

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: P709163

Luminaire Tested: **4APN-35-37L835-UNV**

Issue Date: 09/12/2023



Test Information

Test Method: LM-79-08
Report Number: P709163
Test Lab: INNOVATION CENTER(G2)
Issue Date: 09/12/2023
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: FAIL-SAFE
Catalog Number: 4APN-35-37L835-UNV
Description: ArcMed Patient Recessed 4 FT x6 IN Fixture Ambient and Exam Light
Light Source: 3500K CCT, 80 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

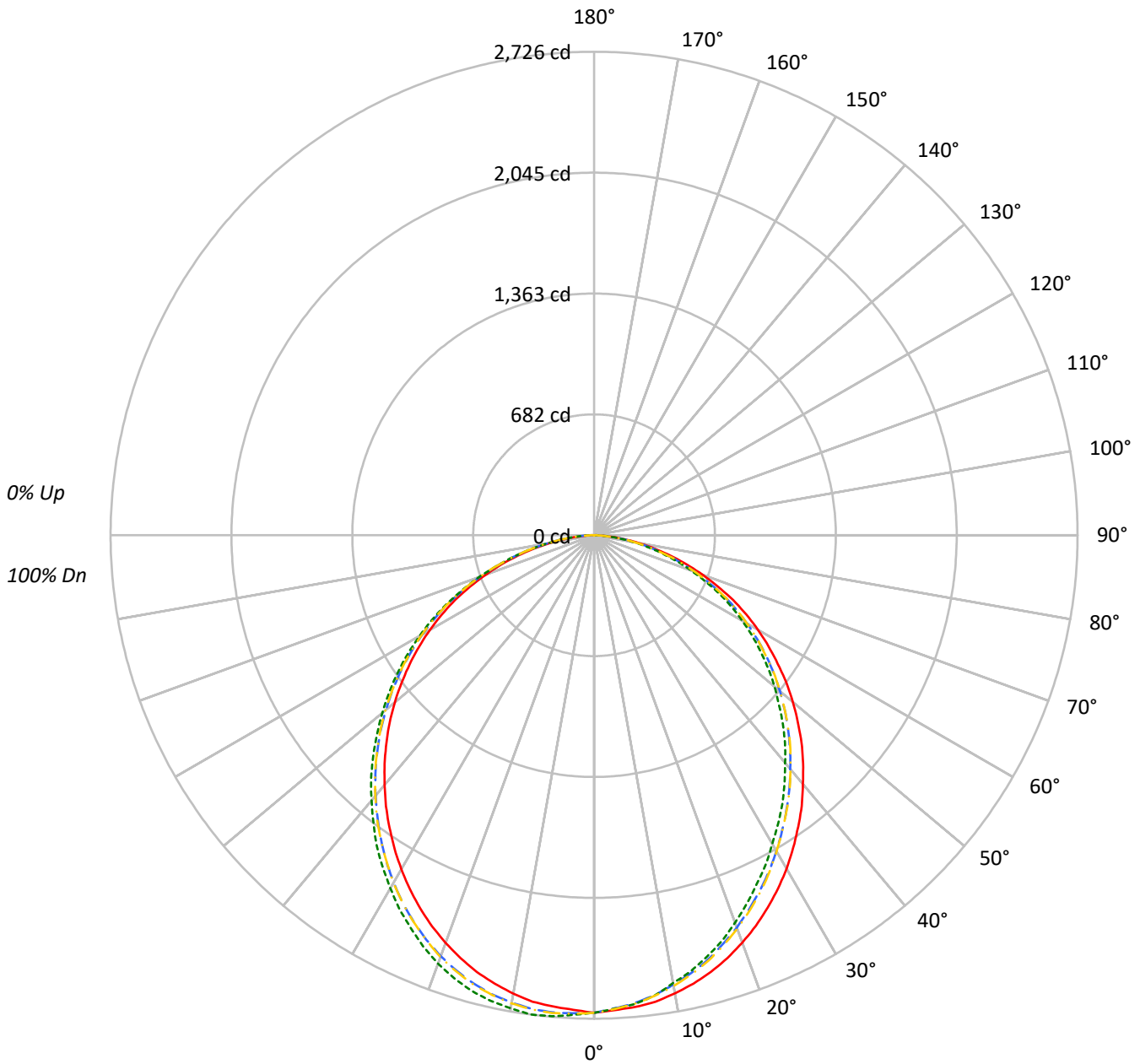
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 7116.6 lumens
Efficiency: N/A
Efficacy: 87.9 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				
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°	24840	24840	24840	24840
5°	24729	24569	24700	25212
10°	24571	24023	24586	25371
15°	24341	23496	24357	25414
20°	23997	22817	24013	25238
25°	23577	22097	23626	24881
30°	23124	21406	23158	24472
35°	22596	20850	22649	24074
40°	22049	20183	22125	23515
45°	21576	19637	21597	22979
50°	21012	19061	21058	22374
55°	20343	18437	20420	21743
60°	19691	17795	19720	20945
65°	18879	17015	18879	20017
70°	17529	15738	17486	18594
75°	15892	14259	15781	16736
80°	13692	12263	13437	14361
85°	10544	9369	10205	11549



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	254.3	3.6
10°-20°	719.9	10.1
20°-30°	1065.8	15.0
30°-40°	1250.4	17.6
40°-50°	1267.3	17.8
50°-60°	1124.7	15.8
60°-70°	844.4	11.9
70°-80°	468.9	6.6
80°-90°	121.1	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°	2039.9	28.7
0°-40°	3290.3	46.2
0°-60°	5682.3	79.8
0°-90°	7116.6	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	7116.6	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	2692	2692	2692	2692	2692	
5°	2670	2653	2667	2722	2670	253
15°	2548	2460	2550	2661	2548	718
25°	2316	2171	2321	2444	2316	1067
35°	2006	1851	2011	2137	2006	1256
45°	1654	1505	1655	1761	1654	1275
55°	1265	1146	1270	1352	1265	1132
65°	865	779	865	917	865	853
75°	446	400	443	470	446	474
85°	100	88	96	109	100	120
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°	2692.3	2692.3	2692.3	2692.3	2692.3	2692.3	2692.3	2692.3	2692.3	2692.3	2692.3
2.5°	2679.6	2686.0	2693.9	2686.0	2673.3	2667.0	2667.0	2665.4	2670.1	2671.7	2670.1
5°	2670.1	2673.3	2674.9	2665.4	2651.2	2643.3	2640.1	2638.5	2644.9	2652.8	2644.9
7.5°	2652.8	2651.2	2649.6	2636.9	2621.1	2610.1	2605.3	2603.7	2610.1	2618.0	2611.7
10°	2622.7	2621.1	2616.4	2600.6	2580.0	2565.8	2561.1	2556.3	2561.1	2564.2	2561.1
12.5°	2589.5	2583.2	2576.9	2559.5	2537.4	2521.5	2513.6	2507.3	2513.6	2518.4	2515.2
15°	2548.4	2538.9	2527.9	2508.9	2486.8	2469.4	2459.9	2453.6	2458.3	2459.9	2459.9
17.5°	2499.4	2488.3	2477.3	2453.6	2426.7	2407.7	2396.7	2388.7	2395.1	2398.2	2398.2
20°	2444.1	2431.4	2417.2	2391.9	2363.5	2342.9	2330.3	2320.8	2322.3	2323.9	2323.9
22.5°	2384.0	2368.2	2350.8	2323.9	2293.9	2271.8	2259.1	2248.0	2248.0	2249.6	2249.6
25°	2316.0	2298.6	2281.2	2254.4	2222.8	2199.0	2183.2	2172.2	2172.2	2170.6	2173.7
27.5°	2246.5	2227.5	2210.1	2181.6	2148.4	2124.7	2108.9	2097.9	2096.3	2094.7	2097.9
30°	2170.6	2148.4	2129.5	2099.4	2067.8	2044.1	2028.3	2015.7	2012.5	2009.3	2012.5
32.5°	2090.0	2069.4	2048.9	2017.2	1985.6	1961.9	1946.1	1933.4	1931.9	1930.3	1933.4
35°	2006.2	1984.0	1965.1	1935.0	1903.4	1879.7	1862.3	1851.2	1851.2	1851.2	1851.2
37.5°	1924.0	1901.8	1881.3	1851.2	1819.6	1795.9	1778.5	1767.5	1764.3	1762.7	1764.3
40°	1830.7	1811.7	1792.7	1764.3	1732.7	1709.0	1694.7	1682.1	1678.9	1675.8	1680.5
42.5°	1745.3	1726.3	1705.8	1678.9	1647.3	1623.6	1607.8	1596.7	1595.1	1593.6	1595.1
45°	1653.6	1631.5	1610.9	1585.6	1557.2	1535.1	1519.2	1508.2	1506.6	1505.0	1506.6
47.5°	1557.2	1539.8	1522.4	1497.1	1468.7	1446.5	1432.3	1419.7	1416.5	1413.3	1416.5
50°	1463.9	1444.9	1427.6	1403.8	1377.0	1356.4	1343.8	1332.7	1329.5	1328.0	1329.5
52.5°	1365.9	1348.5	1332.7	1309.0	1286.9	1266.3	1252.1	1242.6	1241.0	1239.4	1241.0
55°	1264.7	1248.9	1234.7	1215.7	1193.6	1174.6	1162.0	1150.9	1149.3	1146.2	1149.3
57.5°	1166.7	1154.1	1139.8	1119.3	1098.7	1081.3	1070.3	1060.8	1059.2	1057.6	1059.2
60°	1067.1	1054.5	1041.8	1024.4	1003.9	986.5	977.0	969.1	965.9	964.4	965.9
62.5°	967.5	954.9	945.4	928.0	909.0	894.8	885.3	877.4	874.2	872.7	874.2
65°	864.8	853.7	842.6	826.8	812.6	801.5	792.0	784.1	781.0	779.4	779.4
67.5°	755.7	746.2	738.3	724.1	708.2	697.2	687.7	681.4	678.2	676.6	678.2
70°	649.8	641.8	633.9	622.9	610.2	600.7	594.4	588.1	584.9	583.4	583.4
72.5°	548.6	542.3	534.3	524.9	515.4	505.9	499.6	494.8	491.7	490.1	490.1
75°	445.8	439.5	436.3	428.4	418.9	412.6	406.3	403.1	400.0	400.0	400.0
77.5°	349.4	346.2	343.1	335.2	328.8	322.5	317.8	316.2	313.0	313.0	313.0
80°	257.7	256.1	254.5	249.8	243.5	237.1	234.0	232.4	230.8	230.8	230.8
82.5°	173.9	173.9	172.3	167.6	162.8	161.3	158.1	156.5	156.5	156.5	156.5
85°	99.6	99.6	99.6	98.0	94.9	94.9	91.7	90.1	88.5	88.5	88.5
87.5°	39.5	41.1	42.7	41.1	37.9	37.9	37.9	37.9	37.9	37.9	37.9
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°	2692.3	2692.3	2692.3	2692.3	2692.3	2692.3	2692.3	2692.3	2692.3	2692.3	2692.3
2.5°	2665.4	2668.6	2670.1	2678.1	2687.5	2693.9	2686.0	2678.1	2690.7	2704.9	2704.9
5°	2638.5	2641.7	2646.4	2655.9	2668.6	2676.5	2673.3	2667.0	2686.0	2701.8	2703.3
7.5°	2605.3	2608.5	2614.8	2624.3	2640.1	2651.2	2651.2	2652.8	2670.1	2689.1	2693.9
10°	2556.3	2564.2	2573.7	2587.9	2603.7	2618.0	2622.7	2624.3	2646.4	2667.0	2673.3
12.5°	2510.5	2518.4	2527.9	2543.7	2562.6	2578.5	2583.2	2589.5	2613.2	2636.9	2646.4
15°	2458.3	2466.2	2477.3	2493.1	2513.6	2531.0	2540.5	2550.0	2573.7	2599.0	2610.1
17.5°	2396.7	2404.6	2415.6	2434.6	2458.3	2478.9	2489.9	2501.0	2527.9	2554.7	2565.8
20°	2323.9	2335.0	2350.8	2369.8	2396.7	2420.4	2433.0	2445.7	2474.1	2501.0	2513.6
22.5°	2249.6	2262.3	2279.7	2301.8	2330.3	2355.5	2371.4	2387.2	2415.6	2442.5	2456.7
25°	2175.3	2189.6	2206.9	2230.7	2257.5	2282.8	2301.8	2320.8	2349.2	2377.7	2391.9
27.5°	2099.4	2112.1	2129.5	2153.2	2183.2	2210.1	2229.1	2249.6	2278.1	2308.1	2322.3
30°	2015.7	2029.9	2045.7	2069.4	2102.6	2132.6	2151.6	2173.7	2202.2	2232.2	2246.5
32.5°	1935.0	1947.7	1963.5	1987.2	2020.4	2052.0	2072.6	2094.7	2123.2	2153.2	2165.8
35°	1851.2	1863.9	1881.3	1905.0	1938.2	1968.2	1988.8	2010.9	2037.8	2066.2	2080.5
37.5°	1769.0	1781.7	1799.1	1822.8	1854.4	1884.4	1905.0	1927.1	1954.0	1980.9	1993.5
40°	1683.7	1696.3	1710.5	1734.3	1765.9	1795.9	1814.9	1837.0	1863.9	1892.3	1905.0
42.5°	1596.7	1609.4	1626.8	1650.5	1680.5	1707.4	1727.9	1748.5	1773.8	1799.1	1811.7
45°	1509.8	1520.8	1538.2	1560.4	1588.8	1614.1	1634.7	1655.2	1678.9	1702.6	1715.3
47.5°	1419.7	1432.3	1446.5	1468.7	1497.1	1524.0	1544.5	1563.5	1585.6	1609.4	1620.4
50°	1332.7	1343.8	1358.0	1378.5	1405.4	1430.7	1448.1	1467.1	1487.6	1509.8	1519.2
52.5°	1242.6	1253.7	1267.9	1288.4	1310.6	1334.3	1350.1	1367.5	1388.0	1408.6	1418.1
55°	1150.9	1158.8	1171.4	1190.4	1214.1	1236.3	1252.1	1269.5	1286.9	1304.2	1315.3
57.5°	1060.8	1070.3	1082.9	1100.3	1120.9	1141.4	1155.6	1169.9	1187.3	1204.6	1212.6
60°	969.1	977.0	986.5	1002.3	1022.8	1040.2	1054.5	1068.7	1082.9	1098.7	1106.6
62.5°	875.8	883.7	893.2	909.0	926.4	942.2	954.9	967.5	980.2	994.4	1002.3
65°	782.5	790.5	799.9	811.0	825.2	839.5	852.1	864.8	874.2	883.7	891.6
67.5°	681.4	689.3	698.8	708.2	720.9	735.1	744.6	755.7	765.2	776.2	781.0
70°	586.5	592.8	602.3	610.2	621.3	630.8	638.7	648.2	654.5	664.0	671.9
72.5°	493.2	499.6	507.5	515.4	521.7	529.6	539.1	547.0	554.9	564.4	567.5
75°	403.1	406.3	412.6	418.9	425.3	431.6	436.3	442.7	449.0	455.3	460.0
77.5°	314.6	317.8	324.1	328.8	333.6	338.3	341.5	344.6	351.0	355.7	360.4
80°	230.8	234.0	238.7	243.5	248.2	252.9	252.9	252.9	260.8	267.2	268.8
82.5°	156.5	158.1	161.3	164.4	167.6	170.7	170.7	169.2	173.9	178.6	181.8
85°	90.1	91.7	94.9	94.9	96.4	96.4	96.4	96.4	99.6	104.3	107.5
87.5°	36.4	36.4	37.9	37.9	39.5	39.5	37.9	36.4	39.5	44.3	45.8
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):

	220°	230°	240°	250°	260°	270°	280°	290°	300°	310°	320°
0°	2692.3	2692.3	2692.3	2692.3	2692.3	2692.3	2692.3	2692.3	2692.3	2692.3	2692.3
2.5°	2698.6	2697.0	2701.8	2703.3	2706.5	2706.5	2708.1	2708.1	2704.9	2700.2	2701.8
5°	2700.2	2700.2	2704.9	2709.7	2716.0	2722.3	2717.6	2712.8	2709.7	2704.9	2703.3
7.5°	2692.3	2695.4	2700.2	2708.1	2716.0	2725.5	2719.2	2712.8	2704.9	2698.6	2695.4
10°	2673.3	2676.5	2684.4	2692.3	2700.2	2708.1	2701.8	2695.4	2689.1	2681.2	2678.1
12.5°	2649.6	2654.3	2663.8	2671.7	2679.6	2689.1	2681.2	2673.3	2665.4	2657.5	2652.8
15°	2614.8	2621.1	2632.2	2641.7	2652.8	2660.7	2654.3	2648.0	2638.5	2627.5	2619.6
17.5°	2570.5	2580.0	2591.1	2602.2	2611.7	2619.6	2614.8	2608.5	2597.4	2584.8	2575.3
20°	2521.5	2531.0	2540.5	2551.6	2562.6	2570.5	2564.2	2556.3	2545.3	2535.8	2526.3
22.5°	2464.6	2474.1	2485.2	2494.7	2504.2	2512.1	2504.2	2494.7	2485.2	2475.7	2466.2
25°	2399.8	2409.3	2421.9	2431.4	2437.8	2444.1	2437.8	2429.8	2420.4	2410.9	2401.4
27.5°	2331.8	2341.3	2354.0	2363.5	2369.8	2376.1	2369.8	2361.9	2352.4	2342.9	2333.4
30°	2256.0	2265.4	2278.1	2287.6	2292.3	2297.1	2290.7	2284.4	2276.5	2267.0	2257.5
32.5°	2175.3	2184.8	2194.3	2203.8	2211.7	2218.0	2211.7	2205.4	2195.9	2183.2	2173.7
35°	2090.0	2099.4	2110.5	2120.0	2129.5	2137.4	2127.9	2116.8	2108.9	2101.0	2093.1
37.5°	1999.8	2010.9	2023.6	2034.6	2037.8	2044.1	2037.8	2031.5	2023.6	2015.7	2006.2
40°	1911.3	1920.8	1931.9	1942.9	1947.7	1952.4	1946.1	1939.8	1930.3	1922.4	1912.9
42.5°	1819.6	1829.1	1838.6	1848.1	1854.4	1860.7	1854.4	1844.9	1838.6	1832.3	1824.4
45°	1724.8	1734.3	1742.2	1751.6	1756.4	1761.1	1754.8	1746.9	1740.6	1735.8	1727.9
47.5°	1628.3	1636.2	1644.1	1652.0	1655.2	1659.9	1653.6	1648.9	1644.1	1639.4	1633.1
50°	1527.2	1535.1	1544.5	1552.4	1554.0	1558.8	1552.4	1547.7	1543.0	1538.2	1533.5
52.5°	1427.6	1433.9	1441.8	1449.7	1452.9	1456.0	1449.7	1443.4	1438.6	1435.5	1430.7
55°	1323.2	1329.5	1337.4	1343.8	1348.5	1351.7	1345.3	1339.0	1334.3	1332.7	1328.0
57.5°	1218.9	1225.2	1233.1	1239.4	1242.6	1245.8	1239.4	1233.1	1229.9	1226.8	1223.6
60°	1113.0	1119.3	1125.6	1130.3	1133.5	1135.1	1128.8	1124.0	1122.4	1120.9	1117.7
62.5°	1008.6	1011.8	1018.1	1021.3	1024.4	1026.0	1021.3	1018.1	1016.5	1014.9	1013.4
65°	899.5	907.4	912.2	915.3	915.3	916.9	912.2	910.6	909.0	907.4	904.3
67.5°	787.3	793.6	796.8	799.9	799.9	799.9	799.9	799.9	798.4	795.2	792.0
70°	679.8	684.5	687.7	689.3	689.3	689.3	686.1	684.5	686.1	686.1	684.5
72.5°	570.7	573.9	575.4	577.0	575.4	575.4	575.4	578.6	578.6	577.0	573.9
75°	464.8	467.9	469.5	471.1	469.5	469.5	469.5	472.7	471.1	471.1	469.5
77.5°	365.2	366.8	366.8	368.4	366.8	366.8	368.4	371.5	369.9	369.9	369.9
80°	270.3	270.3	270.3	271.9	270.3	270.3	271.9	275.1	273.5	273.5	273.5
82.5°	183.4	185.0	185.0	185.0	186.5	188.1	188.1	188.1	188.1	188.1	186.5
85°	109.1	110.7	109.1	109.1	109.1	109.1	110.7	112.2	112.2	112.2	112.2
87.5°	47.4	49.0	47.4	45.8	44.3	44.3	47.4	50.6	50.6	49.0	49.0
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: P709163
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CANDELA DISTRIBUTION (continued):

	330°	340°	350°	360°
0°	2692.3	2692.3	2692.3	2692.3
2.5°	2708.1	2708.1	2693.9	2679.6
5°	2706.5	2703.3	2687.5	2670.1
7.5°	2697.0	2692.3	2671.7	2652.8
10°	2674.9	2668.6	2646.4	2622.7
12.5°	2648.0	2638.5	2613.2	2589.5
15°	2613.2	2602.2	2575.3	2548.4
17.5°	2567.4	2554.7	2527.9	2499.4
20°	2518.4	2504.2	2474.1	2444.1
22.5°	2458.3	2445.7	2414.0	2384.0
25°	2393.5	2379.3	2347.6	2316.0
27.5°	2323.9	2308.1	2276.5	2246.5
30°	2248.0	2232.2	2200.6	2170.6
32.5°	2167.4	2154.8	2123.2	2090.0
35°	2085.2	2069.4	2037.8	2006.2
37.5°	1998.3	1984.0	1954.0	1924.0
40°	1906.6	1892.3	1860.7	1830.7
42.5°	1816.5	1803.8	1773.8	1745.3
45°	1720.0	1707.4	1678.9	1653.6
47.5°	1623.6	1610.9	1584.1	1557.2
50°	1525.6	1512.9	1487.6	1463.9
52.5°	1422.8	1413.3	1389.6	1365.9
55°	1320.1	1309.0	1285.3	1264.7
57.5°	1217.3	1209.4	1187.3	1166.7
60°	1111.4	1101.9	1084.5	1067.1
62.5°	1008.6	1000.7	983.3	967.5
65°	899.5	893.2	879.0	864.8
67.5°	787.3	782.5	768.3	755.7
70°	679.8	671.9	660.8	649.8
72.5°	570.7	567.5	558.1	548.6
75°	466.4	463.2	453.7	445.8
77.5°	368.4	365.2	357.3	349.4
80°	271.9	270.3	264.0	257.7
82.5°	186.5	185.0	180.2	173.9
85°	112.2	109.1	104.3	99.6
87.5°	49.0	47.4	42.7	39.5
90°	0.0	0.0	0.0	0.0

(END OF REPORT)