

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: P709174

Luminaire Tested: **4APN-39-42L850-UNV**

Issue Date: 09/12/2023



Test Information

Test Method: LM-79-08
Report Number: P709174
Test Lab: INNOVATION CENTER(G2)
Issue Date: 09/12/2023
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: FAIL-SAFE
Catalog Number: 4APN-39-42L850-UNV
Description: ArcMed Patient Recessed 4 FT x6 IN Fixture Ambient and Exam Light
Light Source: 5000K CCT, 80 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

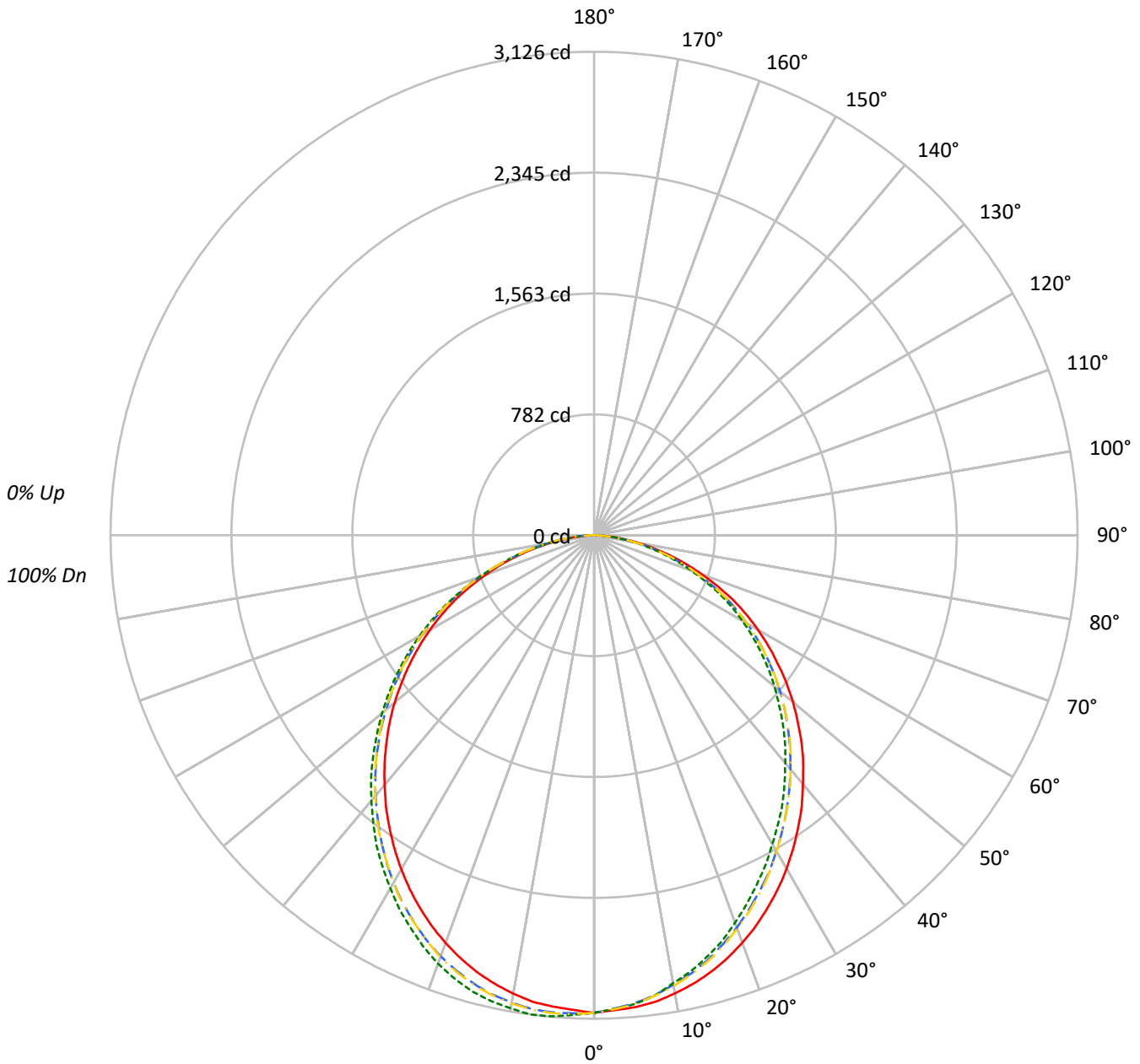
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 8162.5 lumens
Efficiency: N/A
Efficacy: 88.7 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): 92
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	0
RCR																		
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100
1	109	104	100	96	106	102	98	95	98	95	92	94	91	89	90	88	86	84
2	99	91	84	79	97	89	83	78	86	80	76	82	78	74	79	76	72	70
3	90	80	72	66	88	78	71	65	75	69	64	73	67	63	70	66	62	59
4	83	71	62	56	81	70	62	55	67	60	54	65	59	54	63	57	53	51
5	76	64	55	48	74	62	54	48	60	53	47	58	52	47	56	51	46	44
6	71	57	48	42	69	56	48	42	55	47	41	53	46	41	51	45	41	39
7	65	52	43	37	64	51	43	37	50	42	37	48	41	36	47	41	36	34
8	61	48	39	33	59	47	39	33	45	38	33	44	38	33	43	37	32	31
9	57	44	35	30	56	43	35	30	42	35	30	41	34	30	40	34	29	28
10	53	40	32	27	52	40	32	27	39	32	27	38	31	27	37	31	27	25

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°	270°
0°	28490	28490	28490	28490
5°	28363	28179	28330	28918
10°	28181	27554	28199	29100
15°	27919	26949	27936	29149
20°	27523	26170	27541	28947
25°	27042	25344	27097	28537
30°	26523	24552	26561	28068
35°	25916	23915	25977	27612
40°	25289	23148	25377	26970
45°	24746	22523	24770	26355
50°	24099	21862	24153	25661
55°	23333	21146	23420	24937
60°	22584	20410	22617	24023
65°	21652	19515	21652	22960
70°	20102	18049	20054	21327
75°	18226	16351	18098	19196
80°	15706	14064	15413	16476
85°	12089	10745	11708	13243



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	291.6	3.6
10°-20°	825.6	10.1
20°-30°	1222.4	15.0
30°-40°	1434.2	17.6
40°-50°	1453.5	17.8
50°-60°	1290.0	15.8
60°-70°	968.5	11.9
70°-80°	537.8	6.6
80°-90°	138.9	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°	2339.7	28.7
0°-40°	3773.9	46.2
0°-60°	6517.4	79.8
0°-90°	8162.5	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	8162.5	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	3088	3088	3088	3088	3088	
5°	3062	3043	3059	3122	3062	291
15°	2923	2821	2925	3052	2923	824
25°	2656	2490	2662	2803	2656	1224
35°	2301	2123	2306	2452	2301	1440
45°	1897	1726	1898	2020	1897	1462
55°	1451	1315	1456	1550	1451	1299
65°	992	894	992	1052	992	978
75°	511	459	508	538	511	543
85°	114	102	111	125	114	138
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°	3087.9	3087.9	3087.9	3087.9	3087.9	3087.9	3087.9	3087.9	3087.9	3087.9	3087.9
2.5°	3073.4	3080.7	3089.7	3080.7	3066.2	3058.9	3058.9	3057.1	3062.5	3064.4	3062.5
5°	3062.5	3066.2	3068.0	3057.1	3040.8	3031.7	3028.1	3026.3	3033.5	3042.6	3033.5
7.5°	3042.6	3040.8	3039.0	3024.5	3006.3	2993.6	2988.2	2986.4	2993.6	3002.7	2995.4
10°	3008.1	3006.3	3000.9	2982.8	2959.2	2942.9	2937.4	2932.0	2937.4	2941.1	2937.4
12.5°	2970.1	2962.8	2955.6	2935.6	2910.2	2892.1	2883.0	2875.8	2883.0	2888.5	2884.8
15°	2922.9	2912.0	2899.3	2877.6	2852.2	2832.3	2821.4	2814.1	2819.6	2821.4	2821.4
17.5°	2866.7	2854.0	2841.3	2814.1	2783.3	2761.5	2748.9	2739.8	2747.0	2750.7	2750.7
20°	2803.2	2788.7	2772.4	2743.4	2710.8	2687.2	2672.7	2661.8	2663.6	2665.4	2665.4
22.5°	2734.3	2716.2	2696.3	2665.4	2631.0	2605.6	2591.1	2578.4	2578.4	2580.2	2580.2
25°	2656.4	2636.4	2616.5	2585.7	2549.4	2522.2	2504.1	2491.4	2491.4	2489.6	2493.2
27.5°	2576.6	2554.8	2534.9	2502.3	2464.2	2437.0	2418.8	2406.2	2404.3	2402.5	2406.2
30°	2489.6	2464.2	2442.4	2408.0	2371.7	2344.5	2326.4	2311.9	2308.2	2304.6	2308.2
32.5°	2397.1	2373.5	2349.9	2313.7	2277.4	2250.2	2232.1	2217.6	2215.8	2213.9	2217.6
35°	2301.0	2275.6	2253.8	2219.4	2183.1	2155.9	2136.0	2123.3	2123.3	2123.3	2123.3
37.5°	2206.7	2181.3	2157.7	2123.3	2087.0	2059.8	2039.9	2027.2	2023.6	2021.7	2023.6
40°	2099.7	2078.0	2056.2	2023.6	1987.3	1960.1	1943.8	1929.3	1925.6	1922.0	1927.5
42.5°	2001.8	1980.0	1956.5	1925.6	1889.4	1862.2	1844.1	1831.4	1829.5	1827.7	1829.5
45°	1896.6	1871.2	1847.7	1818.7	1786.0	1760.6	1742.5	1729.8	1728.0	1726.2	1728.0
47.5°	1786.0	1766.1	1746.1	1717.1	1684.5	1659.1	1642.8	1628.3	1624.7	1621.0	1624.7
50°	1679.0	1657.3	1637.3	1610.1	1579.3	1555.7	1541.2	1528.5	1524.9	1523.1	1524.9
52.5°	1566.6	1546.7	1528.5	1501.4	1476.0	1452.4	1436.1	1425.2	1423.4	1421.6	1423.4
55°	1450.6	1432.4	1416.1	1394.4	1369.0	1347.2	1332.7	1320.0	1318.2	1314.6	1318.2
57.5°	1338.2	1323.7	1307.3	1283.8	1260.2	1240.2	1227.6	1216.7	1214.9	1213.0	1214.9
60°	1223.9	1209.4	1194.9	1175.0	1151.4	1131.5	1120.6	1111.5	1107.9	1106.1	1107.9
62.5°	1109.7	1095.2	1084.3	1064.4	1042.6	1026.3	1015.4	1006.3	1002.7	1000.9	1002.7
65°	991.8	979.1	966.4	948.3	932.0	919.3	908.4	899.4	895.7	893.9	893.9
67.5°	866.7	855.8	846.8	830.5	812.3	799.6	788.8	781.5	777.9	776.1	777.9
70°	745.2	736.2	727.1	714.4	699.9	689.0	681.8	674.5	670.9	669.1	669.1
72.5°	629.2	621.9	612.9	602.0	591.1	580.2	573.0	567.5	563.9	562.1	562.1
75°	511.3	504.1	500.5	491.4	480.5	473.3	466.0	462.4	458.7	458.7	458.7
77.5°	400.7	397.1	393.5	384.4	377.2	369.9	364.5	362.6	359.0	359.0	359.0
80°	295.6	293.7	291.9	286.5	279.2	272.0	268.4	266.5	264.7	264.7	264.7
82.5°	199.5	199.5	197.6	192.2	186.8	184.9	181.3	179.5	179.5	179.5	179.5
85°	114.2	114.2	114.2	112.4	108.8	108.8	105.2	103.4	101.5	101.5	101.5
87.5°	45.3	47.1	49.0	47.1	43.5	43.5	43.5	43.5	43.5	43.5	43.5
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°	3087.9	3087.9	3087.9	3087.9	3087.9	3087.9	3087.9	3087.9	3087.9	3087.9	3087.9
2.5°	3057.1	3060.7	3062.5	3071.6	3082.5	3089.7	3080.7	3071.6	3086.1	3102.4	3102.4
5°	3026.3	3029.9	3035.3	3046.2	3060.7	3069.8	3066.2	3058.9	3080.7	3098.8	3100.6
7.5°	2988.2	2991.8	2999.1	3010.0	3028.1	3040.8	3040.8	3042.6	3062.5	3084.3	3089.7
10°	2932.0	2941.1	2951.9	2968.3	2986.4	3002.7	3008.1	3010.0	3035.3	3058.9	3066.2
12.5°	2879.4	2888.5	2899.3	2917.5	2939.2	2957.4	2962.8	2970.1	2997.3	3024.5	3035.3
15°	2819.6	2828.6	2841.3	2859.5	2883.0	2903.0	2913.9	2924.7	2951.9	2980.9	2993.6
17.5°	2748.9	2757.9	2770.6	2792.4	2819.6	2843.1	2855.8	2868.5	2899.3	2930.2	2942.9
20°	2665.4	2678.1	2696.3	2718.0	2748.9	2776.0	2790.6	2805.1	2837.7	2868.5	2883.0
22.5°	2580.2	2594.7	2614.7	2640.1	2672.7	2701.7	2719.8	2738.0	2770.6	2801.4	2817.8
25°	2495.0	2511.3	2531.3	2558.5	2589.3	2618.3	2640.1	2661.8	2694.5	2727.1	2743.4
27.5°	2408.0	2422.5	2442.4	2469.6	2504.1	2534.9	2556.6	2580.2	2612.9	2647.3	2663.6
30°	2311.9	2328.2	2346.3	2373.5	2411.6	2446.0	2467.8	2493.2	2525.8	2560.3	2576.6
32.5°	2219.4	2233.9	2252.0	2279.2	2317.3	2353.6	2377.1	2402.5	2435.2	2469.6	2484.1
35°	2123.3	2137.8	2157.7	2184.9	2223.0	2257.5	2281.0	2306.4	2337.2	2369.9	2386.2
37.5°	2029.0	2043.5	2063.5	2090.6	2126.9	2161.4	2184.9	2210.3	2241.1	2272.0	2286.5
40°	1931.1	1945.6	1961.9	1989.1	2025.4	2059.8	2081.6	2107.0	2137.8	2170.4	2184.9
42.5°	1831.4	1845.9	1865.8	1893.0	1927.5	1958.3	1981.9	2005.4	2034.4	2063.5	2078.0
45°	1731.6	1744.3	1764.3	1789.7	1822.3	1851.3	1874.9	1898.4	1925.6	1952.8	1967.3
47.5°	1628.3	1642.8	1659.1	1684.5	1717.1	1747.9	1771.5	1793.3	1818.7	1845.9	1858.6
50°	1528.5	1541.2	1557.6	1581.1	1612.0	1641.0	1660.9	1682.7	1706.2	1731.6	1742.5
52.5°	1425.2	1437.9	1454.2	1477.8	1503.2	1530.4	1548.5	1568.4	1592.0	1615.6	1626.5
55°	1320.0	1329.1	1343.6	1365.4	1392.6	1417.9	1436.1	1456.0	1476.0	1495.9	1508.6
57.5°	1216.7	1227.6	1242.1	1262.0	1285.6	1309.1	1325.5	1341.8	1361.7	1381.7	1390.7
60°	1111.5	1120.6	1131.5	1149.6	1173.2	1193.1	1209.4	1225.7	1242.1	1260.2	1269.3
62.5°	1004.5	1013.6	1024.5	1042.6	1062.6	1080.7	1095.2	1109.7	1124.2	1140.5	1149.6
65°	897.5	906.6	917.5	930.2	946.5	962.8	977.3	991.8	1002.7	1013.6	1022.7
67.5°	781.5	790.6	801.4	812.3	826.8	843.1	854.0	866.7	877.6	890.3	895.7
70°	672.7	680.0	690.8	699.9	712.6	723.5	732.5	743.4	750.7	761.6	770.6
72.5°	565.7	573.0	582.0	591.1	598.4	607.4	618.3	627.4	636.4	647.3	650.9
75°	462.4	466.0	473.3	480.5	487.8	495.0	500.5	507.7	515.0	522.2	527.6
77.5°	360.8	364.5	371.7	377.2	382.6	388.0	391.7	395.3	402.5	408.0	413.4
80°	264.7	268.4	273.8	279.2	284.7	290.1	290.1	290.1	299.2	306.4	308.2
82.5°	179.5	181.3	184.9	188.6	192.2	195.8	195.8	194.0	199.5	204.9	208.5
85°	103.4	105.2	108.8	108.8	110.6	110.6	110.6	110.6	114.2	119.7	123.3
87.5°	41.7	41.7	43.5	43.5	45.3	45.3	43.5	41.7	45.3	50.8	52.6
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°	3087.9	3087.9	3087.9	3087.9	3087.9	3087.9	3087.9	3087.9	3087.9	3087.9	3087.9
2.5°	3095.2	3093.4	3098.8	3100.6	3104.2	3104.2	3106.1	3106.1	3102.4	3097.0	3098.8
5°	3097.0	3097.0	3102.4	3107.9	3115.1	3122.4	3116.9	3111.5	3107.9	3102.4	3100.6
7.5°	3087.9	3091.5	3097.0	3106.1	3115.1	3126.0	3118.7	3111.5	3102.4	3095.2	3091.5
10°	3066.2	3069.8	3078.9	3087.9	3097.0	3106.1	3098.8	3091.5	3084.3	3075.2	3071.6
12.5°	3039.0	3044.4	3055.3	3064.4	3073.4	3084.3	3075.2	3066.2	3057.1	3048.0	3042.6
15°	2999.1	3006.3	3019.0	3029.9	3042.6	3051.7	3044.4	3037.2	3026.3	3013.6	3004.5
17.5°	2948.3	2959.2	2971.9	2984.6	2995.4	3004.5	2999.1	2991.8	2979.1	2964.6	2953.7
20°	2892.1	2903.0	2913.9	2926.5	2939.2	2948.3	2941.1	2932.0	2919.3	2908.4	2897.5
22.5°	2826.8	2837.7	2850.4	2861.3	2872.1	2881.2	2872.1	2861.3	2850.4	2839.5	2828.6
25°	2752.5	2763.4	2777.9	2788.7	2796.0	2803.2	2796.0	2786.9	2776.0	2765.2	2754.3
27.5°	2674.5	2685.4	2699.9	2710.8	2718.0	2725.3	2718.0	2709.0	2698.1	2687.2	2676.3
30°	2587.5	2598.4	2612.9	2623.7	2629.2	2634.6	2627.4	2620.1	2611.0	2600.2	2589.3
32.5°	2495.0	2505.9	2516.8	2527.6	2536.7	2544.0	2536.7	2529.4	2518.6	2504.1	2493.2
35°	2397.1	2408.0	2420.7	2431.5	2442.4	2451.5	2440.6	2427.9	2418.8	2409.8	2400.7
37.5°	2293.7	2306.4	2320.9	2333.6	2337.2	2344.5	2337.2	2330.0	2320.9	2311.9	2301.0
40°	2192.2	2203.1	2215.8	2228.5	2233.9	2239.3	2232.1	2224.8	2213.9	2204.9	2194.0
42.5°	2087.0	2097.9	2108.8	2119.7	2126.9	2134.2	2126.9	2116.0	2108.8	2101.5	2092.5
45°	1978.2	1989.1	1998.2	2009.1	2014.5	2019.9	2012.7	2003.6	1996.4	1990.9	1981.9
47.5°	1867.6	1876.7	1885.8	1894.8	1898.4	1903.9	1896.6	1891.2	1885.8	1880.3	1873.1
50°	1751.6	1760.6	1771.5	1780.6	1782.4	1787.8	1780.6	1775.1	1769.7	1764.3	1758.8
52.5°	1637.3	1644.6	1653.7	1662.7	1666.4	1670.0	1662.7	1655.5	1650.0	1646.4	1641.0
55°	1517.7	1524.9	1534.0	1541.2	1546.7	1550.3	1543.1	1535.8	1530.4	1528.5	1523.1
57.5°	1398.0	1405.2	1414.3	1421.6	1425.2	1428.8	1421.6	1414.3	1410.7	1407.1	1403.4
60°	1276.5	1283.8	1291.0	1296.5	1300.1	1301.9	1294.6	1289.2	1287.4	1285.6	1282.0
62.5°	1156.8	1160.5	1167.7	1171.3	1175.0	1176.8	1171.3	1167.7	1165.9	1164.1	1162.3
65°	1031.7	1040.8	1046.2	1049.9	1049.9	1051.7	1046.2	1044.4	1042.6	1040.8	1037.2
67.5°	903.0	910.2	913.9	917.5	917.5	917.5	917.5	917.5	915.7	912.1	908.4
70°	779.7	785.1	788.8	790.6	790.6	790.6	786.9	785.1	786.9	786.9	785.1
72.5°	654.6	658.2	660.0	661.8	660.0	660.0	660.0	663.6	663.6	661.8	658.2
75°	533.1	536.7	538.5	540.3	538.5	538.5	538.5	542.2	540.3	540.3	538.5
77.5°	418.9	420.7	420.7	422.5	420.7	420.7	422.5	426.1	424.3	424.3	424.3
80°	310.1	310.1	310.1	311.9	310.1	310.1	311.9	315.5	313.7	313.7	313.7
82.5°	210.3	212.1	212.1	212.1	214.0	215.8	215.8	215.8	215.8	215.8	214.0
85°	125.1	126.9	125.1	125.1	125.1	125.1	126.9	128.7	128.7	128.7	128.7
87.5°	54.4	56.2	54.4	52.6	50.8	50.8	54.4	58.0	58.0	56.2	56.2
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: P709174
 CATALOG NUMBER: 4APN-39-42L850-UNV

CANDELA DISTRIBUTION (continued):

	330°	340°	350°	360°
0°	3087.9	3087.9	3087.9	3087.9
2.5°	3106.1	3106.1	3089.7	3073.4
5°	3104.2	3100.6	3082.5	3062.5
7.5°	3093.4	3087.9	3064.4	3042.6
10°	3068.0	3060.7	3035.3	3008.1
12.5°	3037.2	3026.3	2997.3	2970.1
15°	2997.3	2984.6	2953.7	2922.9
17.5°	2944.7	2930.2	2899.3	2866.7
20°	2888.5	2872.1	2837.7	2803.2
22.5°	2819.6	2805.1	2768.8	2734.3
25°	2745.2	2728.9	2692.6	2656.4
27.5°	2665.4	2647.3	2611.0	2576.6
30°	2578.4	2560.3	2524.0	2489.6
32.5°	2485.9	2471.4	2435.2	2397.1
35°	2391.6	2373.5	2337.2	2301.0
37.5°	2291.9	2275.6	2241.1	2206.7
40°	2186.8	2170.4	2134.2	2099.7
42.5°	2083.4	2068.9	2034.4	2001.8
45°	1972.8	1958.3	1925.6	1896.6
47.5°	1862.2	1847.7	1816.9	1786.0
50°	1749.8	1735.3	1706.2	1679.0
52.5°	1631.9	1621.0	1593.8	1566.6
55°	1514.0	1501.4	1474.2	1450.6
57.5°	1396.2	1387.1	1361.7	1338.2
60°	1274.7	1263.8	1243.9	1223.9
62.5°	1156.8	1147.8	1127.8	1109.7
65°	1031.7	1024.5	1008.2	991.8
67.5°	903.0	897.5	881.2	866.7
70°	779.7	770.6	757.9	745.2
72.5°	654.6	650.9	640.1	629.2
75°	534.9	531.3	520.4	511.3
77.5°	422.5	418.9	409.8	400.7
80°	311.9	310.1	302.8	295.6
82.5°	214.0	212.1	206.7	199.5
85°	128.7	125.1	119.7	114.2
87.5°	56.2	54.4	49.0	45.3
90°	0.0	0.0	0.0	0.0

(END OF REPORT)