

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: P838187

Luminaire Tested: **ORLG-24-4-INS-ASY2R-LD4-3LO-30-120-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: P838187
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-LD4-3LO-30-120-EDD-90
Description: 2FT x 4FT ORL LED LUMINAIRE WITH asymmetric/symmetric lens v2 and
RfI grid
Light Source: 3000K CCT, 90 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

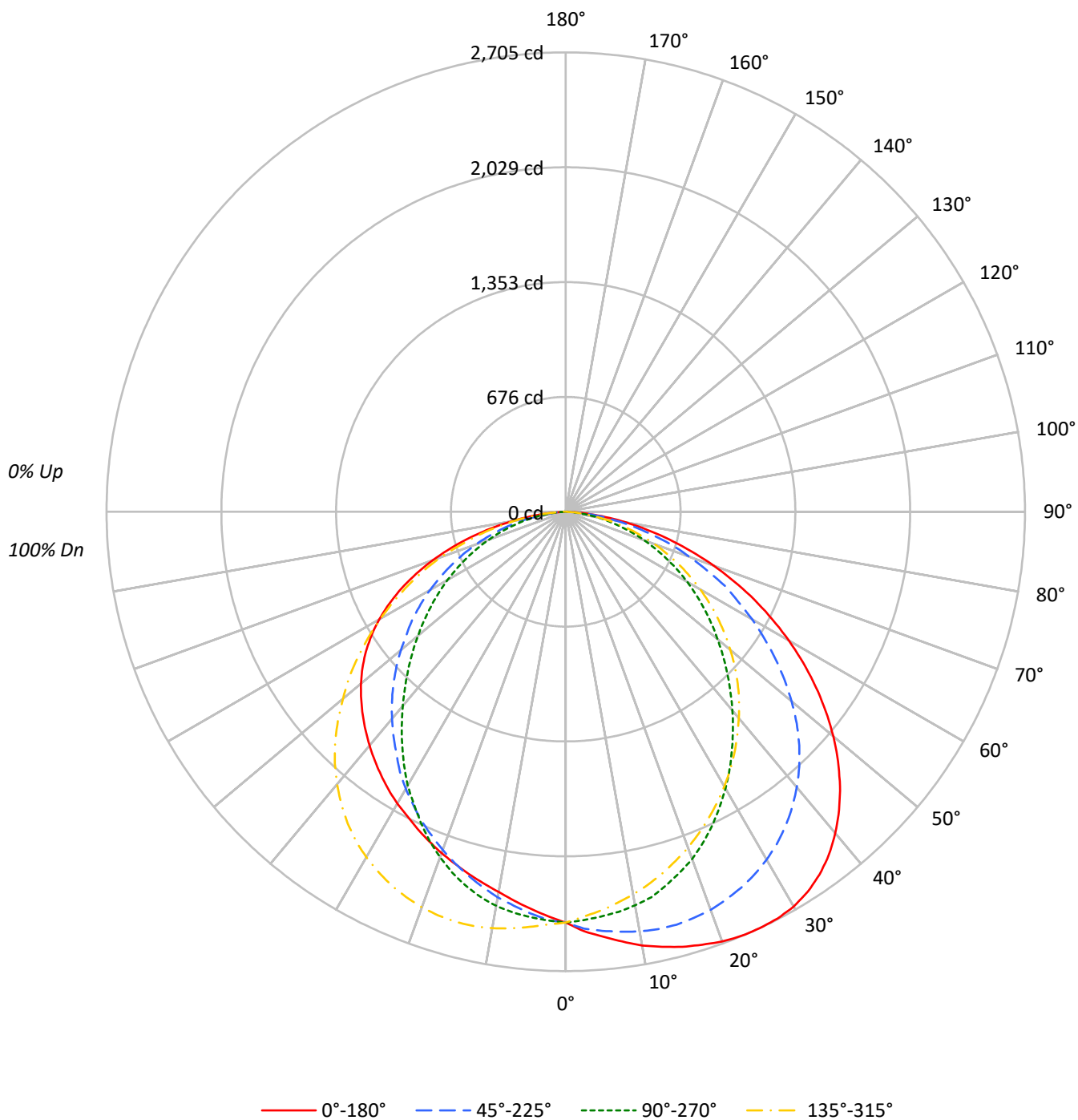
Lumens per Lamp: N/A
Luminaire Lumens: 7097.1 lumens
Efficiency: N/A
Efficacy: 101.1 lumens/watt
Spacing Criteria (0/90/45): 1.43 / 1.16 / 1.4
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')
CIE Type: Direct

Input Watts (W): 70.2
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	30	10	50	30	10
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	94	97	94	91	94	91	89	90	88	86	84		
2	99	91	84	78	96	89	82	77	85	80	75	82	77	73	79	75	72	70		
3	90	79	71	65	88	78	70	64	75	68	63	72	66	62	69	65	61	59		
4	82	70	61	55	80	69	61	54	66	59	53	64	58	53	62	56	52	50		
5	76	63	54	47	74	62	53	47	59	52	46	57	51	46	56	50	45	43		
6	70	56	47	41	68	55	47	41	54	46	40	52	45	40	50	44	40	38		
7	65	51	42	36	63	50	42	36	49	41	36	47	40	35	46	40	35	33		
8	60	47	38	32	59	46	38	32	45	37	32	43	37	32	42	36	31	29		
9	56	43	34	29	55	42	34	29	41	34	29	40	33	28	39	33	28	26		
10	53	39	31	26	51	39	31	26	38	31	26	37	30	26	36	30	26	24		

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°	270°
0°	3255	3255	3255	3255
5°	3392	3231	3170	3237
10°	3543	3215	3106	3219
15°	3695	3174	3076	3175
20°	3856	3116	3062	3099
25°	4016	3029	3062	2998
30°	4171	2924	3082	2891
35°	4282	2804	3113	2759
40°	4339	2683	3157	2622
45°	4347	2561	3218	2496
50°	4306	2444	3297	2379
55°	4217	2335	3370	2270
60°	4085	2221	3415	2164
65°	3902	2091	3397	2043
70°	3645	1938	3277	1902
75°	3280	1728	3007	1719
80°	2781	1447	2527	1469
85°	1934	959	1602	985

Classified

Scaled Data Report

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	229.7	3.2
10°-20°	665.1	9.4
20°-30°	1019.2	14.4
30°-40°	1239.3	17.5
40°-50°	1288.4	18.2
50°-60°	1163.8	16.4
60°-70°	884.8	12.5
70°-80°	493.3	7.0
80°-90°	113.6	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°	1914.0	27.0
0°-40°	3153.3	44.4
0°-60°	5605.5	79.0
0°-90°	7097.1	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	7097.1	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	2419	2419	2419	2419	2419	
5°	2512	2392	2347	2396	2512	242
15°	2653	2278	2208	2279	2653	752
25°	2705	2040	2062	2020	2705	1249
35°	2607	1707	1895	1680	2607	1628
45°	2285	1346	1691	1312	2285	1759
55°	1798	995	1437	968	1798	1605
65°	1226	657	1067	642	1226	1211
75°	631	332	578	331	631	670
85°	125	62	104	64	125	158
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°	2419.0	2419.0	2419.0	2419.0	2419.0	2419.0	2419.0	2419.0	2419.0	2419.0	2419.0
2.5°	2472.6	2436.5	2437.1	2468.7	2444.4	2456.3	2422.4	2435.4	2431.4	2434.3	2406.6
5°	2511.6	2472.6	2472.1	2499.1	2472.1	2477.1	2434.3	2442.7	2430.3	2422.4	2392.5
7.5°	2552.7	2513.8	2509.9	2533.6	2498.0	2494.1	2446.7	2446.7	2424.1	2404.3	2376.1
10°	2593.4	2553.3	2548.2	2566.3	2522.3	2509.3	2451.7	2442.7	2412.8	2383.5	2353.0
12.5°	2623.8	2583.2	2579.3	2590.6	2540.9	2517.2	2451.7	2434.3	2390.2	2349.0	2325.3
15°	2652.6	2610.9	2600.1	2605.8	2548.8	2517.2	2443.8	2416.8	2360.3	2306.2	2278.5
17.5°	2672.9	2632.9	2622.2	2621.6	2552.7	2507.6	2426.9	2389.7	2322.0	2256.5	2228.9
20°	2693.3	2653.2	2639.6	2629.5	2551.6	2494.6	2402.1	2351.9	2272.9	2199.5	2176.4
22.5°	2703.4	2662.2	2647.5	2632.3	2544.3	2470.9	2371.6	2307.9	2217.6	2130.1	2110.9
25°	2705.1	2662.8	2647.0	2625.0	2529.6	2442.7	2332.1	2254.8	2153.8	2056.8	2040.4
27.5°	2700.6	2654.3	2638.5	2612.0	2507.6	2408.3	2285.3	2194.4	2086.1	1978.9	1961.4
30°	2684.8	2638.0	2622.7	2588.3	2476.6	2366.0	2233.9	2127.3	2011.1	1897.1	1881.8
32.5°	2653.2	2607.5	2595.1	2560.6	2442.7	2316.9	2174.1	2055.1	1928.1	1819.2	1796.6
35°	2606.9	2561.2	2553.3	2517.2	2395.3	2258.2	2108.7	1976.1	1840.1	1728.9	1706.9
37.5°	2546.5	2508.2	2496.3	2460.8	2339.5	2191.6	2033.6	1890.3	1750.4	1630.7	1617.2
40°	2470.4	2434.3	2425.2	2393.6	2274.6	2117.7	1952.4	1801.7	1657.8	1546.7	1527.5
42.5°	2383.5	2349.6	2344.5	2311.8	2194.4	2035.9	1864.3	1709.7	1561.3	1454.1	1434.9
45°	2284.7	2252.0	2250.9	2219.8	2107.0	1945.0	1771.8	1616.6	1467.1	1355.9	1345.8
47.5°	2175.8	2146.5	2146.5	2117.7	2009.4	1845.2	1676.4	1519.6	1372.3	1274.1	1256.1
50°	2057.3	2029.7	2021.2	2007.1	1901.6	1736.3	1576.0	1424.8	1278.6	1185.0	1167.5
52.5°	1930.9	1907.2	1912.9	1886.9	1784.8	1622.8	1474.4	1318.1	1184.4	1099.2	1081.7
55°	1797.8	1763.9	1769.0	1759.4	1662.9	1506.0	1360.5	1230.1	1091.9	1011.7	995.4
57.5°	1659.5	1615.5	1633.6	1627.9	1533.1	1386.4	1256.1	1130.2	999.9	926.0	910.2
60°	1517.9	1475.6	1494.2	1489.1	1399.9	1266.8	1148.3	1031.5	908.5	841.3	825.5
62.5°	1372.3	1333.4	1350.3	1346.3	1264.5	1144.3	1041.1	933.9	816.5	756.1	741.4
65°	1225.6	1188.3	1203.6	1200.8	1125.2	1033.7	931.0	832.9	724.0	671.5	656.8
67.5°	1075.5	1041.1	1055.2	1055.2	985.8	898.3	820.4	730.7	633.1	588.0	574.4
70°	926.5	894.4	906.8	905.7	847.0	775.9	708.7	628.6	541.1	503.9	492.6
72.5°	776.4	748.2	759.5	758.4	709.3	663.6	597.0	527.6	451.4	421.5	411.4
75°	630.9	604.3	615.1	613.9	573.9	531.0	486.4	428.8	363.4	342.5	332.4
77.5°	492.0	465.0	474.0	474.0	444.6	413.6	378.1	333.5	287.2	264.6	257.3
80°	358.9	345.9	341.4	341.9	322.2	301.9	283.8	240.9	207.1	191.9	186.8
82.5°	235.9	225.1	220.6	221.8	210.5	198.1	186.8	156.9	134.3	125.3	122.4
85°	125.3	117.4	113.4	116.2	114.0	107.2	101.6	81.3	67.1	63.8	62.1
87.5°	39.5	34.4	31.6	41.8	35.5	31.6	30.5	24.3	18.6	18.6	18.1
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°	2419.0	2419.0	2419.0	2419.0	2419.0	2419.0	2419.0	2419.0	2419.0	2419.0	2419.0
2.5°	2415.6	2415.6	2393.6	2388.5	2386.3	2389.1	2367.1	2363.2	2394.8	2384.0	2359.8
5°	2396.4	2395.3	2364.3	2358.6	2358.6	2355.3	2330.4	2324.8	2356.4	2347.4	2320.8
7.5°	2372.7	2369.4	2332.7	2328.7	2323.1	2320.8	2293.2	2289.2	2316.3	2310.7	2285.9
10°	2344.0	2340.6	2297.1	2294.3	2288.1	2283.6	2257.6	2254.8	2282.5	2273.4	2253.7
12.5°	2306.2	2300.0	2255.4	2252.6	2247.5	2245.8	2220.4	2219.3	2249.7	2240.7	2219.8
15°	2256.5	2251.4	2201.8	2202.9	2203.5	2203.5	2183.2	2182.0	2211.9	2208.0	2185.4
17.5°	2201.8	2195.0	2147.6	2151.0	2154.9	2159.5	2143.7	2146.5	2178.1	2173.0	2152.7
20°	2139.7	2132.9	2086.7	2096.3	2104.7	2113.7	2103.6	2111.5	2140.8	2138.6	2123.3
22.5°	2070.3	2063.5	2020.6	2035.3	2049.4	2066.4	2061.8	2070.9	2101.9	2101.3	2087.8
25°	1985.7	1987.4	1949.5	1967.6	1991.3	2015.0	2016.7	2031.4	2065.8	2062.4	2050.0
27.5°	1906.7	1908.9	1868.9	1899.3	1930.9	1961.4	1968.7	1989.0	2024.0	2021.2	2010.5
30°	1823.7	1826.5	1787.6	1829.4	1867.7	1905.0	1920.8	1948.4	1984.0	1984.0	1972.7
32.5°	1737.4	1742.5	1701.8	1757.7	1802.3	1845.7	1873.4	1902.1	1942.8	1941.6	1932.1
35°	1648.8	1654.4	1617.2	1688.3	1732.9	1785.9	1820.3	1858.7	1894.8	1895.4	1888.0
37.5°	1558.5	1565.3	1531.4	1609.3	1660.1	1722.7	1766.7	1805.1	1845.2	1847.4	1840.6
40°	1468.8	1476.1	1446.8	1521.8	1586.2	1656.1	1706.9	1752.1	1796.1	1797.2	1792.7
42.5°	1379.1	1387.0	1365.0	1438.3	1511.1	1586.2	1646.0	1697.3	1742.5	1745.3	1740.2
45°	1291.6	1298.4	1282.6	1362.7	1432.7	1514.5	1583.3	1641.5	1687.2	1691.1	1689.4
47.5°	1204.7	1210.9	1196.8	1270.2	1350.9	1437.8	1517.3	1581.6	1630.2	1634.7	1633.6
50°	1119.5	1124.6	1109.4	1186.1	1266.2	1358.8	1441.7	1516.2	1570.4	1574.9	1574.3
52.5°	1034.9	1039.9	1027.0	1107.7	1180.4	1278.1	1368.4	1449.0	1502.6	1509.4	1510.5
55°	953.0	955.3	945.1	1022.5	1093.0	1195.1	1298.9	1377.4	1431.0	1436.6	1440.0
57.5°	871.2	871.8	863.3	937.2	1005.0	1109.4	1218.3	1300.6	1351.4	1357.1	1362.1
60°	790.0	789.4	779.8	851.5	916.4	1019.6	1133.1	1214.9	1264.0	1269.0	1275.8
62.5°	709.3	707.6	699.1	765.1	826.1	928.2	1042.2	1121.2	1168.0	1171.4	1180.4
65°	629.2	627.5	619.6	680.5	735.8	833.4	945.1	1020.2	1062.5	1067.0	1065.3
67.5°	550.2	546.8	540.6	595.3	645.5	735.8	843.0	914.7	949.7	953.6	964.3
70°	471.2	467.2	453.1	511.2	555.2	635.9	735.8	799.6	828.9	832.9	831.2
72.5°	393.3	389.3	374.1	427.7	465.0	535.5	624.6	677.7	703.1	706.5	706.5
75°	317.7	315.4	305.8	346.5	377.5	435.1	510.7	554.7	574.4	578.4	577.2
77.5°	244.9	243.2	233.6	268.6	292.9	335.7	396.7	431.1	445.8	450.3	459.9
80°	175.5	174.9	159.7	194.1	204.8	240.9	285.5	312.0	319.9	326.1	332.9
82.5°	112.3	112.9	97.6	127.0	131.5	154.6	182.3	198.6	204.3	209.3	214.4
85°	54.7	57.0	48.5	67.1	67.7	79.6	91.4	97.6	99.9	103.8	108.3
87.5°	14.1	16.4	9.0	19.2	16.9	22.0	25.4	27.1	26.5	29.3	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

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CANDELA DISTRIBUTION (continued):

	195°	205°	215°	225°	235°	245°	255°	265°	270°	275°	285°
0°	2419.0	2419.0	2419.0	2419.0	2419.0	2419.0	2419.0	2419.0	2419.0	2419.0	2419.0
2.5°	2367.7	2385.7	2376.7	2406.0	2417.3	2399.3	2430.9	2431.4	2408.9	2435.4	2450.1
5°	2331.0	2349.6	2344.0	2374.4	2388.5	2372.7	2411.1	2418.5	2396.4	2426.4	2450.1
7.5°	2293.8	2315.8	2308.4	2339.5	2356.4	2344.0	2385.2	2397.0	2380.1	2412.8	2444.4
10°	2261.6	2280.2	2272.3	2305.0	2319.7	2309.6	2350.2	2372.2	2356.4	2396.4	2434.3
12.5°	2230.0	2245.2	2236.2	2263.3	2277.4	2264.4	2314.1	2334.4	2323.1	2364.8	2413.4
15°	2189.4	2206.3	2193.9	2218.1	2228.9	2217.6	2258.2	2293.2	2279.1	2324.8	2378.4
17.5°	2158.3	2167.9	2151.0	2170.2	2176.4	2161.1	2202.3	2236.8	2226.6	2276.3	2338.3
20°	2123.9	2131.8	2108.1	2118.8	2118.3	2099.1	2136.9	2170.7	2164.0	2218.7	2289.2
22.5°	2085.5	2089.5	2061.8	2064.1	2063.0	2031.4	2065.2	2099.6	2096.8	2152.1	2231.1
25°	2044.9	2045.5	2009.9	2008.8	1996.4	1959.1	1989.0	2028.0	2019.5	2079.3	2162.3
27.5°	2004.8	1999.2	1956.3	1946.2	1926.4	1881.8	1908.4	1943.3	1938.3	1996.9	2088.9
30°	1962.0	1954.6	1902.1	1883.5	1854.7	1803.4	1825.4	1858.1	1861.0	1912.3	2008.8
32.5°	1921.3	1902.7	1844.6	1817.5	1781.4	1721.6	1733.4	1766.7	1771.2	1823.2	1922.5
35°	1868.9	1856.4	1784.8	1738.5	1703.0	1637.5	1649.9	1673.1	1679.8	1730.6	1831.6
37.5°	1819.2	1799.5	1723.3	1666.8	1621.1	1552.3	1555.7	1579.4	1586.2	1637.5	1737.4
40°	1767.9	1739.6	1657.8	1591.8	1539.3	1467.1	1463.1	1488.0	1493.1	1543.3	1633.6
42.5°	1713.1	1679.3	1587.3	1515.1	1454.7	1381.3	1373.4	1394.9	1400.5	1449.6	1538.2
45°	1657.8	1617.2	1515.1	1436.1	1370.0	1295.0	1287.1	1303.5	1311.9	1358.2	1443.4
47.5°	1599.1	1551.7	1440.6	1352.6	1284.3	1209.2	1199.6	1216.0	1222.8	1268.5	1349.2
50°	1537.6	1480.1	1363.8	1266.8	1199.1	1125.2	1111.0	1130.2	1136.4	1179.3	1258.3
52.5°	1469.9	1406.2	1282.0	1180.4	1112.7	1042.2	1025.3	1043.9	1051.2	1093.0	1165.8
55°	1398.3	1329.4	1199.6	1100.9	1027.5	958.7	944.6	951.9	967.7	1007.2	1074.9
57.5°	1317.6	1249.3	1112.7	1012.3	941.8	875.7	863.9	870.7	885.3	923.7	984.6
60°	1231.8	1159.6	1024.1	923.7	855.4	792.8	782.1	788.3	804.1	839.1	895.5
62.5°	1147.2	1065.9	932.7	832.9	770.8	712.7	709.8	707.6	722.3	756.1	805.8
65°	1044.5	966.6	837.4	742.6	686.2	633.7	622.4	627.5	641.6	672.6	724.5
67.5°	934.4	863.9	739.8	652.3	602.1	555.2	545.6	547.9	562.6	589.7	634.8
70°	817.6	755.6	639.9	561.4	519.1	475.1	468.9	469.5	483.6	507.3	546.8
72.5°	695.2	639.3	538.9	471.7	436.7	405.1	399.5	392.7	405.7	426.0	459.9
75°	570.5	521.4	438.4	383.7	356.1	329.5	324.5	317.7	330.7	348.2	374.7
77.5°	444.6	405.1	340.8	298.5	277.1	257.3	252.8	245.5	258.4	271.4	292.3
80°	321.6	292.9	254.5	209.9	202.6	189.6	185.1	177.2	189.6	198.1	213.9
82.5°	207.7	188.5	166.5	135.4	134.3	124.7	122.4	113.4	124.7	129.8	141.6
85°	105.0	95.9	90.3	68.8	71.1	64.9	64.3	54.7	63.8	66.0	72.8
87.5°	29.9	31.6	28.2	16.9	21.4	20.3	20.3	14.7	20.3	20.3	23.1
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: P838187

CATALOG NUMBER: ORLG-24-4-INS-ASY2R-LD4-3LO-30-120-EDD-90

CANDELA DISTRIBUTION (continued):

	295°	305°	315°	325°	335°	345°	355°	360°
0°	2419.0	2419.0	2419.0	2419.0	2419.0	2419.0	2419.0	2419.0
2.5°	2421.3	2430.9	2433.1	2432.6	2438.8	2472.6	2461.3	2472.6
5°	2426.9	2448.4	2454.0	2461.9	2472.1	2510.4	2498.0	2511.6
7.5°	2430.3	2462.5	2474.9	2490.1	2506.5	2549.4	2539.2	2552.7
10°	2430.3	2472.1	2490.1	2515.5	2537.5	2587.2	2577.6	2593.4
12.5°	2420.1	2473.8	2499.1	2534.7	2562.9	2616.5	2612.6	2623.8
15°	2399.3	2465.3	2500.3	2546.0	2581.0	2640.8	2639.1	2652.6
17.5°	2371.1	2450.6	2492.9	2550.5	2594.5	2661.7	2665.6	2672.9
20°	2335.5	2423.0	2478.3	2548.8	2604.1	2678.0	2683.1	2693.3
22.5°	2288.7	2389.7	2456.3	2541.5	2605.2	2684.8	2693.8	2703.4
25°	2233.4	2349.6	2427.5	2527.4	2599.6	2684.2	2696.6	2705.1
27.5°	2170.2	2297.7	2390.8	2504.8	2583.8	2675.2	2690.4	2700.6
30°	2096.8	2242.4	2349.0	2475.4	2562.3	2658.3	2674.6	2684.8
32.5°	2021.2	2181.5	2299.4	2437.6	2531.3	2631.2	2645.3	2653.2
35°	1938.8	2107.5	2239.6	2389.1	2491.2	2587.7	2598.5	2606.9
37.5°	1849.1	2027.4	2171.3	2334.4	2434.8	2527.4	2537.0	2546.5
40°	1756.6	1943.3	2094.6	2267.2	2367.7	2453.4	2463.6	2470.4
42.5°	1663.5	1850.2	2012.7	2188.2	2288.1	2370.5	2376.7	2383.5
45°	1569.2	1753.7	1920.8	2100.8	2199.5	2276.8	2279.1	2284.7
47.5°	1473.3	1653.9	1819.8	2000.9	2098.5	2169.0	2171.3	2175.8
50°	1376.8	1554.0	1712.0	1893.1	1988.5	2063.0	2052.8	2057.3
52.5°	1282.0	1449.0	1610.4	1776.9	1871.1	1937.1	1940.0	1930.9
55°	1188.9	1346.3	1494.7	1655.0	1744.7	1796.1	1794.4	1797.8
57.5°	1094.7	1242.5	1378.5	1525.2	1612.7	1661.2	1671.4	1659.5
60°	998.8	1137.6	1259.4	1392.0	1476.7	1517.3	1529.2	1517.9
62.5°	903.4	1030.9	1141.5	1257.2	1335.6	1385.8	1384.7	1372.3
65°	808.0	923.7	1022.5	1120.6	1188.9	1239.1	1236.9	1225.6
67.5°	720.0	815.4	904.0	983.5	1042.8	1077.2	1089.0	1075.5
70°	623.0	705.3	783.2	847.0	896.1	927.1	938.4	926.5
72.5°	525.9	595.9	650.6	712.1	749.9	775.9	787.7	776.4
75°	430.0	487.5	532.1	580.1	606.6	628.6	642.1	630.9
77.5°	336.9	381.4	417.0	452.0	482.4	487.5	499.4	492.0
80°	248.3	280.4	306.4	329.5	351.5	353.8	363.4	358.9
82.5°	165.3	186.8	193.5	217.8	231.9	229.7	239.2	235.9
85°	87.5	100.4	112.3	119.6	127.5	120.2	128.7	125.3
87.5°	29.3	31.0	27.1	38.4	42.3	36.1	41.2	39.5
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)