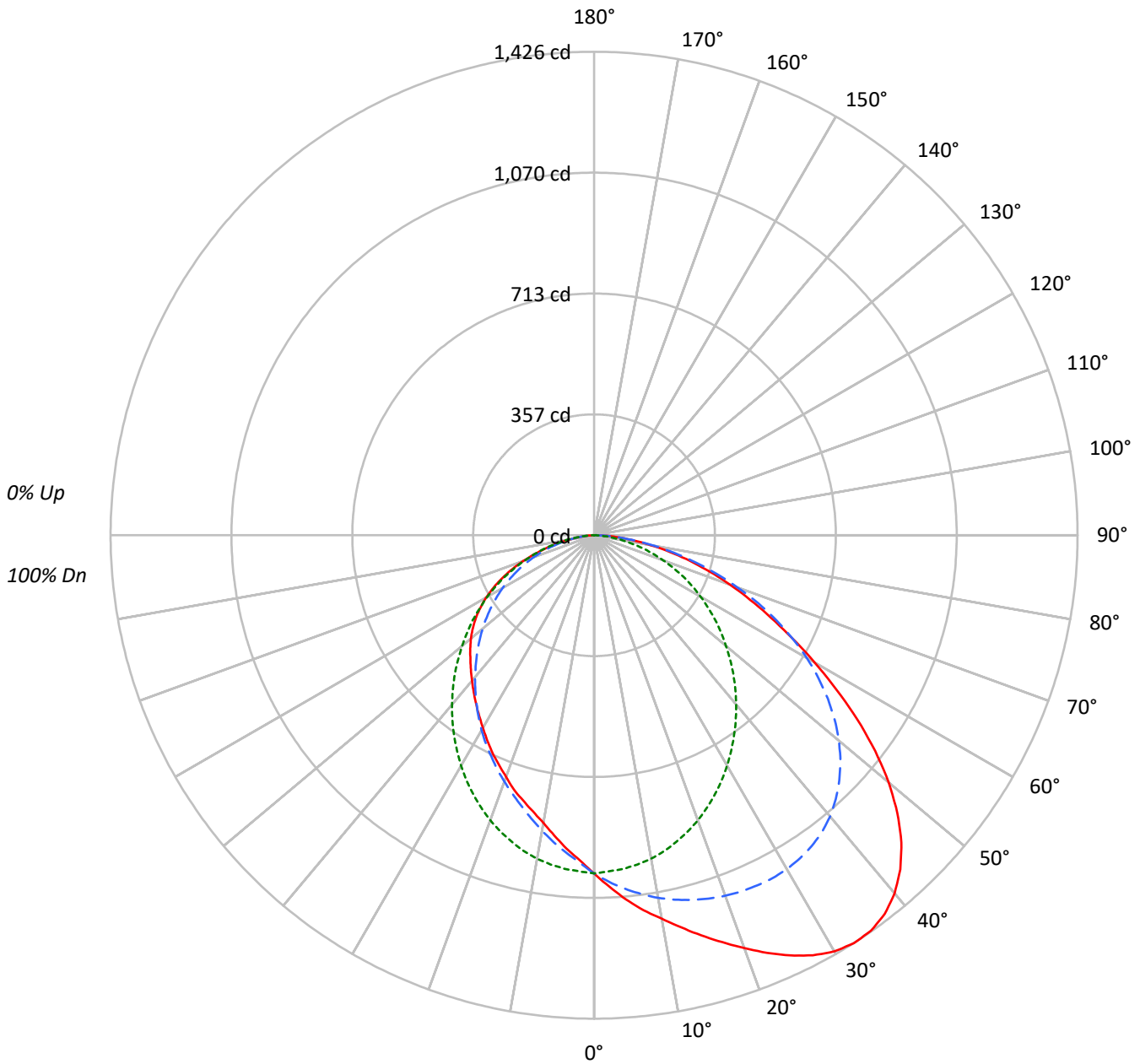
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 3089.8 lumens
Efficiency: N/A
Efficacy: 96.0 lumens/watt
Spacing Criteria (0/90/45): 1.53 / 1.18 / 1.46
Luminous Opening: Rectangular (W 0.29' x L: 3.83' x H: 0')
CIE Type: Direct

Input Watts (W): 32.2
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: 25 FT

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Luminous Intensity Polar Plot



— 0°-180° - - 45°-225° - - - 90°-270°



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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	0
RCR																					
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	102	102	102	100
1	109	104	100	96	106	102	98	94	97	94	91	93	91	88	90	88	86	86	86	86	84
2	99	90	83	78	96	88	82	77	85	80	75	82	77	73	79	75	72	72	72	72	69
3	90	79	71	64	87	78	70	64	75	68	63	72	66	61	69	64	60	60	60	60	58
4	82	70	61	54	80	69	60	54	66	59	53	64	57	52	62	56	52	52	52	52	49
5	75	62	53	46	73	61	53	46	59	51	46	57	50	45	55	49	45	45	45	45	43
6	69	56	47	40	68	55	46	40	53	46	40	51	45	39	50	44	39	39	39	39	37
7	64	51	42	36	63	50	41	35	48	41	35	47	40	35	45	39	35	35	35	35	33
8	60	46	37	32	58	45	37	31	44	37	31	43	36	31	42	35	31	31	31	31	29
9	56	42	34	28	54	42	34	28	40	33	28	39	33	28	38	32	28	28	28	28	26
10	52	39	31	26	51	38	31	26	37	30	25	36	30	25	36	30	25	25	25	25	23

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	9603	9603	9603
5°	10421	9545	8970
10°	11227	9471	8417
15°	12178	9333	8071
20°	13278	9169	7771
25°	14525	8955	7530
30°	15757	8719	7288
35°	16735	8462	7132
40°	17328	8193	7039
45°	17450	7910	7023
50°	16992	7609	7099
55°	15910	7337	7144
60°	14462	7003	7074
65°	13112	6622	6800
70°	12003	6139	6243
75°	10888	5520	5368
80°	9525	4613	4136
85°	8019	3347	3082



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	94.7	3.1
10°-20°	275.5	8.9
20°-30°	431.7	14.0
30°-40°	541.2	17.5
40°-50°	576.1	18.6
50°-60°	520.1	16.8
60°-70°	385.0	12.5
70°-80°	211.3	6.8
80°-90°	54.2	1.8
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°	801.9	26.0
0°-40°	1343.1	43.5
0°-60°	2439.3	78.9
0°-90°	3089.8	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3089.8	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	998	998	998	998	998	
5°	1078	1047	988	940	928	105
15°	1222	1113	936	827	810	348
25°	1367	1139	843	719	709	633
35°	1424	1119	720	605	607	888
45°	1282	1023	581	487	516	983
55°	948	842	437	370	426	845
65°	576	593	291	250	298	574
75°	293	310	148	128	144	311
85°	73	71	30	28	28	86
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	45°	55°	65°	75°	85°	90°
0°	997.5	997.5	997.5	997.5	997.5	997.5	997.5	997.5	997.5	997.5	997.5
2.5°	1037.7	1035.7	1033.2	1032.4	1028.7	1023.8	1019.3	1019.3	1013.9	1001.2	992.2
5°	1078.3	1075.0	1068.9	1064.0	1056.2	1046.7	1037.3	1031.6	1018.9	999.6	987.7
7.5°	1115.6	1111.5	1103.7	1094.3	1081.6	1067.6	1052.1	1039.8	1020.5	994.7	979.5
10°	1148.4	1144.7	1135.3	1123.8	1105.8	1086.1	1063.1	1044.7	1018.4	986.5	968.8
12.5°	1184.5	1180.8	1167.7	1152.1	1127.5	1101.3	1070.9	1045.5	1013.1	974.6	954.5
15°	1221.8	1216.9	1202.1	1181.2	1148.4	1113.2	1075.8	1043.0	1004.5	960.2	936.4
17.5°	1258.7	1253.8	1235.3	1208.7	1167.7	1123.8	1077.9	1037.3	992.2	942.6	916.8
20°	1296.0	1291.1	1267.7	1234.1	1184.5	1131.6	1077.5	1028.7	977.4	922.5	895.0
22.5°	1333.3	1327.6	1299.3	1258.3	1198.4	1136.9	1073.0	1016.8	959.0	899.5	870.0
25°	1367.4	1361.6	1330.5	1282.1	1213.2	1139.4	1065.2	1000.4	938.5	874.1	843.0
27.5°	1396.9	1389.9	1357.5	1304.2	1225.9	1140.2	1054.9	982.0	914.7	846.7	815.1
30°	1417.4	1411.2	1376.8	1319.8	1233.3	1137.3	1041.8	960.2	887.2	817.1	784.3
32.5°	1426.4	1421.1	1387.0	1327.2	1234.5	1130.0	1025.8	936.0	858.5	786.0	752.8
35°	1423.9	1418.6	1386.2	1325.9	1230.8	1119.3	1005.7	908.6	827.8	753.6	720.0
37.5°	1408.4	1402.2	1372.7	1314.9	1220.2	1103.7	982.8	878.6	794.6	720.4	686.3
40°	1378.8	1372.7	1347.3	1294.0	1202.1	1082.8	956.5	846.7	760.6	685.5	651.9
42.5°	1336.6	1330.0	1310.0	1261.2	1176.3	1055.3	926.6	812.6	724.5	651.9	616.6
45°	1281.7	1275.1	1261.6	1220.2	1142.7	1023.0	892.6	775.7	686.8	613.8	581.0
47.5°	1213.6	1207.9	1201.3	1169.3	1101.3	985.6	854.4	736.4	647.4	578.1	544.5
50°	1134.5	1128.7	1130.8	1109.1	1053.3	942.6	812.6	695.0	606.8	538.3	508.0
52.5°	1044.7	1040.2	1050.0	1040.6	997.5	894.6	767.9	652.3	565.4	500.6	471.5
55°	947.9	943.0	961.9	964.7	935.2	841.7	717.1	608.0	523.6	463.7	437.1
57.5°	848.3	844.2	868.4	881.9	867.2	784.7	665.8	562.5	480.5	425.2	398.5
60°	751.1	747.8	773.3	795.4	793.8	724.5	612.5	513.3	437.5	386.2	363.7
62.5°	659.7	656.0	681.4	707.7	717.1	660.1	559.7	464.9	394.4	347.3	327.2
65°	575.6	572.0	593.7	620.7	638.0	592.9	502.7	414.9	351.0	307.9	290.7
67.5°	498.6	498.6	512.1	537.1	558.0	524.0	444.4	367.4	306.3	271.4	254.2
70°	426.4	426.0	435.8	453.5	477.7	450.2	385.4	317.3	264.0	233.3	218.1
72.5°	357.9	360.8	364.5	378.0	403.4	379.7	326.8	268.1	222.6	195.6	182.9
75°	292.7	292.3	297.7	309.6	328.0	310.4	268.1	220.2	181.6	159.5	148.4
77.5°	230.4	230.0	234.5	241.5	257.1	243.1	211.6	175.9	141.5	123.0	115.2
80°	171.8	171.8	175.9	179.6	191.1	180.0	157.9	131.6	103.7	89.4	83.2
82.5°	119.3	121.8	120.1	125.1	131.6	122.2	108.2	90.2	68.9	59.0	54.9
85°	72.6	74.6	72.6	76.7	79.5	71.3	64.4	53.7	39.8	33.2	30.3
87.5°	37.3	36.9	36.5	38.5	39.4	34.4	30.3	25.8	17.6	13.5	11.5
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):

	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
0°	997.5	997.5	997.5	997.5	997.5	997.5	997.5	997.5	997.5	997.5
2.5°	986.9	989.3	985.6	972.1	966.8	961.0	958.6	956.1	960.6	959.4
5°	978.7	975.8	966.4	949.2	940.1	930.7	926.2	923.3	929.5	928.2
7.5°	967.6	959.4	945.5	924.6	913.1	900.4	894.2	890.5	894.6	893.8
10°	953.7	940.1	922.9	897.9	884.4	870.4	863.5	858.1	861.4	861.0
12.5°	936.0	918.4	897.5	869.2	855.3	840.9	834.8	831.1	835.2	833.9
15°	916.4	895.0	870.8	842.1	827.0	813.9	809.3	806.5	809.8	809.8
17.5°	894.6	869.6	843.0	813.9	799.5	789.3	784.7	782.7	784.3	786.8
20°	870.4	842.6	813.9	785.6	773.3	762.6	758.5	756.5	760.1	758.5
22.5°	843.8	814.3	784.3	757.7	746.6	736.0	731.9	730.6	734.7	733.1
25°	815.5	783.5	754.0	729.8	718.7	709.7	706.0	704.8	706.8	708.9
27.5°	788.8	752.8	723.7	701.9	692.1	683.5	680.2	678.1	679.8	682.2
30°	756.5	721.6	692.9	672.8	663.4	655.2	652.7	651.1	653.5	655.6
32.5°	726.1	690.9	662.2	642.5	634.3	626.5	626.1	625.3	628.1	630.6
35°	693.3	658.9	631.0	612.5	604.8	598.2	599.4	600.7	603.9	606.8
37.5°	660.1	626.5	599.8	583.0	575.6	570.3	574.0	575.6	580.2	583.0
40°	626.5	592.9	568.3	553.1	545.7	543.3	548.6	552.3	557.6	560.1
42.5°	592.0	560.9	536.3	522.3	516.2	516.2	523.2	528.9	535.1	537.5
45°	557.6	527.3	503.9	491.2	486.7	490.0	498.2	505.5	513.3	515.8
47.5°	522.8	493.2	471.9	460.4	458.0	462.9	473.1	483.0	492.0	495.3
50°	487.9	461.3	439.9	429.3	429.3	435.4	448.5	460.8	470.7	474.0
52.5°	453.1	427.6	405.9	398.1	399.8	408.4	423.5	436.2	447.3	450.6
55°	417.8	392.8	373.9	367.4	370.2	380.9	396.5	411.2	421.9	425.6
57.5°	382.9	359.2	341.9	336.6	340.7	352.6	370.6	383.4	394.4	397.7
60°	347.7	323.5	310.0	305.9	311.2	323.5	341.9	353.8	364.1	367.4
62.5°	312.8	290.3	278.4	274.7	280.9	294.0	312.0	322.7	330.5	333.7
65°	277.6	257.5	246.4	244.0	250.5	263.2	280.4	289.5	295.2	298.5
67.5°	242.7	225.5	215.3	213.2	220.2	231.7	247.6	252.6	257.9	261.2
70°	208.3	192.7	184.1	182.9	189.0	200.1	213.6	216.1	218.9	221.8
72.5°	174.3	162.0	153.3	152.9	158.7	167.7	178.8	179.2	180.0	182.9
75°	141.5	130.4	123.8	125.1	128.3	135.7	144.3	141.9	142.3	144.3
77.5°	109.9	100.9	96.4	97.2	99.6	105.0	110.7	107.8	106.2	108.2
80°	79.1	71.3	69.7	70.1	71.8	75.4	78.7	76.3	73.0	74.6
82.5°	52.1	47.2	46.3	46.7	48.0	50.0	50.8	47.2	46.3	47.6
85°	28.7	26.7	26.7	27.9	28.3	28.7	28.7	26.7	27.1	27.9
87.5°	11.5	11.5	12.7	13.9	13.1	11.5	9.8	6.6	6.6	7.8
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)