

Scaled data based on original data using

LM-41-14 Approved Method for Photometric Testing Of Indoor Fluorescent Luminaires

Test Report Prepared for

Cooper Lighting Solutions

(formerly Eaton)

Brand: io LED

Report Number: P251568

Luminaire Tested: **LD4B40D010 EU4B30509730 4LBSW1LI**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-41-14  
Report Number: P251568  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G1-1712-453-10)  
Test Lab: INNOVATION CENTER(G1)  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: io LED  
Catalog Number: LD4B40D010 EU4B30509730 4LBSW1LI  
Description: PORTFOLIO 4 INCH SINGLE WALLWASH RECESSED DOWNLIGHT, WITH SPECULAR CLEAR TRIM  
Light Source: (1) HIGH LUMEN LED 97CRI / 3000K CCT  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 2815.0 lumens  
Efficiency: N/A  
Efficacy: 65.4 lumens/watt  
Spacing Criteria (0/90/45): 1.25 / 1.3 / 1.19  
Luminous Opening: Circular (Dia: 0.38' x H: 0')  
CIE Type: Direct

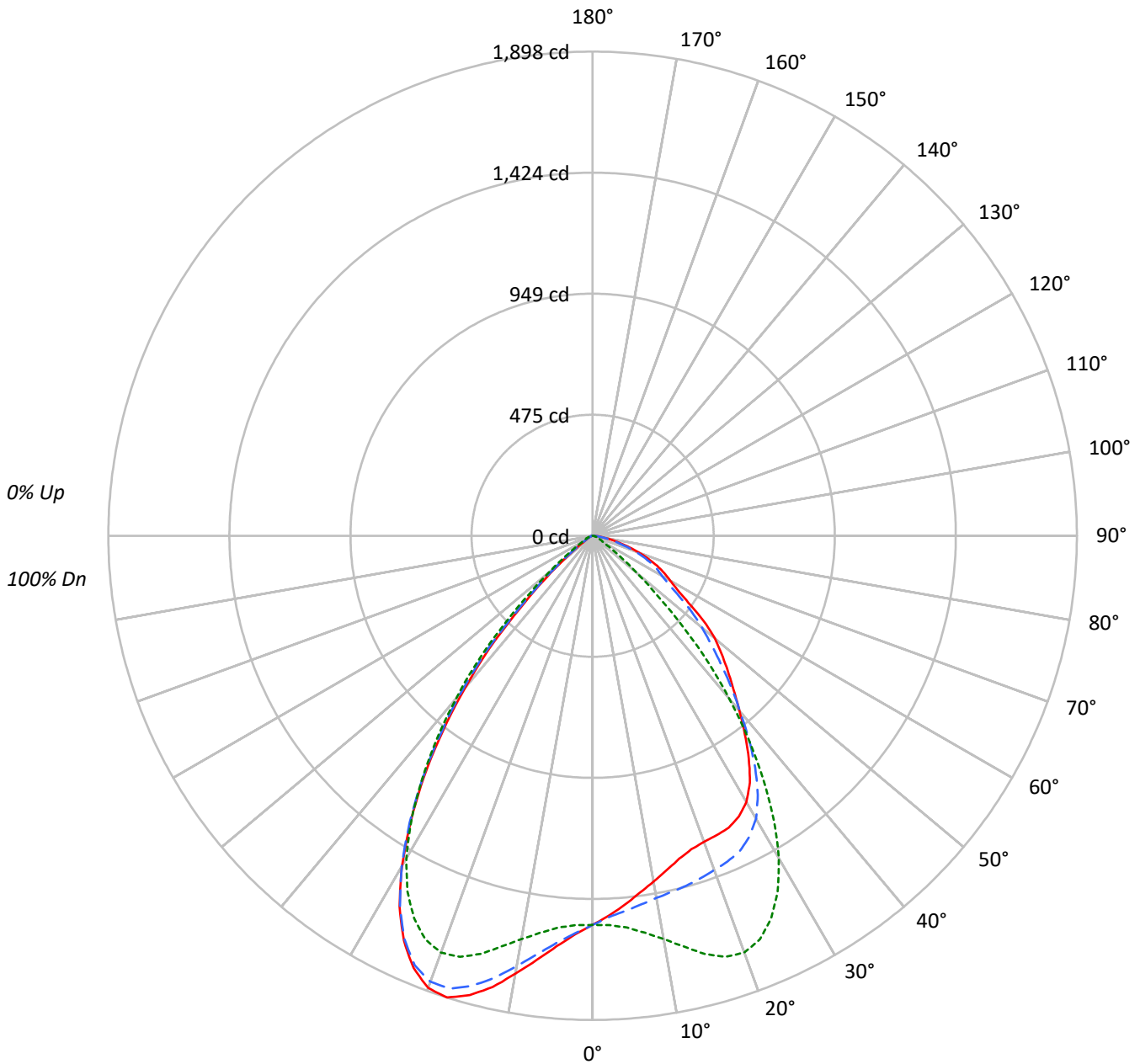
Input Watts (W): 43.02  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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### 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	50	30	10	0					
RCR																										
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100								
1	112	108	105	102	109	106	103	101	102	100	98	98	96	95	95	93	92	90								
2	104	98	93	89	102	96	92	88	93	89	86	90	87	84	87	85	82	80								
3	97	89	83	78	95	88	82	77	85	80	76	82	78	75	80	77	74	72								
4	91	81	75	69	89	80	74	69	78	72	68	76	71	67	74	70	66	64								
5	85	75	67	62	83	74	67	62	72	66	61	70	65	60	68	64	60	58								
6	79	69	61	56	78	68	61	56	66	60	55	64	59	55	63	58	54	53								
7	75	63	56	51	73	62	55	51	61	55	50	60	54	50	58	53	50	48								
8	70	58	51	46	69	58	51	46	57	50	46	55	50	46	54	49	45	44								
9	66	54	47	42	65	54	47	42	53	46	42	52	46	42	51	46	42	40								
10	62	51	44	39	61	50	43	39	49	43	39	48	43	39	47	42	39	37								

**AVERAGE LUMINANCE (cd/sqm):**

	0°	90°	180°
0°	148663	148663	148663
5°	142030	150796	158006
10°	136181	158843	172440
15°	132214	171190	188070
20°	132389	180305	195592
25°	135771	177957	188237
30°	135582	164267	168082
35°	126993	138843	136951
40°	113762	105900	98814
45°	103205	67246	55172
50°	94807	34114	23546
55°	77820	15224	7782
60°	68318	8537	4269
65°	64293	6434	3205
70°	55052	5101	2849
75°	41985	3765	2259
80°	30195	2245	1122
85°	22252	0	0



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	148.2	5.3
10°-20°	461.8	16.4
20°-30°	714.5	25.4
30°-40°	704.0	25.0
40°-50°	432.3	15.4
50°-60°	192.2	6.8
60°-70°	107.3	3.8
70°-80°	46.5	1.7
80°-90°	8.3	0.3
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°	1324.5	47.0
0°-40°	2028.4	72.1
0°-60°	2652.9	94.2
0°-90°	2815.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2815.0	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	1525	1525	1525	1525	1525	
5°	1452	1476	1541	1601	1615	136
15°	1310	1420	1697	1826	1864	372
25°	1263	1364	1655	1744	1750	579
35°	1067	1111	1167	1163	1151	663
45°	749	711	488	426	400	580
55°	458	414	90	52	46	421
65°	279	251	28	16	14	273
75°	112	96	10	6	6	123
85°	20	16	0	0	0	25
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
0°	1525.4	1525.4	1525.4	1525.4	1525.4	1525.4	1525.4	1525.4	1525.4	1525.4	1525.4
2.5°	1489.6	1489.6	1489.6	1489.6	1493.6	1487.6	1493.6	1493.6	1499.6	1501.5	1495.6
5°	1451.8	1449.8	1451.8	1451.8	1455.7	1453.8	1459.7	1463.7	1471.7	1475.7	1475.7
7.5°	1411.9	1411.9	1411.9	1415.9	1421.9	1419.9	1425.9	1431.8	1443.8	1451.8	1457.7
10°	1376.1	1374.1	1380.1	1382.1	1388.0	1388.0	1398.0	1404.0	1417.9	1433.8	1441.8
12.5°	1342.2	1340.2	1344.2	1350.2	1360.2	1360.2	1368.1	1378.1	1398.0	1415.9	1429.9
15°	1310.4	1312.4	1318.3	1322.3	1334.3	1334.3	1344.2	1356.2	1378.1	1400.0	1419.9
17.5°	1288.5	1290.5	1294.4	1300.4	1312.4	1312.4	1322.3	1336.3	1360.2	1384.0	1407.9
20°	1276.5	1278.5	1282.5	1288.5	1298.4	1300.4	1308.4	1324.3	1346.2	1372.1	1394.0
22.5°	1270.5	1274.5	1278.5	1282.5	1292.4	1292.4	1302.4	1314.3	1336.3	1362.1	1382.1
25°	1262.6	1266.6	1268.5	1274.5	1282.5	1282.5	1288.5	1302.4	1322.3	1344.2	1364.1
27.5°	1240.7	1244.6	1246.6	1252.6	1260.6	1258.6	1266.6	1276.5	1294.4	1314.3	1330.3
30°	1204.8	1206.8	1210.8	1212.8	1218.8	1218.8	1224.7	1234.7	1246.6	1264.6	1280.5
32.5°	1147.1	1151.1	1153.0	1155.0	1161.0	1159.0	1161.0	1167.0	1178.9	1194.9	1204.8
35°	1067.4	1075.4	1075.4	1079.4	1081.4	1079.4	1079.4	1087.3	1093.3	1105.2	1111.2
37.5°	979.8	985.8	983.8	987.8	989.7	983.8	987.8	989.7	997.7	1003.7	1005.7
40°	894.2	896.1	896.1	896.1	896.1	894.2	896.1	898.1	904.1	904.1	898.1
42.5°	816.5	818.5	818.5	814.5	818.5	816.5	816.5	816.5	816.5	808.5	802.5
45°	748.8	750.8	750.8	748.8	748.8	744.8	742.8	740.8	734.8	724.9	710.9
47.5°	685.1	689.0	691.0	687.0	685.1	681.1	681.1	669.1	661.2	649.2	629.3
50°	625.3	629.3	629.3	625.3	625.3	619.3	613.4	609.4	597.4	583.5	559.6
52.5°	549.6	555.6	555.6	553.6	553.6	545.7	543.7	535.7	525.7	509.8	489.9
55°	458.0	466.0	464.0	462.0	458.0	458.0	458.0	452.1	446.1	434.1	414.2
57.5°	392.3	394.3	394.3	392.3	392.3	388.3	388.3	382.4	380.4	368.4	352.5
60°	350.5	350.5	352.5	350.5	348.5	346.5	344.5	340.5	334.6	326.6	314.6
62.5°	316.6	318.6	318.6	316.6	314.6	312.7	310.7	306.7	302.7	296.7	284.8
65°	278.8	282.8	280.8	278.8	276.8	274.8	274.8	270.8	266.9	262.9	250.9
67.5°	237.0	239.0	241.0	237.0	237.0	235.0	235.0	231.0	229.0	221.0	213.1
70°	193.2	195.2	195.2	193.2	193.2	191.2	191.2	189.2	187.2	181.2	173.3
72.5°	151.3	153.3	151.3	149.4	149.4	149.4	147.4	145.4	143.4	139.4	133.4
75°	111.5	111.5	113.5	111.5	109.5	109.5	107.5	107.5	103.6	101.6	95.6
77.5°	79.7	81.6	79.7	79.7	77.7	75.7	75.7	73.7	73.7	71.7	67.7
80°	53.8	53.8	55.8	53.8	51.8	53.8	51.8	49.8	49.8	47.8	43.8
82.5°	33.9	35.8	33.9	33.9	33.9	33.9	33.9	31.9	31.9	29.9	27.9
85°	19.9	19.9	19.9	19.9	19.9	19.9	19.9	17.9	17.9	17.9	15.9
87.5°	10.0	10.0	8.0	8.0	10.0	10.0	10.0	8.0	8.0	8.0	8.0
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):**

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
0°	1525.4	1525.4	1525.4	1525.4	1525.4	1525.4	1525.4	1525.4	1525.4	1525.4	1525.4
2.5°	1503.5	1505.5	1509.5	1515.5	1515.5	1511.5	1521.5	1521.5	1525.4	1527.4	1535.4
5°	1487.6	1491.6	1499.6	1509.5	1511.5	1509.5	1523.5	1529.4	1535.4	1541.4	1553.3
7.5°	1473.7	1481.6	1495.6	1509.5	1515.5	1515.5	1537.4	1545.4	1557.3	1569.3	1583.2
10°	1465.7	1477.6	1497.6	1519.5	1525.4	1531.4	1557.3	1573.2	1589.2	1605.1	1625.0
12.5°	1455.7	1477.6	1503.5	1531.4	1543.4	1551.3	1587.2	1607.1	1629.0	1648.9	1674.8
15°	1453.8	1479.6	1513.5	1549.3	1565.3	1577.2	1617.0	1644.9	1670.8	1696.7	1722.6
17.5°	1445.8	1477.6	1519.5	1559.3	1579.2	1595.1	1640.9	1674.8	1704.7	1730.6	1760.4
20°	1435.8	1471.7	1517.5	1561.3	1583.2	1599.1	1648.9	1680.8	1714.6	1738.5	1766.4
22.5°	1421.9	1457.7	1503.5	1547.3	1567.3	1581.2	1631.0	1658.9	1688.7	1712.6	1738.5
25°	1398.0	1431.8	1471.7	1507.5	1527.4	1539.4	1583.2	1609.1	1631.0	1654.9	1678.8
27.5°	1364.1	1390.0	1423.9	1449.8	1461.7	1473.7	1509.5	1531.4	1551.3	1571.2	1587.2
30°	1304.4	1324.3	1348.2	1370.1	1382.1	1384.0	1417.9	1429.9	1445.8	1459.7	1471.7
32.5°	1224.7	1240.7	1254.6	1266.6	1274.5	1276.5	1302.4	1306.4	1322.3	1322.3	1340.2
35°	1123.2	1131.1	1141.1	1141.1	1147.1	1141.1	1159.0	1163.0	1165.0	1167.0	1180.9
37.5°	1007.7	1011.7	1017.6	1005.7	1005.7	999.7	1005.7	1009.7	1001.7	1001.7	1011.7
40°	898.1	890.2	882.2	870.3	864.3	852.3	852.3	842.4	836.4	832.4	834.4
42.5°	792.6	774.7	756.7	730.9	718.9	707.0	695.0	681.1	677.1	667.1	661.2
45°	691.0	665.1	641.2	599.4	575.5	563.6	537.7	509.8	491.9	487.9	472.0
47.5°	605.4	567.6	527.7	477.9	454.0	432.1	394.3	370.4	346.5	334.6	324.6
50°	529.7	495.9	444.1	390.3	360.5	338.5	296.7	268.8	243.0	225.0	213.1
52.5°	464.0	426.2	378.4	316.6	286.8	262.9	217.1	185.2	163.3	145.4	131.4
55°	390.3	360.5	312.7	254.9	225.0	197.2	157.3	123.5	101.6	89.6	79.7
57.5°	336.6	310.7	264.9	209.1	181.2	155.3	115.5	87.6	69.7	57.8	51.8
60°	300.7	276.8	237.0	183.2	157.3	133.4	95.6	69.7	53.8	43.8	39.8
62.5°	270.8	246.9	211.1	161.3	139.4	115.5	81.6	57.8	43.8	35.8	29.9
65°	237.0	215.1	183.2	139.4	119.5	99.6	69.7	47.8	35.8	27.9	23.9
67.5°	201.1	181.2	153.3	115.5	99.6	83.6	55.8	39.8	29.9	23.9	19.9
70°	163.3	147.4	121.5	93.6	79.7	65.7	45.8	31.9	21.9	17.9	15.9
72.5°	125.5	111.5	93.6	71.7	59.7	49.8	33.9	23.9	17.9	13.9	11.9
75°	89.6	79.7	65.7	51.8	43.8	35.8	25.9	17.9	11.9	10.0	8.0
77.5°	61.7	55.8	45.8	35.8	29.9	25.9	17.9	11.9	10.0	8.0	6.0
80°	39.8	35.8	29.9	21.9	17.9	15.9	10.0	8.0	6.0	4.0	4.0
82.5°	23.9	21.9	17.9	11.9	10.0	8.0	6.0	4.0	4.0	2.0	2.0
85°	13.9	11.9	8.0	6.0	6.0	4.0	4.0	2.0	2.0	0.0	0.0
87.5°	6.0	4.0	4.0	2.0	2.0	2.0	2.0	0.0	0.0	0.0	0.0
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):**

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
0°	1525.4	1525.4	1525.4	1525.4	1525.4	1525.4	1525.4	1525.4	1525.4	1525.4	1525.4
2.5°	1531.4	1541.4	1539.4	1545.4	1543.4	1543.4	1553.3	1549.3	1559.3	1559.3	1561.3
5°	1553.3	1567.3	1567.3	1577.2	1575.2	1579.2	1589.2	1589.2	1601.1	1605.1	1605.1
7.5°	1585.2	1603.1	1607.1	1617.0	1619.0	1627.0	1635.0	1637.0	1652.9	1656.9	1658.9
10°	1629.0	1650.9	1656.9	1666.8	1670.8	1678.8	1688.7	1692.7	1712.6	1714.6	1722.6
12.5°	1682.8	1706.7	1712.6	1724.6	1726.6	1736.5	1750.5	1754.5	1774.4	1780.3	1786.3
15°	1734.5	1756.4	1766.4	1778.4	1780.3	1792.3	1804.2	1808.2	1826.1	1834.1	1840.1
17.5°	1770.4	1796.3	1802.3	1818.2	1818.2	1828.1	1840.1	1844.1	1862.0	1868.0	1872.0
20°	1778.4	1802.3	1810.2	1822.2	1824.2	1830.1	1840.1	1844.1	1860.0	1862.0	1868.0
22.5°	1748.5	1772.4	1776.4	1788.3	1790.3	1796.3	1804.2	1802.3	1822.2	1820.2	1822.2
25°	1684.8	1706.7	1706.7	1720.6	1718.6	1724.6	1728.6	1726.6	1744.5	1744.5	1744.5
27.5°	1593.2	1613.1	1615.1	1625.0	1619.0	1621.0	1625.0	1623.0	1635.0	1635.0	1635.0
30°	1479.6	1495.6	1489.6	1497.6	1493.6	1497.6	1493.6	1491.6	1495.6	1499.6	1497.6
32.5°	1338.2	1350.2	1350.2	1352.2	1352.2	1340.2	1336.3	1336.3	1334.3	1332.3	1332.3
35°	1174.9	1184.9	1180.9	1180.9	1178.9	1167.0	1161.0	1157.0	1163.0	1151.1	1159.0
37.5°	1007.7	1009.7	1003.7	1001.7	991.7	991.7	981.8	973.8	977.8	975.8	967.8
40°	824.5	832.4	820.5	816.5	822.5	814.5	804.5	794.6	802.5	792.6	796.6
42.5°	645.2	643.2	639.3	639.3	639.3	627.3	625.3	623.3	625.3	617.3	611.4
45°	466.0	460.0	454.0	454.0	446.1	442.1	442.1	436.1	426.2	426.2	414.2
47.5°	314.6	300.7	296.7	294.7	290.8	290.8	286.8	282.8	280.8	270.8	270.8
50°	205.1	191.2	187.2	185.2	187.2	183.2	179.2	175.2	171.3	169.3	165.3
52.5°	123.5	117.5	113.5	111.5	107.5	105.5	103.6	99.6	97.6	97.6	95.6
55°	73.7	67.7	59.7	59.7	59.7	57.8	55.8	53.8	51.8	51.8	49.8
57.5°	45.8	41.8	37.8	35.8	35.8	35.8	33.9	33.9	33.9	33.9	31.9
60°	33.9	29.9	27.9	27.9	27.9	25.9	25.9	25.9	25.9	23.9	23.9
62.5°	25.9	23.9	21.9	21.9	19.9	19.9	19.9	19.9	19.9	19.9	17.9
65°	21.9	17.9	17.9	15.9	15.9	15.9	15.9	15.9	15.9	15.9	15.9
67.5°	15.9	13.9	13.9	13.9	13.9	11.9	11.9	11.9	11.9	11.9	11.9
70°	11.9	11.9	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
72.5°	10.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0
75°	8.0	8.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
77.5°	6.0	6.0	6.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
80°	4.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
82.5°	2.0	2.0	2.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
85°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
87.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
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: P251568

CATALOG NUMBER: LD4B40D010 EU4B30509730 4LBSW1LI

**CANDELA DISTRIBUTION (continued):**

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	1525.4	1525.4	1525.4	1525.4	1525.4	1525.4	1525.4	1525.4
2.5°	1561.3	1571.2	1561.3	1561.3	1567.3	1565.3	1569.3	1563.3
5°	1607.1	1621.0	1611.1	1609.1	1619.0	1617.0	1619.0	1615.1
7.5°	1662.9	1676.8	1666.8	1666.8	1676.8	1674.8	1680.8	1676.8
10°	1726.6	1742.5	1728.6	1730.6	1744.5	1742.5	1742.5	1742.5
12.5°	1792.3	1808.2	1800.3	1800.3	1810.2	1812.2	1814.2	1812.2
15°	1846.1	1862.0	1852.0	1852.0	1866.0	1864.0	1866.0	1864.0
17.5°	1877.9	1893.9	1881.9	1881.9	1893.9	1893.9	1895.8	1897.8
20°	1870.0	1887.9	1877.9	1873.9	1887.9	1887.9	1885.9	1885.9
22.5°	1824.2	1840.1	1832.1	1828.1	1838.1	1834.1	1832.1	1834.1
25°	1744.5	1760.4	1744.5	1744.5	1752.5	1750.5	1752.5	1750.5
27.5°	1637.0	1648.9	1633.0	1631.0	1639.0	1635.0	1633.0	1639.0
30°	1493.6	1505.5	1497.6	1491.6	1501.5	1495.6	1491.6	1493.6
32.5°	1330.3	1338.2	1334.3	1324.3	1330.3	1326.3	1324.3	1326.3
35°	1151.1	1161.0	1145.1	1143.1	1153.0	1145.1	1141.1	1151.1
37.5°	965.8	977.8	963.9	965.8	959.9	961.9	957.9	963.9
40°	790.6	788.6	784.6	782.6	784.6	778.7	782.6	776.7
42.5°	601.4	605.4	603.4	601.4	603.4	595.4	591.5	599.4
45°	418.2	416.2	412.2	408.2	408.2	406.3	406.3	400.3
47.5°	268.8	266.9	258.9	260.9	264.9	260.9	254.9	262.9
50°	163.3	161.3	161.3	159.3	163.3	159.3	155.3	155.3
52.5°	91.6	91.6	89.6	89.6	89.6	89.6	87.6	85.6
55°	49.8	47.8	47.8	47.8	45.8	45.8	45.8	45.8
57.5°	31.9	31.9	31.9	31.9	31.9	31.9	29.9	29.9
60°	23.9	23.9	23.9	23.9	21.9	23.9	21.9	21.9
62.5°	17.9	17.9	17.9	17.9	17.9	17.9	17.9	17.9
65°	13.9	13.9	13.9	13.9	13.9	13.9	13.9	13.9
67.5°	11.9	11.9	11.9	11.9	11.9	11.9	11.9	11.9
70°	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
72.5°	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0
75°	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
77.5°	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
80°	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
82.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
85°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
87.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



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— 0°-180°    - - 45°-225°    - - - - 90°-270°















(END OF REPORT)