

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-28-30L935-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-28-30L935-UNV-ASY
Description: ArcMed Patient Recessed 4 FT x6 IN Fixture Ambient and Exam Light
w/ ASYMMETRIC Lens
Light Source: 3500K CCT, 90 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

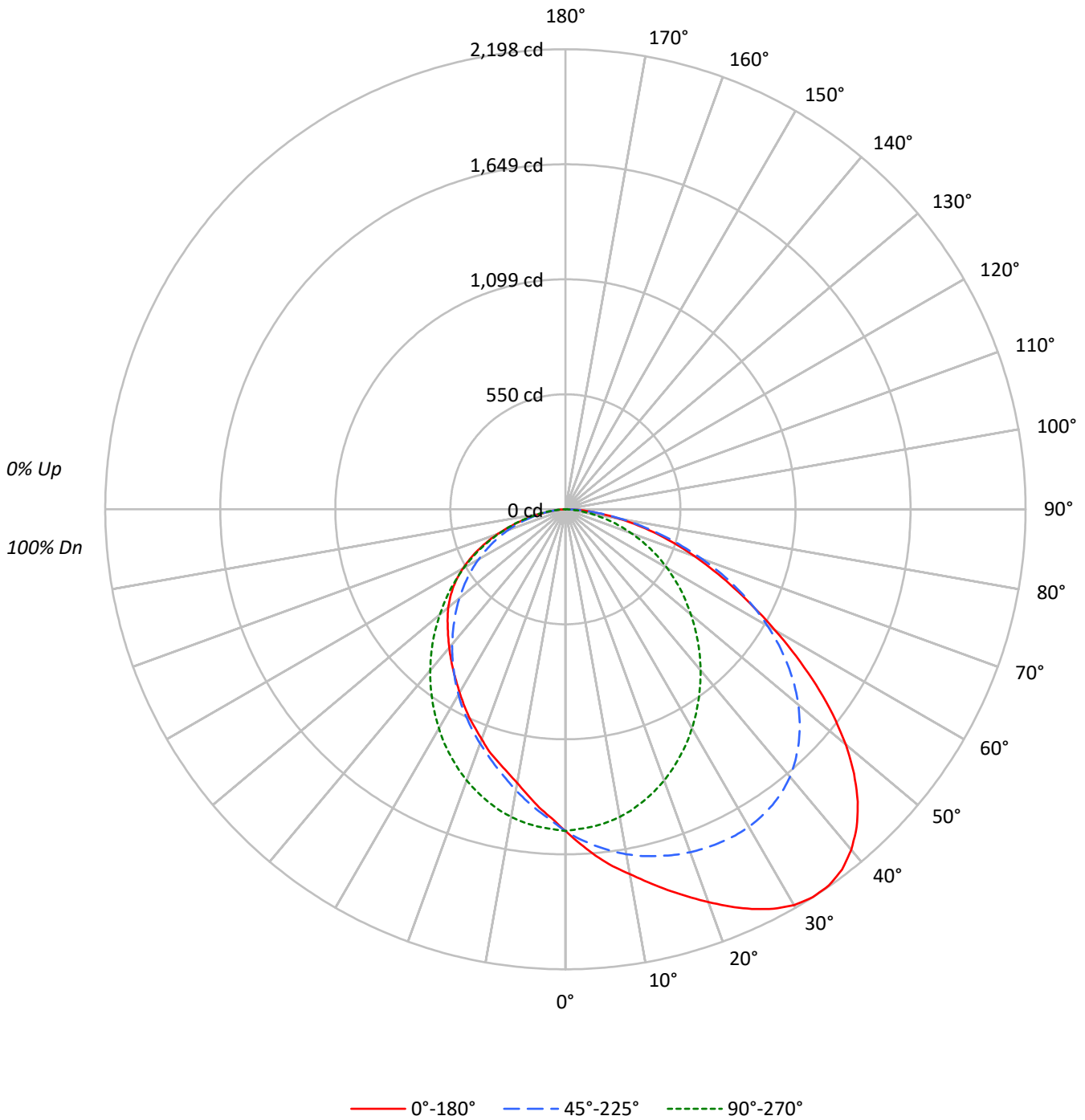
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 4760.9 lumens
Efficiency: N/A
Efficacy: 73.2 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 (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





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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°	14798	14798	14798
5°	16057	14708	13823
10°	17298	14593	12970
15°	18764	14381	12436
20°	20460	14129	11974
25°	22381	13798	11603
30°	24279	13435	11230
35°	25787	13039	10989
40°	26701	12624	10846
45°	26888	12188	10820
50°	26182	11723	10938
55°	24516	11303	11007
60°	22285	10790	10900
65°	20206	10203	10477
70°	18494	9461	9621
75°	16780	8507	8273
80°	14675	7108	6376
85°	12350	5159	4750



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	146.0	3.1
10°-20°	424.6	8.9
20°-30°	665.1	14.0
30°-40°	833.9	17.5
40°-50°	887.7	18.6
50°-60°	801.4	16.8
60°-70°	593.2	12.5
70°-80°	325.5	6.8
80°-90°	83.6	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°	1235.7	26.0
0°-40°	2069.5	43.5
0°-60°	3758.6	78.9
0°-90°	4760.9	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4760.9	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	1537	1537	1537	1537	1537	
5°	1662	1613	1522	1449	1430	162
15°	1883	1715	1443	1274	1248	537
25°	2107	1756	1299	1108	1092	975
35°	2194	1725	1109	932	935	1368
45°	1975	1576	895	750	795	1514
55°	1461	1297	673	570	656	1303
65°	887	914	448	386	460	885
75°	451	478	229	198	222	479
85°	112	110	47	44	43	132
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°	1537.1	1537.1	1537.1	1537.1	1537.1	1537.1	1537.1	1537.1	1537.1	1537.1	1537.1
2.5°	1599.0	1595.8	1592.0	1590.8	1585.1	1577.5	1570.5	1570.5	1562.3	1542.7	1528.8
5°	1661.5	1656.5	1647.0	1639.4	1627.4	1612.9	1598.3	1589.5	1569.9	1540.2	1521.9
7.5°	1719.0	1712.7	1700.7	1686.1	1666.6	1645.1	1621.1	1602.1	1572.4	1532.6	1509.3
10°	1769.5	1763.9	1749.3	1731.6	1703.8	1673.5	1638.1	1609.7	1569.3	1520.0	1492.8
12.5°	1825.1	1819.4	1799.2	1775.2	1737.3	1696.9	1650.1	1611.0	1561.1	1501.7	1470.7
15°	1882.6	1875.0	1852.3	1820.1	1769.5	1715.2	1657.7	1607.2	1547.8	1479.6	1442.9
17.5°	1939.5	1931.9	1903.5	1862.4	1799.2	1731.6	1660.9	1598.3	1528.8	1452.4	1412.6
20°	1997.0	1989.4	1953.4	1901.6	1825.1	1743.6	1660.2	1585.1	1506.1	1421.4	1379.1
22.5°	2054.5	2045.6	2002.0	1938.8	1846.6	1751.9	1653.3	1566.7	1477.7	1386.1	1340.6
25°	2106.9	2098.1	2050.0	1975.5	1869.4	1755.6	1641.3	1541.5	1446.1	1346.9	1298.9
27.5°	2152.4	2141.6	2091.7	2009.6	1888.9	1756.9	1625.5	1513.0	1409.4	1304.6	1255.9
30°	2184.0	2174.5	2121.4	2033.6	1900.3	1752.5	1605.3	1479.6	1367.1	1259.1	1208.5
32.5°	2197.9	2189.7	2137.2	2045.0	1902.2	1741.1	1580.6	1442.3	1322.9	1211.1	1159.9
35°	2194.1	2185.9	2136.0	2043.1	1896.5	1724.7	1549.7	1400.0	1275.5	1161.2	1109.4
37.5°	2170.1	2160.6	2115.1	2026.0	1880.1	1700.7	1514.3	1353.8	1224.3	1110.0	1057.6
40°	2124.6	2115.1	2075.9	1993.8	1852.3	1668.5	1473.9	1304.6	1171.9	1056.3	1004.5
42.5°	2059.5	2049.4	2018.5	1943.3	1812.5	1626.1	1427.8	1252.1	1116.3	1004.5	950.2
45°	1974.9	1964.8	1943.9	1880.1	1760.7	1576.2	1375.3	1195.3	1058.2	945.7	895.2
47.5°	1870.0	1861.1	1851.0	1801.8	1696.9	1518.7	1316.6	1134.6	997.5	890.8	839.0
50°	1748.1	1739.2	1742.4	1708.9	1623.0	1452.4	1252.1	1070.8	935.0	829.5	782.7
52.5°	1609.7	1602.8	1617.9	1603.4	1537.1	1378.5	1183.3	1005.1	871.2	771.4	726.5
55°	1460.6	1453.0	1482.1	1486.5	1441.0	1297.0	1104.9	936.9	806.7	714.5	673.4
57.5°	1307.1	1300.8	1338.1	1358.9	1336.2	1209.2	1026.0	866.8	740.4	655.1	614.1
60°	1157.4	1152.3	1191.5	1225.6	1223.1	1116.3	943.8	791.0	674.1	595.1	560.4
62.5°	1016.5	1010.8	1050.0	1090.4	1104.9	1017.1	862.3	716.4	607.7	535.1	504.1
65°	887.0	881.3	914.8	956.5	983.0	913.5	774.5	639.3	540.8	474.4	447.9
67.5°	768.2	768.2	789.1	827.6	859.8	807.4	684.8	566.1	471.9	418.2	391.7
70°	657.0	656.4	671.6	698.7	736.0	693.7	593.8	489.0	406.8	359.5	336.1
72.5°	551.5	555.9	561.6	582.5	621.6	585.0	503.5	413.2	343.0	301.3	281.8
75°	451.1	450.4	458.7	477.0	505.4	478.2	413.2	339.3	279.9	245.8	228.7
77.5°	355.0	354.4	361.4	372.1	396.1	374.6	326.0	271.0	218.0	189.5	177.5
80°	264.7	264.7	271.0	276.7	294.4	277.3	243.2	202.8	159.8	137.7	128.2
82.5°	183.8	187.6	185.1	192.7	202.8	188.3	166.8	139.0	106.1	91.0	84.7
85°	111.8	115.0	111.8	118.1	122.6	109.9	99.2	82.8	61.3	51.2	46.7
87.5°	57.5	56.9	56.2	59.4	60.6	53.1	46.7	39.8	27.2	20.8	17.7
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°	1537.1	1537.1	1537.1	1537.1	1537.1	1537.1	1537.1	1537.1	1537.1	1537.1
2.5°	1520.6	1524.4	1518.7	1497.9	1489.7	1480.8	1477.0	1473.2	1480.2	1478.3
5°	1508.0	1503.6	1489.0	1462.5	1448.6	1434.1	1427.1	1422.7	1432.2	1430.3
7.5°	1490.9	1478.3	1456.8	1424.6	1406.9	1387.3	1377.9	1372.2	1378.5	1377.2
10°	1469.5	1448.6	1422.1	1383.5	1362.7	1341.2	1330.5	1322.3	1327.3	1326.7
12.5°	1442.3	1415.1	1382.9	1339.3	1317.8	1295.7	1286.2	1280.6	1286.9	1285.0
15°	1412.0	1379.1	1341.8	1297.6	1274.2	1254.0	1247.1	1242.7	1247.7	1247.7
17.5°	1378.5	1339.9	1298.9	1254.0	1231.9	1216.1	1209.2	1206.0	1208.5	1212.3
20°	1341.2	1298.3	1254.0	1210.4	1191.5	1175.1	1168.7	1165.6	1171.3	1168.7
22.5°	1300.1	1254.7	1208.5	1167.5	1150.4	1134.0	1127.7	1125.8	1132.1	1129.6
25°	1256.6	1207.3	1161.8	1124.5	1107.5	1093.6	1087.9	1086.0	1089.1	1092.3
27.5°	1215.5	1159.9	1115.0	1081.6	1066.4	1053.1	1048.1	1044.9	1047.4	1051.2
30°	1165.6	1111.9	1067.7	1036.7	1022.2	1009.5	1005.8	1003.2	1007.0	1010.2
32.5°	1118.8	1064.5	1020.3	990.0	977.3	965.3	964.7	963.4	967.8	971.6
35°	1068.3	1015.2	972.3	943.8	931.8	921.7	923.6	925.5	930.6	935.0
37.5°	1017.1	965.3	924.3	898.4	887.0	878.8	884.5	887.0	893.9	898.4
40°	965.3	913.5	875.6	852.2	840.9	837.1	845.3	851.0	859.2	863.0
42.5°	912.3	864.2	826.3	804.9	795.4	795.4	806.1	815.0	824.4	828.2
45°	859.2	812.4	776.4	756.8	749.9	754.9	767.6	779.0	791.0	794.7
47.5°	805.5	760.0	727.1	709.5	705.7	713.2	729.0	744.2	758.1	763.2
50°	751.8	710.7	677.9	661.4	661.4	670.9	691.1	710.1	725.3	730.3
52.5°	698.1	658.9	625.4	613.4	616.0	629.2	652.6	672.2	689.2	694.3
55°	643.8	605.2	576.2	566.1	570.5	586.9	610.9	633.6	650.1	655.8
57.5°	590.1	553.4	526.9	518.7	525.0	543.3	571.1	590.7	607.7	612.8
60°	535.7	498.5	477.6	471.3	479.5	498.5	526.9	545.2	561.0	566.1
62.5°	482.0	447.3	429.0	423.3	432.8	453.0	480.8	497.2	509.2	514.2
65°	427.7	396.7	379.7	375.9	386.0	405.6	432.1	446.0	454.9	459.9
67.5°	374.0	347.5	331.7	328.5	339.3	356.9	381.6	389.2	397.4	402.4
70°	320.9	296.9	283.7	281.8	291.2	308.3	329.1	332.9	337.4	341.8
72.5°	268.5	249.5	236.3	235.6	244.5	258.4	275.4	276.1	277.3	281.8
75°	218.0	200.9	190.8	192.7	197.7	209.1	222.4	218.6	219.2	222.4
77.5°	169.3	155.4	148.5	149.7	153.5	161.7	170.6	166.2	163.6	166.8
80°	121.9	109.9	107.4	108.0	110.6	116.2	121.3	117.5	112.5	115.0
82.5°	80.2	72.7	71.4	72.0	73.9	77.1	78.3	72.7	71.4	73.3
85°	44.2	41.1	41.1	43.0	43.6	44.2	44.2	41.1	41.7	43.0
87.5°	17.7	17.7	19.6	21.5	20.2	17.7	15.2	10.1	10.1	12.0
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)