

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: P838172

Luminaire Tested: **ORLG-24-4-INS-ASY2R-LD4-4LO-27-120-EDD-90**

Issue Date: 5/21/2024

Cooper Lighting Solutions Photometric Lab
1121 Highway 74 South
Peachtree City, GA 30269

**Test Information**

Test Method: LM-79-08
Report Number: P838172
Test Lab: INNOVATION CENTER(G2)
Issue Date: 5/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: FAIL-SAFE
Catalog Number: ORLG-24-4-INS-ASY2R-LD4-4LO-27-120-EDD-90
Description: 2FT x 4FT ORL LED LUMINAIRE WITH asymmetric/symmetric lens v2 and
RFI grid
Light Source: 2700K CCT, 90 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

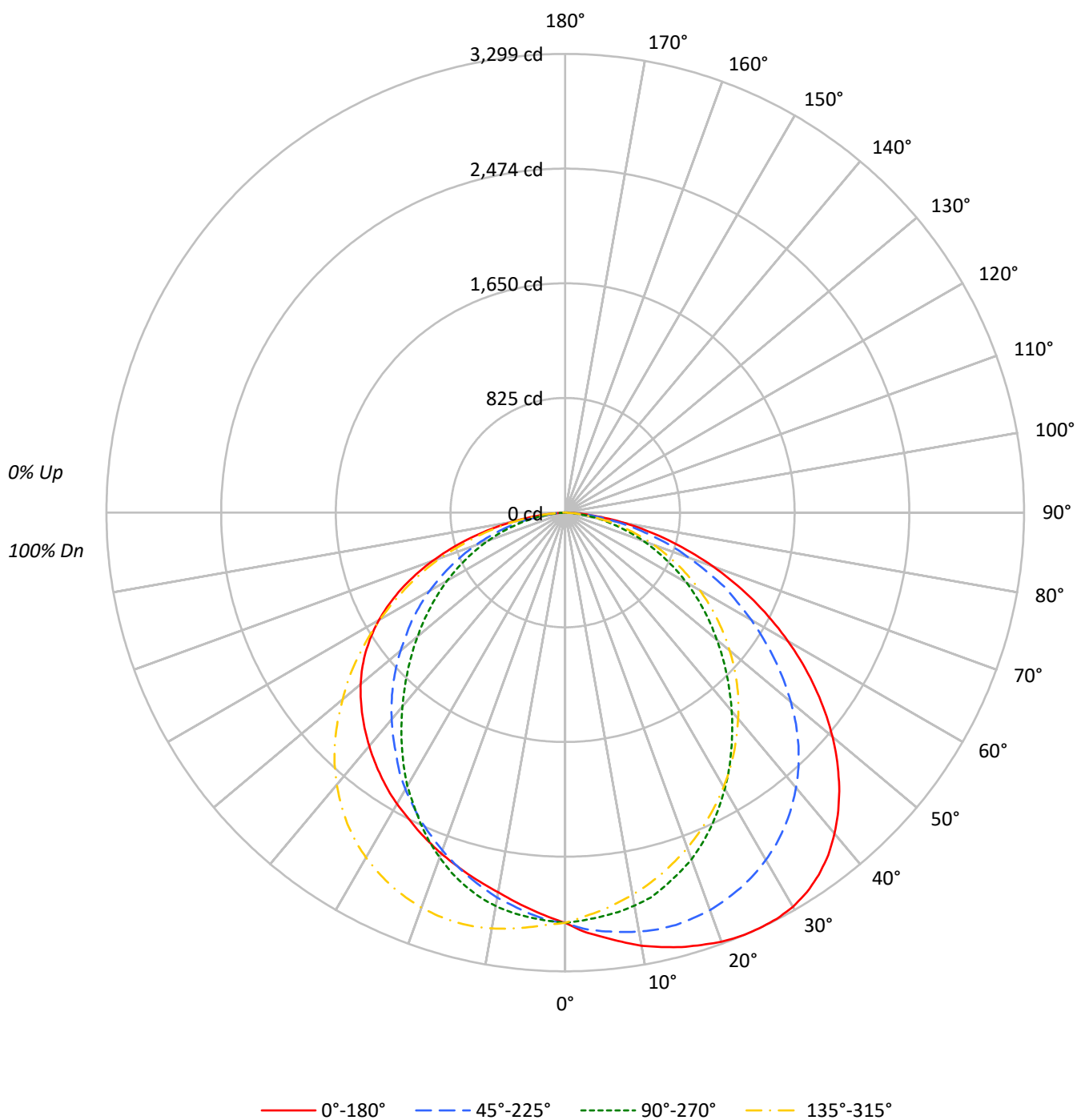
Lumens per Lamp: N/A
Luminaire Lumens: 8655.4 lumens
Efficiency: N/A
Efficacy: 92.5 lumens/watt
Spacing Criteria (0/90/45): 1.43 / 1.16 / 1.4
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')
CIE Type: Direct

Input Watts (W): 93.6
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



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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20				20				20				20				20
RC	80				70				50				30				10
RW	70	50	30	10	70	50	30	10	50	30	10		50	30	10		50
RCR																	
0	119	119	119	119	116	116	116	116	111	111	111		106	106	106		102
1	109	104	100	96	106	102	98	94	97	94	91		94	91	89		90
2	99	91	84	78	96	89	82	77	85	80	75		82	77	73		79
3	90	79	71	65	88	78	70	64	75	68	63		72	66	62		69
4	82	70	61	55	80	69	61	54	66	59	53		64	58	53		62
5	76	63	54	47	74	62	53	47	59	52	46		57	51	46		56
6	70	56	47	41	68	55	47	41	54	46	40		52	45	40		50
7	65	51	42	36	63	50	42	36	49	41	36		47	40	35		46
8	60	47	38	32	59	46	38	32	45	37	32		43	37	32		42
9	56	43	34	29	55	42	34	29	41	34	29		40	33	28		39
10	53	39	31	26	51	39	31	26	38	31	26		37	30	26		36

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°	270°
0°	3969	3969	3969	3969
5°	4137	3941	3867	3947
10°	4321	3921	3788	3926
15°	4506	3871	3751	3872
20°	4703	3801	3735	3779
25°	4898	3694	3734	3657
30°	5087	3566	3759	3526
35°	5222	3419	3797	3365
40°	5292	3272	3850	3198
45°	5302	3123	3924	3044
50°	5252	2980	4020	2901
55°	5143	2848	4110	2769
60°	4982	2709	4165	2639
65°	4759	2550	4143	2491
70°	4445	2364	3996	2320
75°	4000	2107	3667	2097
80°	3391	1765	3082	1791
85°	2359	1169	1954	1201

Classified

Scaled Data Report

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	280.1	3.2
10°-20°	811.1	9.4
20°-30°	1243.1	14.4
30°-40°	1511.5	17.5
40°-50°	1571.3	18.2
50°-60°	1419.3	16.4
60°-70°	1079.1	12.5
70°-80°	601.6	7.0
80°-90°	138.5	1.6
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°	2334.3	27.0
0°-40°	3845.7	44.4
0°-60°	6836.3	79.0
0°-90°	8655.4	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	8655.4	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	2950	2950	2950	2950	2950	
5°	3063	2918	2863	2923	3063	295
15°	3235	2779	2693	2780	3235	917
25°	3299	2488	2515	2463	3299	1524
35°	3179	2082	2312	2049	3179	1986
45°	2786	1641	2062	1600	2786	2145
55°	2192	1214	1752	1180	2192	1957
65°	1495	801	1301	782	1495	1477
75°	769	405	705	403	769	817
85°	153	76	127	78	153	192
90°	0	0	0	0	0	

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CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	45°	55°	65°	75°	85°	90°
0°	2950.2	2950.2	2950.2	2950.2	2950.2	2950.2	2950.2	2950.2	2950.2	2950.2	2950.2
2.5°	3015.6	2971.5	2972.2	3010.7	2981.1	2995.6	2954.3	2970.1	2965.3	2968.8	2935.0
5°	3063.0	3015.6	3014.9	3047.9	3014.9	3021.1	2968.8	2979.1	2963.9	2954.3	2917.8
7.5°	3113.3	3065.8	3061.0	3089.9	3046.5	3041.7	2983.9	2983.9	2956.4	2932.3	2897.9
10°	3162.8	3114.0	3107.8	3129.8	3076.1	3060.3	2990.1	2979.1	2942.6	2906.8	2869.7
12.5°	3200.0	3150.4	3145.6	3159.4	3098.8	3069.9	2990.1	2968.8	2915.1	2864.8	2835.9
15°	3235.1	3184.2	3171.1	3178.0	3108.5	3069.9	2980.5	2947.4	2878.6	2812.5	2778.8
17.5°	3259.9	3211.0	3197.9	3197.2	3113.3	3058.2	2959.8	2914.4	2831.8	2752.0	2718.3
20°	3284.6	3235.8	3219.3	3206.9	3111.9	3042.4	2929.5	2868.3	2771.9	2682.5	2654.3
22.5°	3297.0	3246.8	3228.9	3210.3	3103.0	3013.5	2892.4	2814.6	2704.5	2597.8	2574.4
25°	3299.1	3247.5	3228.2	3201.4	3085.1	2979.1	2844.2	2749.9	2626.7	2508.4	2488.4
27.5°	3293.6	3237.1	3217.9	3185.5	3058.2	2937.1	2787.1	2676.3	2544.2	2413.4	2392.1
30°	3274.3	3217.2	3198.6	3156.6	3020.4	2885.5	2724.5	2594.4	2452.6	2313.6	2295.0
32.5°	3235.8	3180.0	3164.9	3122.9	2979.1	2825.6	2651.5	2506.3	2351.5	2218.7	2191.1
35°	3179.3	3123.6	3114.0	3069.9	2921.3	2754.1	2571.7	2410.0	2244.1	2108.5	2081.7
37.5°	3105.7	3058.9	3044.5	3001.1	2853.1	2672.8	2480.2	2305.4	2134.7	1988.8	1972.3
40°	3012.8	2968.8	2957.7	2919.2	2774.0	2582.7	2381.1	2197.3	2021.8	1886.3	1862.9
42.5°	2906.8	2865.5	2859.3	2819.4	2676.3	2482.9	2273.7	2085.2	1904.2	1773.4	1750.0
45°	2786.4	2746.5	2745.1	2707.3	2569.6	2372.1	2160.8	1971.6	1789.2	1653.7	1641.3
47.5°	2653.6	2617.8	2617.8	2582.7	2450.6	2250.3	2044.5	1853.2	1673.6	1553.9	1531.9
50°	2509.1	2475.3	2465.0	2447.8	2319.1	2117.5	1922.1	1737.6	1559.4	1445.2	1423.8
52.5°	2354.9	2326.0	2332.9	2301.2	2176.7	1979.2	1798.2	1607.6	1444.5	1340.6	1319.2
55°	2192.5	2151.2	2157.4	2145.7	2028.0	1836.7	1659.2	1500.2	1331.6	1233.9	1213.9
57.5°	2023.9	1970.2	1992.2	1985.4	1869.8	1690.8	1531.9	1378.4	1219.4	1129.3	1110.0
60°	1851.2	1799.6	1822.3	1816.1	1707.3	1544.9	1400.4	1258.0	1108.0	1026.1	1006.8
62.5°	1673.6	1626.1	1646.8	1642.0	1542.2	1395.6	1269.7	1138.9	995.8	922.1	904.3
65°	1494.7	1449.3	1467.9	1464.4	1372.2	1260.7	1135.5	1015.7	882.9	818.9	801.0
67.5°	1311.6	1269.7	1286.9	1286.9	1202.2	1095.6	1000.6	891.2	772.1	717.1	700.6
70°	1130.0	1090.7	1105.9	1104.5	1032.9	946.2	864.3	766.6	660.0	614.5	600.8
72.5°	946.9	912.5	926.3	924.9	865.0	809.3	728.1	643.4	550.5	514.1	501.7
75°	769.4	737.0	750.1	748.7	699.9	647.6	593.2	523.0	443.2	417.7	405.3
77.5°	600.1	567.1	578.1	578.1	542.3	504.4	461.1	406.7	350.3	322.8	313.8
80°	437.7	421.8	416.3	417.0	392.9	368.2	346.1	293.8	252.6	234.0	227.8
82.5°	287.7	274.6	269.1	270.5	256.7	241.5	227.8	191.3	163.8	152.8	149.3
85°	152.8	143.1	138.3	141.8	139.0	130.8	123.9	99.1	81.9	77.8	75.7
87.5°	48.2	42.0	38.5	50.9	43.4	38.5	37.2	29.6	22.7	22.7	22.0
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):

	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°	185°
0°	2950.2	2950.2	2950.2	2950.2	2950.2	2950.2	2950.2	2950.2	2950.2	2950.2	2950.2
2.5°	2946.1	2946.1	2919.2	2913.0	2910.3	2913.7	2886.9	2882.1	2920.6	2907.5	2877.9
5°	2922.7	2921.3	2883.4	2876.5	2876.5	2872.4	2842.1	2835.3	2873.8	2862.8	2830.4
7.5°	2893.7	2889.6	2844.9	2840.1	2833.2	2830.4	2796.7	2791.9	2824.9	2818.1	2787.8
10°	2858.7	2854.5	2801.5	2798.1	2790.5	2785.0	2753.4	2749.9	2783.6	2772.6	2748.5
12.5°	2812.5	2805.0	2750.6	2747.2	2741.0	2738.9	2707.9	2706.6	2743.7	2732.7	2707.3
15°	2752.0	2745.8	2685.2	2686.6	2687.3	2687.3	2662.5	2661.1	2697.6	2692.8	2665.3
17.5°	2685.2	2677.0	2619.2	2623.3	2628.1	2633.6	2614.4	2617.8	2656.3	2650.1	2625.4
20°	2609.5	2601.3	2544.8	2556.5	2566.9	2577.9	2565.5	2575.1	2610.9	2608.2	2589.6
22.5°	2524.9	2516.6	2464.3	2482.2	2499.4	2520.1	2514.6	2525.6	2563.4	2562.7	2546.2
25°	2421.7	2423.7	2377.6	2399.6	2428.5	2457.5	2459.5	2477.4	2519.4	2515.3	2500.1
27.5°	2325.3	2328.1	2279.2	2316.4	2354.9	2392.1	2401.0	2425.8	2468.5	2465.0	2451.9
30°	2224.2	2227.6	2180.1	2231.0	2277.8	2323.3	2342.5	2376.2	2419.6	2419.6	2405.8
32.5°	2118.9	2125.1	2075.5	2143.6	2198.0	2251.0	2284.7	2319.8	2369.4	2368.0	2356.3
35°	2010.8	2017.7	1972.3	2059.0	2113.4	2178.1	2220.0	2266.8	2310.9	2311.6	2302.6
37.5°	1900.7	1909.0	1867.7	1962.7	2024.6	2101.0	2154.7	2201.5	2250.3	2253.1	2244.8
40°	1791.3	1800.2	1764.5	1856.0	1934.4	2019.8	2081.7	2136.8	2190.4	2191.8	2186.3
42.5°	1681.9	1691.5	1664.7	1754.1	1842.9	1934.4	2007.4	2070.0	2125.1	2128.5	2122.3
45°	1575.2	1583.5	1564.2	1661.9	1747.3	1847.0	1931.0	2001.9	2057.6	2062.4	2060.4
47.5°	1469.2	1476.8	1459.6	1549.1	1647.5	1753.5	1850.5	1928.9	1988.1	1993.6	1992.2
50°	1365.3	1371.5	1352.9	1446.5	1544.3	1657.1	1758.3	1849.1	1915.2	1920.7	1920.0
52.5°	1262.1	1268.3	1252.5	1350.9	1439.6	1558.7	1668.8	1767.2	1832.6	1840.9	1842.2
55°	1162.3	1165.1	1152.7	1247.0	1333.0	1457.5	1584.2	1679.8	1745.2	1752.1	1756.2
57.5°	1062.5	1063.2	1052.9	1143.0	1225.6	1352.9	1485.8	1586.2	1648.2	1655.0	1661.2
60°	963.4	962.7	951.0	1038.4	1117.6	1243.5	1381.8	1481.6	1541.5	1547.7	1555.9
62.5°	865.0	863.0	852.6	933.2	1007.5	1132.0	1271.0	1367.4	1424.5	1428.6	1439.6
65°	767.3	765.2	755.6	829.9	897.4	1016.4	1152.7	1244.2	1295.8	1301.3	1299.3
67.5°	671.0	666.8	659.3	726.0	787.3	897.4	1028.1	1115.5	1158.2	1163.0	1176.1
70°	574.6	569.8	552.6	623.5	677.2	775.6	897.4	975.1	1010.9	1015.7	1013.7
72.5°	479.7	474.8	456.3	521.6	567.1	653.1	761.8	826.5	857.5	861.6	861.6
75°	387.4	384.7	373.0	422.5	460.4	530.6	622.8	676.5	700.6	705.4	704.0
77.5°	298.7	296.6	284.9	327.6	357.2	409.5	483.8	525.8	543.7	549.2	560.9
80°	214.0	213.3	194.8	236.7	249.8	293.8	348.2	380.6	390.2	397.8	406.0
82.5°	136.9	137.6	119.1	154.8	160.3	188.6	222.3	242.2	249.1	255.3	261.5
85°	66.8	69.5	59.2	81.9	82.6	97.0	111.5	119.1	121.8	126.6	132.1
87.5°	17.2	20.0	11.0	23.4	20.6	26.8	31.0	33.0	32.3	35.8	37.8
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):

	195°	205°	215°	225°	235°	245°	255°	265°	270°	275°	285°
0°	2950.2	2950.2	2950.2	2950.2	2950.2	2950.2	2950.2	2950.2	2950.2	2950.2	2950.2
2.5°	2887.6	2909.6	2898.6	2934.4	2948.1	2926.1	2964.6	2965.3	2937.8	2970.1	2988.0
5°	2842.8	2865.5	2858.7	2895.8	2913.0	2893.7	2940.5	2949.5	2922.7	2959.1	2988.0
7.5°	2797.4	2824.2	2815.3	2853.1	2873.8	2858.7	2908.9	2923.3	2902.7	2942.6	2981.1
10°	2758.2	2780.9	2771.3	2811.2	2829.1	2816.7	2866.2	2893.1	2873.8	2922.7	2968.8
12.5°	2719.6	2738.2	2727.2	2760.2	2777.4	2761.6	2822.2	2847.0	2833.2	2884.1	2943.3
15°	2670.1	2690.7	2675.6	2705.2	2718.3	2704.5	2754.1	2796.7	2779.5	2835.3	2900.6
17.5°	2632.2	2643.9	2623.3	2646.7	2654.3	2635.7	2685.9	2727.9	2715.5	2776.1	2851.8
20°	2590.3	2599.9	2571.0	2584.1	2583.4	2560.0	2606.1	2647.4	2639.1	2705.9	2791.9
22.5°	2543.5	2548.3	2514.6	2517.3	2515.9	2477.4	2518.7	2560.7	2557.2	2624.7	2721.0
25°	2493.9	2494.6	2451.3	2449.9	2434.7	2389.3	2425.8	2473.3	2463.0	2535.9	2637.1
27.5°	2445.1	2438.2	2385.9	2373.5	2349.4	2295.0	2327.4	2370.1	2363.9	2435.4	2547.6
30°	2392.8	2383.8	2319.8	2297.1	2262.0	2199.4	2226.2	2266.1	2269.6	2332.2	2449.9
32.5°	2343.2	2320.5	2249.6	2216.6	2172.5	2099.6	2114.1	2154.7	2160.2	2223.5	2344.6
35°	2279.2	2264.1	2176.7	2120.2	2076.9	1997.1	2012.2	2040.4	2048.7	2110.6	2233.8
37.5°	2218.7	2194.6	2101.7	2032.9	1977.1	1893.2	1897.3	1926.2	1934.4	1997.1	2118.9
40°	2156.0	2121.6	2021.8	1941.3	1877.3	1789.2	1784.4	1814.7	1820.9	1882.1	1992.2
42.5°	2089.3	2048.0	1935.8	1847.7	1774.1	1684.6	1675.0	1701.2	1708.0	1767.9	1875.9
45°	2021.8	1972.3	1847.7	1751.4	1670.9	1579.3	1569.7	1589.7	1600.0	1656.4	1760.3
47.5°	1950.3	1892.5	1756.9	1649.5	1566.3	1474.7	1463.0	1483.0	1491.3	1547.0	1645.4
50°	1875.3	1805.1	1663.3	1544.9	1462.4	1372.2	1355.0	1378.4	1386.0	1438.3	1534.6
52.5°	1792.7	1714.9	1563.5	1439.6	1357.1	1271.0	1250.4	1273.1	1282.1	1333.0	1421.8
55°	1705.3	1621.3	1463.0	1342.6	1253.2	1169.2	1152.0	1160.9	1180.2	1228.4	1311.0
57.5°	1606.9	1523.6	1357.1	1234.6	1148.6	1068.0	1053.6	1061.8	1079.7	1126.5	1200.9
60°	1502.3	1414.2	1249.0	1126.5	1043.3	966.9	953.8	961.4	980.6	1023.3	1092.1
62.5°	1399.0	1300.0	1137.5	1015.7	940.0	869.2	865.7	863.0	880.9	922.1	982.7
65°	1273.8	1178.8	1021.2	905.6	836.8	772.8	759.1	765.2	782.4	820.3	883.6
67.5°	1139.6	1053.6	902.2	795.5	734.3	677.2	665.5	668.2	686.1	719.1	774.2
70°	997.2	921.5	780.4	684.7	633.1	579.4	571.9	572.6	589.8	618.7	666.8
72.5°	847.8	779.7	657.2	575.3	532.6	494.1	487.2	479.0	494.8	519.6	560.9
75°	695.7	635.9	534.7	468.0	434.2	401.9	395.7	387.4	403.3	424.6	456.9
77.5°	542.3	494.1	415.7	364.0	337.9	313.8	308.3	299.4	315.2	331.0	356.5
80°	392.3	357.2	310.4	256.0	247.1	231.2	225.7	216.1	231.2	241.5	260.8
82.5°	253.2	229.8	203.0	165.2	163.8	152.1	149.3	138.3	152.1	158.3	172.7
85°	128.0	117.0	110.1	84.0	86.7	79.1	78.5	66.8	77.8	80.5	88.8
87.5°	36.5	38.5	34.4	20.6	26.2	24.8	24.8	17.9	24.8	24.8	28.2
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: P838172

CATALOG NUMBER: ORLG-24-4-INS-ASY2R-LD4-4LO-27-120-EDD-90

CANDELA DISTRIBUTION (continued):

	295°	305°	315°	325°	335°	345°	355°	360°
0°	2950.2	2950.2	2950.2	2950.2	2950.2	2950.2	2950.2	2950.2
2.5°	2952.9	2964.6	2967.4	2966.7	2974.3	3015.6	3001.8	3015.6
5°	2959.8	2986.0	2992.8	3002.5	3014.9	3061.7	3046.5	3063.0
7.5°	2963.9	3003.2	3018.3	3036.9	3056.8	3109.1	3096.8	3113.3
10°	2963.9	3014.9	3036.9	3067.9	3094.7	3155.3	3143.6	3162.8
12.5°	2951.6	3016.9	3047.9	3091.3	3125.7	3191.0	3186.2	3200.0
15°	2926.1	3006.6	3049.3	3105.0	3147.7	3220.6	3218.6	3235.1
17.5°	2891.7	2988.7	3040.3	3110.5	3164.2	3246.1	3250.9	3259.9
20°	2848.3	2955.0	3022.4	3108.5	3175.9	3266.0	3272.2	3284.6
22.5°	2791.2	2914.4	2995.6	3099.5	3177.3	3274.3	3285.3	3297.0
25°	2723.8	2865.5	2960.5	3082.3	3170.4	3273.6	3288.8	3299.1
27.5°	2646.7	2802.2	2915.8	3054.8	3151.1	3262.6	3281.2	3293.6
30°	2557.2	2734.8	2864.8	3019.0	3125.0	3242.0	3261.9	3274.3
32.5°	2465.0	2660.5	2804.3	2972.9	3087.1	3208.9	3226.1	3235.8
35°	2364.5	2570.3	2731.3	2913.7	3038.3	3155.9	3169.0	3179.3
37.5°	2255.1	2472.6	2648.1	2847.0	2969.4	3082.3	3094.0	3105.7
40°	2142.3	2370.1	2554.5	2765.1	2887.6	2992.2	3004.5	3012.8
42.5°	2028.7	2256.5	2454.7	2668.7	2790.5	2891.0	2898.6	2906.8
45°	1913.8	2138.8	2342.5	2562.1	2682.5	2776.8	2779.5	2786.4
47.5°	1796.8	2017.0	2219.3	2440.2	2559.3	2645.3	2648.1	2653.6
50°	1679.1	1895.2	2087.9	2308.8	2425.1	2515.9	2503.6	2509.1
52.5°	1563.5	1767.2	1964.0	2167.0	2282.0	2362.5	2365.9	2354.9
55°	1450.0	1642.0	1823.0	2018.4	2127.8	2190.4	2188.4	2192.5
57.5°	1335.0	1515.3	1681.2	1860.1	1966.8	2026.0	2038.4	2023.9
60°	1218.1	1387.3	1536.0	1697.7	1800.9	1850.5	1864.9	1851.2
62.5°	1101.8	1257.3	1392.2	1533.2	1628.9	1690.1	1688.8	1673.6
65°	985.5	1126.5	1247.0	1366.7	1450.0	1511.2	1508.5	1494.7
67.5°	878.1	994.4	1102.4	1199.5	1271.7	1313.7	1328.2	1311.6
70°	759.7	860.2	955.2	1032.9	1092.8	1130.7	1144.4	1130.0
72.5°	641.4	726.7	793.5	868.5	914.6	946.2	960.7	946.9
75°	524.4	594.6	648.9	707.4	739.8	766.6	783.1	769.4
77.5°	410.8	465.2	508.6	551.2	588.4	594.6	609.0	600.1
80°	302.8	342.0	373.7	401.9	428.7	431.5	443.2	437.7
82.5°	201.6	227.8	236.0	265.6	282.8	280.1	291.8	287.7
85°	106.7	122.5	136.9	145.9	155.5	146.6	156.9	152.8
87.5°	35.8	37.8	33.0	46.8	51.6	44.0	50.2	48.2
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)