

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-28-30L930-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-28-30L930-UNV-ASY
Description: ArcMed Patient Recessed 4 FT x6 IN Fixture Ambient and Exam Light
w/ ASYMMETRIC Lens
Light Source: 3000K CCT, 90 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

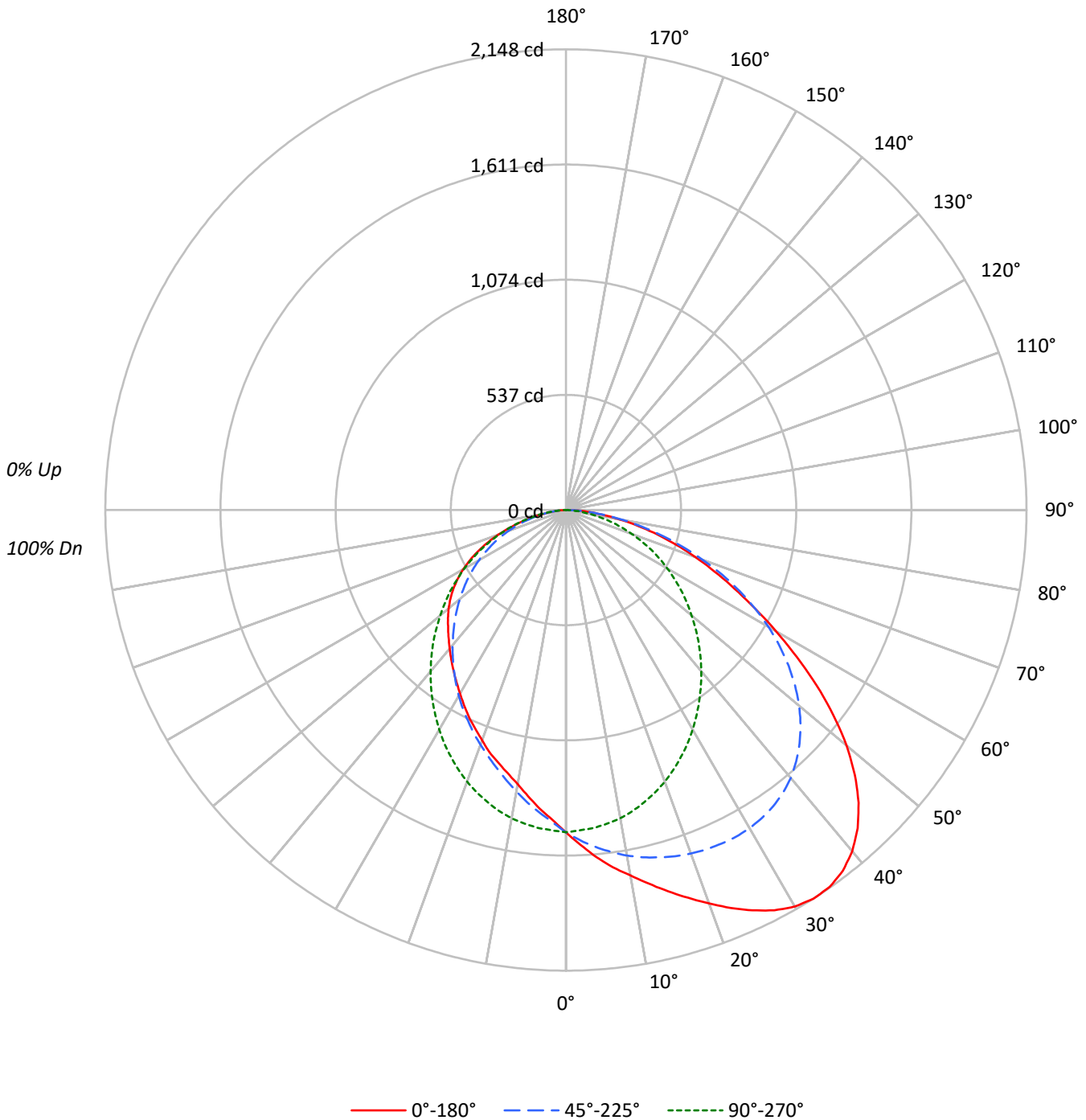
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 4653.9 lumens
Efficiency: N/A
Efficacy: 71.6 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): 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-28-30L930-UNV-ASY

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°	14465	14465	14465
5°	15696	14377	13511
10°	16910	14266	12678
15°	18342	14058	12157
20°	20000	13812	11705
25°	21878	13488	11343
30°	23733	13133	10978
35°	25207	12745	10742
40°	26100	12340	10602
45°	26284	11915	10578
50°	25594	11461	10692
55°	23965	11049	10759
60°	21785	10548	10654
65°	19753	9973	10242
70°	18080	9247	9404
75°	16400	8317	8087
80°	14348	6952	6232
85°	12073	5048	4639



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 CATALOG NUMBER: 4APN-28-30L930-UNV-ASY

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	142.7	3.1
10°-20°	415.0	8.9
20°-30°	650.2	14.0
30°-40°	815.1	17.5
40°-50°	867.8	18.6
50°-60°	783.4	16.8
60°-70°	579.9	12.5
70°-80°	318.2	6.8
80°-90°	81.7	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°	1207.9	26.0
0°-40°	2023.0	43.5
0°-60°	3674.1	78.9
0°-90°	4653.9	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4653.9	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	1502	1502	1502	1502	1502	
5°	1624	1577	1488	1416	1398	158
15°	1840	1677	1410	1246	1220	525
25°	2060	1716	1270	1083	1068	953
35°	2145	1686	1084	911	914	1337
45°	1930	1541	875	733	777	1480
55°	1428	1268	658	558	641	1273
65°	867	893	438	377	450	865
75°	441	468	224	193	217	469
85°	109	108	46	43	42	129
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°	1502.5	1502.5	1502.5	1502.5	1502.5	1502.5	1502.5	1502.5	1502.5	1502.5	1502.5
2.5°	1563.0	1559.9	1556.2	1555.0	1549.5	1542.0	1535.2	1535.2	1527.2	1508.1	1494.5
5°	1624.2	1619.2	1610.0	1602.6	1590.8	1576.6	1562.4	1553.8	1534.6	1505.6	1487.7
7.5°	1680.4	1674.2	1662.5	1648.3	1629.1	1608.1	1584.7	1566.1	1537.1	1498.2	1475.3
10°	1729.8	1724.2	1710.0	1692.7	1665.6	1635.9	1601.3	1573.5	1534.0	1485.8	1459.3
12.5°	1784.1	1778.6	1758.8	1735.3	1698.3	1658.8	1613.1	1574.8	1526.0	1467.9	1437.7
15°	1840.3	1832.9	1810.7	1779.2	1729.8	1676.7	1620.5	1571.1	1513.0	1446.3	1410.5
17.5°	1895.9	1888.5	1860.7	1820.6	1758.8	1692.7	1623.6	1562.4	1494.5	1419.8	1380.9
20°	1952.1	1944.7	1909.5	1858.8	1784.1	1704.5	1622.9	1549.5	1472.3	1389.5	1348.1
22.5°	2008.3	1999.7	1957.0	1895.3	1805.1	1712.5	1616.1	1531.5	1444.5	1354.9	1310.5
25°	2059.6	2050.9	2004.0	1931.1	1827.4	1716.2	1604.4	1506.8	1413.6	1316.6	1269.7
27.5°	2104.0	2093.5	2044.7	1964.4	1846.5	1717.4	1589.0	1479.0	1377.8	1275.3	1227.7
30°	2134.9	2125.6	2073.8	1987.9	1857.6	1713.1	1569.2	1446.3	1336.4	1230.8	1181.4
32.5°	2148.5	2140.5	2089.2	1999.0	1859.5	1702.0	1545.1	1409.9	1293.2	1183.9	1133.8
35°	2144.8	2136.7	2088.0	1997.2	1853.9	1685.9	1514.9	1368.5	1246.8	1135.1	1084.4
37.5°	2121.3	2112.0	2067.6	1980.5	1837.9	1662.5	1480.3	1323.4	1196.8	1085.0	1033.8
40°	2076.8	2067.6	2029.3	1949.0	1810.7	1631.0	1440.8	1275.3	1145.6	1032.6	981.9
42.5°	2013.2	2003.4	1973.1	1899.6	1771.8	1589.6	1395.7	1224.0	1091.2	981.9	928.8
45°	1930.5	1920.6	1900.2	1837.9	1721.1	1540.8	1344.4	1168.4	1034.4	924.5	875.1
47.5°	1828.0	1819.3	1809.4	1761.3	1658.8	1484.6	1287.0	1109.1	975.1	870.8	820.1
50°	1708.8	1700.1	1703.2	1670.5	1586.5	1419.8	1224.0	1046.8	914.0	810.9	765.2
52.5°	1573.5	1566.7	1581.6	1567.4	1502.5	1347.5	1156.7	982.5	851.6	754.0	710.2
55°	1427.8	1420.4	1448.8	1453.1	1408.6	1267.8	1080.1	915.8	788.6	698.5	658.3
57.5°	1277.7	1271.6	1308.0	1328.4	1306.1	1182.0	1002.9	847.3	723.8	640.4	600.3
60°	1131.4	1126.4	1164.7	1198.1	1195.6	1091.2	922.6	773.2	658.9	581.7	547.8
62.5°	993.6	988.1	1026.4	1065.9	1080.1	994.3	843.0	700.3	594.1	523.1	492.8
65°	867.1	861.5	894.2	935.0	960.9	893.0	757.1	625.0	528.6	463.8	437.8
67.5°	750.9	750.9	771.3	809.0	840.5	789.2	669.4	553.3	461.3	408.8	382.9
70°	642.3	641.6	656.5	683.0	719.5	678.1	580.5	478.0	397.7	351.4	328.5
72.5°	539.1	543.5	549.0	569.4	607.7	571.9	492.2	403.9	335.3	294.6	275.4
75°	440.9	440.3	448.3	466.3	494.0	467.5	403.9	331.6	273.6	240.2	223.6
77.5°	347.1	346.4	353.2	363.7	387.2	366.2	318.7	264.9	213.1	185.3	173.5
80°	258.8	258.8	264.9	270.5	287.8	271.1	237.8	198.2	156.2	134.6	125.4
82.5°	179.7	183.4	180.9	188.4	198.2	184.0	163.0	135.9	103.7	88.9	82.8
85°	109.3	112.4	109.3	115.5	119.8	107.5	97.0	80.9	59.9	50.0	45.7
87.5°	56.2	55.6	55.0	58.1	59.3	51.9	45.7	38.9	26.6	20.4	17.3
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°	1502.5	1502.5	1502.5	1502.5	1502.5	1502.5	1502.5	1502.5	1502.5	1502.5
2.5°	1486.5	1490.2	1484.6	1464.2	1456.2	1447.6	1443.8	1440.1	1446.9	1445.1
5°	1474.1	1469.8	1455.6	1429.6	1416.1	1401.9	1395.1	1390.7	1400.0	1398.1
7.5°	1457.4	1445.1	1424.1	1392.6	1375.3	1356.2	1346.9	1341.3	1347.5	1346.3
10°	1436.4	1416.1	1390.1	1352.5	1332.1	1311.1	1300.6	1292.5	1297.5	1296.9
12.5°	1409.9	1383.3	1351.8	1309.2	1288.2	1266.6	1257.3	1251.8	1258.0	1256.1
15°	1380.2	1348.1	1311.7	1268.5	1245.6	1225.9	1219.1	1214.7	1219.7	1219.7
17.5°	1347.5	1309.8	1269.7	1225.9	1204.2	1188.8	1182.0	1178.9	1181.4	1185.1
20°	1311.1	1269.1	1225.9	1183.2	1164.7	1148.7	1142.5	1139.4	1145.0	1142.5
22.5°	1270.9	1226.5	1181.4	1141.2	1124.6	1108.5	1102.3	1100.5	1106.7	1104.2
25°	1228.3	1180.2	1135.7	1099.3	1082.6	1069.0	1063.4	1061.6	1064.7	1067.8
27.5°	1188.2	1133.8	1090.0	1057.3	1042.4	1029.5	1024.5	1021.4	1023.9	1027.6
30°	1139.4	1086.9	1043.7	1013.4	999.2	986.9	983.2	980.7	984.4	987.5
32.5°	1093.7	1040.6	997.4	967.7	955.4	943.6	943.0	941.8	946.1	949.8
35°	1044.3	992.4	950.4	922.6	910.9	901.0	902.9	904.7	909.7	914.0
37.5°	994.3	943.6	903.5	878.2	867.1	859.0	864.6	867.1	873.8	878.2
40°	943.6	893.0	855.9	833.1	822.0	818.3	826.3	831.8	839.9	843.6
42.5°	891.8	844.8	807.8	786.8	777.5	777.5	788.0	796.6	805.9	809.6
45°	839.9	794.2	759.0	739.8	733.0	738.0	750.3	761.4	773.2	776.9
47.5°	787.4	742.9	710.8	693.5	689.8	697.2	712.7	727.5	741.1	746.0
50°	734.9	694.8	662.6	646.6	646.6	655.8	675.6	694.1	709.0	713.9
52.5°	682.4	644.1	611.4	599.6	602.1	615.1	637.9	657.1	673.8	678.7
55°	629.3	591.6	563.2	553.3	557.7	573.7	597.2	619.4	635.5	641.0
57.5°	576.8	541.0	515.0	507.0	513.2	531.1	558.3	577.4	594.1	599.0
60°	523.7	487.3	466.9	460.7	468.7	487.3	515.0	533.0	548.4	553.3
62.5°	471.2	437.2	419.3	413.8	423.0	442.8	470.0	486.0	497.8	502.7
65°	418.1	387.8	371.2	367.4	377.3	396.5	422.4	436.0	444.6	449.6
67.5°	365.6	339.7	324.2	321.1	331.6	348.9	373.0	380.4	388.4	393.4
70°	313.7	290.3	277.3	275.4	284.7	301.4	321.7	325.5	329.8	334.1
72.5°	262.5	243.9	231.0	230.3	239.0	252.6	269.3	269.9	271.1	275.4
75°	213.1	196.4	186.5	188.4	193.3	204.4	217.4	213.7	214.3	217.4
77.5°	165.5	151.9	145.1	146.4	150.1	158.1	166.7	162.4	159.9	163.0
80°	119.2	107.5	105.0	105.6	108.1	113.6	118.6	114.9	109.9	112.4
82.5°	78.4	71.0	69.8	70.4	72.3	75.3	76.6	71.0	69.8	71.6
85°	43.2	40.1	40.1	42.0	42.6	43.2	43.2	40.1	40.8	42.0
87.5°	17.3	17.3	19.1	21.0	19.8	17.3	14.8	9.9	9.9	11.7
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)