

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: io LED

Report Number: P397239

Luminaire Tested: **4VRVT2-LD5-11-DR-W-UNV-LG52-CD1-WL-U**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P397239
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1710-355-14)
Test Lab: INNOVATION CENTER(G3)
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: io LED
Catalog Number: 4VRVT2-LD5-11-DR-W-UNV-LG52-CD1-WL-U
Description:
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 7965.6 lumens
Efficiency: N/A
Efficacy: 40.6 lumens/watt
Spacing Criteria (0/90/45): 1.22 / 1.59 / 1.58
Luminous Opening: Rectangular w/ Sides (W: 0.5' x L: 4.17' x H: 0.17')
CIE Type: Direct

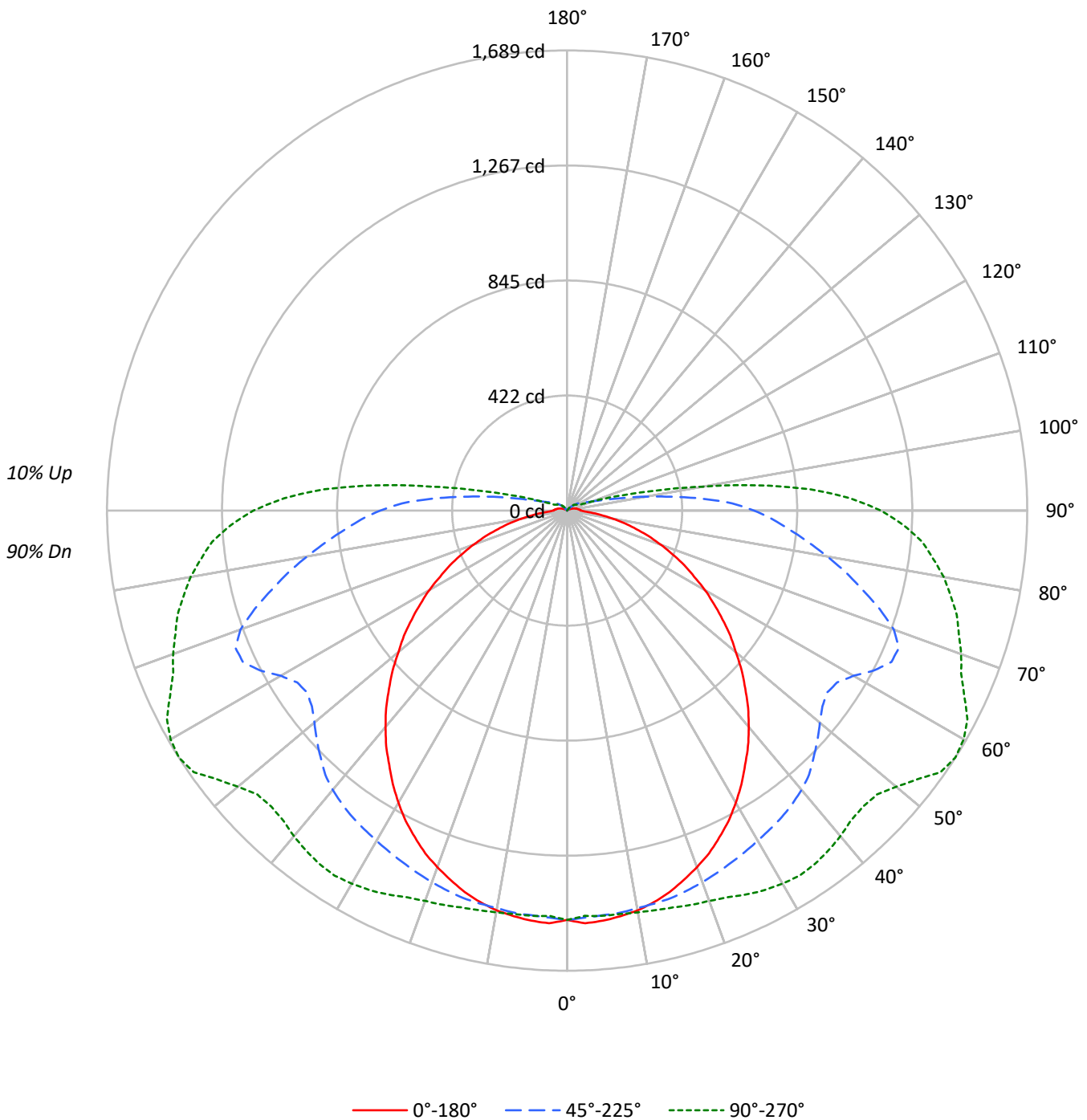
Input Watts (W): 196.2
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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CATALOG NUMBER: 4VRVT2-LD5-11-DR-W-UNV-LG52-CD1-WL-U

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	0
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	0
RCR																		
0	117	117	117	117	113	113	113	113	106	106	106	99	99	99	93	93	93	90
1	101	94	88	83	97	91	85	80	85	80	76	79	75	72	74	71	68	65
2	90	79	71	63	86	77	69	62	71	64	59	66	61	56	62	57	53	50
3	81	68	58	50	77	66	57	49	61	53	47	57	50	45	53	47	43	40
4	73	59	49	41	70	57	48	40	53	45	39	50	43	37	46	40	35	33
5	67	52	42	35	64	51	41	34	47	39	33	44	37	31	41	35	30	27
6	62	47	37	30	59	45	36	29	42	34	28	40	32	27	37	31	26	23
7	57	42	33	26	55	41	32	25	38	30	24	36	29	24	34	27	23	20
8	53	38	29	23	51	37	28	22	35	27	22	33	26	21	31	25	20	18
9	49	35	26	20	47	34	26	20	32	24	19	30	23	19	28	22	18	16
10	46	32	24	18	44	31	23	18	30	22	17	28	21	17	26	20	16	14

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	7763	7763	7763
5°	7809	7559	7525
10°	7763	7428	7420
15°	7675	7355	7404
20°	7548	7281	7476
25°	7403	7235	7672
30°	7220	7243	7910
35°	6986	7314	8101
40°	6769	7391	8223
45°	6495	7399	8418
50°	6201	7404	9071
55°	5934	7620	10210
60°	5649	8601	11008
65°	5334	10253	11465
70°	4968	11170	12137
75°	4560	11282	13171
80°	4082	11537	14445
85°	3617	12128	16123



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	142.8	1.8
10°-20°	418.1	5.2
20°-30°	663.4	8.3
30°-40°	858.4	10.8
40°-50°	971.6	12.2
50°-60°	1066.9	13.4
60°-70°	1132.1	14.2
70°-80°	1061.3	13.3
80°-90°	858.4	10.8
90°-100°	531.8	6.7
100°-110°	166.8	2.1
110°-120°	53.1	0.7
120°-130°	27.5	0.3
130°-140°	11.5	0.1
140°-150°	1.8	0.0
150°-160°	0.0	0.0
160°-170°	0.0	0.0
170°-180°	0.0	0.0
0°-30°	1224.3	15.4
0°-40°	2082.7	26.1
0°-60°	4121.2	51.7
0°-90°	7173.0	90.0
90°-120°	751.7	9.4
90°-150°	792.6	10.0
90°-180°	793.0	10.0
0°-180°	7965.6	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1503	1503	1503	1503	1503	
5°	1511	1506	1491	1497	1493	143
15°	1450	1457	1472	1505	1508	409
25°	1323	1353	1425	1520	1555	609
35°	1139	1212	1374	1537	1584	713
45°	924	1039	1280	1464	1536	714
55°	696	849	1165	1553	1673	623
65°	474	676	1313	1566	1608	468
75°	262	658	1122	1374	1481	280
85°	89	444	822	1182	1308	90
90°	50	331	686	1025	1152	29
95°	44	230	500	782	895	35
105°	29	82	157	207	225	31
115°	15	38	71	62	52	15
125°	5	13	44	44	38	5
135°	2	0	18	26	25	2
145°	1	0	0	5	5	1
155°	0	0	0	0	0	0
165°	0	0	0	0	0	0
175°	0	0	0	0	0	0
180°	0	0	0	0	0	0



TEST NUMBER: P397239

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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
0°	1502.6	1502.6	1502.6	1502.6	1502.6	1502.6	1502.6	1502.6	1502.6	1502.6	1502.6
2.5°	1516.2	1514.2	1511.0	1509.9	1508.9	1508.9	1509.9	1507.8	1504.7	1499.5	1495.3
5°	1511.0	1508.9	1505.8	1503.7	1505.8	1505.8	1506.8	1504.7	1500.6	1496.3	1491.1
7.5°	1501.6	1499.5	1496.3	1496.3	1495.3	1496.3	1496.3	1496.3	1494.2	1492.2	1489.0
10°	1490.1	1487.0	1485.9	1484.9	1485.9	1488.0	1488.0	1489.0	1487.0	1483.8	1481.7
12.5°	1472.3	1471.3	1468.1	1469.2	1470.2	1473.4	1475.4	1477.5	1478.6	1477.5	1477.5
15°	1450.3	1448.2	1447.2	1449.3	1455.6	1456.6	1458.7	1463.9	1466.0	1470.2	1472.3
17.5°	1422.1	1422.1	1422.1	1426.3	1433.6	1435.7	1439.9	1445.1	1450.3	1455.6	1462.9
20°	1392.8	1392.8	1392.8	1398.1	1406.4	1412.7	1416.9	1424.2	1432.6	1444.1	1451.4
22.5°	1361.4	1359.4	1359.4	1364.6	1377.1	1380.3	1388.6	1403.3	1415.8	1429.4	1438.8
25°	1322.8	1320.6	1323.8	1331.1	1345.8	1353.1	1362.5	1379.2	1391.8	1410.6	1425.3
27.5°	1284.1	1281.0	1285.1	1294.6	1314.4	1322.8	1334.2	1354.2	1368.8	1389.7	1412.7
30°	1238.1	1238.1	1243.3	1255.8	1275.7	1287.2	1299.8	1323.8	1343.7	1369.8	1399.1
32.5°	1191.0	1189.0	1198.3	1211.9	1238.1	1251.7	1265.3	1292.5	1317.5	1351.0	1386.6
35°	1138.7	1139.8	1149.2	1167.0	1198.3	1211.9	1226.6	1257.9	1291.4	1332.2	1374.0
37.5°	1090.6	1088.6	1101.1	1125.1	1155.4	1171.1	1186.8	1225.5	1263.2	1309.2	1357.3
40°	1037.3	1038.3	1049.8	1077.0	1108.4	1126.2	1144.0	1189.0	1233.9	1283.0	1338.5
42.5°	983.0	984.0	999.7	1029.0	1063.4	1083.3	1105.3	1152.3	1203.6	1257.9	1314.4
45°	924.4	926.5	945.3	979.8	1014.3	1039.4	1063.4	1114.7	1172.2	1226.6	1279.9
47.5°	869.0	872.1	896.2	927.5	967.3	993.4	1019.5	1078.1	1134.6	1190.0	1246.4
50°	808.3	817.7	838.6	874.2	919.1	944.2	973.5	1034.2	1093.8	1153.4	1210.9
52.5°	755.0	759.1	785.3	819.8	867.9	897.2	924.4	989.2	1051.9	1113.6	1180.6
55°	696.4	702.7	731.0	766.5	816.6	849.1	879.4	944.2	1013.3	1082.2	1164.9
57.5°	638.9	646.2	676.6	713.1	768.6	797.8	833.4	901.4	976.6	1065.5	1174.3
60°	584.6	589.8	618.0	659.8	717.4	750.8	787.4	865.8	957.8	1077.0	1213.0
62.5°	526.0	535.4	561.5	608.6	674.5	709.0	750.8	842.8	965.1	1114.7	1270.5
65°	473.7	481.0	510.3	562.6	632.6	675.5	723.6	843.8	999.7	1164.9	1313.4
67.5°	418.2	430.8	461.1	518.6	601.3	652.5	714.2	865.8	1042.6	1201.4	1317.5
70°	365.0	377.5	416.2	484.2	582.4	647.3	721.5	899.3	1069.7	1196.2	1275.7
72.5°	314.7	327.3	376.5	455.9	576.2	652.5	737.2	915.0	1054.0	1138.7	1202.5
75°	262.5	280.2	340.9	437.1	575.1	657.8	743.4	888.8	990.2	1061.4	1122.0
77.5°	217.5	239.4	309.5	419.3	566.7	642.1	707.9	820.9	907.7	977.7	1047.8
80°	168.3	198.6	281.3	396.3	528.1	587.7	642.1	734.1	819.8	894.1	968.3
82.5°	125.5	163.1	247.8	358.6	466.4	516.6	566.7	652.5	733.0	810.4	894.1
85°	88.9	127.6	212.2	307.4	400.5	444.4	489.4	573.0	652.5	735.1	821.9
87.5°	62.7	99.4	174.6	259.4	343.0	379.6	421.4	500.9	584.6	666.1	757.0
90°	50.2	79.4	145.4	218.6	292.8	331.4	369.1	445.4	521.8	601.3	685.9
92.5°	48.1	65.8	120.2	184.0	248.9	282.3	315.8	384.8	454.9	526.0	606.5
95°	43.9	53.4	93.0	147.4	201.8	230.1	259.4	314.7	375.4	435.0	499.8
97.5°	40.8	43.9	72.2	115.0	159.0	178.8	200.8	247.8	290.7	336.7	386.9
100°	36.6	37.7	54.4	85.8	121.3	139.0	157.9	189.3	221.7	258.3	292.8
102.5°	33.4	33.4	42.9	64.8	91.0	104.6	118.2	145.4	168.3	192.4	212.2
105°	29.3	29.3	34.5	49.1	70.1	81.6	92.0	110.9	129.7	145.4	156.9
107.5°	26.2	25.1	27.2	39.8	56.5	64.8	74.2	88.9	102.5	113.0	122.3
110°	21.9	21.9	21.9	32.4	46.0	53.4	60.6	73.2	84.7	92.0	96.2



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
112.5°	17.8	17.8	17.8	26.2	37.7	45.0	51.2	62.7	72.2	78.4	81.6
115°	14.6	14.6	13.6	19.8	31.4	37.7	42.9	54.4	62.7	68.0	71.1
117.5°	11.5	11.5	11.5	14.6	25.1	30.3	36.6	46.0	55.4	60.6	63.8
120°	9.4	9.4	8.4	9.4	18.8	24.1	29.3	39.8	48.1	53.4	56.5
122.5°	7.3	7.3	6.2	6.2	13.6	17.8	23.0	32.4	40.8	46.0	50.2
125°	5.2	5.2	5.2	4.2	8.4	12.6	17.8	26.2	33.4	39.8	43.9
127.5°	4.2	4.2	4.2	3.1	4.2	7.3	11.5	19.8	27.2	32.4	36.6
130°	3.1	3.1	3.1	2.1	2.1	4.2	7.3	13.6	19.8	25.1	30.3
132.5°	3.1	3.1	2.1	2.1	1.0	1.0	3.1	8.4	14.6	18.8	23.0
135°	2.1	2.1	2.1	1.0	1.0	0.0	0.0	4.2	9.4	13.6	17.8
137.5°	2.1	2.1	1.0	1.0	0.0	0.0	0.0	1.0	5.2	8.4	11.5
140°	2.1	1.0	1.0	1.0	0.0	0.0	0.0	0.0	1.0	4.2	7.3
142.5°	1.0	1.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.1
145°	1.0	1.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
147.5°	1.0	1.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
150°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
152.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
155°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
157.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
160°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
162.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
165°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
167.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
170°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
172.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
175°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
177.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
180°	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):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°
0°	1502.6	1502.6	1502.6	1502.6	1502.6	1502.6	1502.6	1502.6	1502.6	1502.6
2.5°	1493.2	1494.2	1496.3	1496.3	1495.3	1495.3	1494.2	1493.2	1491.1	1489.0
5°	1491.1	1493.2	1496.3	1497.4	1497.4	1496.3	1496.3	1496.3	1495.3	1493.2
7.5°	1490.1	1493.2	1496.3	1497.4	1498.5	1498.5	1497.4	1496.3	1494.2	1493.2
10°	1484.9	1491.1	1494.2	1497.4	1499.5	1499.5	1500.6	1500.6	1498.5	1497.4
12.5°	1482.7	1490.1	1495.3	1499.5	1502.6	1502.6	1504.7	1506.8	1500.6	1501.6
15°	1478.6	1489.0	1497.4	1502.6	1504.7	1505.8	1507.8	1508.9	1506.8	1507.8
17.5°	1473.4	1487.0	1495.3	1502.6	1503.7	1506.8	1513.1	1516.2	1516.2	1517.3
20°	1466.0	1481.7	1493.2	1504.7	1508.9	1512.0	1518.3	1524.6	1522.5	1524.6
22.5°	1457.7	1475.4	1492.2	1505.8	1511.0	1517.3	1527.8	1534.0	1537.1	1536.1
25°	1450.3	1473.4	1493.2	1514.2	1520.4	1528.8	1541.3	1549.7	1552.8	1554.9
27.5°	1442.0	1470.2	1497.4	1520.4	1530.9	1541.3	1557.0	1566.4	1569.5	1570.6
30°	1435.7	1471.3	1499.5	1526.6	1538.2	1549.7	1566.4	1575.8	1580.0	1581.0
32.5°	1429.4	1467.0	1499.5	1528.8	1540.2	1550.7	1570.6	1585.2	1588.4	1588.4
35°	1421.0	1458.7	1495.3	1525.6	1537.1	1548.6	1570.6	1582.1	1585.2	1584.2
37.5°	1406.4	1448.2	1485.9	1513.1	1524.6	1535.0	1557.0	1569.5	1574.8	1573.8
40°	1385.5	1428.4	1465.0	1495.3	1505.8	1517.3	1540.2	1550.7	1558.1	1560.2
42.5°	1360.4	1403.3	1439.9	1470.2	1483.8	1497.4	1520.4	1531.9	1540.2	1542.4
45°	1329.0	1373.0	1412.7	1448.2	1463.9	1477.5	1505.8	1525.6	1534.0	1536.1
47.5°	1296.6	1346.8	1391.8	1434.6	1454.6	1475.4	1506.8	1531.9	1543.4	1542.4
50°	1266.3	1327.0	1383.4	1439.9	1466.0	1490.1	1529.8	1557.0	1570.6	1576.9
52.5°	1251.7	1327.0	1402.2	1469.2	1499.5	1525.6	1572.7	1604.1	1619.8	1619.8
55°	1259.0	1356.2	1443.0	1520.4	1552.8	1581.0	1621.8	1652.2	1665.8	1673.0
57.5°	1292.5	1405.4	1498.5	1571.6	1602.0	1626.0	1663.7	1678.3	1693.0	1688.7
60°	1348.9	1456.6	1539.2	1603.0	1623.9	1636.5	1660.6	1673.0	1680.4	1680.4
62.5°	1396.0	1493.2	1550.7	1588.4	1607.2	1617.7	1637.5	1647.0	1656.3	1656.3
65°	1416.9	1480.6	1524.6	1558.1	1566.4	1579.0	1592.6	1602.0	1610.3	1608.2
67.5°	1391.8	1437.8	1472.3	1502.6	1513.1	1525.6	1542.4	1555.9	1563.3	1565.4
70°	1329.0	1373.0	1405.4	1443.0	1458.7	1474.4	1503.7	1523.5	1535.0	1539.2
72.5°	1255.8	1301.8	1352.1	1395.0	1419.0	1436.7	1469.2	1490.1	1505.8	1507.8
75°	1180.6	1238.1	1295.6	1349.9	1374.0	1399.1	1435.7	1459.8	1477.5	1480.6
77.5°	1112.6	1178.5	1249.6	1308.2	1337.4	1359.4	1399.1	1422.1	1441.0	1442.0
80°	1044.6	1122.0	1194.2	1254.8	1284.1	1312.3	1349.9	1380.3	1396.0	1403.3
82.5°	978.7	1058.2	1135.6	1205.7	1231.8	1259.0	1301.8	1331.1	1348.9	1355.2
85°	913.9	1000.7	1081.2	1149.2	1181.6	1208.8	1254.8	1282.0	1302.9	1308.2
87.5°	845.9	930.6	1011.2	1078.1	1111.5	1135.6	1182.6	1210.9	1231.8	1236.0
90°	772.7	852.2	930.6	993.4	1024.7	1050.9	1101.1	1127.2	1142.9	1152.3
92.5°	681.8	758.1	830.2	891.9	924.4	943.2	990.2	1018.5	1035.2	1039.4
95°	568.9	633.7	698.5	753.9	782.2	810.4	841.8	869.0	891.9	895.1
97.5°	439.2	493.5	546.9	601.3	619.0	635.8	661.9	690.2	711.0	710.0
100°	327.3	358.6	396.3	424.6	438.2	457.0	482.1	498.8	500.9	507.1
102.5°	235.3	257.2	272.9	293.8	300.1	316.8	325.2	336.7	338.8	344.0
105°	170.5	181.9	193.4	201.8	207.0	208.1	214.4	222.7	224.8	224.8
107.5°	127.6	133.8	134.9	138.0	140.1	141.2	145.4	146.4	147.4	147.4
110°	100.4	101.4	99.4	99.4	98.3	98.3	97.3	96.2	95.1	95.1



TEST NUMBER: P397239

CATALOG NUMBER: 4VRVT2-LD5-11-DR-W-UNV-LG52-CD1-WL-U

CANDELA DISTRIBUTION (continued):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°
112.5°	81.6	81.6	79.4	76.3	74.2	73.2	70.1	68.0	67.0	67.0
115°	71.1	69.0	67.0	63.8	61.7	60.6	57.5	55.4	53.4	52.3
117.5°	63.8	62.7	59.6	57.5	55.4	54.4	51.2	48.1	47.0	46.0
120°	57.5	56.5	55.4	52.3	51.2	50.2	47.0	45.0	42.9	42.9
122.5°	51.2	51.2	50.2	48.1	47.0	46.0	43.9	41.8	40.8	39.8
125°	46.0	46.0	46.0	45.0	43.9	42.9	40.8	39.8	38.7	37.7
127.5°	38.7	40.8	40.8	40.8	39.8	39.8	38.7	36.6	35.5	35.5
130°	32.4	34.5	35.5	35.5	35.5	35.5	34.5	33.4	32.4	32.4
132.5°	26.2	29.3	30.3	31.4	31.4	31.4	30.3	30.3	29.3	29.3
135°	20.9	23.0	25.1	26.2	26.2	26.2	26.2	26.2	25.1	25.1
137.5°	15.7	16.7	18.8	19.8	20.9	20.9	20.9	20.9	20.9	20.9
140°	9.4	11.5	13.6	14.6	15.7	15.7	15.7	15.7	15.7	15.7
142.5°	5.2	6.2	8.4	9.4	10.5	10.5	10.5	10.5	10.5	10.5
145°	1.0	2.1	4.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2
147.5°	0.0	0.0	0.0	0.0	1.0	1.0	1.0	1.0	1.0	0.0
150°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
152.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
155°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
157.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
160°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
162.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
165°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
167.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
170°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
172.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
175°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
177.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
180°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)