

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-28-30L950-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-28-30L950-UNV-ASY
Description: ArcMed Patient Recessed 4 FT x6 IN Fixture Ambient and Exam Light
w/ ASYMMETRIC Lens
Light Source: 5000K CCT, 90 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

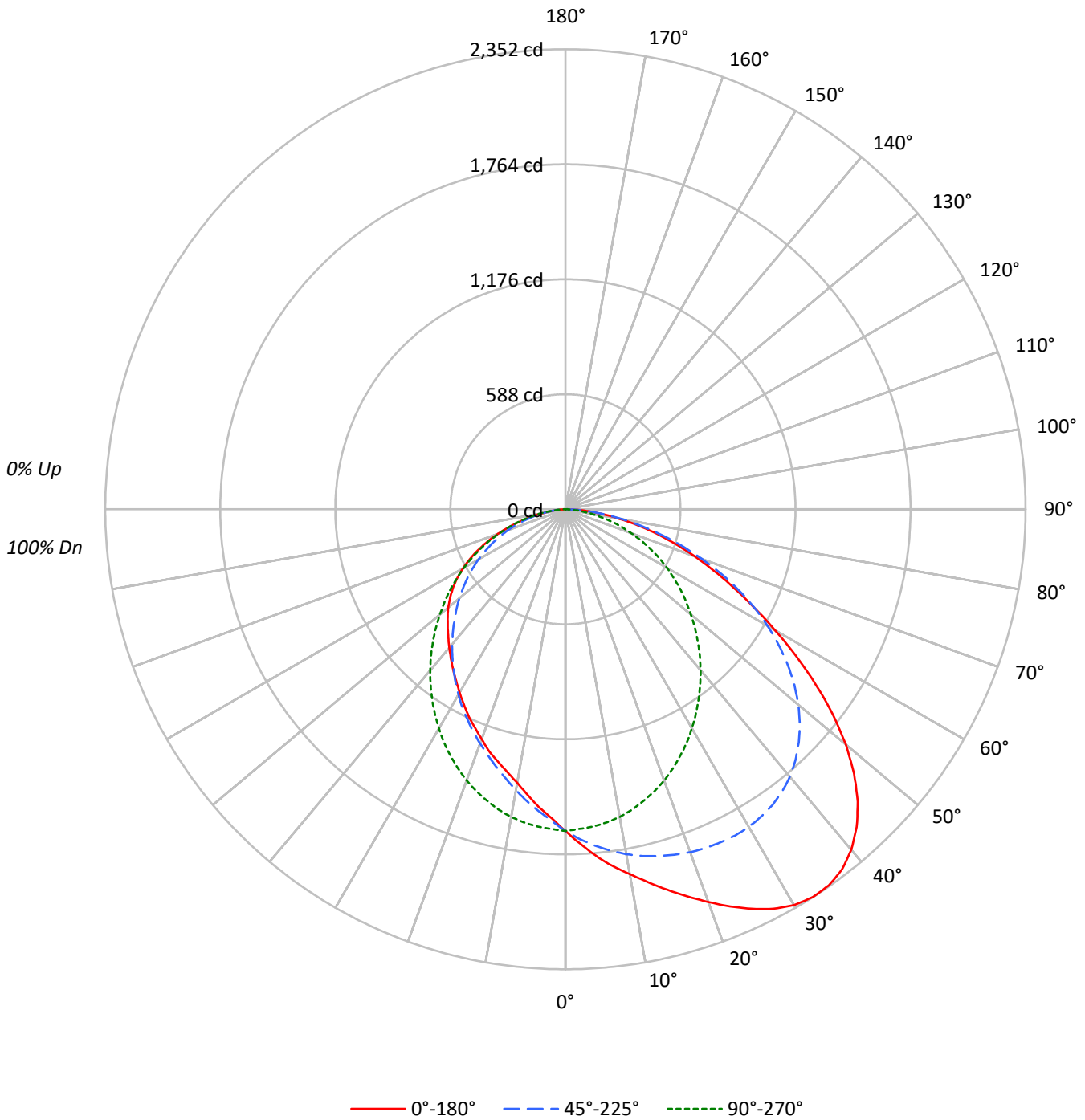
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 5093.8 lumens
Efficiency: N/A
Efficacy: 78.4 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

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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°	15833	15833	15833
5°	17180	15736	14789
10°	18509	15614	13877
15°	20076	15387	13306
20°	21890	15118	12812
25°	23945	14762	12415
30°	25976	14375	12015
35°	27590	13949	11758
40°	28569	13506	11604
45°	28769	13041	11577
50°	28012	12544	11703
55°	26231	12093	11776
60°	23843	11545	11661
65°	21618	10916	11210
70°	19788	10122	10294
75°	17951	9102	8849
80°	15701	7607	6819
85°	13211	5523	5081



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	156.2	3.1
10°-20°	454.3	8.9
20°-30°	711.6	14.0
30°-40°	892.2	17.5
40°-50°	949.8	18.6
50°-60°	857.4	16.8
60°-70°	634.7	12.5
70°-80°	348.3	6.8
80°-90°	89.4	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°	1322.1	26.0
0°-40°	2214.2	43.5
0°-60°	4021.4	78.9
0°-90°	5093.8	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	5093.8	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	1645	1645	1645	1645	1645	
5°	1778	1726	1628	1550	1530	173
15°	2014	1835	1544	1363	1335	575
25°	2254	1878	1390	1185	1169	1043
35°	2348	1845	1187	997	1000	1464
45°	2113	1686	958	802	850	1620
55°	1563	1388	720	610	702	1394
65°	949	977	479	413	492	947
75°	483	512	245	212	238	513
85°	120	118	50	47	46	141
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°	1644.6	1644.6	1644.6	1644.6	1644.6	1644.6	1644.6	1644.6	1644.6	1644.6	1644.6
2.5°	1710.8	1707.4	1703.4	1702.0	1695.9	1687.8	1680.4	1680.4	1671.6	1650.6	1635.8
5°	1777.7	1772.3	1762.2	1754.1	1741.2	1725.7	1710.1	1700.7	1679.7	1647.9	1628.3
7.5°	1839.2	1832.5	1819.6	1804.1	1783.1	1760.1	1734.5	1714.2	1682.4	1639.8	1614.8
10°	1893.3	1887.2	1871.7	1852.7	1823.0	1790.6	1752.7	1722.3	1679.0	1626.3	1597.2
12.5°	1952.8	1946.7	1925.1	1899.4	1858.8	1815.6	1765.5	1723.6	1670.2	1606.7	1573.6
15°	2014.3	2006.2	1981.8	1947.4	1893.3	1835.2	1773.7	1719.6	1656.0	1583.0	1543.8
17.5°	2075.1	2067.0	2036.6	1992.7	1925.1	1852.7	1777.0	1710.1	1635.8	1554.0	1511.4
20°	2136.6	2128.5	2090.0	2034.6	1952.8	1865.6	1776.4	1695.9	1611.4	1520.9	1475.6
22.5°	2198.1	2188.7	2142.0	2074.4	1975.8	1874.4	1768.9	1676.3	1581.0	1483.0	1434.3
25°	2254.2	2244.8	2193.4	2113.7	2000.1	1878.4	1756.1	1649.3	1547.2	1441.1	1389.7
27.5°	2302.9	2291.4	2238.0	2150.2	2021.0	1879.8	1739.2	1618.9	1508.0	1395.8	1343.8
30°	2336.7	2326.6	2269.8	2175.8	2033.2	1875.0	1717.6	1583.0	1462.7	1347.1	1293.1
32.5°	2351.6	2342.8	2286.7	2188.0	2035.2	1862.9	1691.2	1543.2	1415.4	1295.8	1241.0
35°	2347.5	2338.7	2285.3	2186.0	2029.2	1845.3	1658.1	1497.9	1364.7	1242.4	1186.9
37.5°	2321.8	2311.7	2263.0	2167.7	2011.6	1819.6	1620.2	1448.5	1310.0	1187.6	1131.5
40°	2273.2	2263.0	2221.1	2133.3	1981.8	1785.1	1577.0	1395.8	1253.9	1130.2	1074.7
42.5°	2203.6	2192.7	2159.6	2079.2	1939.3	1739.9	1527.6	1339.7	1194.4	1074.7	1016.6
45°	2113.0	2102.2	2079.9	2011.6	1883.8	1686.5	1471.5	1278.9	1132.2	1011.9	957.8
47.5°	2000.8	1991.3	1980.5	1927.8	1815.6	1625.0	1408.7	1214.0	1067.3	953.1	897.6
50°	1870.3	1860.9	1864.2	1828.4	1736.5	1554.0	1339.7	1145.7	1000.4	887.5	837.5
52.5°	1722.3	1714.9	1731.1	1715.5	1644.6	1474.9	1266.0	1075.4	932.1	825.3	777.3
55°	1562.8	1554.7	1585.7	1590.5	1541.8	1387.7	1182.2	1002.4	863.2	764.5	720.5
57.5°	1398.5	1391.8	1431.6	1453.9	1429.6	1293.7	1097.7	927.4	792.2	700.9	657.0
60°	1238.3	1232.9	1274.8	1311.3	1308.6	1194.4	1009.8	846.3	721.2	636.7	599.6
62.5°	1087.6	1081.5	1123.4	1166.7	1182.2	1088.3	922.7	766.5	650.3	572.5	539.4
65°	949.0	942.9	978.8	1023.4	1051.8	977.4	828.7	684.0	578.6	507.6	479.2
67.5°	821.9	821.9	844.2	885.5	919.9	863.8	732.7	605.6	504.9	447.5	419.1
70°	703.0	702.3	718.5	747.6	787.5	742.2	635.4	523.2	435.3	384.6	359.6
72.5°	590.1	594.8	600.9	623.2	665.1	625.9	538.7	442.1	367.0	322.4	301.5
75°	482.6	481.9	490.7	510.3	540.7	511.7	442.1	363.0	299.4	262.9	244.7
77.5°	379.9	379.2	386.6	398.1	423.8	400.8	348.8	290.0	233.2	202.8	189.9
80°	283.2	283.2	290.0	296.1	315.0	296.7	260.2	217.0	171.0	147.4	137.2
82.5°	196.7	200.8	198.0	206.2	217.0	201.4	178.4	148.7	113.6	97.3	90.6
85°	119.6	123.0	119.6	126.4	131.1	117.6	106.1	88.5	65.6	54.8	50.0
87.5°	61.5	60.8	60.2	63.5	64.9	56.8	50.0	42.6	29.1	22.3	18.9
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°	1644.6	1644.6	1644.6	1644.6	1644.6	1644.6	1644.6	1644.6	1644.6	1644.6
2.5°	1627.0	1631.0	1625.0	1602.6	1593.9	1584.4	1580.3	1576.3	1583.7	1581.7
5°	1613.5	1608.7	1593.2	1564.8	1549.9	1534.4	1526.9	1522.2	1532.3	1530.3
7.5°	1595.2	1581.7	1558.7	1524.2	1505.3	1484.4	1474.2	1468.1	1474.9	1473.5
10°	1572.2	1549.9	1521.5	1480.3	1458.0	1435.0	1423.5	1414.7	1420.1	1419.5
12.5°	1543.2	1514.1	1479.6	1433.0	1410.0	1386.3	1376.2	1370.1	1376.9	1374.9
15°	1510.7	1475.6	1435.7	1388.4	1363.4	1341.7	1334.3	1329.6	1335.0	1335.0
17.5°	1474.9	1433.7	1389.7	1341.7	1318.1	1301.2	1293.7	1290.4	1293.1	1297.1
20°	1435.0	1389.0	1341.7	1295.1	1274.8	1257.2	1250.5	1247.1	1253.2	1250.5
22.5°	1391.1	1342.4	1293.1	1249.1	1230.9	1213.3	1206.5	1204.5	1211.3	1208.6
25°	1344.4	1291.7	1243.0	1203.2	1184.9	1170.0	1164.0	1161.9	1165.3	1168.7
27.5°	1300.5	1241.0	1193.0	1157.2	1141.0	1126.8	1121.4	1118.0	1120.7	1124.8
30°	1247.1	1189.6	1142.3	1109.2	1093.7	1080.1	1076.1	1073.4	1077.4	1080.8
32.5°	1197.1	1139.0	1091.6	1059.2	1045.7	1032.8	1032.2	1030.8	1035.5	1039.6
35°	1143.0	1086.2	1040.3	1009.8	997.0	986.2	988.2	990.2	995.7	1000.4
37.5°	1088.3	1032.8	988.9	961.2	949.0	940.2	946.3	949.0	956.4	961.2
40°	1032.8	977.4	936.8	911.8	899.7	895.6	904.4	910.5	919.3	923.3
42.5°	976.1	924.7	884.1	861.1	851.0	851.0	862.5	872.0	882.1	886.2
45°	919.3	869.3	830.7	809.8	802.3	807.7	821.3	833.4	846.3	850.3
47.5°	861.8	813.2	778.0	759.1	755.0	763.1	780.0	796.3	811.1	816.5
50°	804.4	760.4	725.3	707.7	707.7	717.8	739.5	759.8	776.0	781.4
52.5°	746.9	705.0	669.2	656.3	659.0	673.2	698.2	719.2	737.4	742.9
55°	688.8	647.5	616.5	605.6	610.4	627.9	653.6	678.0	695.5	701.6
57.5°	631.3	592.1	563.7	554.9	561.7	581.3	611.0	632.0	650.3	655.7
60°	573.2	533.3	511.0	504.2	513.0	533.3	563.7	583.3	600.2	605.6
62.5°	515.7	478.6	459.0	452.9	463.0	484.6	514.4	532.0	544.8	550.2
65°	457.6	424.5	406.2	402.2	413.0	434.0	462.3	477.2	486.7	492.1
67.5°	400.2	371.8	354.9	351.5	363.0	381.9	408.3	416.4	425.2	430.6
70°	343.4	317.7	303.5	301.5	311.6	329.9	352.2	356.2	360.9	365.7
72.5°	287.3	267.0	252.8	252.1	261.6	276.5	294.7	295.4	296.7	301.5
75°	233.2	214.9	204.1	206.2	211.6	223.7	237.9	233.9	234.5	237.9
77.5°	181.2	166.3	158.8	160.2	164.3	173.0	182.5	177.8	175.1	178.4
80°	130.5	117.6	114.9	115.6	118.3	124.4	129.8	125.7	120.3	123.0
82.5°	85.8	77.7	76.4	77.1	79.1	82.5	83.8	77.7	76.4	78.4
85°	47.3	43.9	43.9	46.0	46.6	47.3	47.3	43.9	44.6	46.0
87.5°	18.9	18.9	21.0	23.0	21.6	18.9	16.2	10.8	10.8	12.8
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)