

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: P838128

Luminaire Tested: **ORLG-24-4-INS-ASY2R-LD4-1STD-50-120-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: P838128
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-LD4-1STD-50-120-EDD
Description: 2FT x 4FT ORL LED LUMINAIRE WITH asymmetric/symmetric lens v2 and
RFI grid
Light Source: 5000K CCT, 80 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

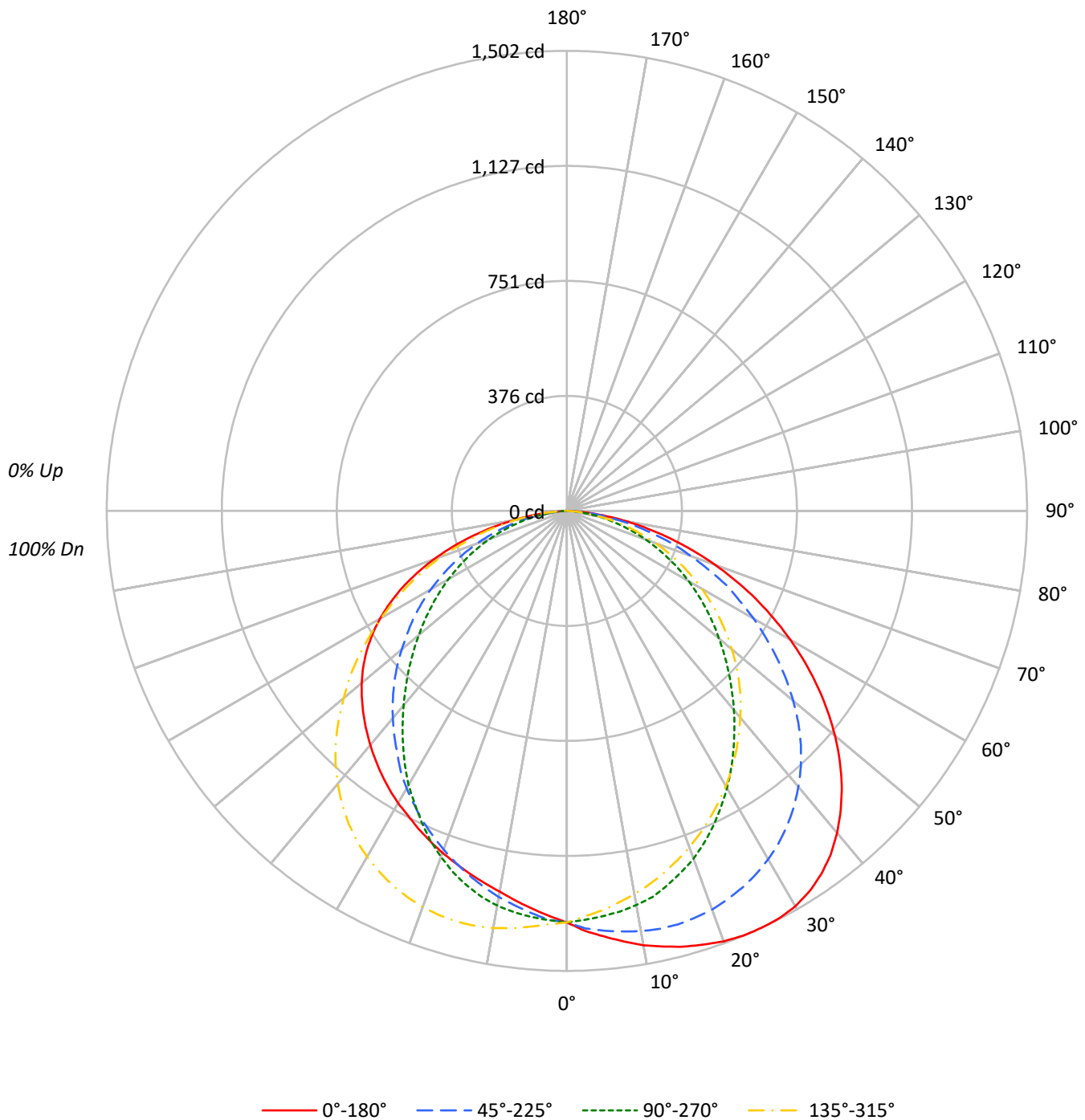
Lumens per Lamp: N/A
Luminaire Lumens: 3941.0 lumens
Efficiency: N/A
Efficacy: 118.3 lumens/watt
Spacing Criteria (0/90/45): 1.43 / 1.16 / 1.4
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')
CIE Type: Direct

Input Watts (W): 33.3
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°	1807	1807	1807	1807
5°	1884	1794	1761	1797
10°	1968	1785	1725	1788
15°	2052	1763	1708	1763
20°	2141	1730	1700	1721
25°	2230	1682	1700	1665
30°	2316	1624	1712	1606
35°	2378	1557	1729	1532
40°	2409	1490	1753	1456
45°	2414	1422	1787	1386
50°	2391	1357	1831	1321
55°	2342	1297	1871	1261
60°	2268	1234	1896	1202
65°	2167	1161	1886	1134
70°	2024	1076	1819	1056
75°	1821	960	1670	954
80°	1544	804	1403	816
85°	1074	533	891	546

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	127.5	3.2
10°-20°	369.3	9.4
20°-30°	566.0	14.4
30°-40°	688.2	17.5
40°-50°	715.4	18.2
50°-60°	646.2	16.4
60°-70°	491.3	12.5
70°-80°	273.9	7.0
80°-90°	63.1	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°	1062.8	27.0
0°-40°	1751.0	44.4
0°-60°	3112.7	79.0
0°-90°	3941.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3941.0	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	1343	1343	1343	1343	1343	
5°	1395	1329	1304	1331	1395	134
15°	1473	1265	1226	1266	1473	418
25°	1502	1133	1145	1121	1502	694
35°	1448	948	1052	933	1448	904
45°	1269	747	939	728	1269	977
55°	998	553	798	537	998	891
65°	681	365	592	356	681	673
75°	350	185	321	184	350	372
85°	70	34	58	35	70	88
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°	1343.3	1343.3	1343.3	1343.3	1343.3	1343.3	1343.3	1343.3	1343.3	1343.3	1343.3
2.5°	1373.1	1353.0	1353.3	1370.9	1357.4	1364.0	1345.2	1352.4	1350.2	1351.7	1336.4
5°	1394.7	1373.1	1372.7	1387.8	1372.7	1375.6	1351.7	1356.4	1349.6	1345.2	1328.6
7.5°	1417.5	1395.9	1393.7	1406.9	1387.2	1385.0	1358.6	1358.6	1346.1	1335.1	1319.5
10°	1440.1	1417.9	1415.0	1425.1	1400.6	1393.4	1361.5	1356.4	1339.8	1323.5	1306.6
12.5°	1457.0	1434.5	1432.3	1438.5	1411.0	1397.8	1361.5	1351.7	1327.3	1304.4	1291.3
15°	1473.0	1449.8	1443.9	1447.0	1415.4	1397.8	1357.1	1342.0	1310.7	1280.6	1265.3
17.5°	1484.3	1462.0	1456.1	1455.8	1417.5	1392.5	1347.7	1327.0	1289.4	1253.0	1237.7
20°	1495.6	1473.3	1465.8	1460.2	1416.9	1385.3	1333.9	1306.0	1262.1	1221.4	1208.5
22.5°	1501.2	1478.3	1470.2	1461.7	1412.8	1372.1	1317.0	1281.6	1231.4	1182.9	1172.2
25°	1502.1	1478.6	1469.9	1457.7	1404.7	1356.4	1295.0	1252.1	1196.0	1142.1	1133.0
27.5°	1499.6	1473.9	1465.2	1450.4	1392.5	1337.3	1269.0	1218.6	1158.4	1098.9	1089.2
30°	1490.9	1464.9	1456.4	1437.3	1375.2	1313.8	1240.5	1181.3	1116.7	1053.4	1045.0
32.5°	1473.3	1447.9	1441.0	1421.9	1356.4	1286.6	1207.3	1141.2	1070.7	1010.2	997.7
35°	1447.6	1422.2	1417.9	1397.8	1330.1	1254.0	1170.9	1097.3	1021.8	960.1	947.9
37.5°	1414.1	1392.8	1386.2	1366.5	1299.1	1217.0	1129.3	1049.7	972.0	905.6	898.0
40°	1371.8	1351.7	1346.7	1329.2	1263.1	1176.0	1084.2	1000.5	920.6	858.9	848.2
42.5°	1323.5	1304.7	1301.9	1283.8	1218.6	1130.5	1035.3	949.4	867.0	807.5	796.8
45°	1268.7	1250.5	1249.9	1232.7	1170.0	1080.1	983.9	897.7	814.7	753.0	747.3
47.5°	1208.2	1191.9	1191.9	1176.0	1115.8	1024.6	930.9	843.8	762.0	707.5	697.5
50°	1142.4	1127.1	1122.4	1114.5	1056.0	964.1	875.2	791.2	710.0	658.0	648.3
52.5°	1072.2	1059.1	1062.2	1047.8	991.1	901.2	818.8	732.0	657.7	610.4	600.7
55°	998.3	979.5	982.3	977.0	923.4	836.3	755.5	683.1	606.3	561.8	552.7
57.5°	921.5	897.1	907.1	904.0	851.3	769.9	697.5	627.6	555.2	514.2	505.4
60°	842.9	819.4	829.7	826.9	777.4	703.4	637.6	572.8	504.5	467.2	458.4
62.5°	762.0	740.4	749.8	747.6	702.2	635.5	578.1	518.6	453.4	419.9	411.7
65°	680.6	659.9	668.4	666.8	624.8	574.0	517.0	462.5	402.0	372.9	364.7
67.5°	597.2	578.1	585.9	585.9	547.4	498.8	455.6	405.8	351.6	326.5	319.0
70°	514.5	496.6	503.5	502.9	470.3	430.8	393.6	349.1	300.5	279.8	273.5
72.5°	431.2	415.5	421.8	421.1	393.9	368.5	331.5	293.0	250.7	234.1	228.4
75°	350.3	335.6	341.5	340.9	318.7	294.9	270.1	238.1	201.8	190.2	184.6
77.5°	273.2	258.2	263.2	263.2	246.9	229.7	209.9	185.2	159.5	147.0	142.9
80°	199.3	192.1	189.6	189.9	178.9	167.6	157.6	133.8	115.0	106.5	103.7
82.5°	131.0	125.0	122.5	123.1	116.9	110.0	103.7	87.1	74.6	69.6	68.0
85°	69.6	65.2	63.0	64.5	63.3	59.5	56.4	45.1	37.3	35.4	34.5
87.5°	21.9	19.1	17.5	23.2	19.7	17.5	16.9	13.5	10.3	10.3	10.0
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°	1343.3	1343.3	1343.3	1343.3	1343.3	1343.3	1343.3	1343.3	1343.3	1343.3	1343.3
2.5°	1341.4	1341.4	1329.2	1326.4	1325.1	1326.7	1314.5	1312.3	1329.8	1323.9	1310.4
5°	1330.8	1330.1	1312.9	1309.8	1309.8	1307.9	1294.1	1291.0	1308.5	1303.5	1288.8
7.5°	1317.6	1315.7	1295.3	1293.2	1290.0	1288.8	1273.4	1271.2	1286.3	1283.1	1269.3
10°	1301.6	1299.7	1275.6	1274.0	1270.6	1268.1	1253.7	1252.1	1267.5	1262.4	1251.5
12.5°	1280.6	1277.2	1252.4	1250.9	1248.0	1247.1	1233.0	1232.4	1249.3	1244.3	1232.7
15°	1253.0	1250.2	1222.6	1223.3	1223.6	1223.6	1212.3	1211.7	1228.3	1226.1	1213.6
17.5°	1222.6	1218.9	1192.6	1194.4	1196.6	1199.1	1190.4	1191.9	1209.5	1206.7	1195.4
20°	1188.2	1184.4	1158.7	1164.1	1168.8	1173.8	1168.1	1172.5	1188.8	1187.6	1179.1
22.5°	1149.6	1145.9	1122.1	1130.2	1138.0	1147.4	1144.9	1150.0	1167.2	1166.9	1159.4
25°	1102.6	1103.6	1082.6	1092.6	1105.8	1118.9	1119.9	1128.0	1147.1	1145.3	1138.4
27.5°	1058.8	1060.0	1037.8	1054.7	1072.2	1089.2	1093.2	1104.5	1123.9	1122.4	1116.4
30°	1012.7	1014.3	992.7	1015.8	1037.2	1057.8	1066.6	1082.0	1101.7	1101.7	1095.4
32.5°	964.8	967.6	945.0	976.1	1000.8	1024.9	1040.3	1056.3	1078.8	1078.2	1072.9
35°	915.6	918.7	898.0	937.5	962.3	991.7	1010.8	1032.1	1052.2	1052.5	1048.4
37.5°	865.4	869.2	850.4	893.6	921.8	956.6	981.1	1002.4	1024.6	1025.9	1022.1
40°	815.6	819.7	803.4	845.1	880.8	919.7	947.9	972.9	997.4	998.0	995.5
42.5°	765.8	770.2	758.0	798.7	839.1	880.8	914.0	942.5	967.6	969.2	966.3
45°	717.2	721.0	712.2	756.7	795.6	841.0	879.2	911.5	936.9	939.1	938.1
47.5°	669.0	672.4	664.6	705.3	750.1	798.4	842.6	878.3	905.2	907.7	907.1
50°	621.7	624.5	616.0	658.6	703.1	754.5	800.6	841.9	872.0	874.5	874.2
52.5°	574.7	577.5	570.3	615.1	655.5	709.7	759.8	804.7	834.4	838.2	838.8
55°	529.2	530.5	524.8	567.8	606.9	663.7	721.3	764.9	794.6	797.8	799.6
57.5°	483.8	484.1	479.4	520.5	558.1	616.0	676.5	722.2	750.4	753.6	756.4
60°	438.7	438.4	433.0	472.8	508.9	566.2	629.2	674.6	701.9	704.7	708.5
62.5°	393.9	392.9	388.2	424.9	458.7	515.4	578.7	622.6	648.6	650.5	655.5
65°	349.4	348.4	344.0	377.9	408.6	462.8	524.8	566.5	590.0	592.5	591.6
67.5°	305.5	303.6	300.2	330.6	358.5	408.6	468.1	507.9	527.3	529.5	535.5
70°	261.6	259.4	251.6	283.9	308.3	353.1	408.6	444.0	460.3	462.5	461.5
72.5°	218.4	216.2	207.7	237.5	258.2	297.4	346.9	376.3	390.4	392.3	392.3
75°	176.4	175.2	169.8	192.4	209.6	241.6	283.6	308.0	319.0	321.2	320.5
77.5°	136.0	135.0	129.7	149.1	162.6	186.4	220.3	239.4	247.5	250.0	255.4
80°	97.4	97.1	88.7	107.8	113.7	133.8	158.5	173.3	177.7	181.1	184.9
82.5°	62.4	62.7	54.2	70.5	73.0	85.9	101.2	110.3	113.4	116.2	119.1
85°	30.4	31.6	26.9	37.3	37.6	44.2	50.8	54.2	55.5	57.7	60.2
87.5°	7.8	9.1	5.0	10.7	9.4	12.2	14.1	15.0	14.7	16.3	17.2
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°	1343.3	1343.3	1343.3	1343.3	1343.3	1343.3	1343.3	1343.3	1343.3	1343.3	1343.3
2.5°	1314.8	1324.8	1319.8	1336.1	1342.3	1332.3	1349.9	1350.2	1337.6	1352.4	1360.5
5°	1294.4	1304.7	1301.6	1318.5	1326.4	1317.6	1338.9	1343.0	1330.8	1347.4	1360.5
7.5°	1273.7	1285.9	1281.9	1299.1	1308.5	1301.6	1324.5	1331.1	1321.7	1339.8	1357.4
10°	1255.9	1266.2	1261.8	1280.0	1288.1	1282.5	1305.1	1317.3	1308.5	1330.8	1351.7
12.5°	1238.3	1246.8	1241.8	1256.8	1264.6	1257.4	1285.0	1296.3	1290.0	1313.2	1340.2
15°	1215.8	1225.2	1218.3	1231.7	1237.7	1231.4	1254.0	1273.4	1265.6	1291.0	1320.7
17.5°	1198.5	1203.8	1194.4	1205.1	1208.5	1200.1	1223.0	1242.1	1236.4	1264.0	1298.5
20°	1179.4	1183.8	1170.6	1176.6	1176.3	1165.6	1186.6	1205.4	1201.7	1232.0	1271.2
22.5°	1158.1	1160.3	1144.9	1146.2	1145.6	1128.0	1146.8	1165.9	1164.4	1195.1	1238.9
25°	1135.5	1135.9	1116.1	1115.5	1108.6	1087.9	1104.5	1126.1	1121.4	1154.7	1200.7
27.5°	1113.3	1110.2	1086.3	1080.7	1069.7	1045.0	1059.7	1079.1	1076.3	1108.9	1160.0
30°	1089.5	1085.4	1056.3	1045.9	1029.9	1001.4	1013.7	1031.8	1033.4	1061.9	1115.5
32.5°	1066.9	1056.6	1024.3	1009.3	989.2	956.0	962.6	981.1	983.6	1012.4	1067.5
35°	1037.8	1030.9	991.1	965.4	945.7	909.3	916.2	929.1	932.8	961.0	1017.1
37.5°	1010.2	999.2	956.9	925.6	900.2	862.0	863.9	877.0	880.8	909.3	964.8
40°	981.7	966.0	920.6	883.9	854.8	814.7	812.5	826.3	829.1	857.0	907.1
42.5°	951.3	932.5	881.4	841.3	807.8	767.1	762.7	774.6	777.7	805.0	854.2
45°	920.6	898.0	841.3	797.4	760.8	719.1	714.7	723.8	728.5	754.2	801.5
47.5°	888.0	861.7	800.0	751.1	713.2	671.5	666.2	675.2	679.0	704.4	749.2
50°	853.8	821.9	757.3	703.4	665.8	624.8	617.0	627.6	631.1	654.9	698.7
52.5°	816.2	780.8	711.9	655.5	617.9	578.7	569.3	579.7	583.8	606.9	647.4
55°	776.5	738.2	666.2	611.3	570.6	532.4	524.5	528.6	537.4	559.3	596.9
57.5°	731.6	693.7	617.9	562.1	523.0	486.3	479.7	483.5	491.6	512.9	546.8
60°	684.0	643.9	568.7	512.9	475.0	440.2	434.3	437.7	446.5	465.9	497.3
62.5°	637.0	591.9	517.9	462.5	428.0	395.7	394.2	392.9	401.1	419.9	447.4
65°	580.0	536.8	465.0	412.4	381.0	351.9	345.6	348.4	356.3	373.5	402.3
67.5°	518.9	479.7	410.8	362.2	334.3	308.3	303.0	304.3	312.4	327.4	352.5
70°	454.0	419.6	355.3	311.8	288.3	263.8	260.4	260.7	268.5	281.7	303.6
72.5°	386.0	355.0	299.2	262.0	242.5	225.0	221.8	218.1	225.3	236.6	255.4
75°	316.8	289.5	243.5	213.1	197.7	183.0	180.2	176.4	183.6	193.3	208.1
77.5°	246.9	225.0	189.3	165.8	153.8	142.9	140.4	136.3	143.5	150.7	162.3
80°	178.6	162.6	141.3	116.6	112.5	105.3	102.8	98.4	105.3	110.0	118.8
82.5°	115.3	104.7	92.4	75.2	74.6	69.2	68.0	63.0	69.2	72.1	78.6
85°	58.3	53.3	50.1	38.2	39.5	36.0	35.7	30.4	35.4	36.7	40.4
87.5°	16.6	17.5	15.7	9.4	11.9	11.3	11.3	8.1	11.3	11.3	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

TEST NUMBER: P838128

CATALOG NUMBER: ORLG-24-4-INS-ASY2R-LD4-1STD-50-120-EDD

CANDELA DISTRIBUTION (continued):

	295°	305°	315°	325°	335°	345°	355°	360°
0°	1343.3	1343.3	1343.3	1343.3	1343.3	1343.3	1343.3	1343.3
2.5°	1344.5	1349.9	1351.1	1350.8	1354.3	1373.1	1366.8	1373.1
5°	1347.7	1359.6	1362.7	1367.1	1372.7	1394.0	1387.2	1394.7
7.5°	1349.6	1367.4	1374.3	1382.8	1391.9	1415.7	1410.0	1417.5
10°	1349.6	1372.7	1382.8	1396.9	1409.1	1436.7	1431.3	1440.1
12.5°	1343.9	1373.7	1387.8	1407.5	1423.2	1453.0	1450.8	1457.0
15°	1332.3	1369.0	1388.4	1413.8	1433.2	1466.4	1465.5	1473.0
17.5°	1316.7	1360.8	1384.3	1416.3	1440.7	1478.0	1480.2	1484.3
20°	1296.9	1345.5	1376.2	1415.4	1446.1	1487.1	1489.9	1495.6
22.5°	1270.9	1327.0	1364.0	1411.3	1446.7	1490.9	1495.9	1501.2
25°	1240.2	1304.7	1348.0	1403.4	1443.6	1490.6	1497.4	1502.1
27.5°	1205.1	1275.9	1327.6	1390.9	1434.8	1485.5	1494.0	1499.6
30°	1164.4	1245.2	1304.4	1374.6	1422.9	1476.1	1485.2	1490.9
32.5°	1122.4	1211.4	1276.9	1353.6	1405.6	1461.1	1468.9	1473.3
35°	1076.6	1170.3	1243.6	1326.7	1383.4	1437.0	1442.9	1447.6
37.5°	1026.8	1125.8	1205.7	1296.3	1352.1	1403.4	1408.8	1414.1
40°	975.4	1079.1	1163.1	1259.0	1314.8	1362.4	1368.0	1371.8
42.5°	923.7	1027.4	1117.7	1215.1	1270.6	1316.3	1319.8	1323.5
45°	871.4	973.9	1066.6	1166.6	1221.4	1264.3	1265.6	1268.7
47.5°	818.1	918.4	1010.5	1111.1	1165.3	1204.5	1205.7	1208.2
50°	764.5	862.9	950.7	1051.3	1104.2	1145.6	1139.9	1142.4
52.5°	711.9	804.7	894.3	986.7	1039.0	1075.7	1077.3	1072.2
55°	660.2	747.6	830.0	919.0	968.8	997.4	996.4	998.3
57.5°	607.9	690.0	765.5	847.0	895.5	922.5	928.1	921.5
60°	554.6	631.7	699.4	773.0	820.0	842.6	849.1	842.9
62.5°	501.7	572.5	633.9	698.1	741.7	769.6	768.9	762.0
65°	448.7	512.9	567.8	622.3	660.2	688.1	686.8	680.6
67.5°	399.8	452.8	502.0	546.2	579.1	598.2	604.7	597.2
70°	345.9	391.7	434.9	470.3	497.6	514.8	521.1	514.5
72.5°	292.0	330.9	361.3	395.4	416.4	430.8	437.4	431.2
75°	238.8	270.7	295.5	322.1	336.8	349.1	356.6	350.3
77.5°	187.1	211.8	231.6	251.0	267.9	270.7	277.3	273.2
80°	137.9	155.7	170.1	183.0	195.2	196.5	201.8	199.3
82.5°	91.8	103.7	107.5	120.9	128.8	127.5	132.9	131.0
85°	48.6	55.8	62.4	66.4	70.8	66.7	71.4	69.6
87.5°	16.3	17.2	15.0	21.3	23.5	20.1	22.9	21.9
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)