

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: P838111

Luminaire Tested: **ORLG-24-4-INS-ASY2R-LD4-1HI-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: P838111
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-LD4-1HI-40-120-EDD
Description: 2FT x 4FT ORL LED LUMINAIRE WITH asymmetric/symmetric lens v2 and
RFI grid
Light Source: 4000K CCT, 80 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

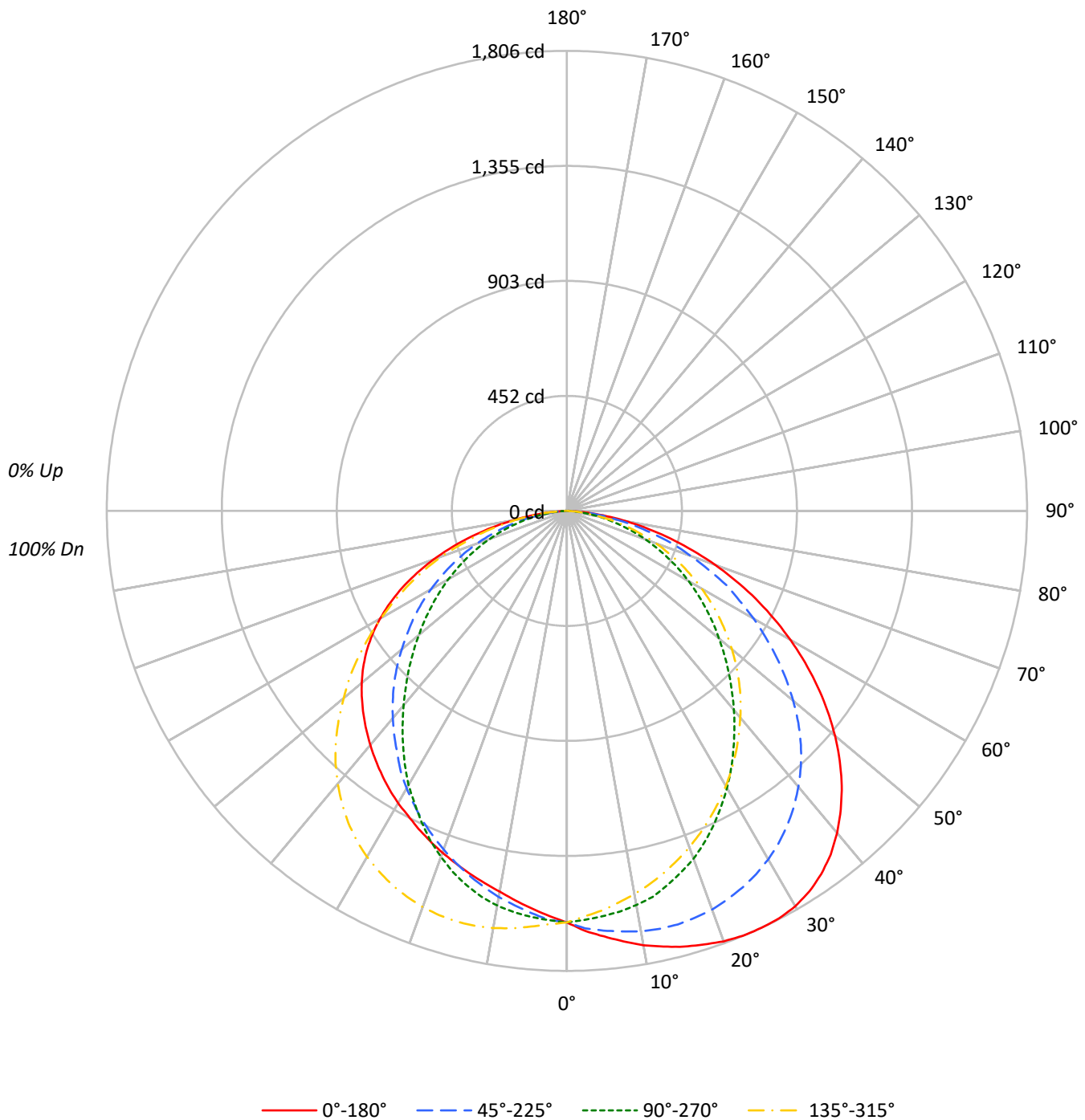
Lumens per Lamp: N/A
Luminaire Lumens: 4738.7 lumens
Efficiency: N/A
Efficacy: 107.7 lumens/watt
Spacing Criteria (0/90/45): 1.43 / 1.16 / 1.4
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')
CIE Type: Direct

Input Watts (W): 44
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°	2173	2173	2173	2173
5°	2265	2158	2117	2161
10°	2366	2147	2074	2150
15°	2467	2119	2054	2120
20°	2575	2081	2045	2069
25°	2681	2023	2044	2002
30°	2785	1952	2058	1931
35°	2859	1872	2079	1842
40°	2897	1791	2108	1751
45°	2903	1710	2149	1667
50°	2875	1632	2201	1588
55°	2816	1559	2250	1516
60°	2727	1483	2280	1445
65°	2605	1396	2268	1364
70°	2434	1294	2188	1270
75°	2190	1154	2008	1148
80°	1857	966	1688	981
85°	1291	639	1070	658



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	153.3	3.2
10°-20°	444.1	9.4
20°-30°	680.6	14.4
30°-40°	827.5	17.5
40°-50°	860.2	18.2
50°-60°	777.1	16.4
60°-70°	590.8	12.5
70°-80°	329.3	7.0
80°-90°	75.8	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°	1278.0	27.0
0°-40°	2105.5	44.4
0°-60°	3742.8	79.0
0°-90°	4738.7	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4738.7	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	1615	1615	1615	1615	1615	
5°	1677	1598	1567	1600	1677	162
15°	1771	1521	1474	1522	1771	502
25°	1806	1362	1377	1348	1806	834
35°	1741	1140	1266	1122	1741	1087
45°	1526	899	1129	876	1526	1174
55°	1200	665	959	646	1200	1072
65°	818	439	712	428	818	809
75°	421	222	386	221	421	447
85°	84	41	69	43	84	105
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°	1615.2	1615.2	1615.2	1615.2	1615.2	1615.2	1615.2	1615.2	1615.2	1615.2	1615.2
2.5°	1651.0	1626.9	1627.2	1648.3	1632.1	1640.0	1617.4	1626.1	1623.5	1625.4	1606.9
5°	1677.0	1651.0	1650.6	1668.7	1650.6	1654.0	1625.4	1631.0	1622.7	1617.4	1597.5
7.5°	1704.5	1678.5	1675.8	1691.7	1667.9	1665.3	1633.6	1633.6	1618.6	1605.4	1586.5
10°	1731.6	1704.9	1701.5	1713.5	1684.1	1675.5	1637.0	1631.0	1611.0	1591.4	1571.1
12.5°	1751.9	1724.8	1722.2	1729.7	1696.6	1680.7	1637.0	1625.4	1596.0	1568.5	1552.6
15°	1771.2	1743.3	1736.1	1739.9	1701.8	1680.7	1631.8	1613.7	1576.0	1539.8	1521.4
17.5°	1784.7	1758.0	1750.8	1750.4	1704.5	1674.3	1620.5	1595.6	1550.4	1506.7	1488.2
20°	1798.3	1771.5	1762.5	1755.7	1703.7	1665.7	1603.9	1570.3	1517.6	1468.6	1453.2
22.5°	1805.1	1777.6	1767.8	1757.6	1698.8	1649.8	1583.5	1541.0	1480.7	1422.3	1409.5
25°	1806.2	1777.9	1767.4	1752.7	1689.0	1631.0	1557.2	1505.5	1438.1	1373.3	1362.4
27.5°	1803.2	1772.3	1761.7	1744.0	1674.3	1608.0	1525.9	1465.2	1392.9	1321.3	1309.6
30°	1792.6	1761.4	1751.2	1728.2	1653.6	1579.8	1491.6	1420.4	1342.8	1266.7	1256.5
32.5°	1771.5	1741.0	1732.7	1709.7	1631.0	1547.0	1451.7	1372.2	1287.4	1214.7	1199.6
35°	1740.6	1710.1	1704.9	1680.7	1599.4	1507.8	1408.0	1319.4	1228.6	1154.4	1139.7
37.5°	1700.3	1674.7	1666.8	1643.1	1562.1	1463.3	1357.9	1262.2	1168.7	1088.8	1079.8
40°	1649.5	1625.4	1619.3	1598.2	1518.7	1414.0	1303.6	1203.0	1106.9	1032.7	1019.9
42.5°	1591.4	1568.8	1565.4	1543.6	1465.2	1359.4	1244.8	1141.6	1042.5	970.9	958.1
45°	1525.5	1503.7	1502.9	1482.2	1406.8	1298.7	1183.0	1079.4	979.6	905.4	898.6
47.5°	1452.8	1433.2	1433.2	1414.0	1341.7	1232.0	1119.4	1014.6	916.3	850.7	838.7
50°	1373.7	1355.2	1349.6	1340.1	1269.7	1159.3	1052.3	951.3	853.7	791.2	779.5
52.5°	1289.3	1273.5	1277.2	1259.9	1191.7	1083.6	984.5	880.1	790.8	733.9	722.3
55°	1200.4	1177.8	1181.2	1174.7	1110.3	1005.6	908.4	821.3	729.0	675.5	664.6
57.5°	1108.1	1078.7	1090.7	1087.0	1023.7	925.7	838.7	754.7	667.6	618.3	607.7
60°	1013.5	985.2	997.7	994.3	934.7	845.8	766.7	688.7	606.6	561.8	551.2
62.5°	916.3	890.3	901.6	899.0	844.3	764.1	695.1	623.5	545.2	504.9	495.1
65°	818.3	793.5	803.6	801.8	751.3	690.2	621.7	556.1	483.4	448.3	438.6
67.5°	718.1	695.1	704.5	704.5	658.2	599.8	547.8	487.9	422.7	392.6	383.5
70°	618.6	597.2	605.5	604.7	565.5	518.0	473.2	419.7	361.3	336.4	328.9
72.5°	518.4	499.6	507.1	506.4	473.6	443.1	398.6	352.3	301.4	281.4	274.7
75°	421.2	403.5	410.7	409.9	383.2	354.5	324.8	286.3	242.6	228.7	221.9
77.5°	328.5	310.5	316.5	316.5	296.9	276.2	252.4	222.7	191.8	176.7	171.8
80°	239.6	231.0	227.9	228.3	215.1	201.6	189.5	160.9	138.3	128.1	124.7
82.5°	157.5	150.3	147.3	148.1	140.5	132.2	124.7	104.7	89.7	83.6	81.8
85°	83.6	78.4	75.7	77.6	76.1	71.6	67.8	54.3	44.8	42.6	41.4
87.5°	26.4	23.0	21.1	27.9	23.7	21.1	20.3	16.2	12.4	12.4	12.1
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°	1615.2	1615.2	1615.2	1615.2	1615.2	1615.2	1615.2	1615.2	1615.2	1615.2	1615.2
2.5°	1612.9	1612.9	1598.2	1594.8	1593.3	1595.2	1580.5	1577.9	1599.0	1591.8	1575.6
5°	1600.1	1599.4	1578.6	1574.9	1574.9	1572.6	1556.0	1552.3	1573.4	1567.3	1549.6
7.5°	1584.3	1582.0	1557.5	1554.9	1551.1	1549.6	1531.2	1528.5	1546.6	1542.8	1526.3
10°	1565.1	1562.8	1533.8	1531.9	1527.8	1524.8	1507.4	1505.5	1524.0	1518.0	1504.8
12.5°	1539.8	1535.7	1505.9	1504.0	1500.6	1499.5	1482.6	1481.8	1502.2	1496.1	1482.2
15°	1506.7	1503.3	1470.1	1470.9	1471.3	1471.3	1457.7	1456.9	1476.9	1474.3	1459.2
17.5°	1470.1	1465.6	1434.0	1436.2	1438.9	1441.9	1431.3	1433.2	1454.3	1450.9	1437.3
20°	1428.7	1424.2	1393.3	1399.7	1405.3	1411.4	1404.6	1409.8	1429.4	1427.9	1417.8
22.5°	1382.3	1377.8	1349.2	1359.0	1368.4	1379.7	1376.7	1382.7	1403.4	1403.1	1394.0
25°	1325.8	1327.0	1301.7	1313.8	1329.6	1345.4	1346.6	1356.3	1379.3	1377.1	1368.8
27.5°	1273.1	1274.6	1247.8	1268.2	1289.3	1309.6	1314.5	1328.1	1351.4	1349.6	1342.4
30°	1217.7	1219.6	1193.6	1221.5	1247.1	1272.0	1282.5	1301.0	1324.7	1324.7	1317.2
32.5°	1160.1	1163.4	1136.3	1173.6	1203.4	1232.4	1250.9	1270.1	1297.2	1296.4	1290.0
35°	1100.9	1104.7	1079.8	1127.3	1157.0	1192.5	1215.4	1241.1	1265.2	1265.5	1260.6
37.5°	1040.6	1045.1	1022.5	1074.5	1108.4	1150.3	1179.6	1205.3	1232.0	1233.5	1229.0
40°	980.7	985.6	966.0	1016.1	1059.1	1105.8	1139.7	1169.8	1199.2	1200.0	1197.0
42.5°	920.8	926.1	911.4	960.4	1009.0	1059.1	1099.0	1133.3	1163.4	1165.3	1161.9
45°	862.4	866.9	856.4	909.9	956.6	1011.2	1057.2	1096.0	1126.5	1129.2	1128.0
47.5°	804.4	808.5	799.1	848.1	902.0	960.0	1013.1	1056.1	1088.5	1091.5	1090.7
50°	747.5	750.9	740.7	792.0	845.5	907.2	962.6	1012.4	1048.5	1051.5	1051.2
52.5°	691.0	694.4	685.7	739.6	788.2	853.4	913.6	967.5	1003.3	1007.8	1008.6
55°	636.4	637.9	631.1	682.7	729.8	798.0	867.3	919.7	955.5	959.2	961.5
57.5°	581.7	582.1	576.4	625.8	671.0	740.7	813.4	868.4	902.3	906.1	909.5
60°	527.5	527.1	520.7	568.5	611.9	680.8	756.5	811.2	843.9	847.3	851.9
62.5°	473.6	472.5	466.8	510.9	551.6	619.8	695.9	748.6	779.9	782.2	788.2
65°	420.1	419.0	413.7	454.4	491.3	556.5	631.1	681.2	709.4	712.5	711.3
67.5°	367.3	365.1	360.9	397.5	431.0	491.3	562.9	610.7	634.1	636.7	643.9
70°	314.6	312.0	302.5	341.3	370.7	424.6	491.3	533.9	553.5	556.1	555.0
72.5°	262.6	260.0	249.8	285.6	310.5	357.5	417.1	452.5	469.4	471.7	471.7
75°	212.1	210.6	204.2	231.3	252.1	290.5	341.0	370.4	383.5	386.2	385.4
77.5°	163.5	162.4	156.0	179.3	195.5	224.2	264.9	287.8	297.6	300.7	307.1
80°	117.2	116.8	106.6	129.6	136.8	160.9	190.6	208.3	213.6	217.8	222.3
82.5°	75.0	75.4	65.2	84.8	87.8	103.2	121.7	132.6	136.4	139.8	143.2
85°	36.5	38.1	32.4	44.8	45.2	53.1	61.0	65.2	66.7	69.3	72.3
87.5°	9.4	10.9	6.0	12.8	11.3	14.7	17.0	18.1	17.7	19.6	20.7
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°	1615.2	1615.2	1615.2	1615.2	1615.2	1615.2	1615.2	1615.2	1615.2	1615.2	1615.2
2.5°	1580.9	1593.0	1586.9	1606.5	1614.1	1602.0	1623.1	1623.5	1608.4	1626.1	1635.9
5°	1556.4	1568.8	1565.1	1585.4	1594.8	1584.3	1609.9	1614.8	1600.1	1620.1	1635.9
7.5°	1531.5	1546.2	1541.3	1562.1	1573.4	1565.1	1592.6	1600.5	1589.2	1611.0	1632.1
10°	1510.1	1522.5	1517.2	1539.1	1548.9	1542.1	1569.2	1583.9	1573.4	1600.1	1625.4
12.5°	1489.0	1499.1	1493.1	1511.2	1520.6	1511.9	1545.1	1558.7	1551.1	1579.0	1611.4
15°	1461.8	1473.1	1464.9	1481.1	1488.2	1480.7	1507.8	1531.2	1521.7	1552.3	1588.1
17.5°	1441.1	1447.5	1436.2	1449.0	1453.2	1443.0	1470.5	1493.5	1486.7	1519.9	1561.3
20°	1418.1	1423.4	1407.6	1414.7	1414.4	1401.6	1426.8	1449.4	1444.9	1481.4	1528.5
22.5°	1392.5	1395.2	1376.7	1378.2	1377.4	1356.3	1379.0	1401.9	1400.1	1437.0	1489.7
25°	1365.4	1365.8	1342.0	1341.3	1333.0	1308.1	1328.1	1354.1	1348.4	1388.4	1443.8
27.5°	1338.6	1334.9	1306.2	1299.5	1286.3	1256.5	1274.2	1297.6	1294.2	1333.4	1394.8
30°	1310.0	1305.1	1270.1	1257.6	1238.4	1204.1	1218.8	1240.7	1242.6	1276.8	1341.3
32.5°	1282.9	1270.4	1231.6	1213.6	1189.4	1149.5	1157.4	1179.6	1182.7	1217.3	1283.6
35°	1247.8	1239.5	1191.7	1160.8	1137.1	1093.4	1101.7	1117.1	1121.6	1155.5	1223.0
37.5°	1214.7	1201.5	1150.6	1113.0	1082.4	1036.5	1038.7	1054.6	1059.1	1093.4	1160.1
40°	1180.4	1161.6	1106.9	1062.8	1027.8	979.6	976.9	993.5	996.9	1030.4	1090.7
42.5°	1143.9	1121.2	1059.8	1011.6	971.3	922.3	917.0	931.4	935.1	967.9	1027.1
45°	1106.9	1079.8	1011.6	958.9	914.8	864.7	859.4	870.3	876.0	906.9	963.8
47.5°	1067.7	1036.1	961.9	903.1	857.5	807.4	801.0	811.9	816.4	847.0	900.8
50°	1026.7	988.2	910.6	845.8	800.6	751.3	741.8	754.7	758.8	787.4	840.2
52.5°	981.5	938.9	856.0	788.2	743.0	695.9	684.6	697.0	701.9	729.8	778.4
55°	933.6	887.7	801.0	735.1	686.1	640.1	630.7	635.6	646.1	672.5	717.7
57.5°	879.7	834.2	743.0	675.9	628.8	584.7	576.8	581.3	591.1	616.8	657.5
60°	822.5	774.2	683.8	616.8	571.2	529.4	522.2	526.3	536.9	560.2	597.9
62.5°	766.0	711.7	622.8	556.1	514.7	475.9	474.0	472.5	482.3	504.9	538.0
65°	697.4	645.4	559.1	495.8	458.1	423.1	415.6	419.0	428.4	449.1	483.8
67.5°	623.9	576.8	493.9	435.5	402.0	370.7	364.3	365.8	375.6	393.7	423.9
70°	545.9	504.5	427.2	374.9	346.6	317.2	313.1	313.5	322.9	338.7	365.1
72.5°	464.2	426.9	359.8	315.0	291.6	270.5	266.7	262.2	270.9	284.5	307.1
75°	380.9	348.1	292.7	256.2	237.7	220.0	216.6	212.1	220.8	232.5	250.2
77.5°	296.9	270.5	227.6	199.3	185.0	171.8	168.8	163.9	172.6	181.2	195.2
80°	214.8	195.5	169.9	140.2	135.3	126.6	123.6	118.3	126.6	132.2	142.8
82.5°	138.6	125.8	111.1	90.4	89.7	83.3	81.8	75.7	83.3	86.7	94.6
85°	70.1	64.0	60.3	46.0	47.5	43.3	43.0	36.5	42.6	44.1	48.6
87.5°	20.0	21.1	18.8	11.3	14.3	13.6	13.6	9.8	13.6	13.6	15.4
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: P838111

CATALOG NUMBER: ORLG-24-4-INS-ASY2R-LD4-1HI-40-120-EDD

CANDELA DISTRIBUTION (continued):

	295°	305°	315°	325°	335°	345°	355°	360°
0°	1615.2	1615.2	1615.2	1615.2	1615.2	1615.2	1615.2	1615.2
2.5°	1616.7	1623.1	1624.6	1624.2	1628.4	1651.0	1643.4	1651.0
5°	1620.5	1634.8	1638.5	1643.8	1650.6	1676.2	1667.9	1677.0
7.5°	1622.7	1644.2	1652.5	1662.7	1673.6	1702.2	1695.4	1704.5
10°	1622.7	1650.6	1662.7	1679.6	1694.3	1727.5	1721.1	1731.6
12.5°	1615.9	1651.7	1668.7	1692.4	1711.3	1747.0	1744.4	1751.9
15°	1602.0	1646.1	1669.4	1700.0	1723.3	1763.2	1762.1	1771.2
17.5°	1583.2	1636.3	1664.5	1703.0	1732.4	1777.2	1779.8	1784.7
20°	1559.4	1617.8	1654.7	1701.8	1738.8	1788.1	1791.5	1798.3
22.5°	1528.1	1595.6	1640.0	1696.9	1739.5	1792.6	1798.7	1805.1
25°	1491.2	1568.8	1620.8	1687.5	1735.7	1792.3	1800.5	1806.2
27.5°	1449.0	1534.2	1596.3	1672.4	1725.2	1786.2	1796.4	1803.2
30°	1400.1	1497.3	1568.5	1652.9	1710.9	1774.9	1785.9	1792.6
32.5°	1349.6	1456.6	1535.3	1627.6	1690.2	1756.8	1766.3	1771.5
35°	1294.6	1407.2	1495.4	1595.2	1663.4	1727.8	1735.0	1740.6
37.5°	1234.7	1353.7	1449.8	1558.7	1625.7	1687.5	1693.9	1700.3
40°	1172.9	1297.6	1398.5	1513.8	1580.9	1638.2	1644.9	1649.5
42.5°	1110.7	1235.4	1343.9	1461.1	1527.8	1582.8	1586.9	1591.4
45°	1047.8	1171.0	1282.5	1402.7	1468.6	1520.2	1521.7	1525.5
47.5°	983.7	1104.3	1215.1	1336.0	1401.2	1448.3	1449.8	1452.8
50°	919.3	1037.6	1143.1	1264.0	1327.7	1377.4	1370.7	1373.7
52.5°	856.0	967.5	1075.3	1186.4	1249.3	1293.4	1295.3	1289.3
55°	793.8	899.0	998.0	1105.0	1165.0	1199.2	1198.1	1200.4
57.5°	730.9	829.6	920.4	1018.4	1076.8	1109.2	1116.0	1108.1
60°	666.9	759.6	840.9	929.5	986.0	1013.1	1021.0	1013.5
62.5°	603.2	688.3	762.2	839.4	891.8	925.3	924.6	916.3
65°	539.5	616.8	682.7	748.3	793.8	827.4	825.9	818.3
67.5°	480.7	544.4	603.6	656.7	696.3	719.2	727.2	718.1
70°	415.9	471.0	522.9	565.5	598.3	619.0	626.6	618.6
72.5°	351.1	397.9	434.4	475.5	500.7	518.0	526.0	518.4
75°	287.1	325.5	355.3	387.3	405.0	419.7	428.8	421.2
77.5°	224.9	254.7	278.4	301.8	322.1	325.5	333.4	328.5
80°	165.8	187.3	204.6	220.0	234.7	236.2	242.6	239.6
82.5°	110.4	124.7	129.2	145.4	154.8	153.3	159.7	157.5
85°	58.4	67.1	75.0	79.9	85.1	80.3	85.9	83.6
87.5°	19.6	20.7	18.1	25.6	28.3	24.1	27.5	26.4
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)