

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-28L835-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-28L835-X-UNV-ASY
Description: ArcMed Patient Recessed 4 FT x6 IN Fixture Ambient Light w/
ASYMMETRIC Lens
Light Source: 3500K CCT, 80 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

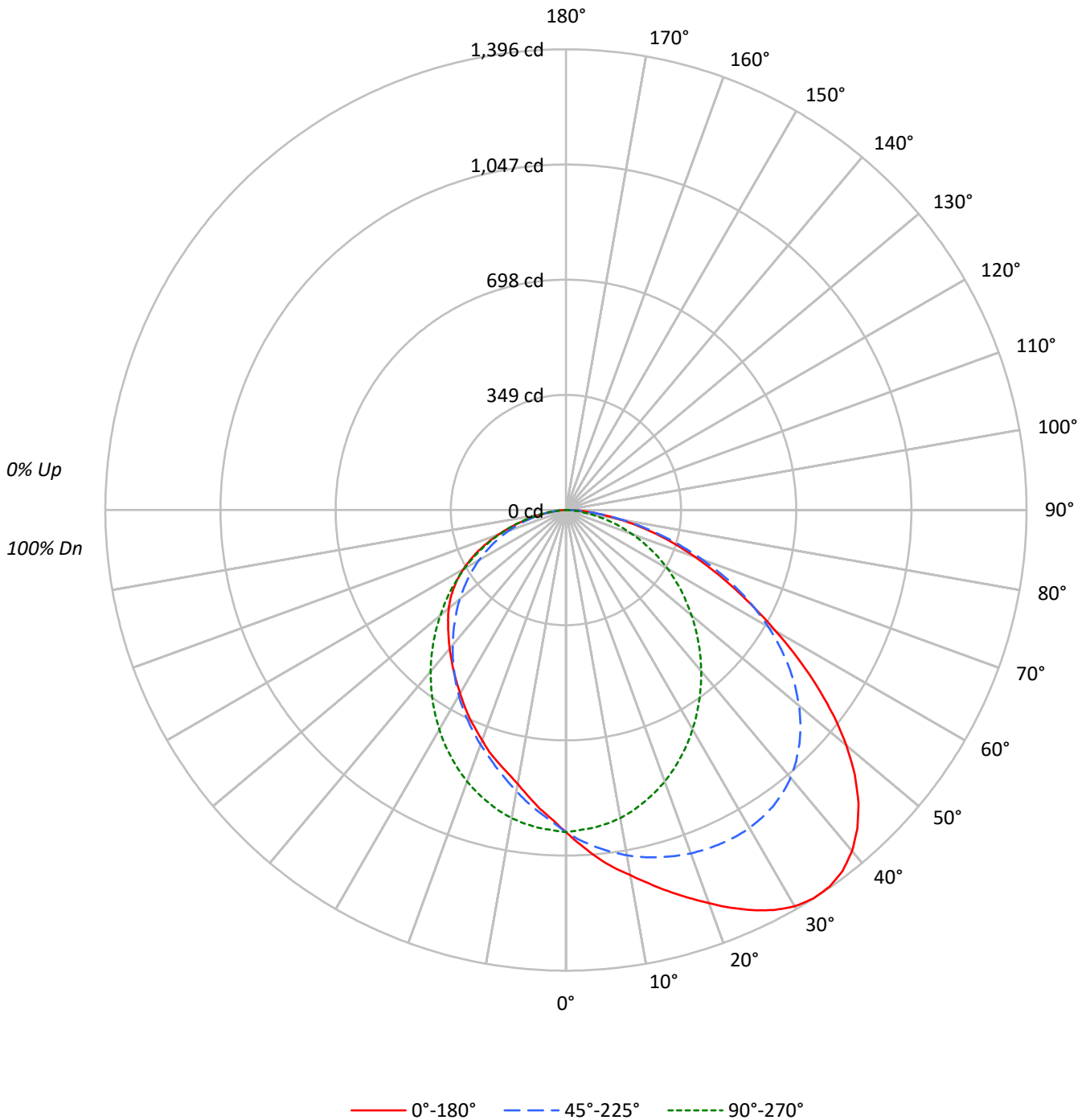
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 3023.0 lumens
Efficiency: N/A
Efficacy: 93.9 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 (A_{in}): 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





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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°	9396	9396	9396
5°	10196	9338	8777
10°	10984	9267	8235
15°	11915	9132	7896
20°	12991	8972	7603
25°	14211	8760	7368
30°	15416	8531	7130
35°	16374	8279	6978
40°	16954	8016	6887
45°	17073	7739	6870
50°	16624	7444	6945
55°	15566	7177	6989
60°	14150	6851	6920
65°	12830	6479	6652
70°	11744	6007	6108
75°	10653	5401	5252
80°	9320	4513	4047
85°	7843	3281	3016



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	92.7	3.1
10°-20°	269.6	8.9
20°-30°	422.3	14.0
30°-40°	529.5	17.5
40°-50°	563.7	18.6
50°-60°	508.8	16.8
60°-70°	376.7	12.5
70°-80°	206.7	6.8
80°-90°	53.1	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°	784.6	26.0
0°-40°	1314.1	43.5
0°-60°	2386.5	78.9
0°-90°	3023.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3023.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	976	976	976	976	976	
5°	1055	1024	966	920	908	103
15°	1195	1089	916	809	792	341
25°	1338	1115	825	703	694	619
35°	1393	1095	704	592	594	869
45°	1254	1001	568	476	505	961
55°	927	824	428	362	416	827
65°	563	580	284	245	292	562
75°	286	304	145	126	141	304
85°	71	70	30	28	27	84
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°	976.0	976.0	976.0	976.0	976.0	976.0	976.0	976.0	976.0	976.0	976.0
2.5°	1015.3	1013.3	1010.9	1010.1	1006.5	1001.6	997.2	997.2	992.0	979.6	970.8
5°	1055.0	1051.8	1045.8	1041.0	1033.3	1024.1	1014.9	1009.3	996.8	978.0	966.3
7.5°	1091.5	1087.5	1079.9	1070.6	1058.2	1044.6	1029.3	1017.3	998.4	973.2	958.3
10°	1123.6	1120.0	1110.7	1099.5	1081.9	1062.6	1040.1	1022.1	996.4	965.1	947.9
12.5°	1158.9	1155.3	1142.4	1127.2	1103.1	1077.5	1047.8	1022.9	991.2	953.5	933.8
15°	1195.4	1190.6	1176.1	1155.7	1123.6	1089.1	1052.6	1020.5	982.8	939.5	916.2
17.5°	1231.5	1226.7	1208.6	1182.6	1142.4	1099.5	1054.6	1014.9	970.8	922.2	896.9
20°	1268.0	1263.2	1240.3	1207.4	1158.9	1107.1	1054.2	1006.5	956.3	902.6	875.7
22.5°	1304.5	1298.9	1271.2	1231.1	1172.5	1112.4	1049.8	994.8	938.3	880.1	851.2
25°	1337.8	1332.2	1301.7	1254.4	1187.0	1114.8	1042.2	978.8	918.2	855.2	824.7
27.5°	1366.7	1359.9	1328.2	1276.0	1199.4	1115.6	1032.1	960.7	894.9	828.3	797.5
30°	1386.7	1380.7	1347.0	1291.3	1206.6	1112.8	1019.3	939.5	868.1	799.5	767.4
32.5°	1395.6	1390.3	1357.0	1298.5	1207.8	1105.5	1003.6	915.8	840.0	769.0	736.5
35°	1393.2	1387.9	1356.2	1297.3	1204.2	1095.1	984.0	888.9	809.9	737.3	704.4
37.5°	1377.9	1371.9	1343.0	1286.4	1193.8	1079.9	961.5	859.6	777.4	704.8	671.5
40°	1349.0	1343.0	1318.1	1266.0	1176.1	1059.4	935.9	828.3	744.1	670.7	637.8
42.5°	1307.7	1301.3	1281.6	1233.9	1150.9	1032.5	906.6	795.1	708.8	637.8	603.3
45°	1254.0	1247.5	1234.3	1193.8	1118.0	1000.8	873.3	759.0	671.9	600.5	568.4
47.5°	1187.4	1181.8	1175.3	1144.0	1077.5	964.3	836.0	720.4	633.4	565.6	532.7
50°	1109.9	1104.3	1106.3	1085.1	1030.5	922.2	795.1	679.9	593.7	526.7	497.0
52.5°	1022.1	1017.7	1027.3	1018.1	976.0	875.3	751.3	638.2	553.2	489.8	461.3
55°	927.4	922.6	941.1	943.9	915.0	823.5	701.6	594.9	512.3	453.7	427.6
57.5°	830.0	825.9	849.6	862.8	848.4	767.8	651.4	550.4	470.1	416.0	389.9
60°	734.9	731.7	756.5	778.2	776.6	708.8	599.3	502.2	428.0	377.9	355.8
62.5°	645.4	641.8	666.7	692.4	701.6	645.8	547.6	454.9	385.9	339.8	320.1
65°	563.2	559.6	580.8	607.3	624.2	580.0	491.8	406.0	343.4	301.3	284.4
67.5°	487.8	487.8	501.0	525.5	545.9	512.7	434.8	359.4	299.6	265.6	248.7
70°	417.2	416.8	426.4	443.7	467.3	440.4	377.1	310.5	258.3	228.2	213.4
72.5°	350.2	353.0	356.6	369.8	394.7	371.5	319.7	262.3	217.8	191.3	178.9
75°	286.4	286.0	291.2	302.9	320.9	303.7	262.3	215.4	177.7	156.0	145.2
77.5°	225.4	225.0	229.5	236.3	251.5	237.9	207.0	172.1	138.4	120.3	112.7
80°	168.1	168.1	172.1	175.7	186.9	176.1	154.4	128.8	101.5	87.4	81.4
82.5°	116.7	119.1	117.5	122.3	128.8	119.5	105.9	88.3	67.4	57.8	53.8
85°	71.0	73.0	71.0	75.0	77.8	69.8	63.0	52.5	38.9	32.5	29.7
87.5°	36.5	36.1	35.7	37.7	38.5	33.7	29.7	25.3	17.2	13.2	11.2
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):

	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
0°	976.0	976.0	976.0	976.0	976.0	976.0	976.0	976.0	976.0	976.0
2.5°	965.5	967.9	964.3	951.1	945.9	940.3	937.9	935.5	939.9	938.7
5°	957.5	954.7	945.5	928.6	919.8	910.6	906.2	903.4	909.4	908.2
7.5°	946.7	938.7	925.0	904.6	893.3	880.9	874.9	871.3	875.3	874.5
10°	933.0	919.8	903.0	878.5	865.3	851.6	844.8	839.6	842.8	842.4
12.5°	915.8	898.5	878.1	850.4	836.8	822.7	816.7	813.1	817.1	815.9
15°	896.5	875.7	852.0	823.9	809.1	796.3	791.8	789.0	792.2	792.2
17.5°	875.3	850.8	824.7	796.3	782.2	772.2	767.8	765.8	767.4	769.8
20°	851.6	824.3	796.3	768.6	756.5	746.1	742.1	740.1	743.7	742.1
22.5°	825.5	796.7	767.4	741.3	730.5	720.0	716.0	714.8	718.8	717.2
25°	797.9	766.6	737.7	714.0	703.2	694.4	690.8	689.6	691.6	693.6
27.5°	771.8	736.5	708.0	686.7	677.1	668.7	665.5	663.5	665.1	667.5
30°	740.1	706.0	677.9	658.3	649.0	641.0	638.6	637.0	639.4	641.4
32.5°	710.4	675.9	647.8	628.6	620.6	612.9	612.5	611.7	614.5	616.9
35°	678.3	644.6	617.4	599.3	591.7	585.3	586.5	587.7	590.9	593.7
37.5°	645.8	612.9	586.9	570.4	563.2	558.0	561.6	563.2	567.6	570.4
40°	612.9	580.0	556.0	541.1	533.9	531.5	536.7	540.3	545.5	548.0
42.5°	579.2	548.8	524.7	511.0	505.0	505.0	511.9	517.5	523.5	525.9
45°	545.5	515.9	493.0	480.6	476.2	479.4	487.4	494.6	502.2	504.6
47.5°	511.5	482.6	461.7	450.5	448.1	452.9	462.9	472.5	481.4	484.6
50°	477.4	451.3	430.4	420.0	420.0	426.0	438.8	450.9	460.5	463.7
52.5°	443.3	418.4	397.1	389.5	391.1	399.5	414.4	426.8	437.6	440.9
55°	408.8	384.3	365.8	359.4	362.2	372.7	387.9	402.3	412.8	416.4
57.5°	374.7	351.4	334.5	329.3	333.3	345.0	362.6	375.1	385.9	389.1
60°	340.2	316.5	303.3	299.2	304.5	316.5	334.5	346.2	356.2	359.4
62.5°	306.1	284.0	272.4	268.8	274.8	287.6	305.3	315.7	323.3	326.5
65°	271.6	251.9	241.1	238.7	245.1	257.5	274.4	283.2	288.8	292.0
67.5°	237.5	220.6	210.6	208.6	215.4	226.6	242.3	247.1	252.3	255.5
70°	203.8	188.5	180.1	178.9	184.9	195.8	209.0	211.4	214.2	217.0
72.5°	170.5	158.4	150.0	149.6	155.2	164.1	174.9	175.3	176.1	178.9
75°	138.4	127.6	121.1	122.3	125.6	132.8	141.2	138.8	139.2	141.2
77.5°	107.5	98.7	94.3	95.1	97.5	102.7	108.3	105.5	103.9	105.9
80°	77.4	69.8	68.2	68.6	70.2	73.8	77.0	74.6	71.4	73.0
82.5°	50.9	46.1	45.3	45.7	46.9	48.9	49.7	46.1	45.3	46.5
85°	28.1	26.1	26.1	27.3	27.7	28.1	28.1	26.1	26.5	27.3
87.5°	11.2	11.2	12.4	13.6	12.8	11.2	9.6	6.4	6.4	7.6
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)