

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-32-34L830-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-32-34L830-UNV-NP  
Description: ArcMed Patient Recessed 4 FT x6 IN Fixture Ambient and Exam Light  
w/ Nature Pattern Lens  
Light Source: 3000K CCT, 80 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

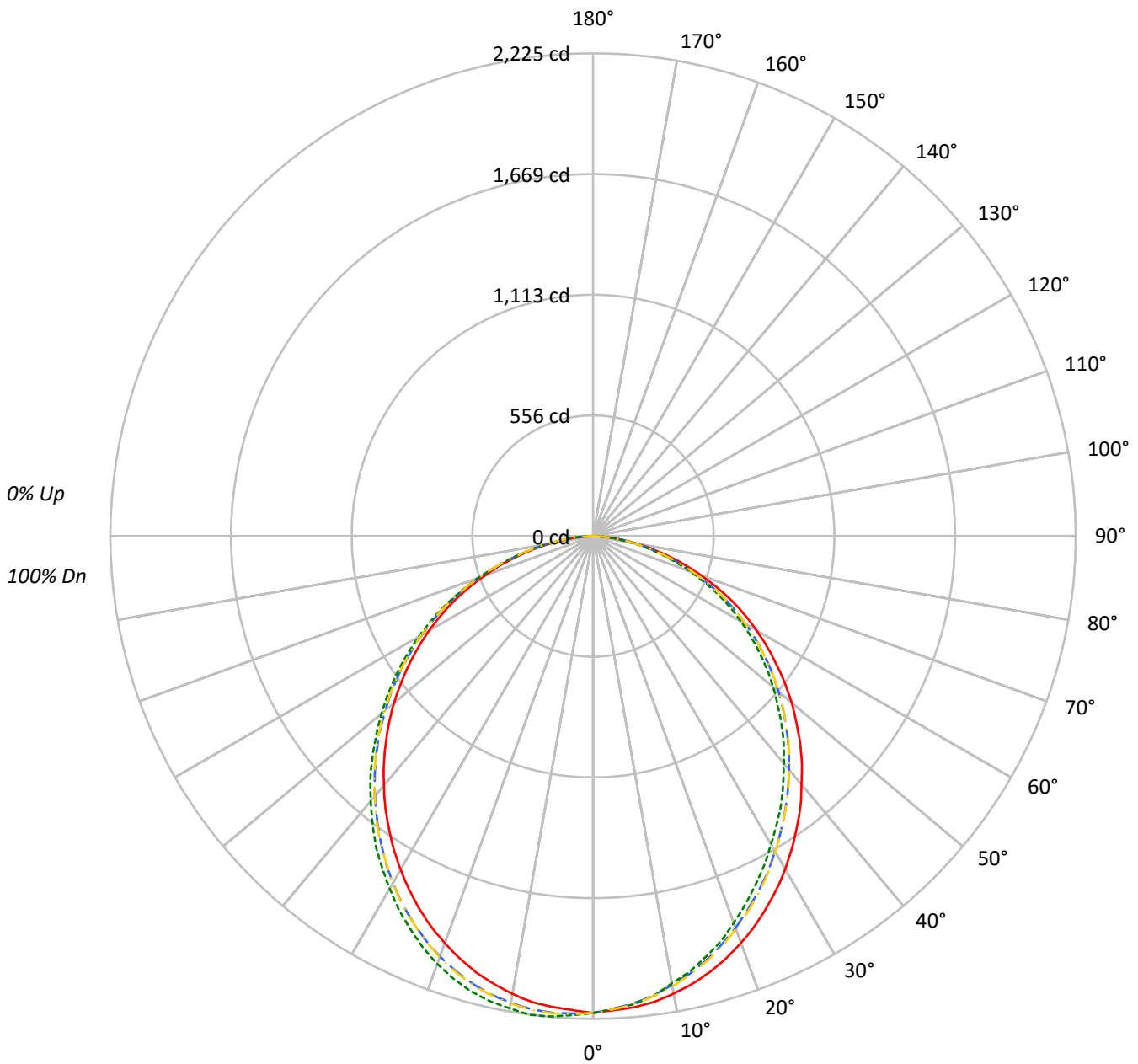
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 5810.4 lumens  
Efficiency: N/A  
Efficacy: 79.6 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): 73  
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

TEST NUMBER: P  
CATALOG NUMBER: 4APN-32-34L830-UNV-NP

### Luminous Intensity Polar Plot



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



TEST NUMBER: P  
 CATALOG NUMBER: 4APN-32-34L830-UNV-NP

**COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:**

RF	20				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°	20280	20280	20280	20280
5°	20191	20059	20167	20585
10°	20061	19614	20073	20714
15°	19874	19184	19887	20749
20°	19592	18629	19605	20606
25°	19249	18041	19289	20314
30°	18880	17477	18908	19980
35°	18448	17023	18492	19655
40°	18002	16479	18064	19198
45°	17616	16032	17633	18761
50°	17155	15562	17193	18266
55°	16608	15051	16671	17750
60°	16076	14528	16100	17100
65°	15415	13893	15415	16345
70°	14311	12848	14275	15182
75°	12976	11642	12883	13667
80°	11179	10015	10972	11726
85°	8606	7654	8331	9432



TEST NUMBER: P  
 CATALOG NUMBER: 4APN-32-34L830-UNV-NP

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	207.6	3.6
10°-20°	587.7	10.1
20°-30°	870.2	15.0
30°-40°	1020.9	17.6
40°-50°	1034.6	17.8
50°-60°	918.2	15.8
60°-70°	689.4	11.9
70°-80°	382.8	6.6
80°-90°	98.9	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°	1665.5	28.7
0°-40°	2686.4	46.2
0°-60°	4639.3	79.8
0°-90°	5810.4	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	5810.4	100.0

**CANDELA DISTRIBUTION:**

	0°	90°	180°	270°	360°	Flux
0°	2198	2198	2198	2198	2198	
5°	2180	2166	2178	2223	2180	207
15°	2081	2008	2082	2172	2081	586
25°	1891	1772	1895	1996	1891	871
35°	1638	1511	1642	1745	1638	1025
45°	1350	1229	1351	1438	1350	1041
55°	1032	936	1036	1104	1032	924
65°	706	636	706	749	706	696
75°	364	327	361	383	364	387
85°	81	72	79	89	81	98
90°	0	0	0	0	0	



TEST NUMBER: P

CATALOG NUMBER: 4APN-32-34L830-UNV-NP

**CANDELA DISTRIBUTION (FULL):**

	0°	10°	20°	30°	40°	50°	60°	70°	80°	90°	100°
0°	2198.1	2198.1	2198.1	2198.1	2198.1	2198.1	2198.1	2198.1	2198.1	2198.1	2198.1
2.5°	2187.8	2193.0	2199.4	2193.0	2182.7	2177.5	2177.5	2176.2	2180.1	2181.4	2180.1
5°	2180.1	2182.7	2183.9	2176.2	2164.6	2158.1	2155.5	2154.3	2159.4	2165.9	2159.4
7.5°	2165.9	2164.6	2163.3	2153.0	2140.1	2131.0	2127.1	2125.9	2131.0	2137.5	2132.3
10°	2141.3	2140.1	2136.2	2123.3	2106.5	2094.9	2091.0	2087.1	2091.0	2093.6	2091.0
12.5°	2114.2	2109.1	2103.9	2089.7	2071.6	2058.7	2052.3	2047.1	2052.3	2056.2	2053.6
15°	2080.7	2072.9	2063.9	2048.4	2030.3	2016.1	2008.4	2003.2	2007.1	2008.4	2008.4
17.5°	2040.7	2031.6	2022.6	2003.2	1981.3	1965.8	1956.8	1950.3	1955.5	1958.1	1958.1
20°	1995.5	1985.2	1973.5	1952.9	1929.7	1912.9	1902.5	1894.8	1896.1	1897.4	1897.4
22.5°	1946.4	1933.5	1919.3	1897.4	1872.9	1854.8	1844.5	1835.4	1835.4	1836.7	1836.7
25°	1890.9	1876.7	1862.5	1840.6	1814.8	1795.4	1782.5	1773.5	1773.5	1772.2	1774.8
27.5°	1834.1	1818.6	1804.4	1781.2	1754.1	1734.7	1721.8	1712.8	1711.5	1710.2	1712.8
30°	1772.2	1754.1	1738.6	1714.1	1688.3	1668.9	1656.0	1645.7	1643.1	1640.5	1643.1
32.5°	1706.3	1689.6	1672.8	1647.0	1621.2	1601.8	1588.9	1578.6	1577.3	1576.0	1578.6
35°	1637.9	1619.9	1604.4	1579.8	1554.0	1534.7	1520.5	1511.4	1511.4	1511.4	1511.4
37.5°	1570.8	1552.7	1536.0	1511.4	1485.6	1466.3	1452.1	1443.0	1440.4	1439.1	1440.4
40°	1494.7	1479.2	1463.7	1440.4	1414.6	1395.3	1383.6	1373.3	1370.7	1368.2	1372.0
42.5°	1425.0	1409.5	1392.7	1370.7	1344.9	1325.6	1312.7	1303.6	1302.3	1301.0	1302.3
45°	1350.1	1332.0	1315.2	1294.6	1271.3	1253.3	1240.4	1231.3	1230.0	1228.7	1230.0
47.5°	1271.3	1257.1	1242.9	1222.3	1199.1	1181.0	1169.4	1159.0	1156.5	1153.9	1156.5
50°	1195.2	1179.7	1165.5	1146.1	1124.2	1107.4	1097.1	1088.1	1085.5	1084.2	1085.5
52.5°	1115.2	1101.0	1088.1	1068.7	1050.6	1033.8	1022.2	1014.5	1013.2	1011.9	1013.2
55°	1032.5	1019.6	1008.0	992.5	974.5	959.0	948.6	939.6	938.3	935.7	938.3
57.5°	952.5	942.2	930.6	913.8	897.0	882.8	873.8	866.0	864.7	863.5	864.7
60°	871.2	860.9	850.5	836.3	819.6	805.4	797.6	791.2	788.6	787.3	788.6
62.5°	789.9	779.6	771.8	757.6	742.2	730.6	722.8	716.4	713.8	712.5	713.8
65°	706.1	697.0	688.0	675.1	663.5	654.4	646.7	640.2	637.7	636.4	636.4
67.5°	617.0	609.3	602.8	591.2	578.3	569.2	561.5	556.3	553.8	552.5	553.8
70°	530.5	524.1	517.6	508.6	498.2	490.5	485.3	480.2	477.6	476.3	476.3
72.5°	447.9	442.7	436.3	428.5	420.8	413.1	407.9	404.0	401.4	400.1	400.1
75°	364.0	358.8	356.3	349.8	342.1	336.9	331.7	329.2	326.6	326.6	326.6
77.5°	285.3	282.7	280.1	273.6	268.5	263.3	259.5	258.2	255.6	255.6	255.6
80°	210.4	209.1	207.8	203.9	198.8	193.6	191.0	189.7	188.5	188.5	188.5
82.5°	142.0	142.0	140.7	136.8	133.0	131.7	129.1	127.8	127.8	127.8	127.8
85°	81.3	81.3	81.3	80.0	77.4	77.4	74.9	73.6	72.3	72.3	72.3
87.5°	32.3	33.6	34.9	33.6	31.0	31.0	31.0	31.0	31.0	31.0	31.0
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-32-34L830-UNV-NP

**CANDELA DISTRIBUTION (continued):**

	110°	120°	130°	140°	150°	160°	170°	180°	190°	200°	210°
0°	2198.1	2198.1	2198.1	2198.1	2198.1	2198.1	2198.1	2198.1	2198.1	2198.1	2198.1
2.5°	2176.2	2178.8	2180.1	2186.5	2194.3	2199.4	2193.0	2186.5	2196.8	2208.5	2208.5
5°	2154.3	2156.8	2160.7	2168.5	2178.8	2185.2	2182.7	2177.5	2193.0	2205.9	2207.2
7.5°	2127.1	2129.7	2134.9	2142.6	2155.5	2164.6	2164.6	2165.9	2180.1	2195.6	2199.4
10°	2087.1	2093.6	2101.3	2112.9	2125.9	2137.5	2141.3	2142.6	2160.7	2177.5	2182.7
12.5°	2049.7	2056.2	2063.9	2076.8	2092.3	2105.2	2109.1	2114.2	2133.6	2153.0	2160.7
15°	2007.1	2013.6	2022.6	2035.5	2052.3	2066.5	2074.2	2082.0	2101.3	2122.0	2131.0
17.5°	1956.8	1963.2	1972.3	1987.7	2007.1	2023.9	2032.9	2042.0	2063.9	2085.8	2094.9
20°	1897.4	1906.4	1919.3	1934.8	1956.8	1976.1	1986.4	1996.8	2020.0	2042.0	2052.3
22.5°	1836.7	1847.0	1861.2	1879.3	1902.5	1923.2	1936.1	1949.0	1972.3	1994.2	2005.8
25°	1776.0	1787.7	1801.9	1821.2	1843.2	1863.8	1879.3	1894.8	1918.0	1941.3	1952.9
27.5°	1714.1	1724.4	1738.6	1758.0	1782.5	1804.4	1819.9	1836.7	1860.0	1884.5	1896.1
30°	1645.7	1657.3	1670.2	1689.6	1716.7	1741.2	1756.7	1774.8	1798.0	1822.5	1834.1
32.5°	1579.8	1590.2	1603.1	1622.4	1649.6	1675.4	1692.1	1710.2	1733.5	1758.0	1768.3
35°	1511.4	1521.8	1536.0	1555.3	1582.4	1607.0	1623.7	1641.8	1663.7	1687.0	1698.6
37.5°	1444.3	1454.6	1468.8	1488.2	1514.0	1538.5	1555.3	1573.4	1595.3	1617.3	1627.6
40°	1374.6	1384.9	1396.6	1415.9	1441.7	1466.3	1481.7	1499.8	1521.8	1545.0	1555.3
42.5°	1303.6	1313.9	1328.1	1347.5	1372.0	1394.0	1410.8	1427.5	1448.2	1468.8	1479.2
45°	1232.6	1241.7	1255.9	1273.9	1297.2	1317.8	1334.6	1351.4	1370.7	1390.1	1400.4
47.5°	1159.0	1169.4	1181.0	1199.1	1222.3	1244.2	1261.0	1276.5	1294.6	1313.9	1323.0
50°	1088.1	1097.1	1108.7	1125.5	1147.4	1168.1	1182.3	1197.8	1214.6	1232.6	1240.4
52.5°	1014.5	1023.5	1035.1	1051.9	1070.0	1089.3	1102.3	1116.4	1133.2	1150.0	1157.8
55°	939.6	946.1	956.4	971.9	991.2	1009.3	1022.2	1036.4	1050.6	1064.8	1073.9
57.5°	866.0	873.8	884.1	898.3	915.1	931.9	943.5	955.1	969.3	983.5	990.0
60°	791.2	797.6	805.4	818.3	835.1	849.3	860.9	872.5	884.1	897.0	903.5
62.5°	715.1	721.6	729.3	742.2	756.3	769.2	779.6	789.9	800.2	811.8	818.3
65°	638.9	645.4	653.1	662.2	673.8	685.4	695.7	706.1	713.8	721.6	728.0
67.5°	556.3	562.8	570.5	578.3	588.6	600.2	608.0	617.0	624.7	633.8	637.7
70°	478.9	484.1	491.8	498.2	507.3	515.0	521.5	529.2	534.4	542.1	548.6
72.5°	402.7	407.9	414.3	420.8	426.0	432.4	440.2	446.6	453.1	460.8	463.4
75°	329.2	331.7	336.9	342.1	347.2	352.4	356.3	361.4	366.6	371.8	375.6
77.5°	256.9	259.5	264.6	268.5	272.4	276.2	278.8	281.4	286.6	290.4	294.3
80°	188.5	191.0	194.9	198.8	202.7	206.5	206.5	206.5	213.0	218.1	219.4
82.5°	127.8	129.1	131.7	134.2	136.8	139.4	139.4	138.1	142.0	145.9	148.4
85°	73.6	74.9	77.4	77.4	78.7	78.7	78.7	78.7	81.3	85.2	87.8
87.5°	29.7	29.7	31.0	31.0	32.3	32.3	31.0	29.7	32.3	36.1	37.4
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-32-34L830-UNV-NP

**CANDELA DISTRIBUTION (continued):**

	220°	230°	240°	250°	260°	270°	280°	290°	300°	310°	320°
0°	2198.1	2198.1	2198.1	2198.1	2198.1	2198.1	2198.1	2198.1	2198.1	2198.1	2198.1
2.5°	2203.3	2202.0	2205.9	2207.2	2209.8	2209.8	2211.0	2211.0	2208.5	2204.6	2205.9
5°	2204.6	2204.6	2208.5	2212.3	2217.5	2222.7	2218.8	2214.9	2212.3	2208.5	2207.2
7.5°	2198.1	2200.7	2204.6	2211.0	2217.5	2225.2	2220.1	2214.9	2208.5	2203.3	2200.7
10°	2182.7	2185.2	2191.7	2198.1	2204.6	2211.0	2205.9	2200.7	2195.6	2189.1	2186.5
12.5°	2163.3	2167.2	2174.9	2181.4	2187.8	2195.6	2189.1	2182.7	2176.2	2169.7	2165.9
15°	2134.9	2140.1	2149.1	2156.8	2165.9	2172.3	2167.2	2162.0	2154.3	2145.2	2138.8
17.5°	2098.7	2106.5	2115.5	2124.6	2132.3	2138.8	2134.9	2129.7	2120.7	2110.4	2102.6
20°	2058.7	2066.5	2074.2	2083.3	2092.3	2098.7	2093.6	2087.1	2078.1	2070.4	2062.6
22.5°	2012.3	2020.0	2029.0	2036.8	2044.5	2051.0	2044.5	2036.8	2029.0	2021.3	2013.6
25°	1959.3	1967.1	1977.4	1985.2	1990.3	1995.5	1990.3	1983.9	1976.1	1968.4	1960.6
27.5°	1903.8	1911.6	1921.9	1929.7	1934.8	1940.0	1934.8	1928.4	1920.6	1912.9	1905.1
30°	1841.9	1849.6	1860.0	1867.7	1871.6	1875.4	1870.3	1865.1	1858.7	1850.9	1843.2
32.5°	1776.0	1783.8	1791.5	1799.3	1805.7	1810.9	1805.7	1800.6	1792.8	1782.5	1774.8
35°	1706.3	1714.1	1723.1	1730.9	1738.6	1745.1	1737.3	1728.3	1721.8	1715.4	1708.9
37.5°	1632.8	1641.8	1652.1	1661.2	1663.7	1668.9	1663.7	1658.6	1652.1	1645.7	1637.9
40°	1560.5	1568.2	1577.3	1586.3	1590.2	1594.0	1588.9	1583.7	1576.0	1569.5	1561.8
42.5°	1485.6	1493.4	1501.1	1508.9	1514.0	1519.2	1514.0	1506.3	1501.1	1495.9	1489.5
45°	1408.2	1415.9	1422.4	1430.1	1434.0	1437.9	1432.7	1426.2	1421.1	1417.2	1410.8
47.5°	1329.4	1335.9	1342.3	1348.8	1351.4	1355.2	1350.1	1346.2	1342.3	1338.5	1333.3
50°	1246.8	1253.3	1261.0	1267.5	1268.8	1272.6	1267.5	1263.6	1259.7	1255.9	1252.0
52.5°	1165.5	1170.7	1177.1	1183.6	1186.2	1188.7	1183.6	1178.4	1174.5	1172.0	1168.1
55°	1080.3	1085.5	1091.9	1097.1	1101.0	1103.5	1098.4	1093.2	1089.3	1088.1	1084.2
57.5°	995.1	1000.3	1006.7	1011.9	1014.5	1017.1	1011.9	1006.7	1004.2	1001.6	999.0
60°	908.6	913.8	919.0	922.8	925.4	926.7	921.5	917.7	916.4	915.1	912.5
62.5°	823.4	826.0	831.2	833.8	836.3	837.6	833.8	831.2	829.9	828.6	827.3
65°	734.5	740.9	744.8	747.4	747.4	748.7	744.8	743.5	742.2	740.9	738.3
67.5°	642.8	648.0	650.6	653.1	653.1	653.1	653.1	653.1	651.9	649.3	646.7
70°	555.0	558.9	561.5	562.8	562.8	562.8	560.2	558.9	560.2	560.2	558.9
72.5°	466.0	468.6	469.9	471.1	469.9	469.9	469.9	472.4	472.4	471.1	468.6
75°	379.5	382.1	383.4	384.7	383.4	383.4	383.4	385.9	384.7	384.7	383.4
77.5°	298.2	299.5	299.5	300.8	299.5	299.5	300.8	303.3	302.0	302.0	302.0
80°	220.7	220.7	220.7	222.0	220.7	220.7	222.0	224.6	223.3	223.3	223.3
82.5°	149.7	151.0	151.0	151.0	152.3	153.6	153.6	153.6	153.6	153.6	152.3
85°	89.1	90.4	89.1	89.1	89.1	89.1	90.4	91.6	91.6	91.6	91.6
87.5°	38.7	40.0	38.7	37.4	36.1	36.1	38.7	41.3	41.3	40.0	40.0
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-32-34L830-UNV-NP

**CANDELA DISTRIBUTION (continued):**

	330°	340°	350°	360°
0°	2198.1	2198.1	2198.1	2198.1
2.5°	2211.0	2211.0	2199.4	2187.8
5°	2209.8	2207.2	2194.3	2180.1
7.5°	2202.0	2198.1	2181.4	2165.9
10°	2183.9	2178.8	2160.7	2141.3
12.5°	2162.0	2154.3	2133.6	2114.2
15°	2133.6	2124.6	2102.6	2080.7
17.5°	2096.2	2085.8	2063.9	2040.7
20°	2056.2	2044.5	2020.0	1995.5
22.5°	2007.1	1996.8	1971.0	1946.4
25°	1954.2	1942.6	1916.7	1890.9
27.5°	1897.4	1884.5	1858.7	1834.1
30°	1835.4	1822.5	1796.7	1772.2
32.5°	1769.6	1759.3	1733.5	1706.3
35°	1702.5	1689.6	1663.7	1637.9
37.5°	1631.5	1619.9	1595.3	1570.8
40°	1556.6	1545.0	1519.2	1494.7
42.5°	1483.0	1472.7	1448.2	1425.0
45°	1404.3	1394.0	1370.7	1350.1
47.5°	1325.6	1315.2	1293.3	1271.3
50°	1245.5	1235.2	1214.6	1195.2
52.5°	1161.6	1153.9	1134.5	1115.2
55°	1077.7	1068.7	1049.3	1032.5
57.5°	993.8	987.4	969.3	952.5
60°	907.3	899.6	885.4	871.2
62.5°	823.4	817.0	802.8	789.9
65°	734.5	729.3	717.7	706.1
67.5°	642.8	638.9	627.3	617.0
70°	555.0	548.6	539.6	530.5
72.5°	466.0	463.4	455.7	447.9
75°	380.8	378.2	370.5	364.0
77.5°	300.8	298.2	291.7	285.3
80°	222.0	220.7	215.6	210.4
82.5°	152.3	151.0	147.2	142.0
85°	91.6	89.1	85.2	81.3
87.5°	40.0	38.7	34.9	32.3
90°	0.0	0.0	0.0	0.0

(END OF REPORT)