

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-28L840-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-28L840-X-UNV-ASY  
Description: ArcMed Patient Recessed 4 FT x6 IN Fixture Ambient Light w/  
ASYMMETRIC Lens  
Light Source: 4000K CCT, 80 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

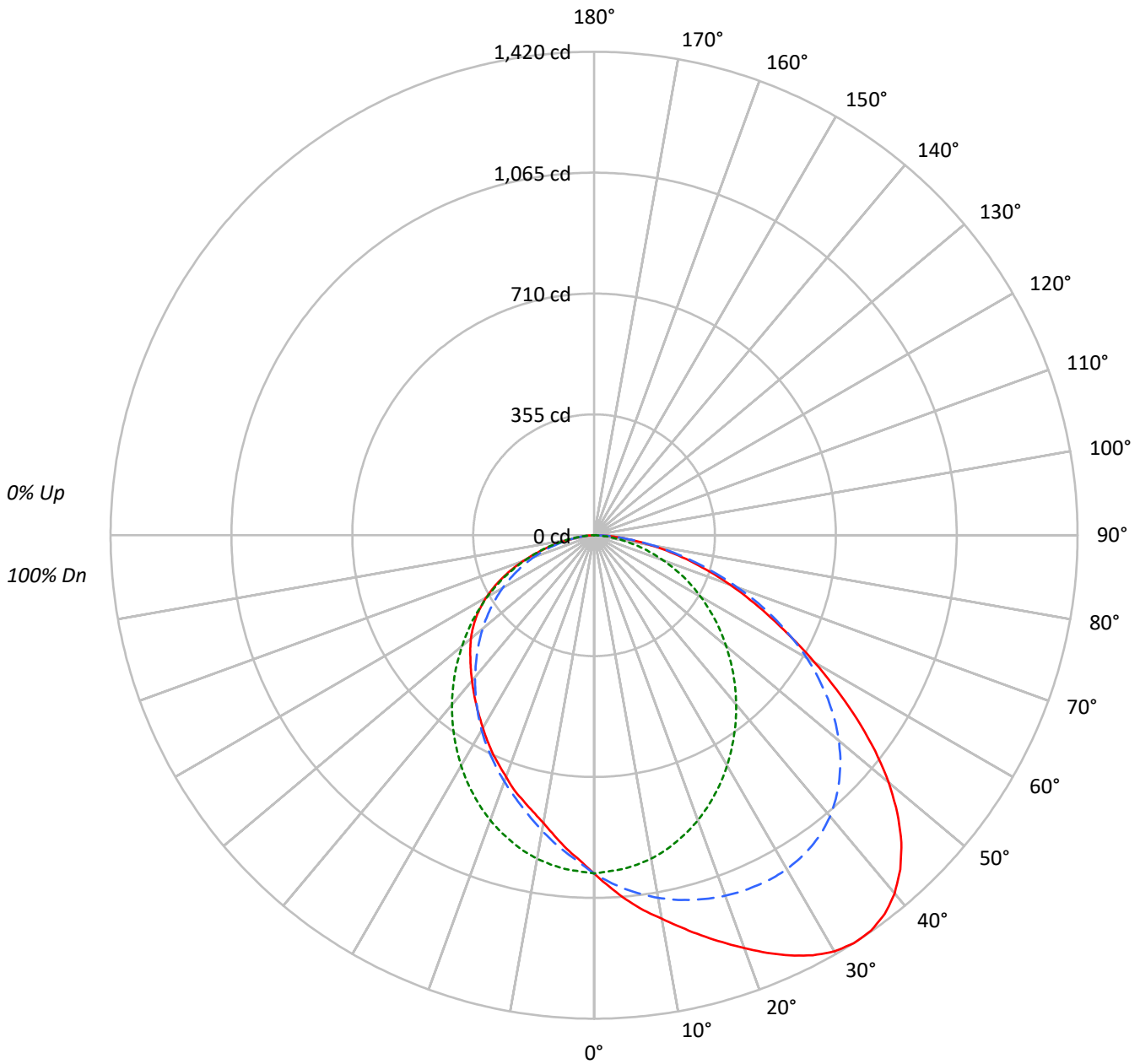
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 3076.9 lumens  
Efficiency: N/A  
Efficacy: 95.6 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<sub>in</sub>): 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

TEST NUMBER: P  
CATALOG NUMBER: 4APN-28L840-X-UNV-ASY

### Luminous Intensity Polar Plot



— 0°-180°    - - 45°-225°    - - - 90°-270°



TEST NUMBER: P  
 CATALOG NUMBER: 4APN-28L840-X-UNV-ASY

**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°	9564	9564	9564
5°	10377	9506	8934
10°	11180	9432	8382
15°	12127	9294	8037
20°	13222	9132	7738
25°	14464	8917	7498
30°	15690	8683	7258
35°	16665	8427	7102
40°	17257	8159	7009
45°	17377	7876	6993
50°	16920	7577	7069
55°	15845	7305	7113
60°	14403	6974	7043
65°	13058	6595	6770
70°	11952	6114	6218
75°	10843	5498	5345
80°	9486	4596	4119
85°	7986	3336	3071



TEST NUMBER: P  
 CATALOG NUMBER: 4APN-28L840-X-UNV-ASY

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	94.3	3.1
10°-20°	274.4	8.9
20°-30°	429.9	14.0
30°-40°	538.9	17.5
40°-50°	573.7	18.6
50°-60°	517.9	16.8
60°-70°	383.4	12.5
70°-80°	210.4	6.8
80°-90°	54.0	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°	798.6	26.0
0°-40°	1337.5	43.5
0°-60°	2429.1	78.9
0°-90°	3076.9	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3076.9	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	993	993	993	993	993	
5°	1074	1042	984	936	924	105
15°	1217	1108	932	824	806	347
25°	1362	1135	839	716	706	630
35°	1418	1115	717	602	604	884
45°	1276	1019	578	485	514	978
55°	944	838	435	369	424	842
65°	573	590	290	250	297	572
75°	292	309	148	128	144	310
85°	72	71	30	28	28	85
90°	0	0	0	0	0	



TEST NUMBER: P

CATALOG NUMBER: 4APN-28L840-X-UNV-ASY

**CANDELA DISTRIBUTION (FULL):**

	0°	5°	15°	25°	35°	45°	55°	65°	75°	85°	90°
0°	993.4	993.4	993.4	993.4	993.4	993.4	993.4	993.4	993.4	993.4	993.4
2.5°	1033.4	1031.3	1028.9	1028.1	1024.4	1019.5	1015.0	1015.0	1009.7	997.0	988.1
5°	1073.8	1070.5	1064.4	1059.5	1051.7	1042.4	1033.0	1027.2	1014.6	995.4	983.6
7.5°	1110.9	1106.9	1099.1	1089.7	1077.1	1063.2	1047.7	1035.4	1016.2	990.5	975.4
10°	1143.6	1139.9	1130.5	1119.1	1101.1	1081.6	1058.7	1040.3	1014.2	982.3	964.8
12.5°	1179.5	1175.9	1162.8	1147.3	1122.8	1096.7	1066.4	1041.1	1008.9	970.5	950.5
15°	1216.7	1211.8	1197.1	1176.3	1143.6	1108.5	1071.3	1038.7	1000.3	956.2	932.5
17.5°	1253.4	1248.5	1230.2	1203.6	1162.8	1119.1	1073.4	1033.0	988.1	938.7	912.9
20°	1290.6	1285.7	1262.4	1228.9	1179.5	1126.9	1073.0	1024.4	973.4	918.6	891.3
22.5°	1327.7	1322.0	1293.9	1253.0	1193.4	1132.2	1068.5	1012.6	955.0	895.8	866.4
25°	1361.6	1355.9	1324.9	1276.7	1208.1	1134.6	1060.7	996.2	934.6	870.5	839.4
27.5°	1391.0	1384.1	1351.8	1298.8	1220.8	1135.4	1050.5	977.8	910.9	843.1	811.7
30°	1411.4	1405.3	1371.0	1314.3	1228.1	1132.6	1037.5	956.2	883.5	813.7	781.1
32.5°	1420.4	1415.1	1381.2	1321.6	1229.4	1125.2	1021.5	932.1	855.0	782.7	749.6
35°	1418.0	1412.7	1380.4	1320.4	1225.7	1114.6	1001.5	904.8	824.3	750.4	717.0
37.5°	1402.5	1396.3	1366.9	1309.4	1215.1	1099.1	978.7	875.0	791.3	717.4	683.5
40°	1373.1	1366.9	1341.6	1288.6	1197.1	1078.3	952.5	843.1	757.4	682.7	649.2
42.5°	1331.0	1324.5	1304.5	1255.9	1171.4	1050.9	922.7	809.2	721.4	649.2	614.1
45°	1276.3	1269.8	1256.3	1215.1	1137.9	1018.7	888.8	772.5	683.9	611.2	578.5
47.5°	1208.5	1202.8	1196.3	1164.4	1096.7	981.5	850.9	733.3	644.7	575.7	542.2
50°	1129.7	1124.0	1126.1	1104.4	1048.9	938.7	809.2	692.0	604.3	536.1	505.9
52.5°	1040.3	1035.8	1045.6	1036.2	993.4	890.9	764.7	649.6	563.0	498.5	469.5
55°	944.0	939.1	957.8	960.7	931.3	838.2	714.1	605.5	521.4	461.8	435.2
57.5°	844.7	840.7	864.8	878.2	863.5	781.5	663.1	560.2	478.5	423.4	396.9
60°	748.0	744.7	770.0	792.1	790.4	721.4	610.0	511.2	435.6	384.6	362.2
62.5°	656.9	653.3	678.6	704.7	714.1	657.3	557.3	463.0	392.8	345.8	325.8
65°	573.2	569.6	591.2	618.1	635.3	590.4	500.6	413.2	349.5	306.6	289.5
67.5°	496.5	496.5	509.9	534.9	555.7	521.8	442.6	365.8	305.0	270.3	253.1
70°	424.6	424.2	434.0	451.6	475.7	448.3	383.8	316.0	262.9	232.3	217.2
72.5°	356.4	359.3	363.0	376.4	401.8	378.1	325.4	267.0	221.7	194.8	182.1
75°	291.5	291.1	296.4	308.3	326.6	309.1	267.0	219.2	180.9	158.8	147.8
77.5°	229.5	229.0	233.5	240.5	256.0	242.1	210.7	175.2	140.9	122.5	114.7
80°	171.1	171.1	175.2	178.8	190.3	179.2	157.2	131.1	103.3	89.0	82.9
82.5°	118.8	121.3	119.6	124.5	131.1	121.7	107.8	89.8	68.6	58.8	54.7
85°	72.3	74.3	72.3	76.3	79.2	71.0	64.1	53.5	39.6	33.1	30.2
87.5°	37.2	36.7	36.3	38.4	39.2	34.3	30.2	25.7	17.6	13.5	11.4
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



TEST NUMBER: P  
 CATALOG NUMBER: 4APN-28L840-X-UNV-ASY

**CANDELA DISTRIBUTION (continued):**

	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
0°	993.4	993.4	993.4	993.4	993.4	993.4	993.4	993.4	993.4	993.4
2.5°	982.7	985.2	981.5	968.0	962.7	957.0	954.6	952.1	956.6	955.4
5°	974.6	971.7	962.3	945.2	936.2	926.8	922.3	919.5	925.6	924.4
7.5°	963.6	955.4	941.5	920.7	909.3	896.6	890.5	886.8	890.9	890.1
10°	949.7	936.2	919.1	894.1	880.7	866.8	859.9	854.5	857.8	857.4
12.5°	932.1	914.6	893.7	865.6	851.7	837.4	831.3	827.6	831.7	830.5
15°	912.5	891.3	867.2	838.6	823.5	810.4	806.0	803.1	806.4	806.4
17.5°	890.9	866.0	839.4	810.4	796.2	786.0	781.5	779.4	781.1	783.5
20°	866.8	839.0	810.4	782.3	770.0	759.4	755.3	753.3	757.0	755.3
22.5°	840.3	810.9	781.1	754.5	743.5	732.9	728.8	727.6	731.6	730.0
25°	812.1	780.2	750.8	726.8	715.7	706.7	703.1	701.8	703.9	705.9
27.5°	785.5	749.6	720.6	699.0	689.2	680.6	677.3	675.3	676.9	679.4
30°	753.3	718.6	690.0	670.0	660.6	652.4	650.0	648.4	650.8	652.9
32.5°	723.1	688.0	659.4	639.8	631.6	623.9	623.5	622.6	625.5	627.9
35°	690.4	656.1	628.4	610.0	602.2	595.7	596.9	598.1	601.4	604.3
37.5°	657.3	623.9	597.3	580.6	573.2	567.9	571.6	573.2	577.7	580.6
40°	623.9	590.4	565.9	550.8	543.4	541.0	546.3	550.0	555.3	557.7
42.5°	589.6	558.5	534.0	520.2	514.0	514.0	521.0	526.7	532.8	535.3
45°	555.3	525.1	501.8	489.1	484.6	487.9	496.1	503.4	511.2	513.6
47.5°	520.6	491.2	469.9	458.5	456.1	461.0	471.2	481.0	489.9	493.2
50°	485.9	459.3	438.1	427.5	427.5	433.6	446.7	458.9	468.7	472.0
52.5°	451.2	425.8	404.2	396.4	398.1	406.7	421.8	434.4	445.4	448.7
55°	416.0	391.1	372.4	365.8	368.7	379.3	394.8	409.5	420.1	423.8
57.5°	381.3	357.7	340.5	335.2	339.3	351.1	369.1	381.7	392.8	396.0
60°	346.2	322.1	308.7	304.6	309.9	322.1	340.5	352.4	362.6	365.8
62.5°	311.5	289.1	277.2	273.6	279.7	292.7	310.7	321.3	329.1	332.3
65°	276.4	256.4	245.4	242.9	249.5	262.1	279.3	288.3	294.0	297.2
67.5°	241.7	224.6	214.4	212.3	219.2	230.7	246.6	251.5	256.8	260.1
70°	207.4	191.9	183.3	182.1	188.2	199.2	212.7	215.2	218.0	220.9
72.5°	173.5	161.3	152.7	152.3	158.0	167.0	178.0	178.4	179.2	182.1
75°	140.9	129.8	123.3	124.5	127.8	135.1	143.7	141.3	141.7	143.7
77.5°	109.4	100.4	95.9	96.8	99.2	104.5	110.2	107.4	105.7	107.8
80°	78.8	71.0	69.4	69.8	71.5	75.1	78.4	75.9	72.7	74.3
82.5°	51.9	47.0	46.1	46.5	47.8	49.8	50.6	47.0	46.1	47.4
85°	28.6	26.5	26.5	27.8	28.2	28.6	28.6	26.5	26.9	27.8
87.5°	11.4	11.4	12.7	13.9	13.1	11.4	9.8	6.5	6.5	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)