

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-28-30L940-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-28-30L940-UNV-ASY
Description: ArcMed Patient Recessed 4 FT x6 IN Fixture Ambient and Exam Light
w/ ASYMMETRIC Lens
Light Source: 4000K CCT, 90 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

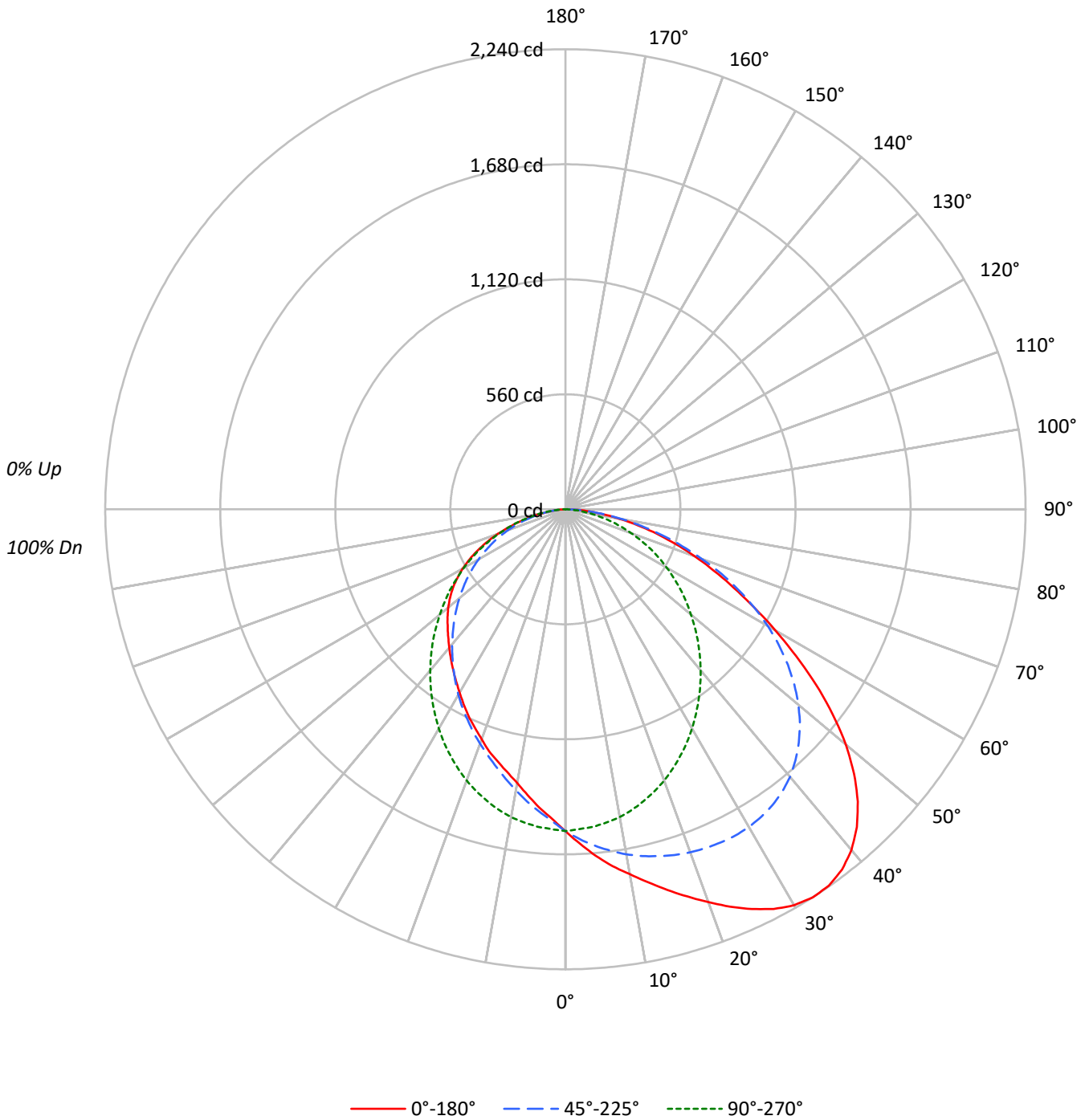
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 4853.2 lumens
Efficiency: N/A
Efficacy: 74.7 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	100	100	100	100
1	109	104	100	96	106	102	98	94	97	94	91	93	91	88	90	88	86	84	84	84	84
2	99	90	83	78	96	88	82	77	85	80	75	82	77	73	79	75	72	69	69	69	69
3	90	79	71	64	87	78	70	64	75	68	63	72	66	61	69	64	60	58	58	58	58
4	82	70	61	54	80	69	60	54	66	59	53	64	57	52	62	56	52	49	49	49	49
5	75	62	53	46	73	61	53	46	59	51	46	57	50	45	55	49	45	43	43	43	43
6	69	56	47	40	68	55	46	40	53	46	40	51	45	39	50	44	39	37	37	37	37
7	64	51	42	36	63	50	41	35	48	41	35	47	40	35	45	39	35	33	33	33	33
8	60	46	37	32	58	45	37	31	44	37	31	43	36	31	42	35	31	29	29	29	29
9	56	42	34	28	54	42	34	28	40	33	28	39	33	28	38	32	28	26	26	26	26
10	52	39	31	26	51	38	31	26	37	30	25	36	30	25	36	30	25	23	23	23	23

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	15085	15085	15085
5°	16368	14993	14090
10°	17634	14877	13221
15°	19128	14660	12677
20°	20856	14404	12206
25°	22814	14065	11828
30°	24749	13696	11448
35°	26286	13291	11202
40°	27219	12869	11056
45°	27409	12424	11031
50°	26688	11951	11151
55°	24991	11523	11221
60°	22717	10998	11110
65°	20598	10401	10679
70°	18854	9644	9807
75°	17103	8671	8433
80°	14958	7246	6498
85°	12593	5269	4838



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	148.8	3.1
10°-20°	432.8	8.9
20°-30°	678.0	14.0
30°-40°	850.0	17.5
40°-50°	904.9	18.6
50°-60°	816.9	16.8
60°-70°	604.7	12.5
70°-80°	331.8	6.8
80°-90°	85.2	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°	1259.6	26.0
0°-40°	2109.6	43.5
0°-60°	3831.4	78.9
0°-90°	4853.2	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4853.2	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	1567	1567	1567	1567	1567	
5°	1694	1644	1551	1477	1458	165
15°	1919	1748	1471	1299	1272	547
25°	2148	1790	1324	1129	1114	994
35°	2237	1758	1131	950	953	1395
45°	2013	1607	912	764	810	1543
55°	1489	1322	686	582	668	1328
65°	904	931	457	394	469	902
75°	460	488	233	202	227	489
85°	114	112	48	44	44	135
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°	1566.9	1566.9	1566.9	1566.9	1566.9	1566.9	1566.9	1566.9	1566.9	1566.9	1566.9
2.5°	1630.0	1626.7	1622.9	1621.6	1615.8	1608.1	1601.0	1601.0	1592.6	1572.6	1558.5
5°	1693.7	1688.6	1678.9	1671.2	1658.9	1644.1	1629.3	1620.3	1600.3	1570.1	1551.4
7.5°	1752.3	1745.9	1733.6	1718.8	1698.9	1677.0	1652.5	1633.2	1602.9	1562.3	1538.5
10°	1803.8	1798.0	1783.2	1765.2	1736.9	1706.0	1669.9	1640.9	1599.7	1549.5	1521.8
12.5°	1860.5	1854.7	1834.1	1809.6	1771.0	1729.8	1682.1	1642.2	1591.3	1530.8	1499.2
15°	1919.1	1911.4	1888.2	1855.4	1803.8	1748.5	1689.9	1638.3	1577.8	1508.2	1470.9
17.5°	1977.1	1969.4	1940.4	1898.5	1834.1	1765.2	1693.1	1629.3	1558.5	1480.6	1440.0
20°	2035.7	2028.0	1991.2	1938.4	1860.5	1777.4	1692.4	1615.8	1535.3	1449.0	1405.9
22.5°	2094.3	2085.3	2040.8	1976.4	1882.4	1785.8	1685.3	1597.1	1506.3	1412.9	1366.6
25°	2147.7	2138.7	2089.8	2013.8	1905.6	1789.7	1673.1	1571.4	1474.1	1373.0	1324.1
27.5°	2194.1	2183.2	2132.3	2048.6	1925.6	1791.0	1657.0	1542.4	1436.8	1329.9	1280.3
30°	2226.3	2216.6	2162.6	2073.0	1937.2	1786.5	1636.4	1508.2	1393.6	1283.5	1232.0
32.5°	2240.5	2232.1	2178.7	2084.6	1939.1	1774.9	1611.3	1470.3	1348.5	1234.5	1182.4
35°	2236.6	2228.2	2177.4	2082.7	1933.3	1758.1	1579.7	1427.1	1300.2	1183.7	1130.9
37.5°	2212.1	2202.5	2156.1	2065.3	1916.5	1733.6	1543.7	1380.1	1248.1	1131.5	1078.1
40°	2165.8	2156.1	2116.2	2032.5	1888.2	1700.8	1502.5	1329.9	1194.6	1076.8	1024.0
42.5°	2099.4	2089.1	2057.6	1980.9	1847.6	1657.7	1455.4	1276.4	1137.9	1024.0	968.6
45°	2013.1	2002.8	1981.6	1916.5	1794.8	1606.8	1402.0	1218.4	1078.7	964.1	912.5
47.5°	1906.2	1897.2	1886.9	1836.7	1729.8	1548.2	1342.1	1156.6	1016.9	908.0	855.2
50°	1781.9	1772.9	1776.2	1742.0	1654.4	1480.6	1276.4	1091.6	953.1	845.6	797.9
52.5°	1640.9	1633.8	1649.3	1634.5	1566.9	1405.2	1206.2	1024.6	888.1	786.3	740.6
55°	1488.9	1481.2	1510.8	1515.3	1469.0	1322.1	1126.4	955.1	822.4	728.4	686.5
57.5°	1332.4	1326.0	1364.0	1385.2	1362.1	1232.6	1045.9	883.6	754.8	667.8	626.0
60°	1179.8	1174.7	1214.6	1249.4	1246.8	1137.9	962.1	806.3	687.1	606.6	571.2
62.5°	1036.2	1030.4	1070.3	1111.5	1126.4	1036.8	879.1	730.3	619.5	545.5	513.9
65°	904.2	898.4	932.5	975.0	1002.1	931.2	789.5	651.7	551.3	483.6	456.6
67.5°	783.1	783.1	804.4	843.6	876.5	823.0	698.1	577.0	481.1	426.3	399.3
70°	669.8	669.1	684.6	712.3	750.3	707.1	605.4	498.5	414.7	366.4	342.6
72.5°	562.2	566.7	572.5	593.8	633.7	596.3	513.3	421.2	349.7	307.2	287.2
75°	459.8	459.2	467.5	486.2	515.2	487.5	421.2	345.8	285.3	250.5	233.1
77.5°	361.9	361.3	368.4	379.3	403.8	381.9	332.3	276.3	222.2	193.2	181.0
80°	269.8	269.8	276.3	282.1	300.1	282.7	247.9	206.7	162.9	140.4	130.7
82.5°	187.4	191.3	188.7	196.4	206.7	191.9	170.0	141.7	108.2	92.7	86.3
85°	114.0	117.2	114.0	120.4	124.9	112.1	101.1	84.4	62.5	52.2	47.7
87.5°	58.6	58.0	57.3	60.5	61.8	54.1	47.7	40.6	27.7	21.3	18.0
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°	1566.9	1566.9	1566.9	1566.9	1566.9	1566.9	1566.9	1566.9	1566.9	1566.9
2.5°	1550.1	1554.0	1548.2	1526.9	1518.6	1509.5	1505.7	1501.8	1508.9	1507.0
5°	1537.2	1532.7	1517.9	1490.9	1476.7	1461.9	1454.8	1450.3	1459.9	1458.0
7.5°	1519.8	1507.0	1485.1	1452.2	1434.2	1414.2	1404.6	1398.8	1405.2	1403.9
10°	1497.9	1476.7	1449.6	1410.4	1389.1	1367.2	1356.3	1347.9	1353.0	1352.4
12.5°	1470.3	1442.6	1409.7	1365.3	1343.4	1320.8	1311.2	1305.4	1311.8	1309.9
15°	1439.3	1405.9	1367.9	1322.8	1298.9	1278.3	1271.3	1266.7	1271.9	1271.9
17.5°	1405.2	1365.9	1324.1	1278.3	1255.8	1239.7	1232.6	1229.4	1232.0	1235.8
20°	1367.2	1323.4	1278.3	1233.9	1214.6	1197.8	1191.4	1188.2	1194.0	1191.4
22.5°	1325.4	1279.0	1232.0	1190.1	1172.7	1156.0	1149.5	1147.6	1154.0	1151.5
25°	1280.9	1230.7	1184.3	1146.3	1128.9	1114.8	1109.0	1107.0	1110.3	1113.5
27.5°	1239.1	1182.4	1136.7	1102.5	1087.1	1073.5	1068.4	1065.2	1067.8	1071.6
30°	1188.2	1133.4	1088.4	1056.8	1042.0	1029.1	1025.2	1022.7	1026.5	1029.8
32.5°	1140.5	1085.1	1040.1	1009.1	996.3	984.0	983.4	982.1	986.6	990.5
35°	1089.0	1034.9	991.1	962.1	949.9	939.6	941.5	943.5	948.6	953.1
37.5°	1036.8	984.0	942.2	915.8	904.2	895.8	901.6	904.2	911.3	915.8
40°	984.0	931.2	892.6	868.8	857.2	853.3	861.7	867.5	875.8	879.7
42.5°	929.9	881.0	842.4	820.5	810.8	810.8	821.7	830.8	840.4	844.3
45°	875.8	828.2	791.5	771.5	764.4	769.6	782.5	794.1	806.3	810.2
47.5°	821.1	774.7	741.2	723.2	719.3	727.1	743.2	758.6	772.8	778.0
50°	766.4	724.5	691.0	674.3	674.3	683.9	704.5	723.9	739.3	744.5
52.5°	711.6	671.7	637.6	625.3	627.9	641.4	665.3	685.2	702.6	707.8
55°	656.2	617.0	587.3	577.0	581.5	598.3	622.7	645.9	662.7	668.5
57.5°	601.5	564.1	537.1	528.7	535.2	553.8	582.2	602.1	619.5	624.7
60°	546.1	508.1	486.9	480.4	488.8	508.1	537.1	555.8	571.9	577.0
62.5°	491.4	456.0	437.3	431.5	441.1	461.7	490.1	506.8	519.1	524.2
65°	436.0	404.4	387.0	383.2	393.5	413.4	440.5	454.7	463.7	468.8
67.5°	381.2	354.2	338.1	334.9	345.8	363.9	389.0	396.7	405.1	410.2
70°	327.2	302.7	289.2	287.2	296.9	314.3	335.5	339.4	343.9	348.4
72.5°	273.7	254.4	240.9	240.2	249.2	263.4	280.8	281.4	282.7	287.2
75°	222.2	204.8	194.5	196.4	201.6	213.2	226.7	222.8	223.5	226.7
77.5°	172.6	158.4	151.3	152.6	156.5	164.9	173.9	169.4	166.8	170.0
80°	124.3	112.1	109.5	110.1	112.7	118.5	123.6	119.8	114.6	117.2
82.5°	81.8	74.1	72.8	73.4	75.3	78.6	79.9	74.1	72.8	74.7
85°	45.1	41.9	41.9	43.8	44.4	45.1	45.1	41.9	42.5	43.8
87.5°	18.0	18.0	20.0	21.9	20.6	18.0	15.5	10.3	10.3	12.2
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)