

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: P837832

Luminaire Tested: **ORLG-24-2-INS-ASY2R-LD4-4HI-20-120-EDD**

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: P837832
Test Lab: INNOVATION CENTER(G2)
Issue Date: 5/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: FAIL-SAFE
Catalog Number: ORLG-24-2-INS-ASY2R-LD4-4HI-20-120-EDD
Description: 2FT x 2FT ORL LED LUMINAIRE WITH asymmetric/symmetric lens v2 and
RFI grid
Light Source: 2000K CCT, 80 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

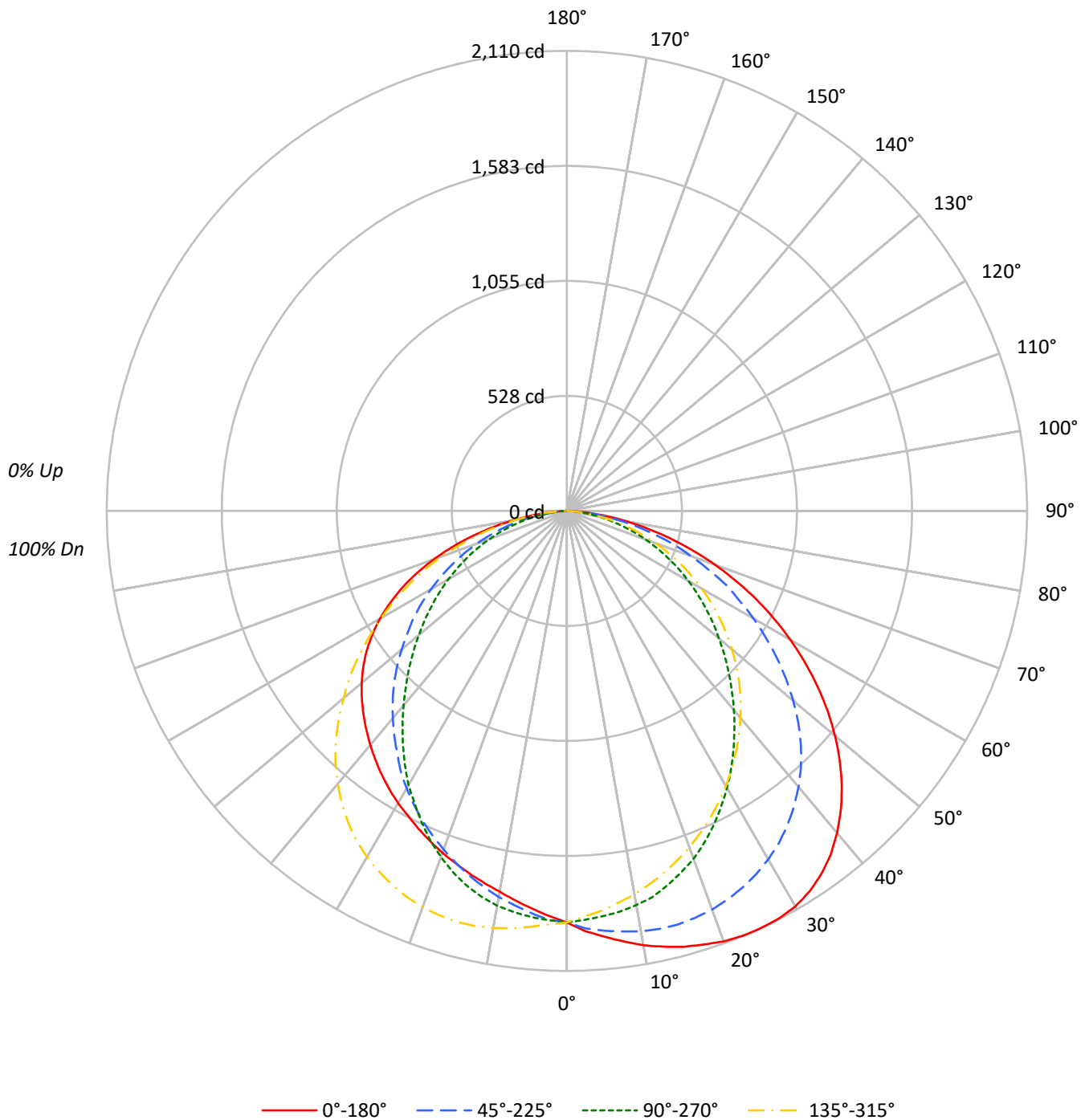
Lumens per Lamp: N/A
Luminaire Lumens: 5537.0 lumens
Efficiency: N/A
Efficacy: 62.9 lumens/watt
Spacing Criteria (0/90/45): 1.43 / 1.16 / 1.4
Luminous Opening: Rectangular (W 2' x L: 2' x H: 0')
CIE Type: Direct

Input Watts (W): 88
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°	5079	5079	5079	5079
5°	5293	5042	4947	5051
10°	5529	5016	4847	5023
15°	5765	4953	4799	4954
20°	6017	4863	4778	4835
25°	6266	4727	4777	4678
30°	6508	4562	4810	4511
35°	6682	4375	4858	4305
40°	6770	4186	4925	4092
45°	6784	3996	5021	3895
50°	6720	3813	5144	3712
55°	6580	3643	5258	3542
60°	6373	3467	5329	3376
65°	6089	3263	5301	3187
70°	5688	3024	5113	2969
75°	5117	2696	4691	2682
80°	4339	2258	3944	2292
85°	3017	1494	2501	1535

Classified

Scaled Data Report

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	179.2	3.2
10°-20°	518.9	9.4
20°-30°	795.2	14.4
30°-40°	966.9	17.5
40°-50°	1005.2	18.2
50°-60°	908.0	16.4
60°-70°	690.3	12.5
70°-80°	384.8	7.0
80°-90°	88.6	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°	1493.3	27.0
0°-40°	2460.2	44.4
0°-60°	4373.3	79.0
0°-90°	5537.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	5537.0	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	1887	1887	1887	1887	1887	
5°	1960	1867	1831	1870	1960	189
15°	2070	1778	1723	1778	2070	587
25°	2110	1592	1609	1576	2110	975
35°	2034	1332	1479	1311	2034	1270
45°	1782	1050	1319	1024	1782	1372
55°	1403	777	1121	755	1403	1252
65°	956	512	832	500	956	945
75°	492	259	451	258	492	523
85°	98	48	81	50	98	123
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°	1887.3	1887.3	1887.3	1887.3	1887.3	1887.3	1887.3	1887.3	1887.3	1887.3	1887.3
2.5°	1929.1	1900.9	1901.4	1926.0	1907.1	1916.3	1889.9	1900.0	1897.0	1899.2	1877.6
5°	1959.5	1929.1	1928.7	1949.8	1928.7	1932.6	1899.2	1905.8	1896.1	1889.9	1866.6
7.5°	1991.6	1961.2	1958.1	1976.6	1948.9	1945.8	1908.8	1908.8	1891.2	1875.8	1853.8
10°	2023.3	1992.0	1988.1	2002.2	1967.8	1957.7	1912.8	1905.8	1882.4	1859.5	1835.8
12.5°	2047.1	2015.4	2012.3	2021.1	1982.4	1963.9	1912.8	1899.2	1864.8	1832.7	1814.2
15°	2069.5	2036.9	2028.6	2033.0	1988.5	1963.9	1906.6	1885.5	1841.5	1799.2	1777.7
17.5°	2085.4	2054.1	2045.8	2045.3	1991.6	1956.4	1893.4	1864.4	1811.6	1760.5	1738.9
20°	2101.2	2070.0	2059.4	2051.5	1990.7	1946.3	1874.1	1834.9	1773.3	1716.0	1698.0
22.5°	2109.1	2077.0	2065.6	2053.7	1985.0	1927.8	1850.3	1800.5	1730.1	1661.9	1646.9
25°	2110.5	2077.4	2065.1	2048.0	1973.6	1905.8	1819.5	1759.2	1680.4	1604.6	1591.9
27.5°	2106.9	2070.8	2058.5	2037.8	1956.4	1878.9	1782.9	1712.1	1627.5	1543.9	1530.2
30°	2094.6	2058.1	2046.2	2019.3	1932.2	1845.9	1742.9	1659.7	1569.0	1480.1	1468.2
32.5°	2070.0	2034.3	2024.6	1997.8	1905.8	1807.6	1696.2	1603.3	1504.3	1419.3	1401.7
35°	2033.9	1998.2	1992.0	1963.9	1868.8	1761.8	1645.1	1541.7	1435.6	1348.9	1331.7
37.5°	1986.8	1956.8	1947.6	1919.8	1825.2	1709.9	1586.6	1474.8	1365.6	1272.3	1261.7
40°	1927.3	1899.2	1892.1	1867.5	1774.6	1652.2	1523.2	1405.7	1293.4	1206.7	1191.7
42.5°	1859.5	1833.1	1829.2	1803.6	1712.1	1588.4	1454.5	1333.9	1218.1	1134.5	1119.5
45°	1782.5	1757.0	1756.1	1731.9	1643.8	1517.5	1382.3	1261.3	1144.6	1057.9	1050.0
47.5°	1697.5	1674.6	1674.6	1652.2	1567.7	1439.6	1307.9	1185.5	1070.6	994.0	980.0
50°	1605.1	1583.5	1576.9	1565.9	1483.6	1354.6	1229.6	1111.6	997.6	924.5	910.8
52.5°	1506.5	1488.0	1492.4	1472.1	1392.5	1266.1	1150.3	1028.4	924.0	857.6	843.9
55°	1402.6	1376.2	1380.1	1372.6	1297.4	1175.0	1061.4	959.7	851.8	789.3	776.6
57.5°	1294.7	1260.4	1274.5	1270.1	1196.1	1081.6	980.0	881.8	780.1	722.4	710.1
60°	1184.2	1151.2	1165.7	1161.8	1092.2	988.3	895.9	804.7	708.8	656.4	644.1
62.5°	1070.6	1040.3	1053.5	1050.4	986.6	892.8	812.2	728.6	637.0	589.9	578.5
65°	956.2	927.1	939.0	936.8	877.8	806.5	726.4	649.8	564.8	523.9	512.4
67.5°	839.1	812.2	823.2	823.2	769.1	700.8	640.1	570.1	493.9	458.7	448.2
70°	722.9	697.8	707.5	706.6	660.8	605.3	552.9	490.4	422.2	393.1	384.3
72.5°	605.8	583.7	592.6	591.7	553.4	517.7	465.8	411.6	352.2	328.9	320.9
75°	492.2	471.5	479.9	479.0	447.7	414.3	379.5	334.6	283.5	267.2	259.3
77.5°	383.9	362.8	369.8	369.8	346.9	322.7	295.0	260.2	224.1	206.5	200.7
80°	280.0	269.9	266.3	266.8	251.4	235.5	221.4	188.0	161.6	149.7	145.7
82.5°	184.0	175.7	172.1	173.0	164.2	154.5	145.7	122.4	104.8	97.7	95.5
85°	97.7	91.6	88.5	90.7	88.9	83.6	79.2	63.4	52.4	49.7	48.4
87.5°	30.8	26.9	24.7	32.6	27.7	24.7	23.8	18.9	14.5	14.5	14.1
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°	1887.3	1887.3	1887.3	1887.3	1887.3	1887.3	1887.3	1887.3	1887.3	1887.3	1887.3
2.5°	1884.6	1884.6	1867.5	1863.5	1861.7	1863.9	1846.8	1843.7	1868.3	1860.0	1841.0
5°	1869.7	1868.8	1844.6	1840.2	1840.2	1837.5	1818.2	1813.8	1838.4	1831.4	1810.7
7.5°	1851.2	1848.5	1819.9	1816.8	1812.4	1810.7	1789.1	1786.0	1807.1	1802.7	1783.4
10°	1828.7	1826.1	1792.2	1790.0	1785.1	1781.6	1761.4	1759.2	1780.7	1773.7	1758.3
12.5°	1799.2	1794.4	1759.6	1757.4	1753.4	1752.1	1732.3	1731.4	1755.2	1748.2	1731.9
15°	1760.5	1756.5	1717.8	1718.7	1719.1	1719.1	1703.3	1702.4	1725.7	1722.6	1705.0
17.5°	1717.8	1712.5	1675.5	1678.2	1681.2	1684.8	1672.4	1674.6	1699.3	1695.3	1679.5
20°	1669.4	1664.1	1628.0	1635.5	1642.1	1649.1	1641.2	1647.3	1670.2	1668.5	1656.6
22.5°	1615.2	1609.9	1576.5	1587.9	1598.9	1612.1	1608.6	1615.6	1639.9	1639.4	1628.9
25°	1549.2	1550.5	1521.0	1535.1	1553.6	1572.1	1573.4	1584.8	1611.7	1609.0	1599.4
27.5°	1487.5	1489.3	1458.0	1481.8	1506.5	1530.2	1536.0	1551.8	1579.1	1576.9	1568.5
30°	1422.8	1425.0	1394.7	1427.2	1457.2	1486.2	1498.5	1520.1	1547.9	1547.9	1539.0
32.5°	1355.5	1359.4	1327.7	1371.3	1406.1	1440.0	1461.6	1484.0	1515.7	1514.8	1507.4
35°	1286.4	1290.8	1261.7	1317.2	1351.9	1393.3	1420.2	1450.1	1478.3	1478.7	1473.0
37.5°	1215.9	1221.2	1194.8	1255.5	1295.2	1344.0	1378.4	1408.3	1439.6	1441.3	1436.0
40°	1145.9	1151.6	1128.8	1187.3	1237.5	1292.1	1331.7	1366.9	1401.3	1402.1	1398.6
42.5°	1075.9	1082.1	1064.9	1122.1	1178.9	1237.5	1284.2	1324.2	1359.4	1361.6	1357.7
45°	1007.7	1013.0	1000.6	1063.2	1117.7	1181.6	1235.3	1280.6	1316.3	1319.4	1318.1
47.5°	939.9	944.7	933.7	991.0	1053.9	1121.7	1183.8	1234.0	1271.8	1275.3	1274.5
50°	873.4	877.4	865.5	925.4	987.9	1060.1	1124.8	1182.9	1225.2	1228.7	1228.2
52.5°	807.4	811.3	801.2	864.2	921.0	997.1	1067.6	1130.5	1172.3	1177.6	1178.5
55°	743.5	745.3	737.4	797.7	852.7	932.4	1013.4	1074.6	1116.4	1120.8	1123.5
57.5°	679.7	680.2	673.6	731.2	784.1	865.5	950.5	1014.7	1054.4	1058.8	1062.7
60°	616.3	615.9	608.4	664.3	714.9	795.5	884.0	947.8	986.1	990.1	995.4
62.5°	553.4	552.0	545.4	597.0	644.5	724.2	813.1	874.7	911.3	913.9	921.0
65°	490.9	489.5	483.4	530.9	574.1	650.2	737.4	795.9	829.0	832.5	831.2
67.5°	429.2	426.6	421.7	464.4	503.6	574.1	657.7	713.6	740.9	744.0	752.4
70°	367.6	364.5	353.5	398.8	433.2	496.1	574.1	623.8	646.7	649.8	648.5
72.5°	306.8	303.8	291.9	333.7	362.8	417.8	487.3	528.7	548.5	551.2	551.2
75°	247.8	246.1	238.6	270.3	294.5	339.4	398.4	432.7	448.2	451.2	450.4
77.5°	191.1	189.7	182.3	209.5	228.5	261.9	309.5	336.3	347.8	351.3	358.8
80°	136.9	136.5	124.6	151.4	159.8	188.0	222.8	243.4	249.6	254.5	259.7
82.5°	87.6	88.0	76.2	99.1	102.6	120.6	142.2	155.0	159.4	163.3	167.3
85°	42.7	44.5	37.9	52.4	52.8	62.1	71.3	76.2	77.9	81.0	84.5
87.5°	11.0	12.8	7.0	15.0	13.2	17.2	19.8	21.1	20.7	22.9	24.2
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°	1887.3	1887.3	1887.3	1887.3	1887.3	1887.3	1887.3	1887.3	1887.3	1887.3	1887.3
2.5°	1847.2	1861.3	1854.3	1877.1	1885.9	1871.9	1896.5	1897.0	1879.3	1900.0	1911.5
5°	1818.6	1833.1	1828.7	1852.5	1863.5	1851.2	1881.1	1886.8	1869.7	1893.0	1911.5
7.5°	1789.5	1806.7	1801.0	1825.2	1838.4	1828.7	1860.9	1870.1	1856.9	1882.4	1907.1
10°	1764.4	1779.0	1772.8	1798.3	1809.8	1801.9	1833.6	1850.7	1838.4	1869.7	1899.2
12.5°	1739.8	1751.7	1744.6	1765.8	1776.8	1766.6	1805.4	1821.2	1812.4	1845.0	1882.9
15°	1708.1	1721.3	1711.6	1730.5	1738.9	1730.1	1761.8	1789.1	1778.1	1813.8	1855.6
17.5°	1683.9	1691.4	1678.2	1693.1	1698.0	1686.1	1718.2	1745.1	1737.2	1775.9	1824.3
20°	1657.0	1663.2	1644.7	1653.1	1652.6	1637.7	1667.2	1693.6	1688.3	1731.0	1786.0
22.5°	1627.1	1630.2	1608.6	1610.4	1609.5	1584.8	1611.2	1638.1	1635.9	1679.0	1740.7
25°	1595.4	1595.8	1568.1	1567.2	1557.5	1528.5	1551.8	1582.2	1575.6	1622.3	1687.0
27.5°	1564.1	1559.7	1526.3	1518.4	1502.9	1468.2	1488.9	1516.2	1512.2	1558.0	1629.7
30°	1530.7	1525.0	1484.0	1469.5	1447.0	1407.0	1424.1	1449.7	1451.9	1491.9	1567.2
32.5°	1499.0	1484.5	1439.1	1418.0	1389.8	1343.1	1352.4	1378.4	1381.9	1422.4	1499.9
35°	1458.0	1448.4	1392.5	1356.4	1328.6	1277.6	1287.2	1305.3	1310.6	1350.2	1429.0
37.5°	1419.3	1403.9	1344.5	1300.4	1264.8	1211.1	1213.7	1232.2	1237.5	1277.6	1355.5
40°	1379.2	1357.2	1293.4	1241.9	1200.9	1144.6	1141.5	1160.9	1164.9	1204.0	1274.5
42.5°	1336.5	1310.1	1238.4	1182.0	1134.9	1077.7	1071.5	1088.3	1092.7	1131.0	1200.1
45°	1293.4	1261.7	1182.0	1120.4	1068.9	1010.3	1004.2	1016.9	1023.5	1059.6	1126.1
47.5°	1247.6	1210.6	1123.9	1055.2	1002.0	943.4	935.9	948.7	954.0	989.6	1052.6
50°	1199.6	1154.7	1064.0	988.3	935.5	877.8	866.8	881.8	886.6	920.1	981.7
52.5°	1146.8	1097.1	1000.2	921.0	868.1	813.1	799.9	814.4	820.2	852.7	909.5
55°	1090.9	1037.2	935.9	858.9	801.7	748.0	736.9	742.7	755.0	785.8	838.6
57.5°	1027.9	974.7	868.1	789.8	734.7	683.2	674.0	679.3	690.7	720.7	768.2
60°	961.0	904.7	799.0	720.7	667.4	618.5	610.2	615.0	627.3	654.6	698.6
62.5°	895.0	831.6	727.7	649.8	601.4	556.0	553.8	552.0	563.5	589.9	628.6
65°	814.9	754.1	653.3	579.3	535.3	494.4	485.6	489.5	500.5	524.8	565.3
67.5°	729.0	674.0	577.1	508.9	469.7	433.2	425.7	427.5	438.9	460.0	495.3
70°	637.9	589.5	499.2	438.0	405.0	370.7	365.8	366.3	377.3	395.8	426.6
72.5°	542.4	498.8	420.4	368.0	340.7	316.1	311.7	306.4	316.5	332.4	358.8
75°	445.1	406.8	342.1	299.4	277.8	257.1	253.1	247.8	258.0	271.6	292.3
77.5°	346.9	316.1	265.9	232.9	216.2	200.7	197.2	191.5	201.6	211.8	228.0
80°	250.9	228.5	198.5	163.8	158.0	147.9	144.4	138.2	147.9	154.5	166.8
82.5°	162.0	147.0	129.9	105.7	104.8	97.3	95.5	88.5	97.3	101.3	110.5
85°	81.9	74.8	70.4	53.7	55.5	50.6	50.2	42.7	49.7	51.5	56.8
87.5°	23.3	24.7	22.0	13.2	16.7	15.8	15.8	11.4	15.8	15.8	18.0
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: P837832

CATALOG NUMBER: ORLG-24-2-INS-ASY2R-LD4-4HI-20-120-EDD

CANDELA DISTRIBUTION (continued):

	295°	305°	315°	325°	335°	345°	355°	360°
0°	1887.3	1887.3	1887.3	1887.3	1887.3	1887.3	1887.3	1887.3
2.5°	1889.0	1896.5	1898.3	1897.8	1902.7	1929.1	1920.3	1929.1
5°	1893.4	1910.2	1914.6	1920.7	1928.7	1958.6	1948.9	1959.5
7.5°	1896.1	1921.2	1930.9	1942.7	1955.5	1989.0	1981.0	1991.6
10°	1896.1	1928.7	1942.7	1962.5	1979.7	2018.5	2011.0	2023.3
12.5°	1888.2	1930.0	1949.8	1977.5	1999.5	2041.4	2038.3	2047.1
15°	1871.9	1923.4	1950.7	1986.3	2013.6	2060.3	2059.0	2069.5
17.5°	1849.9	1911.9	1944.9	1989.8	2024.2	2076.6	2079.7	2085.4
20°	1822.1	1890.4	1933.5	1988.5	2031.7	2089.3	2093.3	2101.2
22.5°	1785.6	1864.4	1916.3	1982.8	2032.5	2094.6	2101.7	2109.1
25°	1742.4	1833.1	1893.9	1971.8	2028.1	2094.2	2103.9	2110.5
27.5°	1693.1	1792.6	1865.3	1954.2	2015.8	2087.1	2099.0	2106.9
30°	1635.9	1749.5	1832.7	1931.3	1999.1	2073.9	2086.7	2094.6
32.5°	1576.9	1701.9	1793.9	1901.8	1974.9	2052.8	2063.8	2070.0
35°	1512.6	1644.3	1747.3	1863.9	1943.6	2018.9	2027.3	2033.9
37.5°	1442.6	1581.7	1694.0	1821.2	1899.6	1971.8	1979.3	1986.8
40°	1370.4	1516.2	1634.1	1768.8	1847.2	1914.1	1922.0	1927.3
42.5°	1297.8	1443.5	1570.3	1707.2	1785.1	1849.4	1854.3	1859.5
45°	1224.3	1368.2	1498.5	1639.0	1716.0	1776.3	1778.1	1782.5
47.5°	1149.4	1290.3	1419.7	1561.1	1637.2	1692.2	1694.0	1697.5
50°	1074.2	1212.4	1335.7	1477.0	1551.4	1609.5	1601.6	1605.1
52.5°	1000.2	1130.5	1256.4	1386.3	1459.8	1511.3	1513.5	1506.5
55°	927.6	1050.4	1166.2	1291.2	1361.2	1401.3	1399.9	1402.6
57.5°	854.0	969.4	1075.5	1189.9	1258.2	1296.0	1304.0	1294.7
60°	779.2	887.5	982.6	1086.0	1152.1	1183.8	1193.0	1184.2
62.5°	704.8	804.3	890.6	980.8	1042.0	1081.2	1080.3	1070.6
65°	630.4	720.7	797.7	874.3	927.6	966.7	965.0	956.2
67.5°	561.7	636.1	705.2	767.3	813.5	840.4	849.6	839.1
70°	486.0	550.3	611.0	660.8	699.1	723.3	732.1	722.9
72.5°	410.3	464.9	507.6	555.6	585.1	605.3	614.6	605.8
75°	335.5	380.4	415.1	452.6	473.2	490.4	501.0	492.2
77.5°	262.8	297.6	325.3	352.6	376.4	380.4	389.6	383.9
80°	193.7	218.8	239.0	257.1	274.3	276.0	283.5	280.0
82.5°	129.0	145.7	151.0	169.9	180.9	179.2	186.7	184.0
85°	68.2	78.4	87.6	93.3	99.5	93.8	100.4	97.7
87.5°	22.9	24.2	21.1	29.9	33.0	28.2	32.1	30.8
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)