

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-20-22L830-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-20-22L830-UNV-ASY
Description: ArcMed Patient Recessed 4 FT x6 IN Fixture Ambient and Exam Light
w/ ASYMMETRIC Lens
Light Source: 3000K CCT, 80 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

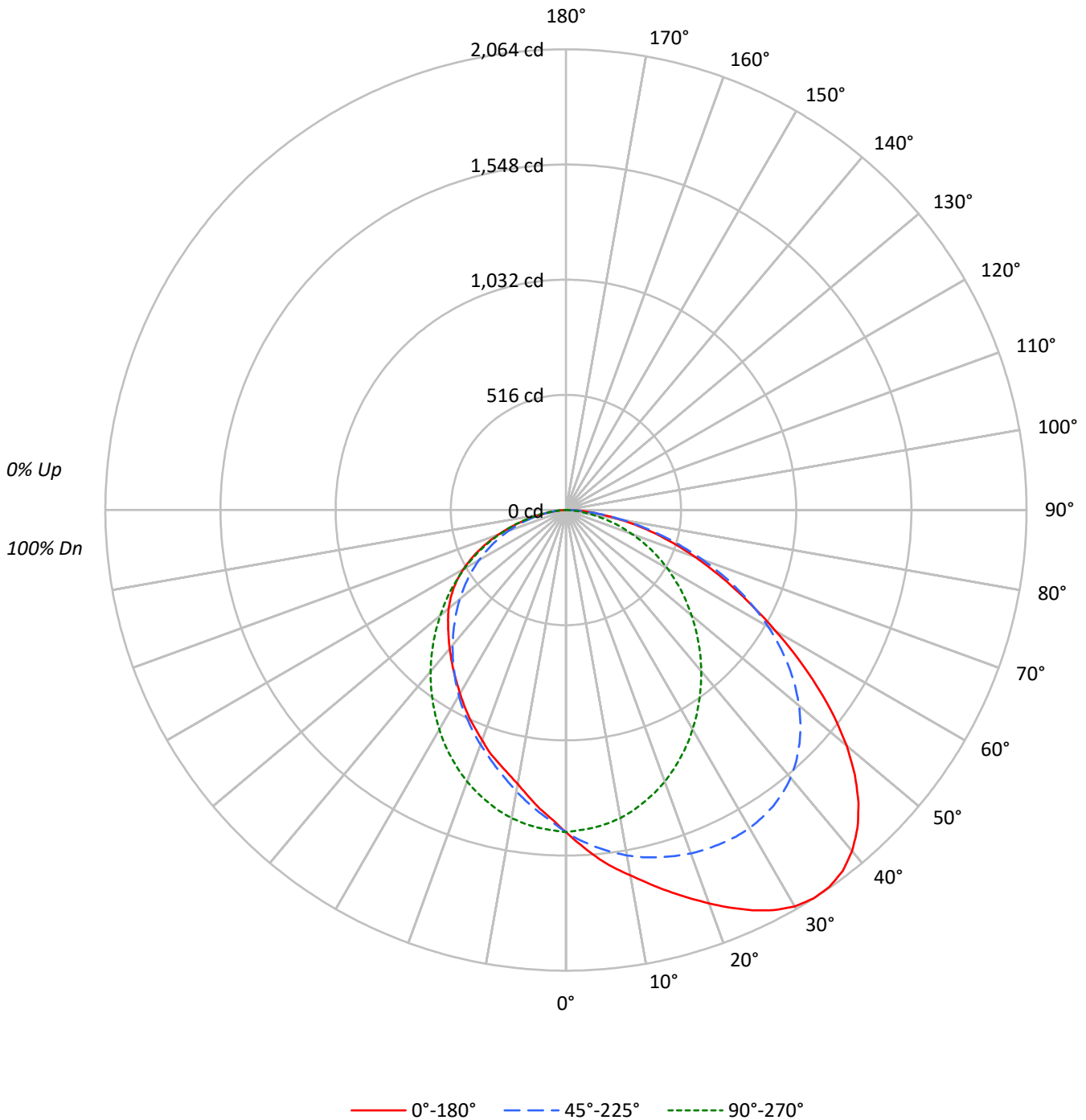
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 4470.2 lumens
Efficiency: N/A
Efficacy: 93.1 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): 48
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°	13894	13894	13894
5°	15077	13810	12979
10°	16243	13703	12178
15°	17619	13503	11676
20°	19210	13267	11243
25°	21015	12955	10895
30°	22796	12615	10544
35°	24212	12242	10318
40°	25071	11854	10184
45°	25247	11444	10160
50°	24583	11008	10270
55°	23019	10613	10334
60°	20924	10132	10234
65°	18971	9581	9837
70°	17365	8884	9033
75°	15753	7986	7767
80°	13777	6675	5988
85°	11598	4849	4452



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	137.1	3.1
10°-20°	398.6	8.9
20°-30°	624.5	14.0
30°-40°	782.9	17.5
40°-50°	833.5	18.6
50°-60°	752.4	16.8
60°-70°	557.0	12.5
70°-80°	305.6	6.8
80°-90°	78.5	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°	1160.2	26.0
0°-40°	1943.2	43.5
0°-60°	3529.1	78.9
0°-90°	4470.2	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4470.2	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	1443	1443	1443	1443	1443	
5°	1560	1514	1429	1360	1343	152
15°	1768	1610	1355	1196	1172	504
25°	1978	1648	1220	1040	1026	916
35°	2060	1619	1042	875	878	1285
45°	1854	1480	840	704	746	1422
55°	1371	1218	632	536	616	1223
65°	833	858	421	362	432	831
75°	424	449	215	186	209	450
85°	105	103	44	41	40	124
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°	1443.2	1443.2	1443.2	1443.2	1443.2	1443.2	1443.2	1443.2	1443.2	1443.2	1443.2
2.5°	1501.3	1498.4	1494.8	1493.6	1488.3	1481.2	1474.6	1474.6	1466.9	1448.5	1435.5
5°	1560.1	1555.3	1546.4	1539.3	1528.0	1514.4	1500.7	1492.4	1474.1	1446.2	1429.0
7.5°	1614.0	1608.1	1596.8	1583.2	1564.8	1544.6	1522.1	1504.3	1476.4	1439.1	1417.1
10°	1661.5	1656.2	1642.5	1625.9	1599.8	1571.3	1538.1	1511.4	1473.5	1427.2	1401.7
12.5°	1713.7	1708.4	1689.4	1666.8	1631.2	1593.3	1549.4	1512.6	1465.7	1410.0	1380.9
15°	1767.7	1760.6	1739.2	1709.0	1661.5	1610.5	1556.5	1509.1	1453.3	1389.2	1354.8
17.5°	1821.1	1813.9	1787.3	1748.7	1689.4	1625.9	1559.5	1500.7	1435.5	1363.7	1326.4
20°	1875.0	1867.9	1834.1	1785.5	1713.7	1637.2	1558.9	1488.3	1414.1	1334.7	1294.9
22.5°	1929.0	1920.7	1879.8	1820.5	1733.9	1644.9	1552.4	1471.1	1387.4	1301.4	1258.7
25°	1978.3	1970.0	1924.9	1854.9	1755.2	1648.4	1541.1	1447.4	1357.8	1264.7	1219.6
27.5°	2021.0	2010.9	1964.0	1886.9	1773.6	1649.6	1526.3	1420.7	1323.4	1224.9	1179.2
30°	2050.6	2041.7	1991.9	1909.4	1784.3	1645.5	1507.3	1389.2	1283.6	1182.2	1134.8
32.5°	2063.7	2056.0	2006.7	1920.1	1786.1	1634.8	1484.1	1354.2	1242.1	1137.1	1089.1
35°	2060.1	2052.4	2005.5	1918.3	1780.7	1619.4	1455.1	1314.5	1197.6	1090.3	1041.6
37.5°	2037.6	2028.7	1986.0	1902.3	1765.3	1596.8	1421.9	1271.2	1149.6	1042.2	993.0
40°	1994.9	1986.0	1949.2	1872.1	1739.2	1566.6	1383.9	1224.9	1100.3	991.8	943.2
42.5°	1933.8	1924.3	1895.2	1824.6	1701.8	1526.8	1340.6	1175.7	1048.1	943.2	892.1
45°	1854.3	1844.8	1825.2	1765.3	1653.2	1480.0	1291.4	1122.3	993.6	888.0	840.5
47.5°	1755.8	1747.5	1738.0	1691.8	1593.3	1426.0	1236.2	1065.4	936.6	836.4	787.7
50°	1641.3	1633.0	1636.0	1604.6	1523.9	1363.7	1175.7	1005.4	877.9	778.8	735.0
52.5°	1511.4	1504.9	1519.1	1505.5	1443.2	1294.3	1111.0	943.7	818.0	724.3	682.2
55°	1371.4	1364.3	1391.6	1395.8	1353.0	1217.8	1037.5	879.7	757.5	670.9	632.3
57.5°	1227.3	1221.4	1256.4	1275.9	1254.6	1135.3	963.3	813.8	695.2	615.1	576.6
60°	1086.7	1082.0	1118.7	1150.8	1148.4	1048.1	886.2	742.7	632.9	558.8	526.2
62.5°	954.4	949.1	985.9	1023.8	1037.5	955.0	809.7	672.7	570.6	502.4	473.4
65°	832.8	827.5	858.9	898.1	923.0	857.7	727.2	600.3	507.8	445.5	420.6
67.5°	721.3	721.3	740.9	777.1	807.3	758.1	643.0	531.5	443.1	392.7	367.8
70°	616.9	616.3	630.6	656.1	691.1	651.3	557.6	459.1	382.0	337.5	315.6
72.5°	517.8	522.0	527.3	546.9	583.7	549.3	472.8	387.9	322.1	282.9	264.6
75°	423.5	422.9	430.6	447.9	474.5	449.0	387.9	318.5	262.8	230.7	214.7
77.5°	333.4	332.8	339.3	349.4	371.9	351.8	306.1	254.5	204.6	178.0	166.7
80°	248.5	248.5	254.5	259.8	276.4	260.4	228.4	190.4	150.1	129.3	120.4
82.5°	172.6	176.2	173.8	180.9	190.4	176.8	156.6	130.5	99.7	85.4	79.5
85°	105.0	108.0	105.0	110.9	115.1	103.2	93.1	77.7	57.5	48.0	43.9
87.5°	54.0	53.4	52.8	55.8	56.9	49.8	43.9	37.4	25.5	19.6	16.6
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°	1443.2	1443.2	1443.2	1443.2	1443.2	1443.2	1443.2	1443.2	1443.2	1443.2
2.5°	1427.8	1431.3	1426.0	1406.4	1398.7	1390.4	1386.9	1383.3	1389.8	1388.0
5°	1415.9	1411.8	1398.1	1373.2	1360.2	1346.5	1340.0	1335.8	1344.7	1343.0
7.5°	1399.9	1388.0	1367.9	1337.6	1321.0	1302.6	1293.7	1288.4	1294.3	1293.1
10°	1379.7	1360.2	1335.2	1299.1	1279.5	1259.3	1249.2	1241.5	1246.3	1245.7
12.5°	1354.2	1328.7	1298.5	1257.5	1237.4	1216.6	1207.7	1202.4	1208.3	1206.5
15°	1325.8	1294.9	1259.9	1218.4	1196.4	1177.5	1170.9	1166.8	1171.5	1171.5
17.5°	1294.3	1258.1	1219.6	1177.5	1156.7	1141.9	1135.3	1132.4	1134.8	1138.3
20°	1259.3	1219.0	1177.5	1136.5	1118.7	1103.3	1097.4	1094.4	1099.8	1097.4
22.5°	1220.8	1178.1	1134.8	1096.2	1080.2	1064.8	1058.8	1057.0	1063.0	1060.6
25°	1179.8	1133.6	1090.9	1055.9	1039.8	1026.8	1021.5	1019.7	1022.6	1025.6
27.5°	1141.3	1089.1	1047.0	1015.5	1001.3	988.8	984.1	981.1	983.5	987.1
30°	1094.4	1044.0	1002.5	973.4	959.8	947.9	944.3	942.0	945.5	948.5
32.5°	1050.5	999.5	958.0	929.5	917.6	906.4	905.8	904.6	908.8	912.3
35°	1003.1	953.2	912.9	886.2	874.9	865.4	867.2	869.0	873.8	877.9
37.5°	955.0	906.4	867.8	843.5	832.8	825.1	830.5	832.8	839.4	843.5
40°	906.4	857.7	822.1	800.2	789.5	786.0	793.7	799.0	806.7	810.3
42.5°	856.6	811.5	775.9	755.7	746.8	746.8	756.9	765.2	774.1	777.7
45°	806.7	762.8	729.0	710.6	704.1	708.9	720.7	731.4	742.7	746.2
47.5°	756.3	713.6	682.8	666.1	662.6	669.7	684.5	698.8	711.8	716.6
50°	705.9	667.3	636.5	621.1	621.1	630.0	648.9	666.7	681.0	685.7
52.5°	655.5	618.7	587.2	576.0	578.4	590.8	612.8	631.1	647.2	651.9
55°	604.5	568.3	541.0	531.5	535.6	551.1	573.6	595.0	610.4	615.7
57.5°	554.0	519.6	494.7	487.0	492.9	510.1	536.2	554.6	570.6	575.4
60°	503.0	468.0	448.4	442.5	450.2	468.0	494.7	511.9	526.7	531.5
62.5°	452.6	420.0	402.8	397.4	406.3	425.3	451.4	466.8	478.1	482.8
65°	401.6	372.5	356.5	352.9	362.4	380.8	405.7	418.8	427.1	431.8
67.5°	351.2	326.2	311.4	308.5	318.5	335.1	358.3	365.4	373.1	377.9
70°	301.3	278.8	266.3	264.6	273.5	289.5	309.0	312.6	316.8	320.9
72.5°	252.1	234.3	221.8	221.3	229.6	242.6	258.6	259.2	260.4	264.6
75°	204.6	188.6	179.1	180.9	185.7	196.3	208.8	205.2	205.8	208.8
77.5°	159.0	145.9	139.4	140.6	144.1	151.9	160.2	156.0	153.6	156.6
80°	114.5	103.2	100.8	101.4	103.8	109.1	113.9	110.3	105.6	108.0
82.5°	75.3	68.2	67.0	67.6	69.4	72.4	73.6	68.2	67.0	68.8
85°	41.5	38.6	38.6	40.3	40.9	41.5	41.5	38.6	39.1	40.3
87.5°	16.6	16.6	18.4	20.2	19.0	16.6	14.2	9.5	9.5	11.3
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)