

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: P251949

Luminaire Tested: **LD4B40D010 EU4B30508040 4LBDW1H**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P251949
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G1-1712-453-15)
Test Lab: INNOVATION CENTER(G1)
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: io LED
Catalog Number: LD4B40D010 EU4B30508040 4LBDW1H
Description: PORTFOLIO 4 INCH DOUBLE WALLWASH RECESSED DOWNLIGHT, WITH HAZE TRIM
Light Source: (1) HIGH LUMEN LED 80CRI / 4000K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 3655.0 lumens
Efficiency: N/A
Efficacy: 85.0 lumens/watt
Spacing Criteria (0/90/45): 1.19 / 1.18 / 1.19
Luminous Opening: Circular (Dia: 0.38' x H: 0')
CIE Type: Direct

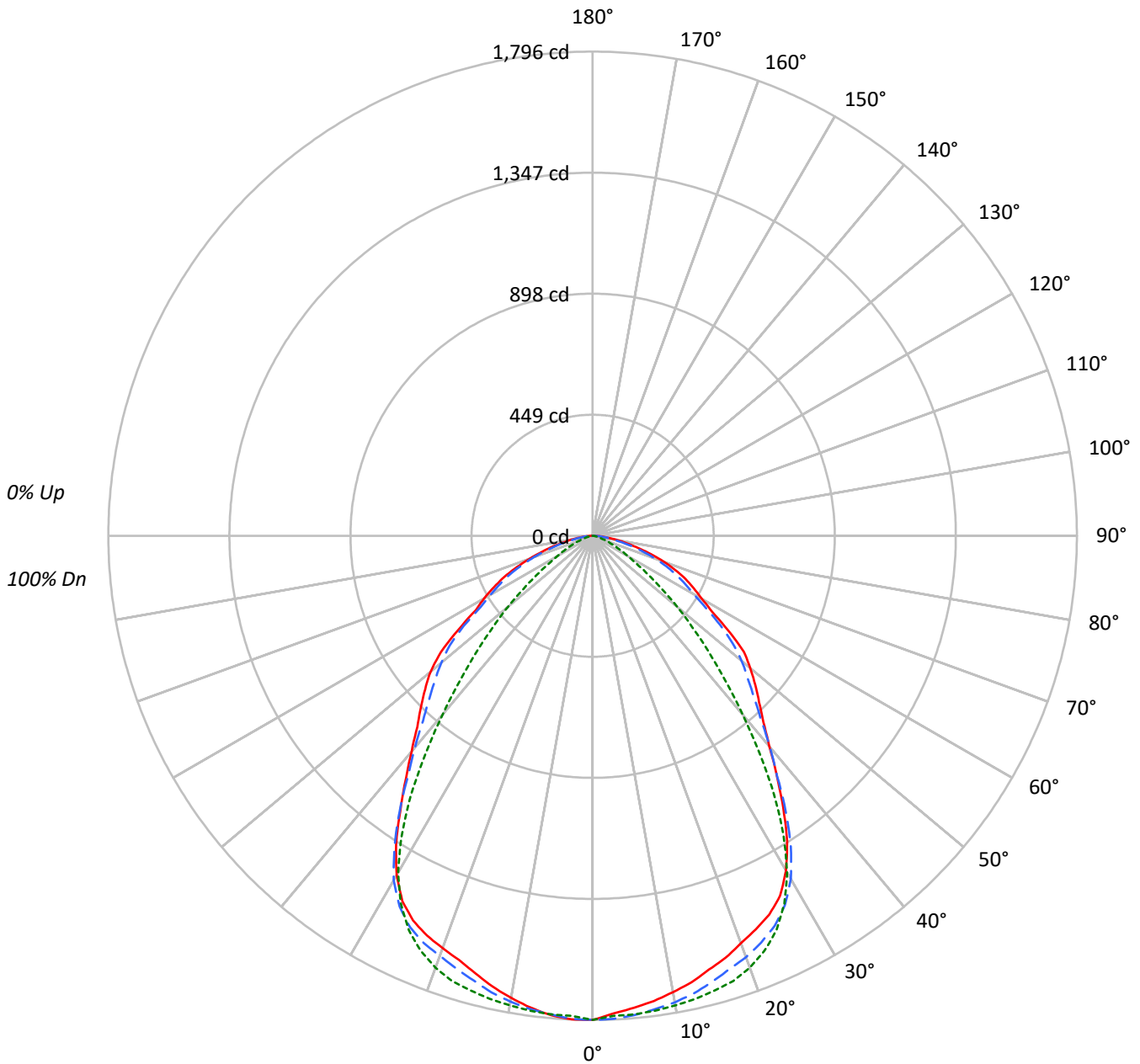
Input Watts (W): 43.02
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Luminous Intensity Polar Plot





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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20				20				20				20				20				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				100
1	111	107	103	100	108	104	101	98	100	98	95	96	94	92	93	91	89	88				88
2	102	95	89	84	100	93	88	83	90	85	81	87	83	80	84	81	78	76				76
3	94	85	78	72	92	84	77	72	81	75	70	78	73	69	76	72	68	66				66
4	87	77	69	63	85	75	68	62	73	67	62	71	65	61	69	64	60	58				58
5	81	69	61	55	79	68	61	55	66	60	54	64	58	54	63	57	53	51				51
6	75	63	55	49	73	62	55	49	60	54	49	59	53	48	57	52	48	46				46
7	70	58	50	44	68	57	49	44	56	49	44	54	48	43	53	47	43	41				41
8	66	53	45	40	64	52	45	40	51	44	40	50	44	39	49	43	39	37				37
9	62	49	41	36	60	49	41	36	47	41	36	46	40	36	45	40	36	34				34
10	58	46	38	33	57	45	38	33	44	38	33	43	37	33	42	37	33	31				31

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	175025	175025	175025
5°	171907	174343	174617
10°	170075	174994	172262
15°	168103	176185	169495
20°	166770	176799	168782
25°	166676	173515	169354
30°	161375	162309	163547
35°	146612	139712	147921
40°	129703	110022	132871
45°	120336	83785	124140
50°	115624	61997	118975
55°	104683	42716	103290
60°	91006	29081	90480
65°	87930	21031	83456
70°	79529	14162	70867
75°	65557	9376	56181
80°	52700	6230	41868
85°	43275	3131	27843



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	169.5	4.6
10°-20°	484.7	13.3
20°-30°	732.3	20.0
30°-40°	766.4	21.0
40°-50°	620.7	17.0
50°-60°	451.5	12.4
60°-70°	278.5	7.6
70°-80°	125.8	3.4
80°-90°	25.6	0.7
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°	1386.6	37.9
0°-40°	2153.0	58.9
0°-60°	3225.2	88.2
0°-90°	3655.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3655.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	1796	1796	1796	1796	1796	
5°	1757	1785	1782	1782	1785	167
15°	1666	1713	1746	1708	1680	471
25°	1550	1597	1614	1602	1575	710
35°	1232	1249	1174	1249	1243	768
45°	873	846	608	856	901	679
55°	616	578	251	583	608	550
65°	381	343	91	337	362	373
75°	174	149	25	130	149	189
85°	39	30	3	22	25	44
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°	1795.9	1795.9	1795.9	1795.9	1795.9	1795.9	1795.9	1795.9	1795.9	1795.9	1795.9
2.5°	1773.8	1773.8	1790.4	1809.7	1793.2	1776.6	1787.6	1782.1	1801.5	1801.5	1793.2
5°	1757.2	1762.8	1776.6	1793.2	1779.3	1762.8	1776.6	1771.1	1790.4	1790.4	1784.9
7.5°	1740.7	1743.4	1760.0	1779.3	1765.5	1749.0	1760.0	1757.2	1773.8	1776.6	1771.1
10°	1718.6	1721.3	1737.9	1757.2	1743.4	1729.6	1740.7	1737.9	1760.0	1760.0	1757.2
12.5°	1696.5	1699.2	1715.8	1732.4	1718.6	1704.7	1715.8	1715.8	1737.9	1740.7	1737.9
15°	1666.1	1671.6	1685.4	1702.0	1693.7	1677.1	1688.2	1688.2	1707.5	1713.0	1713.0
17.5°	1641.2	1644.0	1657.8	1674.4	1663.3	1649.5	1660.5	1660.5	1679.9	1685.4	1685.4
20°	1608.0	1613.6	1627.4	1644.0	1635.7	1624.6	1632.9	1632.9	1655.0	1660.5	1663.3
22.5°	1580.4	1585.9	1597.0	1619.1	1605.3	1597.0	1608.0	1605.3	1630.1	1632.9	1632.9
25°	1550.0	1555.5	1569.4	1583.2	1574.9	1566.6	1574.9	1574.9	1594.2	1597.0	1597.0
27.5°	1505.8	1508.6	1522.4	1536.2	1527.9	1516.9	1527.9	1525.2	1544.5	1547.3	1544.5
30°	1434.0	1439.5	1445.0	1464.4	1456.1	1447.8	1458.8	1453.3	1472.7	1472.7	1469.9
32.5°	1342.8	1342.8	1353.9	1367.7	1356.6	1351.1	1359.4	1362.1	1376.0	1376.0	1367.7
35°	1232.3	1237.8	1246.1	1254.4	1246.1	1240.6	1248.9	1246.1	1262.7	1257.1	1248.9
37.5°	1121.8	1124.5	1132.8	1143.9	1132.8	1124.5	1127.3	1124.5	1138.3	1138.3	1124.5
40°	1019.5	1025.1	1030.6	1041.6	1030.6	1025.1	1027.8	1019.5	1036.1	1030.6	1022.3
42.5°	936.6	939.4	947.7	953.2	942.2	939.4	942.2	936.6	944.9	939.4	922.8
45°	873.1	873.1	875.9	884.1	873.1	870.3	870.3	864.8	873.1	862.0	845.5
47.5°	817.8	820.6	823.4	828.9	820.6	812.3	815.1	804.0	809.5	801.3	779.2
50°	762.6	768.1	770.9	776.4	768.1	762.6	765.3	754.3	754.3	740.5	721.1
52.5°	707.3	710.1	707.3	712.8	707.3	699.0	701.8	690.7	690.7	674.2	654.8
55°	616.1	618.9	621.7	627.2	621.7	613.4	618.9	610.6	610.6	599.6	577.5
57.5°	525.0	527.7	530.5	533.3	533.3	527.7	530.5	525.0	522.2	513.9	497.3
60°	466.9	466.9	466.9	469.7	466.9	464.2	464.2	458.7	458.7	447.6	431.0
62.5°	422.7	425.5	425.5	428.3	425.5	422.7	420.0	414.4	411.7	400.6	386.8
65°	381.3	381.3	378.5	384.1	381.3	378.5	378.5	373.0	367.5	356.4	342.6
67.5°	331.6	334.3	331.6	334.3	334.3	331.6	328.8	323.3	320.5	312.2	295.6
70°	279.1	279.1	279.1	281.8	279.1	279.1	281.8	273.5	270.8	259.7	245.9
72.5°	226.6	229.3	229.3	226.6	229.3	223.8	223.8	223.8	221.0	210.0	196.2
75°	174.1	176.8	176.8	179.6	176.8	174.1	174.1	171.3	168.5	160.3	149.2
77.5°	129.9	129.9	132.6	132.6	132.6	129.9	129.9	124.3	124.3	118.8	107.8
80°	93.9	93.9	91.2	93.9	93.9	91.2	91.2	88.4	88.4	82.9	74.6
82.5°	60.8	63.5	63.5	63.5	63.5	60.8	60.8	60.8	58.0	55.3	49.7
85°	38.7	38.7	38.7	38.7	41.4	38.7	41.4	38.7	38.7	33.2	30.4
87.5°	16.6	16.6	16.6	19.3	19.3	16.6	16.6	16.6	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



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CANDELA DISTRIBUTION (continued):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
0°	1795.9	1795.9	1795.9	1795.9	1795.9	1795.9	1795.9	1795.9	1795.9	1795.9	1795.9
2.5°	1793.2	1795.9	1787.6	1798.7	1790.4	1793.2	1795.9	1793.2	1782.1	1782.1	1812.5
5°	1782.1	1787.6	1779.3	1793.2	1787.6	1787.6	1793.2	1790.4	1779.3	1782.1	1809.7
7.5°	1771.1	1779.3	1773.8	1787.6	1779.3	1779.3	1784.9	1784.9	1773.8	1776.6	1801.5
10°	1754.5	1765.5	1762.8	1776.6	1768.3	1768.3	1776.6	1776.6	1765.5	1768.3	1793.2
12.5°	1740.7	1751.7	1749.0	1762.8	1757.2	1760.0	1762.8	1768.3	1754.5	1760.0	1782.1
15°	1718.6	1729.6	1729.6	1743.4	1737.9	1743.4	1749.0	1757.2	1746.2	1746.2	1768.3
17.5°	1693.7	1707.5	1707.5	1718.6	1718.6	1721.3	1732.4	1740.7	1729.6	1732.4	1751.7
20°	1666.1	1682.6	1682.6	1696.5	1693.7	1699.2	1707.5	1715.8	1704.7	1704.7	1726.9
22.5°	1638.4	1652.3	1655.0	1663.3	1663.3	1666.1	1674.4	1679.9	1666.1	1666.1	1688.2
25°	1599.8	1613.6	1616.3	1621.9	1616.3	1616.3	1621.9	1627.4	1613.6	1613.6	1632.9
27.5°	1547.3	1561.1	1561.1	1558.3	1552.8	1555.5	1552.8	1555.5	1541.7	1539.0	1558.3
30°	1469.9	1478.2	1478.2	1475.4	1467.1	1467.1	1458.8	1461.6	1442.3	1442.3	1458.8
32.5°	1364.9	1373.2	1367.7	1362.1	1351.1	1345.6	1340.0	1337.3	1317.9	1317.9	1337.3
35°	1240.6	1246.1	1237.8	1226.8	1212.9	1204.7	1196.4	1185.3	1171.5	1174.3	1185.3
37.5°	1113.5	1113.5	1102.4	1080.3	1069.3	1055.5	1041.6	1041.6	1019.5	1016.8	1025.1
40°	1005.7	994.7	975.3	944.9	925.6	911.8	892.4	881.4	864.8	864.8	878.6
42.5°	909.0	886.9	862.0	820.6	801.3	784.7	759.8	748.8	729.4	726.7	734.9
45°	823.4	801.3	765.3	721.1	696.3	676.9	641.0	627.2	610.6	607.9	613.4
47.5°	754.3	729.4	685.2	627.2	602.3	577.5	541.5	522.2	508.4	500.1	508.4
50°	693.5	660.3	613.4	552.6	519.4	497.3	453.1	433.8	414.4	408.9	411.7
52.5°	627.2	594.0	544.3	480.8	450.4	417.2	375.8	348.1	331.6	323.3	331.6
55°	555.4	522.2	472.5	408.9	375.8	345.4	301.2	279.1	259.7	251.4	259.7
57.5°	478.0	447.6	403.4	339.8	309.5	281.8	240.4	218.3	198.9	193.4	198.9
60°	411.7	386.8	342.6	281.8	257.0	226.6	190.6	168.5	152.0	149.2	152.0
62.5°	367.5	339.8	298.4	240.4	215.5	190.6	157.5	135.4	121.6	118.8	121.6
65°	323.3	292.9	254.2	204.5	179.6	160.3	127.1	107.8	93.9	91.2	93.9
67.5°	273.5	245.9	212.7	168.5	149.2	129.9	102.2	82.9	71.8	69.1	71.8
70°	226.6	201.7	168.5	135.4	116.0	102.2	77.4	63.5	52.5	49.7	52.5
72.5°	179.6	157.5	129.9	102.2	91.2	77.4	60.8	47.0	38.7	35.9	38.7
75°	138.1	121.6	99.5	74.6	66.3	58.0	41.4	33.2	27.6	24.9	27.6
77.5°	96.7	85.7	69.1	55.3	47.0	41.4	30.4	22.1	19.3	16.6	19.3
80°	66.3	58.0	47.0	35.9	30.4	24.9	19.3	13.8	11.1	11.1	11.1
82.5°	44.2	35.9	27.6	22.1	19.3	16.6	11.1	8.3	8.3	5.5	5.5
85°	24.9	22.1	16.6	13.8	11.1	8.3	5.5	5.5	2.8	2.8	2.8
87.5°	11.1	8.3	5.5	5.5	2.8	2.8	2.8	2.8	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°	1795.9	1795.9	1795.9	1795.9	1795.9	1795.9	1795.9	1795.9	1795.9	1795.9	1795.9
2.5°	1804.2	1795.9	1807.0	1795.9	1790.4	1795.9	1790.4	1807.0	1793.2	1782.1	1793.2
5°	1801.5	1790.4	1801.5	1793.2	1784.9	1787.6	1782.1	1798.7	1782.1	1773.8	1779.3
7.5°	1795.9	1787.6	1793.2	1784.9	1776.6	1779.3	1773.8	1787.6	1771.1	1762.8	1768.3
10°	1787.6	1779.3	1782.1	1776.6	1768.3	1768.3	1762.8	1773.8	1754.5	1743.4	1749.0
12.5°	1776.6	1765.5	1771.1	1762.8	1751.7	1751.7	1746.2	1754.5	1735.1	1724.1	1726.9
15°	1762.8	1751.7	1751.7	1743.4	1732.4	1732.4	1721.3	1729.6	1707.5	1696.5	1696.5
17.5°	1746.2	1732.4	1732.4	1724.1	1710.3	1707.5	1699.2	1707.5	1682.6	1671.6	1671.6
20°	1721.3	1710.3	1707.5	1702.0	1688.2	1685.4	1674.4	1677.1	1657.8	1649.5	1646.7
22.5°	1688.2	1677.1	1679.9	1671.6	1660.5	1657.8	1646.7	1655.0	1635.7	1627.4	1630.1
25°	1630.1	1624.6	1630.1	1627.4	1619.1	1619.1	1613.6	1619.1	1602.5	1597.0	1599.8
27.5°	1563.8	1561.1	1563.8	1563.8	1558.3	1558.3	1558.3	1566.6	1550.0	1547.3	1547.3
30°	1467.1	1467.1	1469.9	1472.7	1472.7	1478.2	1475.4	1486.5	1475.4	1469.9	1475.4
32.5°	1340.0	1351.1	1359.4	1359.4	1359.4	1364.9	1370.4	1378.7	1367.7	1370.4	1370.4
35°	1196.4	1204.7	1210.2	1224.0	1215.7	1235.0	1240.6	1251.6	1248.9	1254.4	1251.6
37.5°	1036.1	1047.2	1058.2	1077.6	1074.8	1096.9	1107.9	1130.1	1124.5	1135.6	1141.1
40°	886.9	903.5	920.1	933.9	944.9	967.0	989.1	1016.8	1025.1	1033.3	1036.1
42.5°	743.2	759.8	787.4	806.8	823.4	859.3	889.7	922.8	931.1	947.7	953.2
45°	627.2	641.0	674.2	699.0	712.8	765.3	801.3	842.7	856.5	875.9	884.1
47.5°	519.4	544.3	577.5	607.9	627.2	682.5	729.4	773.6	793.0	815.1	826.1
50°	425.5	453.1	497.3	525.0	552.6	613.4	665.9	712.8	732.2	757.1	768.1
52.5°	348.1	378.5	420.0	450.4	480.8	544.3	599.6	643.8	668.6	685.2	701.8
55°	273.5	306.7	348.1	381.3	406.2	475.2	522.2	566.4	583.0	596.8	605.1
57.5°	212.7	237.6	279.1	306.7	337.1	397.9	444.8	478.0	491.8	508.4	513.9
60°	165.8	190.6	229.3	257.0	284.6	342.6	389.6	422.7	436.5	450.4	458.7
62.5°	132.6	157.5	193.4	218.3	243.1	295.6	337.1	370.2	386.8	400.6	408.9
65°	105.0	127.1	157.5	182.4	201.7	248.7	290.1	320.5	337.1	350.9	359.2
67.5°	82.9	102.2	129.9	146.4	165.8	204.5	240.4	268.0	281.8	298.4	306.7
70°	63.5	77.4	102.2	116.0	129.9	163.0	190.6	218.3	232.1	243.1	248.7
72.5°	47.0	58.0	77.4	88.4	96.7	124.3	146.4	165.8	176.8	187.9	193.4
75°	33.2	41.4	55.3	63.5	69.1	88.4	107.8	121.6	129.9	138.1	146.4
77.5°	22.1	27.6	35.9	41.4	47.0	60.8	71.8	82.9	91.2	99.5	102.2
80°	13.8	19.3	24.9	27.6	30.4	38.7	49.7	55.3	60.8	66.3	69.1
82.5°	8.3	11.1	13.8	16.6	19.3	24.9	30.4	35.9	38.7	44.2	47.0
85°	2.8	5.5	5.5	8.3	8.3	13.8	16.6	19.3	22.1	24.9	27.6
87.5°	0.0	0.0	2.8	2.8	2.8	2.8	5.5	5.5	5.5	5.5	5.5
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: P251949

CATALOG NUMBER: LD4B40D010 EU4B30508040 4LBDW1H

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	1795.9	1795.9	1795.9	1795.9	1795.9	1795.9	1795.9	1795.9
2.5°	1804.2	1795.9	1790.4	1787.6	1807.0	1782.1	1793.2	1795.9
5°	1793.2	1784.9	1779.3	1776.6	1793.2	1771.1	1779.3	1784.9
7.5°	1776.6	1771.1	1762.8	1760.0	1776.6	1751.7	1762.8	1765.5
10°	1757.2	1749.0	1743.4	1740.7	1754.5	1729.6	1740.7	1740.7
12.5°	1732.4	1726.9	1715.8	1715.8	1726.9	1704.7	1713.0	1713.0
15°	1699.2	1693.7	1682.6	1682.6	1693.7	1671.6	1679.9	1679.9
17.5°	1671.6	1666.1	1657.8	1655.0	1666.1	1644.0	1652.3	1649.5
20°	1649.5	1644.0	1632.9	1632.9	1641.2	1619.1	1627.4	1627.4
22.5°	1630.1	1627.4	1616.3	1616.3	1627.4	1605.3	1610.8	1605.3
25°	1599.8	1597.0	1585.9	1588.7	1594.2	1572.1	1580.4	1574.9
27.5°	1550.0	1550.0	1539.0	1536.2	1544.5	1525.2	1530.7	1527.9
30°	1472.7	1475.4	1461.6	1461.6	1464.4	1447.8	1456.1	1453.3
32.5°	1367.7	1370.4	1359.4	1356.6	1364.9	1351.1	1356.6	1356.6
35°	1251.6	1254.4	1246.1	1246.1	1254.4	1246.1	1246.1	1243.3
37.5°	1135.6	1141.1	1135.6	1138.3	1143.9	1135.6	1141.1	1138.3
40°	1041.6	1047.2	1038.9	1044.4	1049.9	1041.6	1049.9	1044.4
42.5°	956.0	964.3	958.7	964.3	969.8	964.3	969.8	961.5
45°	892.4	898.0	895.2	898.0	903.5	900.7	903.5	900.7
47.5°	831.7	842.7	837.2	842.7	851.0	845.5	851.0	842.7
50°	776.4	784.7	781.9	787.4	790.2	787.4	793.0	784.7
52.5°	704.6	712.8	710.1	710.1	715.6	710.1	715.6	710.1
55°	610.6	613.4	613.4	616.1	613.4	610.6	613.4	607.9
57.5°	519.4	525.0	516.7	525.0	522.2	519.4	519.4	513.9
60°	461.4	469.7	464.2	469.7	466.9	466.9	466.9	464.2
62.5°	414.4	420.0	414.4	417.2	417.2	417.2	414.4	411.7
65°	361.9	370.2	364.7	367.5	364.7	361.9	364.7	361.9
67.5°	309.5	312.2	312.2	309.5	309.5	309.5	309.5	303.9
70°	251.4	254.2	251.4	257.0	254.2	251.4	254.2	248.7
72.5°	196.2	198.9	196.2	198.9	196.2	196.2	196.2	196.2
75°	146.4	149.2	149.2	149.2	149.2	149.2	143.7	149.2
77.5°	105.0	105.0	105.0	107.8	105.0	105.0	105.0	105.0
80°	71.8	71.8	71.8	74.6	71.8	74.6	71.8	74.6
82.5°	47.0	47.0	47.0	47.0	47.0	47.0	47.0	47.0
85°	24.9	27.6	27.6	24.9	24.9	24.9	24.9	24.9
87.5°	5.5	2.8	2.8	2.8	2.8	2.8	2.8	2.8
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)