

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-28-30L835-UNV-NP**

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-28-30L835-UNV-NP  
Description: ArcMed Patient Recessed 4 FT x6 IN Fixture Ambient and Exam Light  
w/ Nature Pattern Lens  
Light Source: 3500K CCT, 80 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

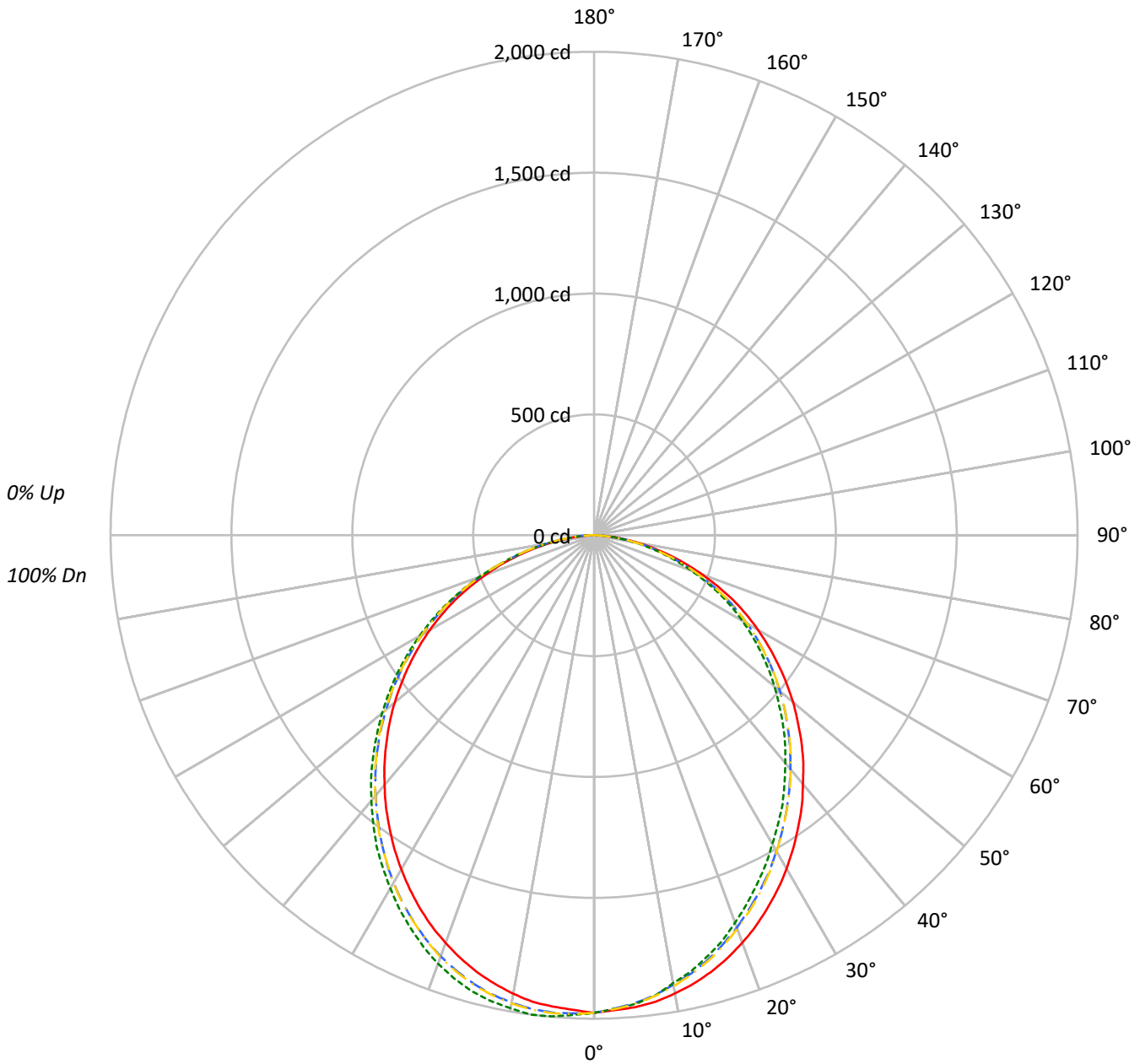
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 5222.8 lumens  
Efficiency: N/A  
Efficacy: 80.4 lumens/watt  
Spacing Criteria (0/90/45): 1.2 / 1.19 / 1.32  
Luminous Opening: Rectangular (W 0.29' x L: 4' x H: 0')  
CIE Type: Direct

Input Watts (W): 65  
Input Voltage (V): 120  
Input Current (A<sub>in</sub>): 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



— 0°-180°    - - 45°-225°    - - - 90°-270°    - · - 135°-315°



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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	95	98	95	92	94	91	89	90	88	86	86	86	86	84
2	99	91	84	79	97	89	83	78	86	80	76	82	78	74	79	76	72	72	72	72	70
3	90	80	72	66	88	78	71	65	75	69	64	73	67	63	70	66	62	62	62	62	59
4	83	71	62	56	81	70	62	55	67	60	54	65	59	54	63	57	53	53	53	53	51
5	76	64	55	48	74	62	54	48	60	53	47	58	52	47	56	51	46	46	46	46	44
6	71	57	48	42	69	56	48	42	55	47	41	53	46	41	51	45	41	41	41	41	39
7	65	52	43	37	64	51	43	37	50	42	37	48	41	36	47	41	36	36	36	36	34
8	61	48	39	33	59	47	39	33	45	38	33	44	38	33	43	37	32	32	32	32	31
9	57	44	35	30	56	43	35	30	42	35	30	41	34	30	40	34	29	29	29	29	28
10	53	40	32	27	52	40	32	27	39	32	27	38	31	27	37	31	27	27	27	27	25

**AVERAGE LUMINANCE (cd/sqm):**

	0°	90°	180°	270°
0°	18229	18229	18229	18229
5°	18149	18030	18127	18503
10°	18033	17630	18044	18620
15°	17864	17244	17875	18651
20°	17611	16745	17623	18522
25°	17303	16216	17339	18260
30°	16970	15710	16994	17960
35°	16582	15302	16622	17667
40°	16181	14813	16236	17258
45°	15834	14411	15849	16864
50°	15420	13989	15453	16419
55°	14930	13529	14987	15957
60°	14450	13059	14472	15371
65°	13854	12487	13854	14690
70°	12865	11548	12832	13644
75°	11664	10466	11578	12284
80°	10047	9000	9861	10541
85°	7738	6881	7495	8469



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	186.6	3.6
10°-20°	528.3	10.1
20°-30°	782.2	15.0
30°-40°	917.7	17.6
40°-50°	930.0	17.8
50°-60°	825.4	15.8
60°-70°	619.7	11.9
70°-80°	344.1	6.6
80°-90°	88.8	1.7
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°	1497.0	28.7
0°-40°	2414.7	46.2
0°-60°	4170.2	79.8
0°-90°	5222.8	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	5222.8	100.0

**CANDELA DISTRIBUTION:**

	0°	90°	180°	270°	360°	Flux
0°	1976	1976	1976	1976	1976	
5°	1960	1947	1957	1998	1960	186
15°	1870	1805	1871	1953	1870	527
25°	1700	1593	1703	1794	1700	783
35°	1472	1359	1476	1569	1472	921
45°	1214	1104	1215	1292	1214	935
55°	928	841	932	992	928	831
65°	635	572	635	673	635	626
75°	327	294	325	345	327	348
85°	73	65	71	80	73	88
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	10°	20°	30°	40°	50°	60°	70°	80°	90°	100°
0°	1975.8	1975.8	1975.8	1975.8	1975.8	1975.8	1975.8	1975.8	1975.8	1975.8	1975.8
2.5°	1966.5	1971.1	1977.0	1971.1	1961.9	1957.2	1957.2	1956.1	1959.6	1960.7	1959.6
5°	1959.6	1961.9	1963.0	1956.1	1945.7	1939.9	1937.5	1936.4	1941.0	1946.8	1941.0
7.5°	1946.8	1945.7	1944.5	1935.2	1923.6	1915.5	1912.0	1910.8	1915.5	1921.3	1916.7
10°	1924.8	1923.6	1920.2	1908.5	1893.4	1883.0	1879.5	1876.1	1879.5	1881.8	1879.5
12.5°	1900.4	1895.7	1891.1	1878.4	1862.2	1850.5	1844.7	1840.0	1844.7	1848.2	1845.8
15°	1870.3	1863.3	1855.2	1841.2	1825.0	1812.2	1805.3	1800.7	1804.1	1805.3	1805.3
17.5°	1834.3	1826.1	1818.0	1800.7	1780.9	1767.0	1758.9	1753.1	1757.7	1760.0	1760.0
20°	1793.7	1784.3	1773.9	1755.4	1734.5	1719.4	1710.1	1703.2	1704.3	1705.5	1705.5
22.5°	1749.6	1738.0	1725.2	1705.5	1683.5	1667.3	1657.9	1649.8	1649.8	1650.9	1650.9
25°	1699.7	1686.9	1674.2	1654.4	1631.2	1613.9	1602.3	1594.1	1594.1	1592.9	1595.2
27.5°	1648.6	1634.7	1622.0	1601.1	1576.7	1559.3	1547.7	1539.6	1538.4	1537.3	1539.6
30°	1592.9	1576.7	1562.8	1540.8	1517.5	1500.1	1488.6	1479.3	1477.0	1474.6	1477.0
32.5°	1533.7	1518.7	1503.6	1480.5	1457.2	1439.8	1428.2	1419.0	1417.8	1416.6	1419.0
35°	1472.2	1456.0	1442.1	1420.1	1396.9	1379.5	1366.7	1358.6	1358.6	1358.6	1358.6
37.5°	1412.0	1395.7	1380.6	1358.6	1335.4	1318.0	1305.2	1297.1	1294.8	1293.7	1294.8
40°	1343.5	1329.6	1315.7	1294.8	1271.6	1254.2	1243.8	1234.5	1232.2	1229.9	1233.3
42.5°	1280.8	1266.9	1251.9	1232.2	1208.9	1191.5	1179.9	1171.8	1170.7	1169.5	1170.7
45°	1213.5	1197.3	1182.3	1163.7	1142.8	1126.6	1115.0	1106.9	1105.7	1104.5	1105.7
47.5°	1142.8	1130.0	1117.3	1098.7	1077.8	1061.6	1051.2	1041.9	1039.6	1037.2	1039.6
50°	1074.3	1060.4	1047.7	1030.2	1010.5	995.5	986.2	978.1	975.8	974.6	975.8
52.5°	1002.4	989.7	978.1	960.6	944.4	929.3	918.9	912.0	910.8	909.6	910.8
55°	928.2	916.6	906.1	892.2	876.0	862.1	852.8	844.6	843.4	841.1	843.4
57.5°	856.3	846.9	836.5	821.4	806.4	793.6	785.5	778.5	777.3	776.1	777.3
60°	783.1	773.8	764.6	751.8	736.8	724.0	717.0	711.2	708.9	707.7	708.9
62.5°	710.0	700.7	693.8	681.1	667.2	656.6	649.7	643.9	641.6	640.4	641.6
65°	634.6	626.5	618.4	606.8	596.3	588.2	581.2	575.4	573.1	572.0	572.0
67.5°	554.6	547.6	541.8	531.3	519.7	511.6	504.7	500.0	497.7	496.6	497.7
70°	476.9	471.0	465.2	457.1	447.8	440.9	436.2	431.6	429.3	428.1	428.1
72.5°	402.5	397.9	392.1	385.2	378.2	371.3	366.6	363.2	360.8	359.7	359.7
75°	327.2	322.5	320.2	314.4	307.5	302.8	298.2	295.9	293.6	293.6	293.6
77.5°	256.4	254.1	251.8	246.0	241.3	236.7	233.2	232.1	229.8	229.8	229.8
80°	189.1	188.0	186.8	183.3	178.7	174.1	171.7	170.6	169.4	169.4	169.4
82.5°	127.6	127.6	126.5	123.0	119.5	118.4	116.0	114.9	114.9	114.9	114.9
85°	73.1	73.1	73.1	71.9	69.6	69.6	67.3	66.1	65.0	65.0	65.0
87.5°	29.0	30.1	31.3	30.1	27.8	27.8	27.8	27.8	27.8	27.8	27.8
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):**

	110°	120°	130°	140°	150°	160°	170°	180°	190°	200°	210°
0°	1975.8	1975.8	1975.8	1975.8	1975.8	1975.8	1975.8	1975.8	1975.8	1975.8	1975.8
2.5°	1956.1	1958.4	1959.6	1965.3	1972.3	1977.0	1971.1	1965.3	1974.6	1985.1	1985.1
5°	1936.4	1938.7	1942.2	1949.1	1958.4	1964.2	1961.9	1957.2	1971.1	1982.8	1984.0
7.5°	1912.0	1914.3	1919.0	1926.0	1937.5	1945.7	1945.7	1946.8	1959.6	1973.5	1977.0
10°	1876.1	1881.8	1888.8	1899.2	1910.8	1921.3	1924.8	1926.0	1942.2	1957.2	1961.9
12.5°	1842.4	1848.2	1855.2	1866.8	1880.7	1892.3	1895.7	1900.4	1917.9	1935.2	1942.2
15°	1804.1	1809.9	1818.0	1829.6	1844.7	1857.5	1864.5	1871.4	1888.8	1907.3	1915.5
17.5°	1758.9	1764.7	1772.8	1786.7	1804.1	1819.2	1827.3	1835.4	1855.2	1874.9	1883.0
20°	1705.5	1713.6	1725.2	1739.2	1758.9	1776.2	1785.5	1794.9	1815.7	1835.4	1844.7
22.5°	1650.9	1660.2	1673.0	1689.3	1710.1	1728.7	1740.3	1751.9	1772.8	1792.6	1803.0
25°	1596.4	1606.9	1619.7	1637.0	1656.7	1675.4	1689.3	1703.2	1724.0	1745.0	1755.4
27.5°	1540.8	1550.1	1562.8	1580.2	1602.3	1622.0	1635.9	1650.9	1671.9	1693.9	1704.3
30°	1479.3	1489.7	1501.3	1518.7	1543.1	1565.1	1579.0	1595.2	1616.2	1638.2	1648.6
32.5°	1420.1	1429.4	1441.0	1458.3	1482.8	1505.9	1521.0	1537.3	1558.2	1580.2	1589.4
35°	1358.6	1367.9	1380.6	1398.0	1422.4	1444.4	1459.5	1475.8	1495.5	1516.4	1526.8
37.5°	1298.3	1307.6	1320.3	1337.7	1360.9	1383.0	1398.0	1414.3	1434.0	1453.7	1463.0
40°	1235.6	1244.9	1255.3	1272.7	1296.0	1318.0	1331.9	1348.1	1367.9	1388.7	1398.0
42.5°	1171.8	1181.1	1193.8	1211.2	1233.3	1253.0	1268.1	1283.1	1301.8	1320.3	1329.6
45°	1108.0	1116.1	1128.9	1145.1	1166.0	1184.6	1199.6	1214.7	1232.2	1249.5	1258.8
47.5°	1041.9	1051.2	1061.6	1077.8	1098.7	1118.5	1133.5	1147.4	1163.7	1181.1	1189.2
50°	978.1	986.2	996.6	1011.7	1031.4	1050.0	1062.7	1076.6	1091.7	1108.0	1115.0
52.5°	912.0	920.1	930.5	945.6	961.8	979.2	990.8	1003.6	1018.6	1033.7	1040.7
55°	844.6	850.5	859.7	873.6	891.0	907.2	918.9	931.7	944.4	957.1	965.2
57.5°	778.5	785.5	794.8	807.5	822.6	837.6	848.1	858.6	871.3	884.1	889.9
60°	711.2	717.0	724.0	735.6	750.7	763.4	773.8	784.3	794.8	806.4	812.1
62.5°	642.7	648.5	655.5	667.2	679.9	691.5	700.7	710.0	719.3	729.8	735.6
65°	574.3	580.1	587.0	595.2	605.7	616.1	625.4	634.6	641.6	648.5	654.3
67.5°	500.0	505.8	512.8	519.7	529.0	539.5	546.5	554.6	561.5	569.7	573.1
70°	430.4	435.1	442.0	447.8	455.9	462.9	468.7	475.7	480.4	487.3	493.1
72.5°	362.0	366.6	372.4	378.2	382.9	388.6	395.6	401.4	407.2	414.2	416.5
75°	295.9	298.2	302.8	307.5	312.1	316.7	320.2	324.8	329.5	334.1	337.6
77.5°	230.9	233.2	237.9	241.3	244.8	248.3	250.6	252.9	257.6	261.0	264.5
80°	169.4	171.7	175.2	178.7	182.2	185.6	185.6	185.6	191.4	196.1	197.2
82.5°	114.9	116.0	118.4	120.7	123.0	125.3	125.3	124.1	127.6	131.1	133.4
85°	66.1	67.3	69.6	69.6	70.8	70.8	70.8	70.8	73.1	76.6	78.9
87.5°	26.6	26.6	27.8	27.8	29.0	29.0	27.8	26.6	29.0	32.5	33.7
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):**

	220°	230°	240°	250°	260°	270°	280°	290°	300°	310°	320°
0°	1975.8	1975.8	1975.8	1975.8	1975.8	1975.8	1975.8	1975.8	1975.8	1975.8	1975.8
2.5°	1980.5	1979.3	1982.8	1984.0	1986.3	1986.3	1987.5	1987.5	1985.1	1981.7	1982.8
5°	1981.7	1981.7	1985.1	1988.6	1993.2	1997.9	1994.4	1990.9	1988.6	1985.1	1984.0
7.5°	1975.8	1978.2	1981.7	1987.5	1993.2	2000.2	1995.6	1990.9	1985.1	1980.5	1978.2
10°	1961.9	1964.2	1970.0	1975.8	1981.7	1987.5	1982.8	1978.2	1973.5	1967.7	1965.3
12.5°	1944.5	1948.0	1954.9	1960.7	1966.5	1973.5	1967.7	1961.9	1956.1	1950.3	1946.8
15°	1919.0	1923.6	1931.8	1938.7	1946.8	1952.6	1948.0	1943.3	1936.4	1928.3	1922.5
17.5°	1886.5	1893.4	1901.5	1909.6	1916.7	1922.5	1919.0	1914.3	1906.2	1896.9	1890.0
20°	1850.5	1857.5	1864.5	1872.6	1880.7	1886.5	1881.8	1876.1	1867.9	1861.0	1854.0
22.5°	1808.8	1815.7	1823.8	1830.8	1837.7	1843.5	1837.7	1830.8	1823.8	1816.9	1809.9
25°	1761.2	1768.1	1777.4	1784.3	1789.0	1793.7	1789.0	1783.2	1776.2	1769.3	1762.3
27.5°	1711.3	1718.2	1727.6	1734.5	1739.2	1743.8	1739.2	1733.4	1726.4	1719.4	1712.4
30°	1655.6	1662.6	1671.9	1678.8	1682.3	1685.8	1681.2	1676.5	1670.7	1663.7	1656.7
32.5°	1596.4	1603.4	1610.4	1617.3	1623.1	1627.8	1623.1	1618.5	1611.5	1602.3	1595.2
35°	1533.7	1540.8	1548.9	1555.8	1562.8	1568.6	1561.6	1553.5	1547.7	1541.9	1536.1
37.5°	1467.6	1475.8	1485.1	1493.2	1495.5	1500.1	1495.5	1490.9	1485.1	1479.3	1472.2
40°	1402.6	1409.6	1417.8	1425.9	1429.4	1432.9	1428.2	1423.6	1416.6	1410.8	1403.8
42.5°	1335.4	1342.3	1349.3	1356.3	1360.9	1365.6	1360.9	1354.0	1349.3	1344.6	1338.8
45°	1265.8	1272.7	1278.5	1285.5	1289.0	1292.5	1287.8	1282.0	1277.3	1273.9	1268.1
47.5°	1195.0	1200.8	1206.6	1212.4	1214.7	1218.2	1213.5	1210.1	1206.6	1203.1	1198.5
50°	1120.8	1126.6	1133.5	1139.3	1140.5	1143.9	1139.3	1135.8	1132.4	1128.9	1125.4
52.5°	1047.7	1052.3	1058.1	1063.9	1066.2	1068.5	1063.9	1059.3	1055.8	1053.5	1050.0
55°	971.1	975.8	981.6	986.2	989.7	992.0	987.4	982.7	979.2	978.1	974.6
57.5°	894.5	899.1	904.9	909.6	912.0	914.3	909.6	904.9	902.6	900.3	898.0
60°	816.8	821.4	826.0	829.5	831.8	833.0	828.4	824.9	823.7	822.6	820.3
62.5°	740.2	742.5	747.2	749.5	751.8	753.0	749.5	747.2	746.0	744.9	743.7
65°	660.2	666.0	669.5	671.8	671.8	672.9	669.5	668.3	667.2	666.0	663.7
67.5°	577.8	582.4	584.7	587.0	587.0	587.0	587.0	587.0	585.9	583.6	581.2
70°	498.9	502.4	504.7	505.8	505.8	505.8	503.5	502.4	503.5	503.5	502.4
72.5°	418.9	421.2	422.3	423.5	422.3	422.3	422.3	424.7	424.7	423.5	421.2
75°	341.1	343.4	344.6	345.8	344.6	344.6	344.6	346.9	345.8	345.8	344.6
77.5°	268.0	269.1	269.1	270.3	269.1	269.1	270.3	272.6	271.5	271.5	271.5
80°	198.4	198.4	198.4	199.5	198.4	198.4	199.5	201.9	200.7	200.7	200.7
82.5°	134.6	135.7	135.7	135.7	136.9	138.0	138.0	138.0	138.0	138.0	136.9
85°	80.0	81.2	80.0	80.0	80.0	80.0	81.2	82.3	82.3	82.3	82.3
87.5°	34.9	36.0	34.9	33.7	32.5	32.5	34.9	37.2	37.2	36.0	36.0
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0





TEST NUMBER: P  
 CATALOG NUMBER: 4APN-28-30L835-UNV-NP

**CANDELA DISTRIBUTION (continued):**

	330°	340°	350°	360°
0°	1975.8	1975.8	1975.8	1975.8
2.5°	1987.5	1987.5	1977.0	1966.5
5°	1986.3	1984.0	1972.3	1959.6
7.5°	1979.3	1975.8	1960.7	1946.8
10°	1963.0	1958.4	1942.2	1924.8
12.5°	1943.3	1936.4	1917.9	1900.4
15°	1917.9	1909.6	1890.0	1870.3
17.5°	1884.2	1874.9	1855.2	1834.3
20°	1848.2	1837.7	1815.7	1793.7
22.5°	1804.1	1794.9	1771.6	1749.6
25°	1756.5	1746.1	1722.9	1699.7
27.5°	1705.5	1693.9	1670.7	1648.6
30°	1649.8	1638.2	1615.0	1592.9
32.5°	1590.6	1581.3	1558.2	1533.7
35°	1530.3	1518.7	1495.5	1472.2
37.5°	1466.5	1456.0	1434.0	1412.0
40°	1399.2	1388.7	1365.6	1343.5
42.5°	1333.0	1323.8	1301.8	1280.8
45°	1262.3	1253.0	1232.2	1213.5
47.5°	1191.5	1182.3	1162.5	1142.8
50°	1119.6	1110.3	1091.7	1074.3
52.5°	1044.2	1037.2	1019.8	1002.4
55°	968.7	960.6	943.2	928.2
57.5°	893.3	887.5	871.3	856.3
60°	815.6	808.7	795.9	783.1
62.5°	740.2	734.4	721.6	710.0
65°	660.2	655.5	645.0	634.6
67.5°	577.8	574.3	563.9	554.6
70°	498.9	493.1	485.0	476.9
72.5°	418.9	416.5	409.6	402.5
75°	342.2	339.9	332.9	327.2
77.5°	270.3	268.0	262.2	256.4
80°	199.5	198.4	193.7	189.1
82.5°	136.9	135.7	132.3	127.6
85°	82.3	80.0	76.6	73.1
87.5°	36.0	34.9	31.3	29.0
90°	0.0	0.0	0.0	0.0

(END OF REPORT)