

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: P251794

Luminaire Tested: **LD4B40D010 EU4B30508050 4LBLWW1H**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-41-14  
Report Number: P251794  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G1-1712-453-12)  
Test Lab: INNOVATION CENTER(G1)  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: io LED  
Catalog Number: LD4B40D010 EU4B30508050 4LBLWW1H  
Description: PORTFOLIO 4 INCH LENS WALLWASH RECESSED DOWNLIGHT, WITH HAZE TRIM  
Light Source: (1) HIGH LUMEN LED 80CRI / 5000K CCT  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 3236.0 lumens  
Efficiency: N/A  
Efficacy: 75.2 lumens/watt  
Spacing Criteria (0/90/45): 1.12 / 1.03 / 1.12  
Luminous Opening: Circular (Dia: 0.38' x H: 0')  
CIE Type: Direct

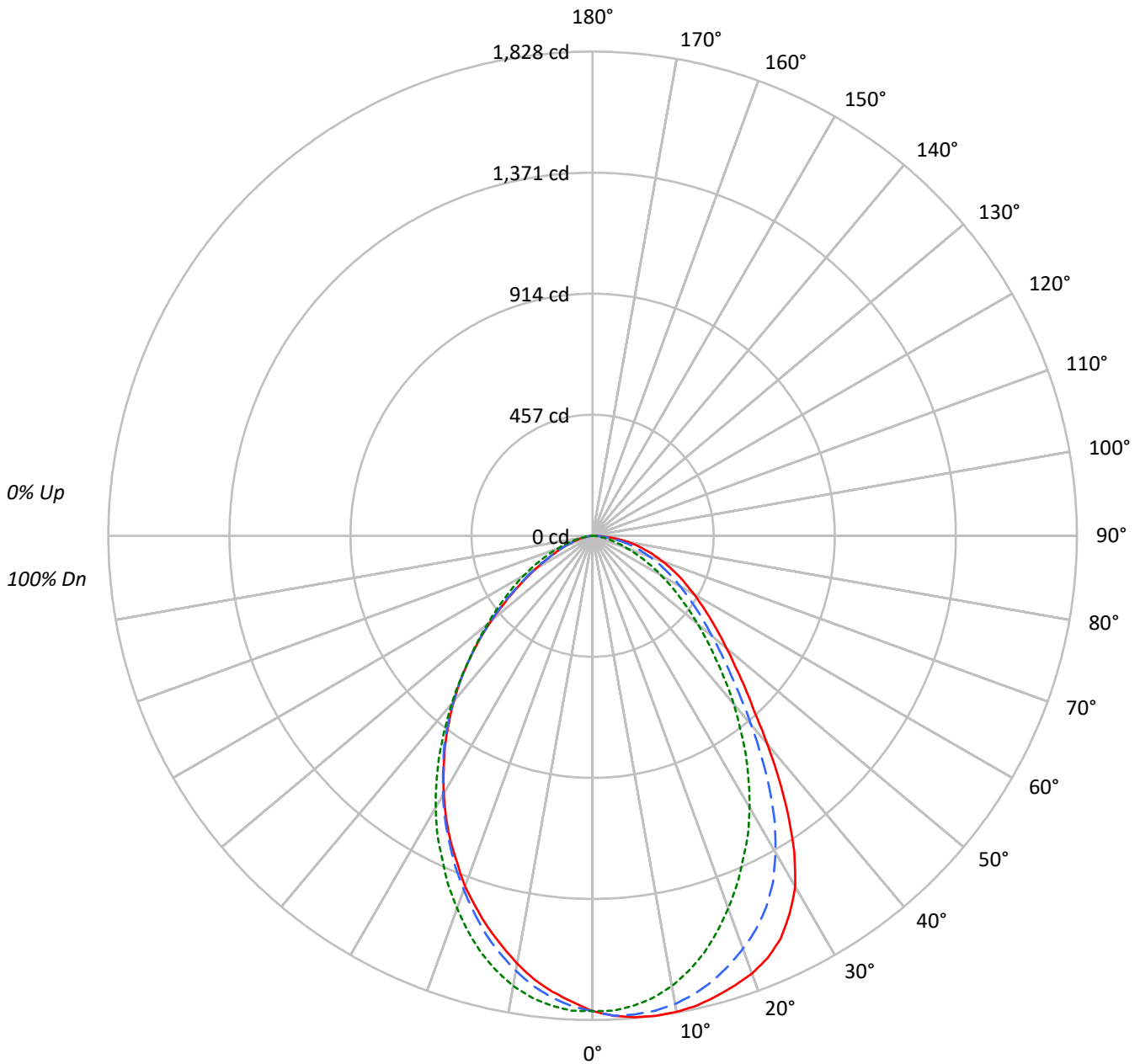
Input Watts (W): 43.02  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



TEST NUMBER: P251794

CATALOG NUMBER: LD4B40D010 EU4B30508050 4LBLWW1H

### Luminous Intensity Polar Plot





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**COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:**

RF	20									20									20									20									
RC	80									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	111	107	103	100	108	104	101	98	100	98	95	96	94	92	93	91	90	88																			
2	102	95	89	85	100	93	88	84	90	85	82	87	83	80	84	81	78	76																			
3	94	85	78	73	92	84	77	72	81	75	71	78	74	70	76	72	69	67																			
4	88	77	69	63	85	76	69	63	73	67	62	71	66	61	69	64	61	59																			
5	81	70	62	56	79	69	61	56	67	60	55	65	59	55	63	58	54	52																			
6	76	64	56	50	74	63	55	50	61	54	49	60	54	49	58	53	49	47																			
7	71	59	51	45	69	58	50	45	56	50	45	55	49	44	54	48	44	42																			
8	66	54	46	41	65	53	46	41	52	45	41	51	45	40	50	44	40	38																			
9	62	50	42	37	61	49	42	37	48	42	37	47	41	37	46	41	37	35																			
10	59	46	39	34	57	46	39	34	45	39	34	44	38	34	43	38	34	32																			

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

	0°	90°	180°
0°	174908	174908	174908
5°	178540	174226	169090
10°	180605	170768	162297
15°	181633	164360	154331
20°	182410	155206	146038
25°	180516	144589	136578
30°	172133	133298	126455
35°	153072	119902	115631
40°	130314	105378	103623
45°	112260	90566	90194
50°	100053	78280	75763
55°	91957	67557	60523
60°	86114	58124	47365
65°	82764	49027	36920
70°	79472	39351	29891
75°	76929	31178	22857
80°	77507	21720	13919
85°	64856	15431	6150



TEST NUMBER: P251794

CATALOG NUMBER: LD4B40D010 EU4B30508050 4LBLWW1H

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	168.0	5.2
10°-20°	461.9	14.3
20°-30°	645.9	20.0
30°-40°	663.9	20.5
40°-50°	538.9	16.7
50°-60°	379.4	11.7
60°-70°	233.6	7.2
70°-80°	116.7	3.6
80°-90°	27.7	0.9
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°	1275.8	39.4
0°-40°	1939.7	59.9
0°-60°	2858.0	88.3
0°-90°	3236.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3236.0	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	1795	1795	1795	1795	1795	
5°	1825	1814	1781	1750	1728	174
15°	1800	1742	1629	1557	1530	509
25°	1679	1549	1345	1278	1270	767
35°	1287	1162	1008	977	972	800
45°	814	734	657	657	654	633
55°	541	475	398	364	356	486
65°	359	301	213	163	160	355
75°	204	160	83	61	61	218
85°	58	39	14	8	6	68
90°	0	0	0	0	0	



TEST NUMBER: P251794

CATALOG NUMBER: LD4B40D010 EU4B30508050 4LBLWW1H

**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
0°	1794.7	1794.7	1794.7	1794.7	1794.7	1794.7	1794.7	1794.7	1794.7	1794.7	1794.7
2.5°	1814.0	1816.8	1808.5	1816.8	1805.7	1811.2	1814.0	1808.5	1802.9	1814.0	1814.0
5°	1825.0	1825.0	1816.8	1827.8	1814.0	1816.8	1822.3	1814.0	1805.7	1816.8	1814.0
7.5°	1827.8	1827.8	1816.8	1827.8	1814.0	1816.8	1819.5	1811.2	1802.9	1811.2	1808.5
10°	1825.0	1822.3	1814.0	1825.0	1811.2	1811.2	1814.0	1805.7	1791.9	1800.2	1794.7
12.5°	1816.8	1816.8	1805.7	1816.8	1797.4	1797.4	1800.2	1789.1	1778.1	1778.1	1772.6
15°	1800.2	1800.2	1789.1	1797.4	1780.9	1780.9	1778.1	1767.1	1753.2	1753.2	1742.2
17.5°	1780.9	1780.9	1769.8	1778.1	1758.8	1758.8	1756.0	1739.4	1720.1	1717.4	1703.5
20°	1758.8	1758.8	1745.0	1750.5	1728.4	1728.4	1725.6	1706.3	1684.2	1678.7	1659.4
22.5°	1725.6	1725.6	1711.8	1714.6	1692.5	1689.7	1687.0	1664.9	1642.8	1634.5	1609.7
25°	1678.7	1675.9	1664.9	1664.9	1642.8	1637.3	1631.8	1609.7	1587.6	1571.0	1548.9
27.5°	1609.7	1612.4	1598.6	1601.4	1573.8	1568.3	1565.5	1537.9	1513.0	1496.5	1474.4
30°	1529.6	1521.3	1507.5	1507.5	1485.4	1482.7	1477.1	1452.3	1424.7	1405.4	1380.5
32.5°	1416.4	1413.6	1399.8	1399.8	1375.0	1375.0	1363.9	1339.1	1314.2	1303.2	1278.4
35°	1286.6	1283.9	1272.8	1272.8	1250.7	1253.5	1242.5	1223.1	1198.3	1181.7	1162.4
37.5°	1154.1	1151.3	1140.3	1143.1	1123.7	1123.7	1115.5	1096.1	1076.8	1068.5	1043.7
40°	1024.3	1021.6	1007.8	1016.1	999.5	994.0	991.2	977.4	955.3	944.3	930.5
42.5°	905.6	908.4	894.6	900.1	886.3	880.8	878.0	867.0	850.4	839.4	825.5
45°	814.5	809.0	803.5	803.5	789.7	786.9	784.1	770.3	759.3	748.2	734.4
47.5°	728.9	723.4	717.9	720.6	709.6	706.8	701.3	690.3	676.5	670.9	657.1
50°	659.9	657.1	648.8	648.8	637.8	635.0	629.5	621.2	607.4	599.1	588.1
52.5°	596.4	596.4	588.1	585.3	577.1	574.3	571.5	560.5	549.4	538.4	527.4
55°	541.2	538.4	532.9	532.9	521.8	519.1	516.3	505.3	494.2	485.9	474.9
57.5°	488.7	488.7	483.2	483.2	474.9	469.4	469.4	458.3	444.5	439.0	425.2
60°	441.8	441.8	436.2	436.2	428.0	428.0	422.4	411.4	403.1	392.1	381.0
62.5°	397.6	400.3	394.8	392.1	383.8	381.0	381.0	372.7	358.9	350.6	339.6
65°	358.9	356.2	353.4	350.6	342.4	339.6	339.6	328.6	320.3	309.2	301.0
67.5°	317.5	317.5	312.0	312.0	306.5	303.7	298.2	289.9	281.6	273.3	265.1
70°	278.9	278.9	276.1	276.1	267.8	265.1	262.3	254.0	245.7	237.4	226.4
72.5°	243.0	240.2	237.4	237.4	231.9	229.2	226.4	218.1	209.8	201.6	193.3
75°	204.3	204.3	201.6	201.6	196.0	193.3	193.3	187.7	176.7	171.2	160.1
77.5°	171.2	171.2	168.4	168.4	162.9	162.9	160.1	151.9	146.3	138.1	132.5
80°	138.1	135.3	135.3	132.5	127.0	127.0	124.2	121.5	113.2	107.7	99.4
82.5°	96.6	96.6	96.6	93.9	91.1	91.1	88.4	82.8	77.3	74.5	66.3
85°	58.0	58.0	55.2	52.5	55.2	52.5	49.7	46.9	44.2	41.4	38.7
87.5°	24.8	24.8	22.1	22.1	22.1	22.1	22.1	19.3	16.6	16.6	13.8
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: P251794

CATALOG NUMBER: LD4B40D010 EU4B30508050 4LBLWW1H

**CANDELA DISTRIBUTION (continued):**

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
0°	1794.7	1794.7	1794.7	1794.7	1794.7	1794.7	1794.7	1794.7	1794.7	1794.7	1794.7
2.5°	1797.4	1805.7	1802.9	1800.2	1794.7	1794.7	1794.7	1791.9	1794.7	1794.7	1789.1
5°	1797.4	1802.9	1800.2	1794.7	1789.1	1789.1	1786.4	1780.9	1780.9	1780.9	1769.8
7.5°	1789.1	1794.7	1786.4	1780.9	1775.3	1769.8	1769.8	1761.5	1761.5	1758.8	1747.7
10°	1772.6	1775.3	1764.3	1758.8	1750.5	1747.7	1742.2	1731.2	1728.4	1725.6	1714.6
12.5°	1747.7	1750.5	1736.7	1725.6	1714.6	1711.8	1706.3	1692.5	1687.0	1681.5	1667.7
15°	1711.8	1711.8	1695.3	1681.5	1670.4	1667.7	1653.9	1640.0	1634.5	1629.0	1609.7
17.5°	1670.4	1667.7	1645.6	1631.8	1618.0	1612.4	1598.6	1582.1	1571.0	1565.5	1548.9
20°	1626.2	1618.0	1593.1	1579.3	1562.7	1554.5	1540.6	1518.6	1507.5	1496.5	1479.9
22.5°	1573.8	1562.7	1535.1	1515.8	1499.2	1491.0	1471.6	1452.3	1435.7	1424.7	1405.4
25°	1510.3	1496.5	1466.1	1441.3	1427.4	1419.2	1399.8	1377.7	1361.2	1344.6	1328.1
27.5°	1435.7	1419.2	1388.8	1363.9	1350.1	1336.3	1322.5	1297.7	1283.9	1270.1	1250.7
30°	1344.6	1325.3	1297.7	1275.6	1259.0	1248.0	1231.4	1209.3	1192.8	1184.5	1165.2
32.5°	1245.2	1223.1	1198.3	1176.2	1167.9	1154.1	1140.3	1118.2	1104.4	1096.1	1082.3
35°	1134.8	1118.2	1090.6	1074.0	1060.2	1054.7	1043.7	1021.6	1016.1	1007.8	991.2
37.5°	1018.8	1005.0	985.7	971.9	960.8	955.3	944.3	930.5	922.2	913.9	905.6
40°	911.1	900.1	883.5	872.5	858.7	850.4	850.4	833.8	828.3	828.3	820.0
42.5°	806.2	800.7	786.9	770.3	767.6	759.3	756.5	748.2	742.7	740.0	737.2
45°	717.9	709.6	695.8	687.5	679.2	679.2	670.9	662.6	659.9	657.1	654.4
47.5°	640.6	629.5	618.5	610.2	604.7	601.9	593.6	588.1	585.3	585.3	582.6
50°	571.5	563.2	552.2	543.9	538.4	532.9	527.4	521.8	519.1	516.3	516.3
52.5°	513.5	502.5	491.5	483.2	474.9	472.1	466.6	461.1	458.3	455.6	452.8
55°	461.1	452.8	439.0	430.7	422.4	422.4	414.2	405.9	400.3	397.6	394.8
57.5°	411.4	403.1	389.3	381.0	375.5	370.0	364.5	358.9	353.4	347.9	342.4
60°	367.2	358.9	345.1	334.1	331.3	325.8	320.3	309.2	303.7	298.2	292.7
62.5°	325.8	314.8	303.7	292.7	289.9	284.4	276.1	267.8	259.5	254.0	245.7
65°	287.1	278.9	265.1	256.8	248.5	245.7	237.4	226.4	218.1	212.6	204.3
67.5°	251.3	240.2	226.4	218.1	212.6	207.1	198.8	190.5	182.2	173.9	165.7
70°	215.4	207.1	193.3	185.0	179.5	173.9	165.7	154.6	146.3	138.1	132.5
72.5°	182.2	171.2	160.1	151.9	146.3	140.8	132.5	124.2	116.0	110.4	102.2
75°	151.9	140.8	132.5	121.5	118.7	113.2	104.9	96.6	88.4	82.8	77.3
77.5°	121.5	113.2	102.2	96.6	91.1	85.6	80.1	71.8	66.3	58.0	52.5
80°	91.1	82.8	74.5	69.0	63.5	60.7	55.2	49.7	44.2	38.7	35.9
82.5°	60.7	55.2	46.9	44.2	41.4	38.7	33.1	30.4	27.6	24.8	22.1
85°	33.1	30.4	27.6	22.1	22.1	19.3	16.6	16.6	13.8	13.8	11.0
87.5°	13.8	11.0	11.0	8.3	8.3	8.3	5.5	5.5	5.5	2.8	2.8
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: P251794

CATALOG NUMBER: LD4B40D010 EU4B30508050 4LBLWW1H

**CANDELA DISTRIBUTION (continued):**

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
0°	1794.7	1794.7	1794.7	1794.7	1794.7	1794.7	1794.7	1794.7	1794.7	1794.7	1794.7
2.5°	1791.9	1780.9	1780.9	1780.9	1772.6	1775.3	1778.1	1780.9	1778.1	1769.8	1778.1
5°	1772.6	1761.5	1761.5	1756.0	1750.5	1750.5	1750.5	1753.2	1750.5	1742.2	1745.0
7.5°	1747.7	1733.9	1731.2	1725.6	1720.1	1717.4	1717.4	1717.4	1714.6	1703.5	1709.1
10°	1709.1	1695.3	1689.7	1687.0	1678.7	1675.9	1673.2	1670.4	1667.7	1656.6	1662.1
12.5°	1662.1	1651.1	1640.0	1637.3	1629.0	1623.5	1620.7	1620.7	1615.2	1604.2	1609.7
15°	1606.9	1590.3	1582.1	1576.5	1568.3	1562.7	1557.2	1560.0	1557.2	1546.2	1548.9
17.5°	1540.6	1524.1	1515.8	1513.0	1502.0	1496.5	1493.7	1493.7	1491.0	1479.9	1482.7
20°	1468.9	1452.3	1446.8	1441.3	1435.7	1430.2	1427.4	1424.7	1421.9	1410.9	1419.2
22.5°	1397.1	1377.7	1369.5	1369.5	1358.4	1355.7	1352.9	1355.7	1352.9	1341.9	1347.4
25°	1322.5	1303.2	1297.7	1289.4	1283.9	1281.1	1281.1	1281.1	1278.4	1272.8	1278.4
27.5°	1239.7	1225.9	1217.6	1214.8	1209.3	1206.6	1203.8	1206.6	1206.6	1198.3	1203.8
30°	1156.9	1145.8	1140.3	1137.5	1129.3	1126.5	1129.3	1129.3	1129.3	1121.0	1129.3
32.5°	1074.0	1065.8	1063.0	1054.7	1049.2	1049.2	1049.2	1051.9	1049.2	1043.7	1051.9
35°	991.2	980.2	977.4	974.6	974.6	969.1	974.6	971.9	977.4	969.1	974.6
37.5°	902.9	897.3	894.6	894.6	889.0	891.8	891.8	891.8	897.3	889.0	894.6
40°	820.0	814.5	814.5	814.5	811.7	811.7	811.7	814.5	817.3	811.7	817.3
42.5°	737.2	734.4	734.4	731.7	728.9	731.7	734.4	734.4	737.2	731.7	734.4
45°	657.1	654.4	657.1	654.4	654.4	651.6	654.4	657.1	657.1	654.4	654.4
47.5°	582.6	582.6	579.8	579.8	579.8	579.8	579.8	579.8	579.8	574.3	579.8
50°	516.3	510.8	513.5	510.8	510.8	508.0	508.0	505.3	502.5	499.7	499.7
52.5°	452.8	447.3	447.3	444.5	441.8	441.8	439.0	436.2	433.5	428.0	428.0
55°	392.1	386.5	383.8	381.0	378.3	375.5	372.7	370.0	364.5	361.7	361.7
57.5°	336.8	331.3	325.8	325.8	320.3	317.5	312.0	306.5	303.7	298.2	298.2
60°	287.1	281.6	273.3	270.6	267.8	262.3	254.0	251.3	248.5	243.0	245.7
62.5°	240.2	231.9	223.6	220.9	218.1	212.6	207.1	201.6	198.8	201.6	201.6
65°	196.0	187.7	182.2	176.7	173.9	168.4	165.7	162.9	162.9	162.9	165.7
67.5°	157.4	149.1	143.6	140.8	135.3	132.5	132.5	132.5	132.5	132.5	132.5
70°	124.2	118.7	113.2	107.7	107.7	104.9	104.9	104.9	104.9	104.9	104.9
72.5°	93.9	88.4	85.6	85.6	82.8	82.8	82.8	82.8	80.1	80.1	82.8
75°	69.0	66.3	63.5	63.5	63.5	60.7	60.7	60.7	60.7	60.7	60.7
77.5°	49.7	46.9	46.9	44.2	44.2	44.2	44.2	44.2	44.2	41.4	41.4
80°	33.1	30.4	30.4	30.4	30.4	27.6	27.6	27.6	27.6	27.6	27.6
82.5°	19.3	19.3	19.3	16.6	16.6	16.6	16.6	16.6	16.6	16.6	16.6
85°	11.0	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3
87.5°	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	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: P251794

CATALOG NUMBER: LD4B40D010 EU4B30508050 4LBLWW1H

**CANDELA DISTRIBUTION (continued):**

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	1794.7	1794.7	1794.7	1794.7	1794.7	1794.7	1794.7	1794.7
2.5°	1761.5	1772.6	1775.3	1767.1	1769.8	1764.3	1767.1	1761.5
5°	1731.2	1739.4	1742.2	1736.7	1736.7	1731.2	1733.9	1728.4
7.5°	1692.5	1700.8	1703.5	1698.0	1698.0	1692.5	1692.5	1689.7
10°	1648.3	1651.1	1656.6	1648.3	1651.1	1645.6	1645.6	1640.0
12.5°	1593.1	1598.6	1604.2	1595.9	1595.9	1593.1	1593.1	1584.8
15°	1535.1	1540.6	1543.4	1537.9	1537.9	1535.1	1532.4	1529.6
17.5°	1474.4	1477.1	1482.7	1474.4	1479.9	1474.4	1474.4	1468.9
20°	1405.4	1413.6	1416.4	1408.1	1410.9	1408.1	1408.1	1408.1
22.5°	1339.1	1344.6	1347.4	1341.9	1344.6	1339.1	1341.9	1336.3
25°	1270.1	1272.8	1275.6	1270.1	1275.6	1272.8	1270.1	1270.1
27.5°	1198.3	1201.0	1203.8	1198.3	1203.8	1201.0	1203.8	1198.3
30°	1121.0	1126.5	1132.0	1126.5	1129.3	1126.5	1126.5	1123.7
32.5°	1043.7	1049.2	1054.7	1049.2	1054.7	1049.2	1051.9	1046.4
35°	971.9	974.6	977.4	971.9	974.6	974.6	974.6	971.9
37.5°	891.8	897.3	897.3	894.6	900.1	897.3	897.3	891.8
40°	814.5	817.3	820.0	814.5	817.3	814.5	817.3	814.5
42.5°	734.4	740.0	742.7	737.2	737.2	737.2	734.4	737.2
45°	651.6	657.1	662.6	654.4	657.1	657.1	657.1	654.4
47.5°	577.1	577.1	579.8	577.1	579.8	574.3	579.8	577.1
50°	499.7	499.7	505.3	499.7	499.7	499.7	499.7	499.7
52.5°	425.2	428.0	428.0	422.4	425.2	422.4	425.2	422.4
55°	356.2	356.2	358.9	356.2	356.2	356.2	356.2	356.2
57.5°	295.4	298.2	298.2	295.4	298.2	295.4	295.4	295.4
60°	245.7	245.7	245.7	243.0	245.7	243.0	245.7	243.0
62.5°	198.8	201.6	201.6	198.8	201.6	198.8	198.8	198.8
65°	162.9	162.9	162.9	162.9	162.9	162.9	162.9	160.1
67.5°	129.8	129.8	132.5	129.8	132.5	132.5	132.5	132.5
70°	104.9	104.9	104.9	104.9	104.9	104.9	104.9	104.9
72.5°	80.1	80.1	82.8	80.1	80.1	80.1	80.1	80.1
75°	60.7	60.7	60.7	60.7	60.7	58.0	58.0	60.7
77.5°	41.4	41.4	41.4	41.4	41.4	41.4	41.4	44.2
80°	27.6	27.6	27.6	27.6	24.8	24.8	27.6	24.8
82.5°	13.8	13.8	13.8	13.8	13.8	13.8	13.8	13.8
85°	8.3	8.3	5.5	5.5	5.5	5.5	5.5	5.5
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)