

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-28-30L835-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-28-30L835-UNV-ASY
Description: ArcMed Patient Recessed 4 FT x6 IN Fixture Ambient and Exam Light
w/ ASYMMETRIC Lens
Light Source: 3500K CCT, 80 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

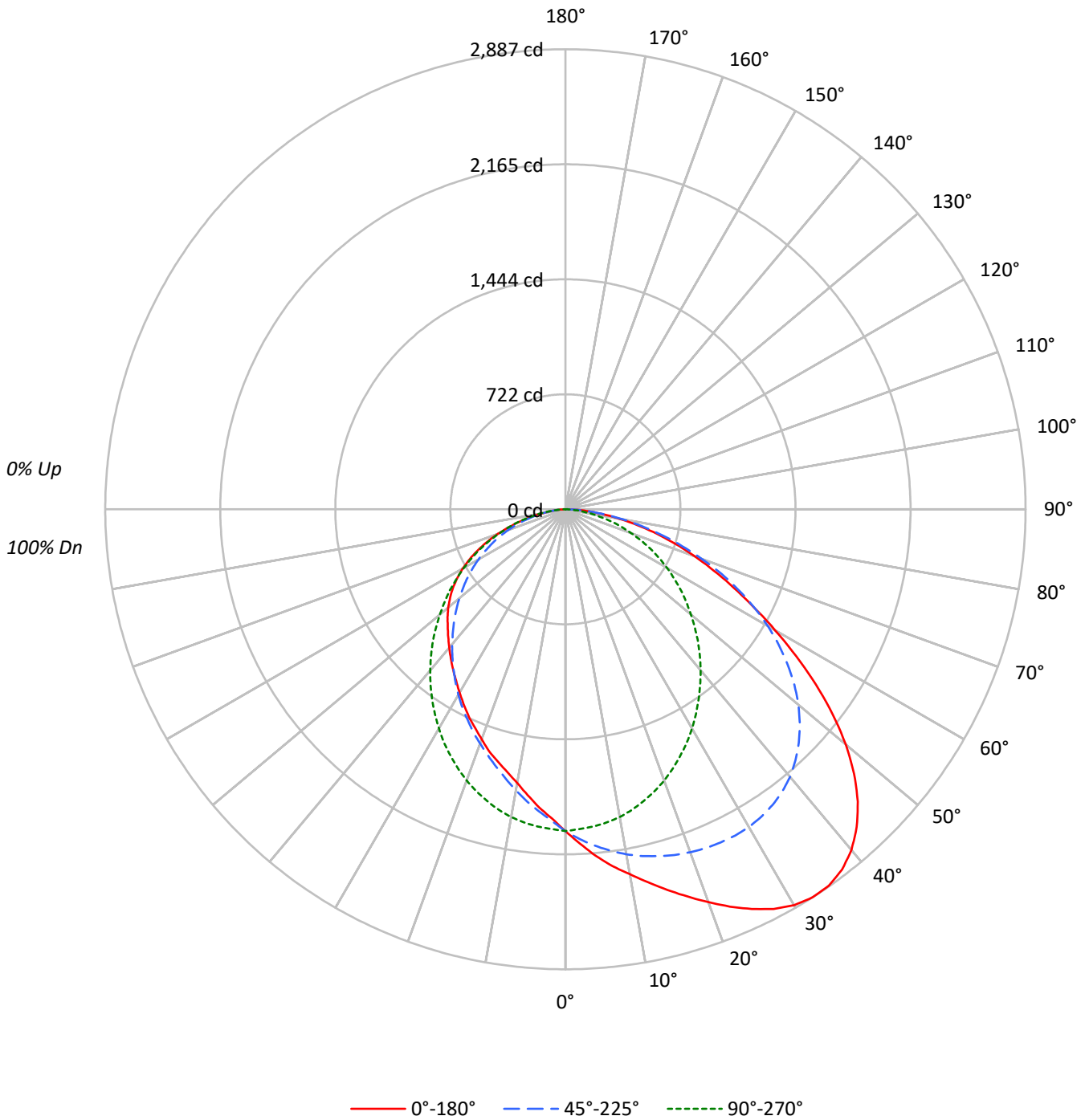
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 6254.3 lumens
Efficiency: N/A
Efficacy: 96.2 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): 65
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

TEST NUMBER: P
CATALOG NUMBER: 4APN-28-30L835-UNV-ASY

Luminous Intensity Polar Plot





TEST NUMBER: P
 CATALOG NUMBER: 4APN-28-30L835-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°	19440	19440	19440
5°	21094	19321	18158
10°	22725	19171	17037
15°	24650	18892	16337
20°	26877	18561	15730
25°	29401	18125	15242
30°	31894	17649	14752
35°	33875	17127	14436
40°	35076	16584	14248
45°	35322	16011	14214
50°	34394	15401	14369
55°	32207	14849	14460
60°	29275	14173	14318
65°	26544	13404	13764
70°	24295	12428	12639
75°	22043	11174	10865
80°	19277	9342	8372
85°	16227	6782	6230



TEST NUMBER: P
 CATALOG NUMBER: 4APN-28-30L835-UNV-ASY

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	191.8	3.1
10°-20°	557.7	8.9
20°-30°	873.8	14.0
30°-40°	1095.4	17.5
40°-50°	1166.1	18.6
50°-60°	1052.7	16.8
60°-70°	779.3	12.5
70°-80°	427.6	6.8
80°-90°	109.8	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°	1623.3	26.0
0°-40°	2718.7	43.5
0°-60°	4937.6	78.9
0°-90°	6254.3	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	6254.3	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	2019	2019	2019	2019	2019	
5°	2183	2119	1999	1903	1879	213
15°	2473	2253	1896	1674	1639	705
25°	2768	2306	1706	1455	1435	1281
35°	2882	2266	1457	1224	1228	1797
45°	2594	2071	1176	985	1044	1989
55°	1919	1704	885	749	862	1711
65°	1165	1200	588	507	604	1163
75°	593	628	300	260	292	630
85°	147	144	61	57	56	174
90°	0	0	0	0	0	



TEST NUMBER: P

CATALOG NUMBER: 4APN-28-30L835-UNV-ASY

CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	45°	55°	65°	75°	85°	90°
0°	2019.2	2019.2	2019.2	2019.2	2019.2	2019.2	2019.2	2019.2	2019.2	2019.2	2019.2
2.5°	2100.5	2096.4	2091.4	2089.7	2082.3	2072.3	2063.2	2063.2	2052.4	2026.7	2008.4
5°	2182.7	2176.0	2163.6	2153.6	2137.9	2118.8	2099.7	2088.1	2062.3	2023.3	1999.3
7.5°	2258.2	2249.9	2234.1	2215.1	2189.3	2161.1	2129.6	2104.7	2065.7	2013.4	1982.7
10°	2324.6	2317.1	2298.0	2274.8	2238.3	2198.5	2152.0	2114.6	2061.5	1996.8	1961.1
12.5°	2397.6	2390.2	2363.6	2332.1	2282.3	2229.2	2167.7	2116.3	2050.7	1972.7	1932.1
15°	2473.2	2463.2	2433.3	2391.0	2324.6	2253.2	2177.7	2111.3	2033.3	1943.7	1895.5
17.5°	2547.9	2537.9	2500.5	2446.6	2363.6	2274.8	2181.9	2099.7	2008.4	1908.0	1855.7
20°	2623.4	2613.4	2566.1	2498.1	2397.6	2290.6	2181.0	2082.3	1978.5	1867.3	1811.7
22.5°	2698.9	2687.3	2630.0	2547.0	2425.9	2301.4	2171.9	2058.2	1941.2	1820.8	1761.1
25°	2767.8	2756.2	2693.1	2595.2	2455.7	2306.3	2156.1	2025.0	1899.7	1769.4	1706.3
27.5°	2827.5	2813.4	2747.9	2640.0	2481.5	2308.0	2135.4	1987.7	1851.5	1713.8	1649.9
30°	2869.0	2856.6	2786.9	2671.5	2496.4	2302.2	2108.8	1943.7	1795.9	1654.0	1587.6
32.5°	2887.3	2876.5	2807.6	2686.4	2498.9	2287.3	2076.5	1894.7	1737.9	1591.0	1523.7
35°	2882.3	2871.5	2806.0	2684.0	2491.4	2265.7	2035.8	1839.1	1675.6	1525.4	1457.3
37.5°	2850.8	2838.3	2778.6	2661.6	2469.8	2234.1	1989.3	1778.5	1608.4	1458.2	1389.3
40°	2791.0	2778.6	2727.1	2619.2	2433.3	2191.8	1936.2	1713.8	1539.5	1387.6	1319.6
42.5°	2705.5	2692.3	2651.6	2552.8	2381.0	2136.2	1875.6	1644.9	1466.5	1319.6	1248.2
45°	2594.3	2581.0	2553.7	2469.8	2313.0	2070.6	1806.7	1570.2	1390.1	1242.4	1176.0
47.5°	2456.6	2444.9	2431.7	2366.9	2229.2	1995.1	1729.6	1490.5	1310.4	1170.2	1102.1
50°	2296.4	2284.8	2288.9	2244.9	2132.1	1908.0	1644.9	1406.7	1228.3	1089.7	1028.3
52.5°	2114.6	2105.5	2125.4	2106.3	2019.2	1810.9	1554.4	1320.4	1144.5	1013.3	954.4
55°	1918.8	1908.8	1947.0	1952.8	1893.0	1703.8	1451.5	1230.8	1059.8	938.6	884.7
57.5°	1717.1	1708.8	1757.8	1785.2	1755.3	1588.5	1347.8	1138.6	972.7	860.6	806.7
60°	1520.4	1513.8	1565.2	1610.0	1606.7	1466.5	1239.9	1039.1	885.5	781.8	736.1
62.5°	1335.3	1327.9	1379.3	1432.4	1451.5	1336.2	1132.8	941.1	798.4	702.9	662.3
65°	1165.2	1157.7	1201.7	1256.5	1291.4	1200.1	1017.5	839.9	710.4	623.3	588.4
67.5°	1009.2	1009.2	1036.6	1087.2	1129.5	1060.6	899.6	743.6	619.9	549.4	514.5
70°	863.1	862.3	882.2	917.9	966.9	911.3	780.1	642.4	534.5	472.2	441.5
72.5°	724.5	730.3	737.8	765.2	816.6	768.5	661.4	542.8	450.6	395.9	370.1
75°	592.6	591.7	602.5	626.6	663.9	628.2	542.8	445.7	367.7	322.8	300.4
77.5°	466.4	465.6	474.7	488.8	520.4	492.1	428.2	356.0	286.3	249.0	233.2
80°	347.7	347.7	356.0	363.5	386.7	364.3	319.5	266.4	210.0	180.9	168.5
82.5°	241.5	246.5	243.2	253.1	266.4	247.3	219.1	182.6	139.4	119.5	111.2
85°	146.9	151.0	146.9	155.2	161.0	144.4	130.3	108.7	80.5	67.2	61.4
87.5°	75.5	74.7	73.9	78.0	79.7	69.7	61.4	52.3	35.7	27.4	23.2
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-28-30L835-UNV-ASY

CANDELA DISTRIBUTION (continued):

	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
0°	2019.2	2019.2	2019.2	2019.2	2019.2	2019.2	2019.2	2019.2	2019.2	2019.2
2.5°	1997.6	2002.6	1995.1	1967.7	1956.9	1945.3	1940.4	1935.4	1944.5	1942.0
5°	1981.0	1975.2	1956.1	1921.3	1903.0	1883.9	1874.8	1869.0	1881.4	1878.9
7.5°	1958.6	1942.0	1913.8	1871.5	1848.2	1822.5	1810.1	1802.6	1810.9	1809.2
10°	1930.4	1903.0	1868.1	1817.5	1790.1	1761.9	1747.8	1737.0	1743.7	1742.8
12.5°	1894.7	1859.0	1816.7	1759.4	1731.2	1702.2	1689.7	1682.2	1690.5	1688.1
15°	1854.9	1811.7	1762.7	1704.7	1673.9	1647.4	1638.3	1632.5	1639.1	1639.1
17.5°	1810.9	1760.3	1706.3	1647.4	1618.3	1597.6	1588.5	1584.3	1587.6	1592.6
20°	1761.9	1705.5	1647.4	1590.1	1565.2	1543.6	1535.4	1531.2	1538.7	1535.4
22.5°	1708.0	1648.2	1587.6	1533.7	1511.3	1489.7	1481.4	1478.9	1487.2	1483.9
25°	1650.7	1586.0	1526.2	1477.3	1454.8	1436.6	1429.1	1426.6	1430.8	1434.9
27.5°	1596.8	1523.7	1464.8	1420.8	1400.9	1383.5	1376.8	1372.7	1376.0	1381.0
30°	1531.2	1460.7	1402.6	1361.9	1342.8	1326.2	1321.2	1317.9	1322.9	1327.0
32.5°	1469.8	1398.4	1340.3	1300.5	1283.9	1268.1	1267.3	1265.6	1271.4	1276.4
35°	1403.4	1333.7	1277.2	1239.9	1224.1	1210.9	1213.3	1215.8	1222.5	1228.3
37.5°	1336.2	1268.1	1214.2	1180.1	1165.2	1154.4	1161.9	1165.2	1174.3	1180.1
40°	1268.1	1200.1	1150.3	1119.6	1104.6	1099.6	1110.4	1117.9	1128.7	1133.7
42.5°	1198.4	1135.3	1085.5	1057.3	1044.9	1044.9	1059.0	1070.6	1083.0	1088.0
45°	1128.7	1067.3	1020.0	994.2	985.1	991.8	1008.4	1023.3	1039.1	1044.0
47.5°	1058.1	998.4	955.2	932.0	927.0	937.0	957.7	977.6	995.9	1002.5
50°	987.6	933.7	890.5	868.9	868.9	881.4	907.9	932.8	952.7	959.4
52.5°	917.1	865.6	821.6	805.9	809.2	826.6	857.3	883.0	905.4	912.1
55°	845.7	795.1	756.9	743.6	749.4	771.0	802.5	832.4	854.0	861.5
57.5°	775.1	727.0	692.2	681.4	689.7	713.7	750.2	776.0	798.4	805.0
60°	703.8	654.8	627.4	619.1	629.9	654.8	692.2	716.2	737.0	743.6
62.5°	633.2	587.6	563.5	556.0	568.5	595.1	631.6	653.1	668.9	675.6
65°	561.9	521.2	498.8	493.8	507.1	532.8	567.7	585.9	597.5	604.2
67.5°	491.3	456.5	435.7	431.6	445.7	468.9	501.3	511.2	522.0	528.7
70°	421.6	390.1	372.6	370.1	382.6	405.0	432.4	437.4	443.2	449.0
72.5°	352.7	327.8	310.4	309.6	321.2	339.4	361.8	362.7	364.3	370.1
75°	286.3	263.9	250.6	253.1	259.8	274.7	292.1	287.2	288.0	292.1
77.5°	222.4	204.2	195.0	196.7	201.7	212.5	224.1	218.3	214.9	219.1
80°	160.2	144.4	141.1	141.9	145.2	152.7	159.3	154.4	147.7	151.0
82.5°	105.4	95.4	93.8	94.6	97.1	101.3	102.9	95.4	93.8	96.3
85°	58.1	53.9	53.9	56.4	57.3	58.1	58.1	53.9	54.8	56.4
87.5°	23.2	23.2	25.7	28.2	26.6	23.2	19.9	13.3	13.3	15.8
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)