

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: P837902

Luminaire Tested: **ORLG-24-2-INS-ASY2R-LD4-4LO-40-120-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: P837902
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-LD4-4LO-40-120-EDD
Description: 2FT x 2FT ORL LED LUMINAIRE WITH asymmetric/symmetric lens v2 and RFI grid
Light Source: 4000K CCT, 80 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

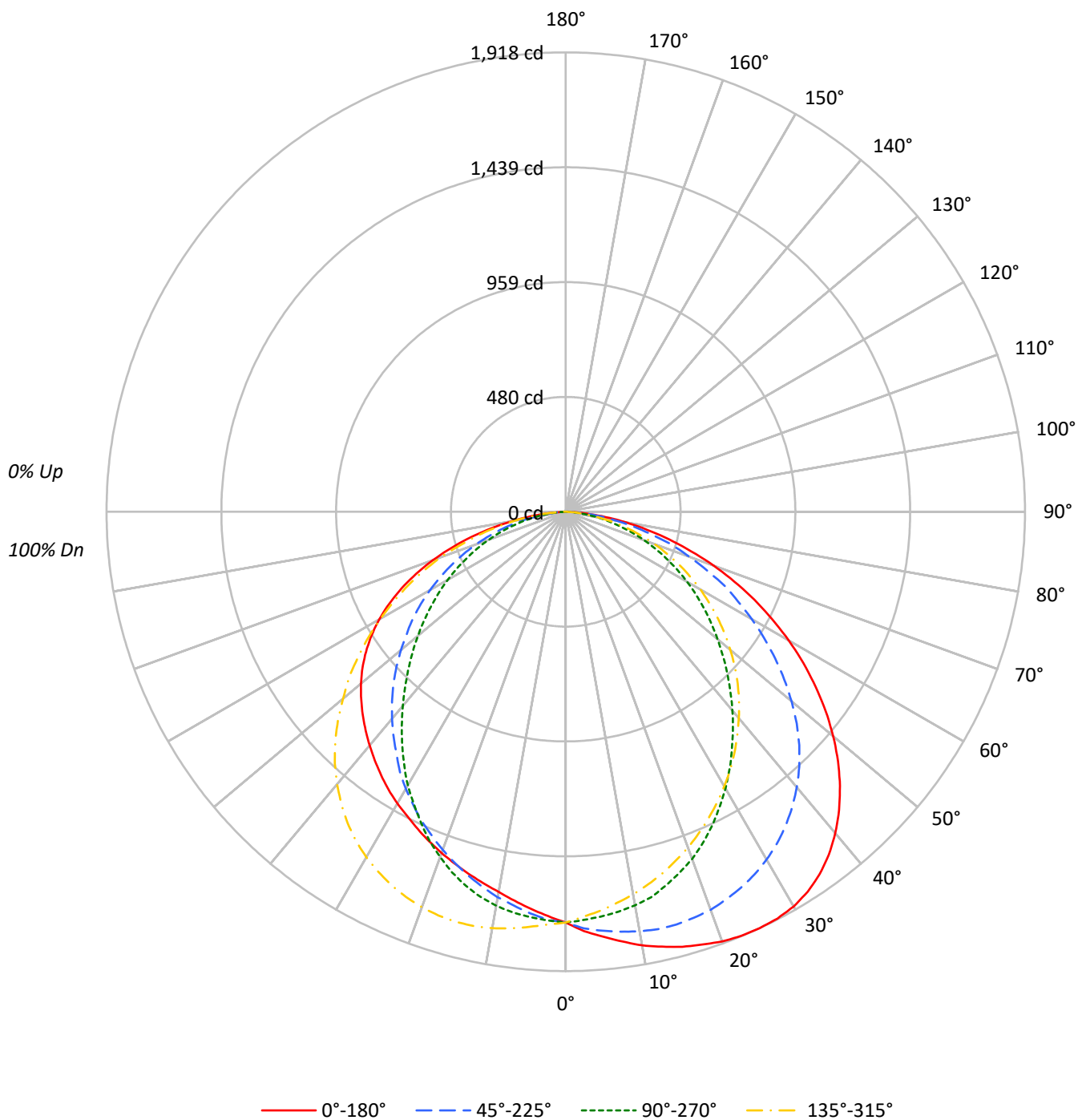
Lumens per Lamp: N/A
Luminaire Lumens: 5031.3 lumens
Efficiency: N/A
Efficacy: 107.5 lumens/watt
Spacing Criteria (0/90/45): 1.43 / 1.16 / 1.4
Luminous Opening: Rectangular (W 2' x L: 2' x H: 0')
CIE Type: Direct

Input Watts (W): 46.8
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°	4615	4615	4615	4615
5°	4810	4582	4495	4589
10°	5024	4558	4404	4565
15°	5239	4500	4361	4501
20°	5468	4418	4342	4393
25°	5694	4295	4341	4251
30°	5914	4145	4370	4099
35°	6071	3975	4414	3912
40°	6152	3804	4476	3718
45°	6164	3631	4563	3540
50°	6106	3465	4674	3373
55°	5979	3310	4778	3218
60°	5792	3150	4842	3068
65°	5533	2965	4817	2896
70°	5168	2747	4645	2697
75°	4650	2450	4263	2437
80°	3942	2052	3583	2083
85°	2742	1359	2272	1396

Classified

Scaled Data Report

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	162.8	3.2
10°-20°	471.5	9.4
20°-30°	722.6	14.4
30°-40°	878.6	17.5
40°-50°	913.4	18.2
50°-60°	825.1	16.4
60°-70°	627.2	12.5
70°-80°	349.7	6.9
80°-90°	80.5	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°	1356.9	27.0
0°-40°	2235.5	44.4
0°-60°	3973.9	79.0
0°-90°	5031.3	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	5031.3	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	1715	1715	1715	1715	1715	
5°	1780	1696	1664	1699	1780	172
15°	1880	1615	1565	1616	1880	533
25°	1918	1446	1462	1432	1918	886
35°	1848	1210	1344	1191	1848	1154
45°	1620	954	1199	930	1620	1247
55°	1274	706	1018	686	1274	1138
65°	869	466	756	455	869	859
75°	447	236	410	234	447	475
85°	89	44	74	45	89	112
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°	1714.9	1714.9	1714.9	1714.9	1714.9	1714.9	1714.9	1714.9	1714.9	1714.9	1714.9
2.5°	1752.9	1727.3	1727.7	1750.1	1732.9	1741.3	1717.3	1726.5	1723.7	1725.7	1706.1
5°	1780.5	1752.9	1752.5	1771.7	1752.5	1756.1	1725.7	1731.7	1722.9	1717.3	1696.1
7.5°	1809.7	1782.1	1779.3	1796.1	1770.9	1768.1	1734.5	1734.5	1718.5	1704.5	1684.5
10°	1838.5	1810.1	1806.5	1819.3	1788.1	1778.9	1738.1	1731.7	1710.5	1689.7	1668.1
12.5°	1860.1	1831.3	1828.5	1836.5	1801.3	1784.5	1738.1	1725.7	1694.5	1665.3	1648.5
15°	1880.5	1850.9	1843.3	1847.3	1806.9	1784.5	1732.5	1713.3	1673.3	1634.9	1615.3
17.5°	1894.9	1866.5	1858.9	1858.5	1809.7	1777.7	1720.5	1694.1	1646.1	1599.7	1580.1
20°	1909.3	1880.9	1871.3	1864.1	1808.9	1768.5	1702.9	1667.3	1611.3	1559.3	1542.9
22.5°	1916.5	1887.3	1876.9	1866.1	1803.7	1751.7	1681.3	1636.1	1572.1	1510.1	1496.5
25°	1917.7	1887.7	1876.5	1860.9	1793.3	1731.7	1653.3	1598.5	1526.9	1458.1	1446.5
27.5°	1914.5	1881.7	1870.5	1851.7	1777.7	1707.3	1620.1	1555.7	1478.9	1402.9	1390.5
30°	1903.3	1870.1	1859.3	1834.9	1755.7	1677.3	1583.7	1508.1	1425.7	1344.9	1334.1
32.5°	1880.9	1848.5	1839.7	1815.3	1731.7	1642.5	1541.3	1456.9	1366.9	1289.7	1273.7
35°	1848.1	1815.7	1810.1	1784.5	1698.1	1600.9	1494.9	1400.9	1304.5	1225.7	1210.1
37.5°	1805.3	1778.1	1769.7	1744.5	1658.5	1553.7	1441.7	1340.1	1240.9	1156.1	1146.5
40°	1751.3	1725.7	1719.3	1696.9	1612.5	1501.3	1384.1	1277.3	1175.3	1096.5	1082.9
42.5°	1689.7	1665.7	1662.1	1638.9	1555.7	1443.3	1321.7	1212.1	1106.9	1030.9	1017.3
45°	1619.7	1596.5	1595.7	1573.7	1493.7	1378.9	1256.1	1146.1	1040.1	961.3	954.1
47.5°	1542.5	1521.7	1521.7	1501.3	1424.5	1308.1	1188.5	1077.3	972.9	903.3	890.5
50°	1458.5	1438.9	1432.9	1422.9	1348.1	1230.9	1117.3	1010.1	906.5	840.1	827.7
52.5°	1368.9	1352.1	1356.1	1337.7	1265.3	1150.5	1045.3	934.5	839.7	779.3	766.9
55°	1274.5	1250.5	1254.1	1247.3	1178.9	1067.7	964.5	872.1	774.1	717.2	705.6
57.5°	1176.5	1145.3	1158.1	1154.1	1086.9	982.9	890.5	801.3	708.8	656.4	645.2
60°	1076.1	1046.1	1059.3	1055.7	992.5	898.1	814.1	731.3	644.0	596.4	585.2
62.5°	972.9	945.3	957.3	954.5	896.5	811.3	738.1	662.0	578.8	536.0	525.6
65°	868.9	842.5	853.3	851.3	797.7	732.9	660.0	590.4	513.2	476.0	465.6
67.5°	762.5	738.1	748.1	748.1	698.8	636.8	581.6	518.0	448.8	416.8	407.2
70°	656.8	634.0	642.8	642.0	600.4	550.0	502.4	445.6	383.6	357.2	349.2
72.5°	550.4	530.4	538.4	537.6	502.8	470.4	423.2	374.0	320.0	298.8	291.6
75°	447.2	428.4	436.0	435.2	406.8	376.4	344.8	304.0	257.6	242.8	235.6
77.5°	348.8	329.6	336.0	336.0	315.2	293.2	268.0	236.4	203.6	187.6	182.4
80°	254.4	245.2	242.0	242.4	228.4	214.0	201.2	170.8	146.8	136.0	132.4
82.5°	167.2	159.6	156.4	157.2	149.2	140.4	132.4	111.2	95.2	88.8	86.8
85°	88.8	83.2	80.4	82.4	80.8	76.0	72.0	57.6	47.6	45.2	44.0
87.5°	28.0	24.4	22.4	29.6	25.2	22.4	21.6	17.2	13.2	13.2	12.8
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):

	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°	185°
0°	1714.9	1714.9	1714.9	1714.9	1714.9	1714.9	1714.9	1714.9	1714.9	1714.9	1714.9
2.5°	1712.5	1712.5	1696.9	1693.3	1691.7	1693.7	1678.1	1675.3	1697.7	1690.1	1672.9
5°	1698.9	1698.1	1676.1	1672.1	1672.1	1669.7	1652.1	1648.1	1670.5	1664.1	1645.3
7.5°	1682.1	1679.7	1653.7	1650.9	1646.9	1645.3	1625.7	1622.9	1642.1	1638.1	1620.5
10°	1661.7	1659.3	1628.5	1626.5	1622.1	1618.9	1600.5	1598.5	1618.1	1611.7	1597.7
12.5°	1634.9	1630.5	1598.9	1596.9	1593.3	1592.1	1574.1	1573.3	1594.9	1588.5	1573.7
15°	1599.7	1596.1	1560.9	1561.7	1562.1	1562.1	1547.7	1546.9	1568.1	1565.3	1549.3
17.5°	1560.9	1556.1	1522.5	1524.9	1527.7	1530.9	1519.7	1521.7	1544.1	1540.5	1526.1
20°	1516.9	1512.1	1479.3	1486.1	1492.1	1498.5	1491.3	1496.9	1517.7	1516.1	1505.3
22.5°	1467.7	1462.9	1432.5	1442.9	1452.9	1464.9	1461.7	1468.1	1490.1	1489.7	1480.1
25°	1407.7	1408.9	1382.1	1394.9	1411.7	1428.5	1429.7	1440.1	1464.5	1462.1	1453.3
27.5°	1351.7	1353.3	1324.9	1346.5	1368.9	1390.5	1395.7	1410.1	1434.9	1432.9	1425.3
30°	1292.9	1294.9	1267.3	1296.9	1324.1	1350.5	1361.7	1381.3	1406.5	1406.5	1398.5
32.5°	1231.7	1235.3	1206.5	1246.1	1277.7	1308.5	1328.1	1348.5	1377.3	1376.5	1369.7
35°	1168.9	1172.9	1146.5	1196.9	1228.5	1266.1	1290.5	1317.7	1343.3	1343.7	1338.5
37.5°	1104.9	1109.7	1085.7	1140.9	1176.9	1221.3	1252.5	1279.7	1308.1	1309.7	1304.9
40°	1041.3	1046.5	1025.7	1078.9	1124.5	1174.1	1210.1	1242.1	1273.3	1274.1	1270.9
42.5°	977.7	983.3	967.7	1019.7	1071.3	1124.5	1166.9	1203.3	1235.3	1237.3	1233.7
45°	915.7	920.5	909.3	966.1	1015.7	1073.7	1122.5	1163.7	1196.1	1198.9	1197.7
47.5°	854.1	858.5	848.5	900.5	957.7	1019.3	1075.7	1121.3	1155.7	1158.9	1158.1
50°	793.7	797.3	786.5	840.9	897.7	963.3	1022.1	1074.9	1113.3	1116.5	1116.1
52.5°	733.7	737.3	728.1	785.3	836.9	906.1	970.1	1027.3	1065.3	1070.1	1070.9
55°	675.6	677.2	670.0	724.8	774.9	847.3	920.9	976.5	1014.5	1018.5	1020.9
57.5°	617.6	618.0	612.0	664.4	712.4	786.5	863.7	922.1	958.1	962.1	965.7
60°	560.0	559.6	552.8	603.6	649.6	722.8	803.3	861.3	896.1	899.7	904.5
62.5°	502.8	501.6	495.6	542.4	585.6	658.0	738.9	794.9	828.1	830.5	836.9
65°	446.0	444.8	439.2	482.4	521.6	590.8	670.0	723.2	753.3	756.5	755.3
67.5°	390.0	387.6	383.2	422.0	457.6	521.6	597.6	648.4	673.2	676.0	683.6
70°	334.0	331.2	321.2	362.4	393.6	450.8	521.6	566.8	587.6	590.4	589.2
72.5°	278.8	276.0	265.2	303.2	329.6	379.6	442.8	480.4	498.4	500.8	500.8
75°	225.2	223.6	216.8	245.6	267.6	308.4	362.0	393.2	407.2	410.0	409.2
77.5°	173.6	172.4	165.6	190.4	207.6	238.0	281.2	305.6	316.0	319.2	326.0
80°	124.4	124.0	113.2	137.6	145.2	170.8	202.4	221.2	226.8	231.2	236.0
82.5°	79.6	80.0	69.2	90.0	93.2	109.6	129.2	140.8	144.8	148.4	152.0
85°	38.8	40.4	34.4	47.6	48.0	56.4	64.8	69.2	70.8	73.6	76.8
87.5°	10.0	11.6	6.4	13.6	12.0	15.6	18.0	19.2	18.8	20.8	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):

	195°	205°	215°	225°	235°	245°	255°	265°	270°	275°	285°
0°	1714.9	1714.9	1714.9	1714.9	1714.9	1714.9	1714.9	1714.9	1714.9	1714.9	1714.9
2.5°	1678.5	1691.3	1684.9	1705.7	1713.7	1700.9	1723.3	1723.7	1707.7	1726.5	1736.9
5°	1652.5	1665.7	1661.7	1683.3	1693.3	1682.1	1709.3	1714.5	1698.9	1720.1	1736.9
7.5°	1626.1	1641.7	1636.5	1658.5	1670.5	1661.7	1690.9	1699.3	1687.3	1710.5	1732.9
10°	1603.3	1616.5	1610.9	1634.1	1644.5	1637.3	1666.1	1681.7	1670.5	1698.9	1725.7
12.5°	1580.9	1591.7	1585.3	1604.5	1614.5	1605.3	1640.5	1654.9	1646.9	1676.5	1710.9
15°	1552.1	1564.1	1555.3	1572.5	1580.1	1572.1	1600.9	1625.7	1615.7	1648.1	1686.1
17.5°	1530.1	1536.9	1524.9	1538.5	1542.9	1532.1	1561.3	1585.7	1578.5	1613.7	1657.7
20°	1505.7	1511.3	1494.5	1502.1	1501.7	1488.1	1514.9	1538.9	1534.1	1572.9	1622.9
22.5°	1478.5	1481.3	1461.7	1463.3	1462.5	1440.1	1464.1	1488.5	1486.5	1525.7	1581.7
25°	1449.7	1450.1	1424.9	1424.1	1415.3	1388.9	1410.1	1437.7	1431.7	1474.1	1532.9
27.5°	1421.3	1417.3	1386.9	1379.7	1365.7	1334.1	1352.9	1377.7	1374.1	1415.7	1480.9
30°	1390.9	1385.7	1348.5	1335.3	1314.9	1278.5	1294.1	1317.3	1319.3	1355.7	1424.1
32.5°	1362.1	1348.9	1307.7	1288.5	1262.9	1220.5	1228.9	1252.5	1255.7	1292.5	1362.9
35°	1324.9	1316.1	1265.3	1232.5	1207.3	1160.9	1169.7	1186.1	1190.9	1226.9	1298.5
37.5°	1289.7	1275.7	1221.7	1181.7	1149.3	1100.5	1102.9	1119.7	1124.5	1160.9	1231.7
40°	1253.3	1233.3	1175.3	1128.5	1091.3	1040.1	1037.3	1054.9	1058.5	1094.1	1158.1
42.5°	1214.5	1190.5	1125.3	1074.1	1031.3	979.3	973.7	988.9	992.9	1027.7	1090.5
45°	1175.3	1146.5	1074.1	1018.1	971.3	918.1	912.5	924.1	930.1	962.9	1023.3
47.5°	1133.7	1100.1	1021.3	958.9	910.5	857.3	850.5	862.1	866.9	899.3	956.5
50°	1090.1	1049.3	966.9	898.1	850.1	797.7	787.7	801.3	805.7	836.1	892.1
52.5°	1042.1	996.9	908.9	836.9	788.9	738.9	726.9	740.1	745.3	774.9	826.5
55°	991.3	942.5	850.5	780.5	728.5	679.6	669.6	674.8	686.0	714.0	762.1
57.5°	934.1	885.7	788.9	717.6	667.6	620.8	612.4	617.2	627.6	654.8	698.0
60°	873.3	822.1	726.1	654.8	606.4	562.0	554.4	558.8	570.0	594.8	634.8
62.5°	813.3	755.7	661.2	590.4	546.4	505.2	503.2	501.6	512.0	536.0	571.2
65°	740.5	685.2	593.6	526.4	486.4	449.2	441.2	444.8	454.8	476.8	513.6
67.5°	662.4	612.4	524.4	462.4	426.8	393.6	386.8	388.4	398.8	418.0	450.0
70°	579.6	535.6	453.6	398.0	368.0	336.8	332.4	332.8	342.8	359.6	387.6
72.5°	492.8	453.2	382.0	334.4	309.6	287.2	283.2	278.4	287.6	302.0	326.0
75°	404.4	369.6	310.8	272.0	252.4	233.6	230.0	225.2	234.4	246.8	265.6
77.5°	315.2	287.2	241.6	211.6	196.4	182.4	179.2	174.0	183.2	192.4	207.2
80°	228.0	207.6	180.4	148.8	143.6	134.4	131.2	125.6	134.4	140.4	151.6
82.5°	147.2	133.6	118.0	96.0	95.2	88.4	86.8	80.4	88.4	92.0	100.4
85°	74.4	68.0	64.0	48.8	50.4	46.0	45.6	38.8	45.2	46.8	51.6
87.5°	21.2	22.4	20.0	12.0	15.2	14.4	14.4	10.4	14.4	14.4	16.4
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: P837902

CATALOG NUMBER: ORLG-24-2-INS-ASY2R-LD4-4LO-40-120-EDD

CANDELA DISTRIBUTION (continued):

	295°	305°	315°	325°	335°	345°	355°	360°
0°	1714.9	1714.9	1714.9	1714.9	1714.9	1714.9	1714.9	1714.9
2.5°	1716.5	1723.3	1724.9	1724.5	1728.9	1752.9	1744.9	1752.9
5°	1720.5	1735.7	1739.7	1745.3	1752.5	1779.7	1770.9	1780.5
7.5°	1722.9	1745.7	1754.5	1765.3	1776.9	1807.3	1800.1	1809.7
10°	1722.9	1752.5	1765.3	1783.3	1798.9	1834.1	1827.3	1838.5
12.5°	1715.7	1753.7	1771.7	1796.9	1816.9	1854.9	1852.1	1860.1
15°	1700.9	1747.7	1772.5	1804.9	1829.7	1872.1	1870.9	1880.5
17.5°	1680.9	1737.3	1767.3	1808.1	1839.3	1886.9	1889.7	1894.9
20°	1655.7	1717.7	1756.9	1806.9	1846.1	1898.5	1902.1	1909.3
22.5°	1622.5	1694.1	1741.3	1801.7	1846.9	1903.3	1909.7	1916.5
25°	1583.3	1665.7	1720.9	1791.7	1842.9	1902.9	1911.7	1917.7
27.5°	1538.5	1628.9	1694.9	1775.7	1831.7	1896.5	1907.3	1914.5
30°	1486.5	1589.7	1665.3	1754.9	1816.5	1884.5	1896.1	1903.3
32.5°	1432.9	1546.5	1630.1	1728.1	1794.5	1865.3	1875.3	1880.9
35°	1374.5	1494.1	1587.7	1693.7	1766.1	1834.5	1842.1	1848.1
37.5°	1310.9	1437.3	1539.3	1654.9	1726.1	1791.7	1798.5	1805.3
40°	1245.3	1377.7	1484.9	1607.3	1678.5	1739.3	1746.5	1751.3
42.5°	1179.3	1311.7	1426.9	1551.3	1622.1	1680.5	1684.9	1689.7
45°	1112.5	1243.3	1361.7	1489.3	1559.3	1614.1	1615.7	1619.7
47.5°	1044.5	1172.5	1290.1	1418.5	1487.7	1537.7	1539.3	1542.5
50°	976.1	1101.7	1213.7	1342.1	1409.7	1462.5	1455.3	1458.5
52.5°	908.9	1027.3	1141.7	1259.7	1326.5	1373.3	1375.3	1368.9
55°	842.9	954.5	1059.7	1173.3	1236.9	1273.3	1272.1	1274.5
57.5°	776.1	880.9	977.3	1081.3	1143.3	1177.7	1184.9	1176.5
60°	708.0	806.5	892.9	986.9	1046.9	1075.7	1084.1	1076.1
62.5°	640.4	730.9	809.3	891.3	946.9	982.5	981.7	972.9
65°	572.8	654.8	724.8	794.5	842.9	878.5	876.9	868.9
67.5°	510.4	578.0	640.8	697.2	739.3	763.7	772.1	762.5
70°	441.6	500.0	555.2	600.4	635.2	657.2	665.2	656.8
72.5°	372.8	422.4	461.2	504.8	531.6	550.0	558.4	550.4
75°	304.8	345.6	377.2	411.2	430.0	445.6	455.2	447.2
77.5°	238.8	270.4	295.6	320.4	342.0	345.6	354.0	348.8
80°	176.0	198.8	217.2	233.6	249.2	250.8	257.6	254.4
82.5°	117.2	132.4	137.2	154.4	164.4	162.8	169.6	167.2
85°	62.0	71.2	79.6	84.8	90.4	85.2	91.2	88.8
87.5°	20.8	22.0	19.2	27.2	30.0	25.6	29.2	28.0
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)