

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: P709157

Luminaire Tested: **4APN-35-37L830-UNV**

Issue Date: 09/12/2023



Test Information

Test Method: LM-79-08
Report Number: P709157
Test Lab: INNOVATION CENTER(G2)
Issue Date: 09/12/2023
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: FAIL-SAFE
Catalog Number: 4APN-35-37L830-UNV
Description: ArcMed Patient Recessed 4 FT x6 IN Fixture Ambient and Exam Light
Light Source: 3000K CCT, 80 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

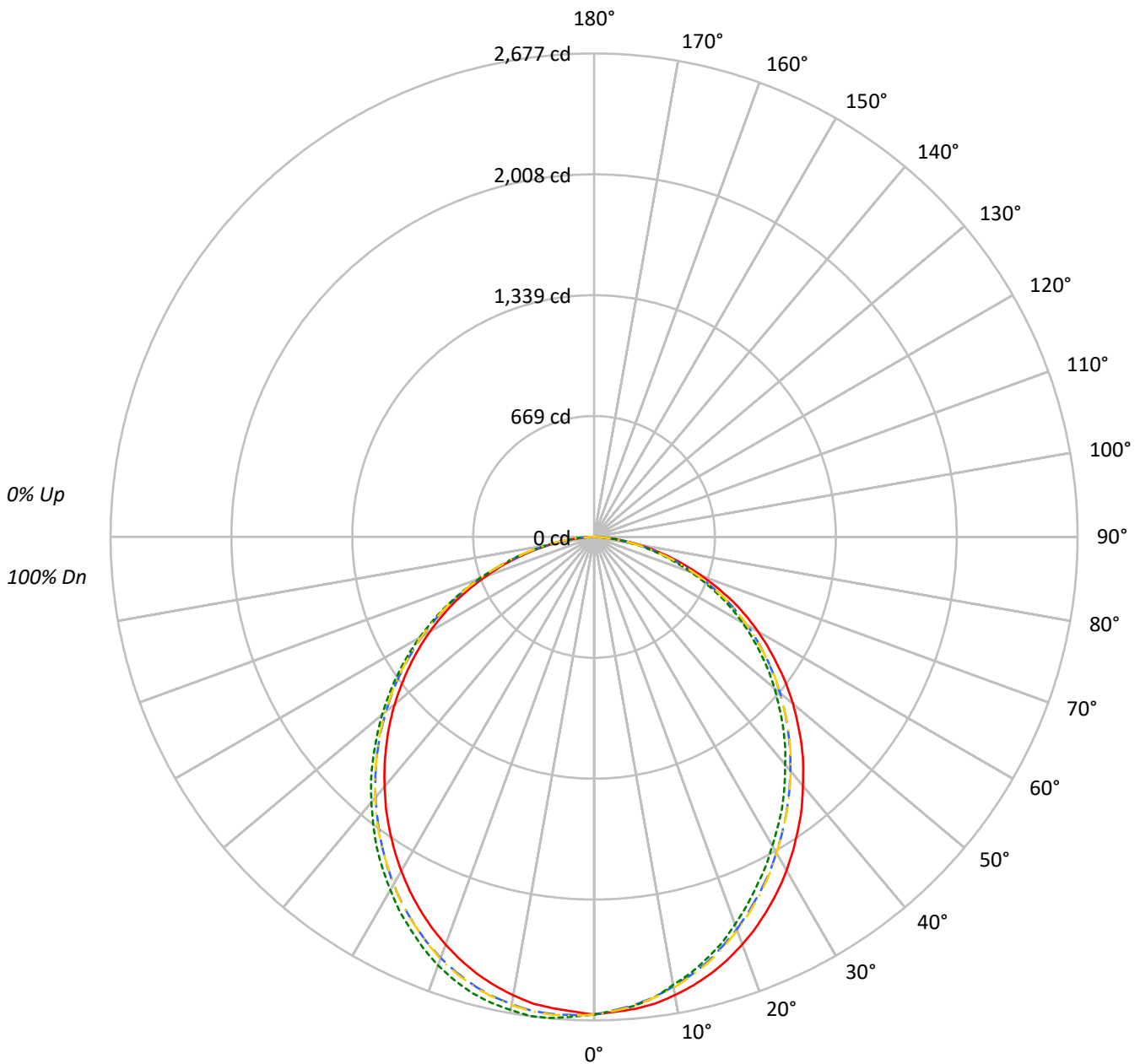
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 6989.9 lumens
Efficiency: N/A
Efficacy: 86.3 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): 81
Input Voltage (V): 120
Input Current (Ain): 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				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°	24397	24397	24397	24397
5°	24289	24131	24260	24763
10°	24133	23596	24148	24919
15°	23908	23078	23923	24961
20°	23569	22410	23585	24789
25°	23157	21703	23204	24437
30°	22712	21025	22745	24035
35°	22193	20480	22246	23645
40°	21656	19823	21731	23095
45°	21192	19287	21212	22570
50°	20637	18721	20682	21975
55°	19981	18107	20057	21355
60°	19340	17478	19369	20573
65°	18543	16712	18543	19661
70°	17216	15457	17173	18262
75°	15610	14002	15499	16441
80°	13448	12045	13198	14106
85°	10353	9210	10025	11337



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	249.7	3.6
10°-20°	707.0	10.1
20°-30°	1046.8	15.0
30°-40°	1228.2	17.6
40°-50°	1244.7	17.8
50°-60°	1104.7	15.8
60°-70°	829.4	11.9
70°-80°	460.5	6.6
80°-90°	118.9	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°	2003.6	28.7
0°-40°	3231.7	46.2
0°-60°	5581.1	79.8
0°-90°	6989.9	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	6989.9	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	2644	2644	2644	2644	2644	
5°	2623	2606	2620	2674	2623	249
15°	2503	2416	2505	2613	2503	705
25°	2275	2132	2279	2400	2275	1048
35°	1970	1818	1975	2099	1970	1233
45°	1624	1478	1626	1730	1624	1252
55°	1242	1126	1247	1328	1242	1112
65°	849	766	849	901	849	837
75°	438	393	435	461	438	465
85°	98	87	95	107	98	118
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°	2644.3	2644.3	2644.3	2644.3	2644.3	2644.3	2644.3	2644.3	2644.3	2644.3	2644.3
2.5°	2631.9	2638.1	2645.9	2638.1	2625.7	2619.5	2619.5	2617.9	2622.6	2624.1	2622.6
5°	2622.6	2625.7	2627.2	2617.9	2604.0	2596.2	2593.1	2591.5	2597.7	2605.5	2597.7
7.5°	2605.5	2604.0	2602.4	2590.0	2574.5	2563.6	2558.9	2557.4	2563.6	2571.3	2565.1
10°	2576.0	2574.5	2569.8	2554.3	2534.1	2520.1	2515.4	2510.8	2515.4	2518.6	2515.4
12.5°	2543.4	2537.2	2531.0	2513.9	2492.2	2476.6	2468.9	2462.7	2468.9	2473.5	2470.4
15°	2503.0	2493.7	2482.8	2464.2	2442.5	2425.4	2416.1	2409.9	2414.5	2416.1	2416.1
17.5°	2454.9	2444.0	2433.2	2409.9	2383.5	2364.8	2354.0	2346.2	2352.4	2355.5	2355.5
20°	2400.5	2388.1	2374.1	2349.3	2321.4	2301.2	2288.7	2279.4	2281.0	2282.5	2282.5
22.5°	2341.5	2326.0	2308.9	2282.5	2253.0	2231.3	2218.9	2208.0	2208.0	2209.6	2209.6
25°	2274.8	2257.7	2240.6	2214.2	2183.2	2159.9	2144.3	2133.5	2133.5	2131.9	2135.0
27.5°	2206.5	2187.8	2170.7	2142.8	2110.2	2086.9	2071.4	2060.5	2058.9	2057.4	2060.5
30°	2131.9	2110.2	2091.5	2062.0	2031.0	2007.7	1992.2	1979.8	1976.6	1973.5	1976.6
32.5°	2052.7	2032.5	2012.4	1981.3	1950.2	1927.0	1911.4	1899.0	1897.5	1895.9	1899.0
35°	1970.4	1948.7	1930.1	1900.6	1869.5	1846.2	1829.1	1818.3	1818.3	1818.3	1818.3
37.5°	1889.7	1868.0	1847.8	1818.3	1787.2	1763.9	1746.8	1736.0	1732.9	1731.3	1732.9
40°	1798.1	1779.4	1760.8	1732.9	1701.8	1678.5	1664.5	1652.1	1649.0	1645.9	1650.6
42.5°	1714.2	1695.6	1675.4	1649.0	1618.0	1594.7	1579.1	1568.3	1566.7	1565.2	1566.7
45°	1624.2	1602.4	1582.2	1557.4	1529.5	1507.7	1492.2	1481.3	1479.8	1478.2	1479.8
47.5°	1529.5	1512.4	1495.3	1470.4	1442.5	1420.8	1406.8	1394.4	1391.3	1388.2	1391.3
50°	1437.8	1419.2	1402.1	1378.8	1352.4	1332.3	1319.8	1309.0	1305.9	1304.3	1305.9
52.5°	1341.6	1324.5	1309.0	1285.7	1263.9	1243.7	1229.8	1220.5	1218.9	1217.4	1218.9
55°	1242.2	1226.7	1212.7	1194.1	1172.3	1153.7	1141.3	1130.4	1128.8	1125.7	1128.8
57.5°	1145.9	1133.5	1119.5	1099.3	1079.2	1062.1	1051.2	1041.9	1040.3	1038.8	1040.3
60°	1048.1	1035.7	1023.3	1006.2	986.0	968.9	959.6	951.8	948.7	947.2	948.7
62.5°	950.3	937.9	928.5	911.5	892.8	878.9	869.5	861.8	858.7	857.1	858.7
65°	849.4	838.5	827.6	812.1	798.1	787.2	777.9	770.2	767.1	765.5	765.5
67.5°	742.2	732.9	725.1	711.2	695.6	684.8	675.4	669.2	666.1	664.6	666.1
70°	638.2	630.4	622.7	611.8	599.4	590.0	583.8	577.6	574.5	573.0	573.0
72.5°	538.8	532.6	524.8	515.5	506.2	496.9	490.7	486.0	482.9	481.4	481.4
75°	437.9	431.7	428.6	420.8	411.5	405.3	399.1	396.0	392.8	392.8	392.8
77.5°	343.2	340.1	336.9	329.2	323.0	316.8	312.1	310.5	307.4	307.4	307.4
80°	253.1	251.5	250.0	245.3	239.1	232.9	229.8	228.3	226.7	226.7	226.7
82.5°	170.8	170.8	169.2	164.6	159.9	158.4	155.3	153.7	153.7	153.7	153.7
85°	97.8	97.8	97.8	96.3	93.2	93.2	90.1	88.5	87.0	87.0	87.0
87.5°	38.8	40.4	41.9	40.4	37.3	37.3	37.3	37.3	37.3	37.3	37.3
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):

	110°	120°	130°	140°	150°	160°	170°	180°	190°	200°	210°
0°	2644.3	2644.3	2644.3	2644.3	2644.3	2644.3	2644.3	2644.3	2644.3	2644.3	2644.3
2.5°	2617.9	2621.0	2622.6	2630.4	2639.7	2645.9	2638.1	2630.4	2642.8	2656.7	2656.7
5°	2591.5	2594.6	2599.3	2608.6	2621.0	2628.8	2625.7	2619.5	2638.1	2653.6	2655.2
7.5°	2558.9	2562.0	2568.2	2577.6	2593.1	2604.0	2604.0	2605.5	2622.6	2641.2	2645.9
10°	2510.8	2518.6	2527.9	2541.8	2557.4	2571.3	2576.0	2577.6	2599.3	2619.5	2625.7
12.5°	2465.8	2473.5	2482.8	2498.4	2517.0	2532.5	2537.2	2543.4	2566.7	2590.0	2599.3
15°	2414.5	2422.3	2433.2	2448.7	2468.9	2485.9	2495.3	2504.6	2527.9	2552.7	2563.6
17.5°	2354.0	2361.7	2372.6	2391.2	2414.5	2434.7	2445.6	2456.4	2482.8	2509.2	2520.1
20°	2282.5	2293.4	2308.9	2327.6	2354.0	2377.3	2389.7	2402.1	2430.0	2456.4	2468.9
22.5°	2209.6	2222.0	2239.1	2260.8	2288.7	2313.6	2329.1	2344.6	2372.6	2399.0	2413.0
25°	2136.6	2150.6	2167.6	2190.9	2217.3	2242.2	2260.8	2279.4	2307.4	2335.3	2349.3
27.5°	2062.0	2074.5	2091.5	2114.8	2144.3	2170.7	2189.4	2209.6	2237.5	2267.0	2281.0
30°	1979.8	1993.7	2009.3	2032.5	2065.2	2094.7	2113.3	2135.0	2163.0	2192.5	2206.5
32.5°	1900.6	1913.0	1928.5	1951.8	1984.4	2015.5	2035.6	2057.4	2085.3	2114.8	2127.3
35°	1818.3	1830.7	1847.8	1871.1	1903.7	1933.2	1953.4	1975.1	2001.5	2029.4	2043.4
37.5°	1737.5	1749.9	1767.0	1790.3	1821.4	1850.9	1871.1	1892.8	1919.2	1945.6	1958.0
40°	1653.7	1666.1	1680.1	1703.4	1734.4	1763.9	1782.6	1804.3	1830.7	1858.6	1871.1
42.5°	1568.3	1580.7	1597.8	1621.1	1650.6	1677.0	1697.2	1717.3	1742.2	1767.0	1779.4
45°	1482.9	1493.7	1510.8	1532.6	1560.5	1585.4	1605.5	1625.7	1649.0	1672.3	1684.7
47.5°	1394.4	1406.8	1420.8	1442.5	1470.4	1496.8	1517.0	1535.7	1557.4	1580.7	1591.6
50°	1309.0	1319.8	1333.8	1354.0	1380.4	1405.2	1422.3	1440.9	1461.1	1482.9	1492.2
52.5°	1220.5	1231.3	1245.3	1265.5	1287.2	1310.5	1326.0	1343.1	1363.3	1383.5	1392.8
55°	1130.4	1138.2	1150.6	1169.2	1192.5	1214.2	1229.8	1246.9	1263.9	1281.0	1291.9
57.5°	1041.9	1051.2	1063.6	1080.7	1100.9	1121.1	1135.1	1149.0	1166.1	1183.2	1191.0
60°	951.8	959.6	968.9	984.4	1004.6	1021.7	1035.7	1049.7	1063.6	1079.2	1086.9
62.5°	860.2	868.0	877.3	892.8	909.9	925.4	937.9	950.3	962.7	976.7	984.4
65°	768.6	776.4	785.7	796.6	810.5	824.5	836.9	849.4	858.7	868.0	875.7
67.5°	669.2	677.0	686.3	695.6	708.1	722.0	731.3	742.2	751.5	762.4	767.1
70°	576.1	582.3	591.6	599.4	610.2	619.5	627.3	636.6	642.8	652.2	659.9
72.5°	484.5	490.7	498.4	506.2	512.4	520.2	529.5	537.2	545.0	554.3	557.4
75°	396.0	399.1	405.3	411.5	417.7	423.9	428.6	434.8	441.0	447.2	451.8
77.5°	309.0	312.1	318.3	323.0	327.6	332.3	335.4	338.5	344.7	349.4	354.0
80°	226.7	229.8	234.5	239.1	243.8	248.4	248.4	248.4	256.2	262.4	264.0
82.5°	153.7	155.3	158.4	161.5	164.6	167.7	167.7	166.1	170.8	175.5	178.6
85°	88.5	90.1	93.2	93.2	94.7	94.7	94.7	94.7	97.8	102.5	105.6
87.5°	35.7	35.7	37.3	37.3	38.8	38.8	37.3	35.7	38.8	43.5	45.0
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):

	220°	230°	240°	250°	260°	270°	280°	290°	300°	310°	320°
0°	2644.3	2644.3	2644.3	2644.3	2644.3	2644.3	2644.3	2644.3	2644.3	2644.3	2644.3
2.5°	2650.5	2649.0	2653.6	2655.2	2658.3	2658.3	2659.9	2659.9	2656.7	2652.1	2653.6
5°	2652.1	2652.1	2656.7	2661.4	2667.6	2673.8	2669.2	2664.5	2661.4	2656.7	2655.2
7.5°	2644.3	2647.4	2652.1	2659.9	2667.6	2676.9	2670.7	2664.5	2656.7	2650.5	2647.4
10°	2625.7	2628.8	2636.6	2644.3	2652.1	2659.9	2653.6	2647.4	2641.2	2633.5	2630.4
12.5°	2602.4	2607.1	2616.4	2624.1	2631.9	2641.2	2633.5	2625.7	2617.9	2610.2	2605.5
15°	2568.2	2574.5	2585.3	2594.6	2605.5	2613.3	2607.1	2600.8	2591.5	2580.7	2572.9
17.5°	2524.8	2534.1	2544.9	2555.8	2565.1	2572.9	2568.2	2562.0	2551.2	2538.7	2529.4
20°	2476.6	2485.9	2495.3	2506.1	2517.0	2524.8	2518.6	2510.8	2499.9	2490.6	2481.3
22.5°	2420.7	2430.0	2440.9	2450.2	2459.5	2467.3	2459.5	2450.2	2440.9	2431.6	2422.3
25°	2357.1	2366.4	2378.8	2388.1	2394.3	2400.5	2394.3	2386.6	2377.3	2367.9	2358.6
27.5°	2290.3	2299.6	2312.0	2321.4	2327.6	2333.8	2327.6	2319.8	2310.5	2301.2	2291.9
30°	2215.8	2225.1	2237.5	2246.8	2251.5	2256.1	2249.9	2243.7	2236.0	2226.6	2217.3
32.5°	2136.6	2145.9	2155.2	2164.5	2172.3	2178.5	2172.3	2166.1	2156.8	2144.3	2135.0
35°	2052.7	2062.0	2072.9	2082.2	2091.5	2099.3	2090.0	2079.1	2071.4	2063.6	2055.8
37.5°	1964.2	1975.1	1987.5	1998.4	2001.5	2007.7	2001.5	1995.3	1987.5	1979.8	1970.4
40°	1877.3	1886.6	1897.5	1908.3	1913.0	1917.6	1911.4	1905.2	1895.9	1888.1	1878.8
42.5°	1787.2	1796.5	1805.8	1815.2	1821.4	1827.6	1821.4	1812.1	1805.8	1799.6	1791.9
45°	1694.0	1703.4	1711.1	1720.4	1725.1	1729.8	1723.5	1715.8	1709.6	1704.9	1697.2
47.5°	1599.3	1607.1	1614.9	1622.6	1625.7	1630.4	1624.2	1619.5	1614.9	1610.2	1604.0
50°	1500.0	1507.7	1517.0	1524.8	1526.3	1531.0	1524.8	1520.1	1515.5	1510.8	1506.2
52.5°	1402.1	1408.3	1416.1	1423.9	1427.0	1430.1	1423.9	1417.7	1413.0	1409.9	1405.2
55°	1299.6	1305.9	1313.6	1319.8	1324.5	1327.6	1321.4	1315.2	1310.5	1309.0	1304.3
57.5°	1197.2	1203.4	1211.1	1217.4	1220.5	1223.6	1217.4	1211.1	1208.0	1204.9	1201.8
60°	1093.1	1099.3	1105.6	1110.2	1113.3	1114.9	1108.7	1104.0	1102.4	1100.9	1097.8
62.5°	990.7	993.8	1000.0	1003.1	1006.2	1007.7	1003.1	1000.0	998.4	996.9	995.3
65°	883.5	891.3	895.9	899.0	899.0	900.6	895.9	894.4	892.8	891.3	888.2
67.5°	773.3	779.5	782.6	785.7	785.7	785.7	785.7	785.7	784.1	781.0	777.9
70°	667.7	672.3	675.4	677.0	677.0	677.0	673.9	672.3	673.9	673.9	672.3
72.5°	560.5	563.6	565.2	566.8	565.2	565.2	565.2	568.3	568.3	566.8	563.6
75°	456.5	459.6	461.2	462.7	461.2	461.2	461.2	464.3	462.7	462.7	461.2
77.5°	358.7	360.2	360.2	361.8	360.2	360.2	361.8	364.9	363.3	363.3	363.3
80°	265.5	265.5	265.5	267.1	265.5	265.5	267.1	270.2	268.6	268.6	268.6
82.5°	180.1	181.7	181.7	181.7	183.2	184.8	184.8	184.8	184.8	184.8	183.2
85°	107.1	108.7	107.1	107.1	107.1	107.1	108.7	110.2	110.2	110.2	110.2
87.5°	46.6	48.1	46.6	45.0	43.5	43.5	46.6	49.7	49.7	48.1	48.1
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: P709157
 CATALOG NUMBER: 4APN-35-37L830-UNV

CANDELA DISTRIBUTION (continued):

	330°	340°	350°	360°
0°	2644.3	2644.3	2644.3	2644.3
2.5°	2659.9	2659.9	2645.9	2631.9
5°	2658.3	2655.2	2639.7	2622.6
7.5°	2649.0	2644.3	2624.1	2605.5
10°	2627.2	2621.0	2599.3	2576.0
12.5°	2600.8	2591.5	2566.7	2543.4
15°	2566.7	2555.8	2529.4	2503.0
17.5°	2521.7	2509.2	2482.8	2454.9
20°	2473.5	2459.5	2430.0	2400.5
22.5°	2414.5	2402.1	2371.0	2341.5
25°	2350.9	2336.9	2305.8	2274.8
27.5°	2282.5	2267.0	2236.0	2206.5
30°	2208.0	2192.5	2161.4	2131.9
32.5°	2128.8	2116.4	2085.3	2052.7
35°	2048.1	2032.5	2001.5	1970.4
37.5°	1962.7	1948.7	1919.2	1889.7
40°	1872.6	1858.6	1827.6	1798.1
42.5°	1784.1	1771.7	1742.2	1714.2
45°	1689.4	1677.0	1649.0	1624.2
47.5°	1594.7	1582.2	1555.9	1529.5
50°	1498.4	1486.0	1461.1	1437.8
52.5°	1397.5	1388.2	1364.9	1341.6
55°	1296.5	1285.7	1262.4	1242.2
57.5°	1195.6	1187.9	1166.1	1145.9
60°	1091.6	1082.3	1065.2	1048.1
62.5°	990.7	982.9	965.8	950.3
65°	883.5	877.3	863.3	849.4
67.5°	773.3	768.6	754.6	742.2
70°	667.7	659.9	649.0	638.2
72.5°	560.5	557.4	548.1	538.8
75°	458.1	455.0	445.6	437.9
77.5°	361.8	358.7	350.9	343.2
80°	267.1	265.5	259.3	253.1
82.5°	183.2	181.7	177.0	170.8
85°	110.2	107.1	102.5	97.8
87.5°	48.1	46.6	41.9	38.8
90°	0.0	0.0	0.0	0.0

(END OF REPORT)