

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: P251793

Luminaire Tested: **LD4B40D010 EU4B30508040 4LBLWW1H**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P251793
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 EU4B30508040 4LBLWW1H
Description: PORTFOLIO 4 INCH LENS 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: 3238.0 lumens
Efficiency: N/A
Efficacy: 75.3 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

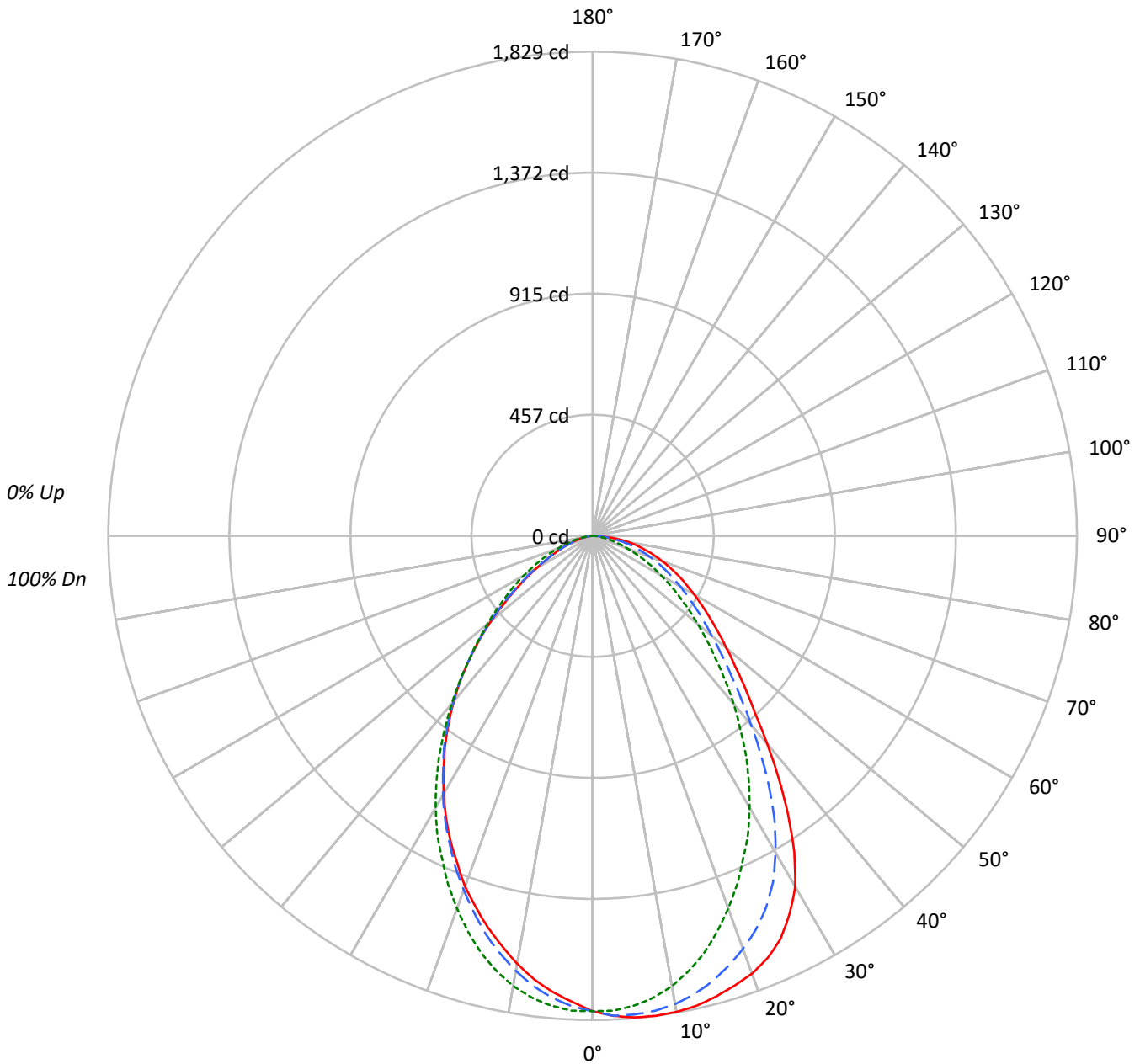
Input Watts (W): 43.02
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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				100				
1	111	107	103	100	108	104	101	98	100	98	95	96	94	92	93	91	90	88				88				
2	102	95	89	85	100	93	88	84	90	85	82	87	83	80	84	81	78	76				76				
3	94	85	78	73	92	84	77	72	81	75	71	78	74	70	76	72	69	67				67				
4	88	77	69	63	85	76	69	63	73	67	62	71	66	61	69	64	61	59				59				
5	81	70	62	56	79	69	61	56	67	60	55	65	59	55	63	58	54	52				52				
6	76	64	56	50	74	63	55	50	61	54	49	60	54	49	58	53	49	47				47				
7	71	59	51	45	69	58	50	45	56	50	45	55	49	44	54	48	44	42				42				
8	66	54	46	41	65	53	46	41	52	45	41	51	45	40	50	44	40	38				38				
9	62	50	42	37	61	49	42	37	48	42	37	47	41	37	46	41	37	35				35				
10	59	46	39	34	57	46	39	34	45	39	34	44	38	34	43	38	34	32				32				

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	175015	175015	175015
5°	178658	174334	169198
10°	180724	170877	162406
15°	181744	164461	154431
20°	182524	155299	146131
25°	180623	144675	136664
30°	172246	133376	126534
35°	153168	119974	115703
40°	130403	105442	103686
45°	112329	90621	90249
50°	100113	78326	75824
55°	92008	67591	60557
60°	86153	58163	47384
65°	82833	49050	36943
70°	79501	39351	29920
75°	76967	31216	22894
80°	77507	21720	13975
85°	64856	15431	6150



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	168.1	5.2
10°-20°	462.2	14.3
20°-30°	646.3	20.0
30°-40°	664.3	20.5
40°-50°	539.2	16.7
50°-60°	379.7	11.7
60°-70°	233.7	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°	1276.6	39.4
0°-40°	1940.9	59.9
0°-60°	2859.8	88.3
0°-90°	3238.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3238.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	1796	1796	1796	1796	1796	
5°	1826	1815	1782	1752	1730	174
15°	1801	1743	1630	1558	1531	509
25°	1680	1550	1345	1279	1271	768
35°	1287	1163	1008	978	972	801
45°	815	735	658	658	655	634
55°	542	475	398	365	356	487
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	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
0°	1795.8	1795.8	1795.8	1795.8	1795.8	1795.8	1795.8	1795.8	1795.8	1795.8	1795.8
2.5°	1815.1	1817.9	1809.6	1817.9	1806.8	1812.3	1815.1	1809.6	1804.1	1815.1	1815.1
5°	1826.2	1826.2	1817.9	1828.9	1815.1	1817.9	1823.4	1815.1	1806.8	1817.9	1815.1
7.5°	1828.9	1828.9	1817.9	1828.9	1815.1	1817.9	1820.6	1812.3	1804.1	1812.3	1809.6
10°	1826.2	1823.4	1815.1	1826.2	1812.3	1812.3	1815.1	1806.8	1793.0	1801.3	1795.8
12.5°	1817.9	1817.9	1806.8	1817.9	1798.5	1798.5	1801.3	1790.2	1779.2	1779.2	1773.7
15°	1801.3	1801.3	1790.2	1798.5	1782.0	1782.0	1779.2	1768.1	1754.3	1754.3	1743.3
17.5°	1782.0	1782.0	1770.9	1779.2	1759.9	1759.9	1757.1	1740.5	1721.2	1718.4	1704.6
20°	1759.9	1759.9	1746.0	1751.6	1729.5	1729.5	1726.7	1707.4	1685.3	1679.7	1660.4
22.5°	1726.7	1726.7	1712.9	1715.7	1693.6	1690.8	1688.0	1665.9	1643.8	1635.5	1610.7
25°	1679.7	1677.0	1665.9	1665.9	1643.8	1638.3	1632.8	1610.7	1588.6	1572.0	1549.9
27.5°	1610.7	1613.4	1599.6	1602.4	1574.8	1569.2	1566.5	1538.8	1514.0	1497.4	1475.3
30°	1530.6	1522.3	1508.4	1508.4	1486.3	1483.6	1478.1	1453.2	1425.6	1406.2	1381.4
32.5°	1417.3	1414.5	1400.7	1400.7	1375.8	1375.8	1364.8	1339.9	1315.1	1304.0	1279.1
35°	1287.4	1284.7	1273.6	1273.6	1251.5	1254.3	1243.2	1223.9	1199.0	1182.4	1163.1
37.5°	1154.8	1152.1	1141.0	1143.8	1124.4	1124.4	1116.1	1096.8	1077.5	1069.2	1044.3
40°	1025.0	1022.2	1008.4	1016.7	1000.1	994.6	991.8	978.0	955.9	944.9	931.0
42.5°	906.2	908.9	895.1	900.6	886.8	881.3	878.5	867.5	850.9	839.9	826.1
45°	815.0	809.5	804.0	804.0	790.1	787.4	784.6	770.8	759.7	748.7	734.9
47.5°	729.4	723.8	718.3	721.1	710.0	707.3	701.7	690.7	676.9	671.3	657.5
50°	660.3	657.5	649.2	649.2	638.2	635.4	629.9	621.6	607.8	599.5	588.5
52.5°	596.7	596.7	588.5	585.7	577.4	574.6	571.9	560.8	549.8	538.7	527.7
55°	541.5	538.7	533.2	533.2	522.2	519.4	516.6	505.6	494.5	486.2	475.2
57.5°	489.0	489.0	483.5	483.5	475.2	469.7	469.7	458.6	444.8	439.3	425.5
60°	442.0	442.0	436.5	436.5	428.2	428.2	422.7	411.6	403.4	392.3	381.3
62.5°	397.8	400.6	395.1	392.3	384.0	381.3	381.3	373.0	359.2	350.9	339.8
65°	359.2	356.4	353.6	350.9	342.6	339.8	339.8	328.8	320.5	309.4	301.1
67.5°	317.7	317.7	312.2	312.2	306.7	303.9	298.4	290.1	281.8	273.5	265.2
70°	279.0	279.0	276.3	276.3	268.0	265.2	262.5	254.2	245.9	237.6	226.5
72.5°	243.1	240.4	237.6	237.6	232.1	229.3	226.5	218.3	210.0	201.7	193.4
75°	204.4	204.4	201.7	201.7	196.2	193.4	193.4	187.9	176.8	171.3	160.2
77.5°	171.3	171.3	168.5	168.5	163.0	163.0	160.2	151.9	146.4	138.1	132.6
80°	138.1	135.4	135.4	132.6	127.1	127.1	124.3	121.6	113.3	107.7	99.5
82.5°	96.7	96.7	96.7	93.9	91.2	91.2	88.4	82.9	77.4	74.6	66.3
85°	58.0	58.0	55.3	52.5	55.3	52.5	49.7	47.0	44.2	41.4	38.7
87.5°	24.9	24.9	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



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CANDELA DISTRIBUTION (continued):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
0°	1795.8	1795.8	1795.8	1795.8	1795.8	1795.8	1795.8	1795.8	1795.8	1795.8	1795.8
2.5°	1798.5	1806.8	1804.1	1801.3	1795.8	1795.8	1795.8	1793.0	1795.8	1795.8	1790.2
5°	1798.5	1804.1	1801.3	1795.8	1790.2	1790.2	1787.5	1782.0	1782.0	1782.0	1770.9
7.5°	1790.2	1795.8	1787.5	1782.0	1776.4	1770.9	1770.9	1762.6	1762.6	1759.9	1748.8
10°	1773.7	1776.4	1765.4	1759.9	1751.6	1748.8	1743.3	1732.2	1729.5	1726.7	1715.7
12.5°	1748.8	1751.6	1737.8	1726.7	1715.7	1712.9	1707.4	1693.6	1688.0	1682.5	1668.7
15°	1712.9	1712.9	1696.3	1682.5	1671.4	1668.7	1654.9	1641.1	1635.5	1630.0	1610.7
17.5°	1671.4	1668.7	1646.6	1632.8	1619.0	1613.4	1599.6	1583.0	1572.0	1566.5	1549.9
20°	1627.2	1619.0	1594.1	1580.3	1563.7	1555.4	1541.6	1519.5	1508.4	1497.4	1480.8
22.5°	1574.8	1563.7	1536.1	1516.7	1500.2	1491.9	1472.5	1453.2	1436.6	1425.6	1406.2
25°	1511.2	1497.4	1467.0	1442.1	1428.3	1420.0	1400.7	1378.6	1362.0	1345.4	1328.9
27.5°	1436.6	1420.0	1389.7	1364.8	1351.0	1337.2	1323.3	1298.5	1284.7	1270.9	1251.5
30°	1345.4	1326.1	1298.5	1276.4	1259.8	1248.8	1232.2	1210.1	1193.5	1185.2	1165.9
32.5°	1246.0	1223.9	1199.0	1176.9	1168.6	1154.8	1141.0	1118.9	1105.1	1096.8	1083.0
35°	1135.5	1118.9	1091.3	1074.7	1060.9	1055.4	1044.3	1022.2	1016.7	1008.4	991.8
37.5°	1019.4	1005.6	986.3	972.5	961.4	955.9	944.9	931.0	922.8	914.5	906.2
40°	911.7	900.6	884.1	873.0	859.2	850.9	850.9	834.3	828.8	828.8	820.5
42.5°	806.7	801.2	787.4	770.8	768.0	759.7	757.0	748.7	743.2	740.4	737.6
45°	718.3	710.0	696.2	687.9	679.6	679.6	671.3	663.1	660.3	657.5	654.8
47.5°	641.0	629.9	618.9	610.6	605.0	602.3	594.0	588.5	585.7	585.7	582.9
50°	571.9	563.6	552.5	544.3	538.7	533.2	527.7	522.2	519.4	516.6	516.6
52.5°	513.9	502.8	491.8	483.5	475.2	472.4	466.9	461.4	458.6	455.8	453.1
55°	461.4	453.1	439.3	431.0	422.7	422.7	414.4	406.1	400.6	397.8	395.1
57.5°	411.6	403.4	389.5	381.3	375.7	370.2	364.7	359.2	353.6	348.1	342.6
60°	367.4	359.2	345.3	334.3	331.5	326.0	320.5	309.4	303.9	298.4	292.8
62.5°	326.0	315.0	303.9	292.8	290.1	284.6	276.3	268.0	259.7	254.2	245.9
65°	287.3	279.0	265.2	256.9	248.6	245.9	237.6	226.5	218.3	212.7	204.4
67.5°	251.4	240.4	226.5	218.3	212.7	207.2	198.9	190.6	182.3	174.1	165.8
70°	215.5	207.2	193.4	185.1	179.6	174.1	165.8	154.7	146.4	138.1	132.6
72.5°	182.3	171.3	160.2	151.9	146.4	140.9	132.6	124.3	116.0	110.5	102.2
75°	151.9	140.9	132.6	121.6	118.8	113.3	105.0	96.7	88.4	82.9	77.4
77.5°	121.6	113.3	102.2	96.7	91.2	85.6	80.1	71.8	66.3	58.0	52.5
80°	91.2	82.9	74.6	69.1	63.5	60.8	55.3	49.7	44.2	38.7	35.9
82.5°	60.8	55.3	47.0	44.2	41.4	38.7	33.2	30.4	27.6	24.9	22.1
85°	33.2	30.4	27.6	22.1	22.1	19.3	16.6	16.6	13.8	13.8	11.1
87.5°	13.8	11.1	11.1	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



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CANDELA DISTRIBUTION (continued):

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
0°	1795.8	1795.8	1795.8	1795.8	1795.8	1795.8	1795.8	1795.8	1795.8	1795.8	1795.8
2.5°	1793.0	1782.0	1782.0	1782.0	1773.7	1776.4	1779.2	1782.0	1779.2	1770.9	1779.2
5°	1773.7	1762.6	1762.6	1757.1	1751.6	1751.6	1751.6	1754.3	1751.6	1743.3	1746.0
7.5°	1748.8	1735.0	1732.2	1726.7	1721.2	1718.4	1718.4	1718.4	1715.7	1704.6	1710.1
10°	1710.1	1696.3	1690.8	1688.0	1679.7	1677.0	1674.2	1671.4	1668.7	1657.6	1663.2
12.5°	1663.2	1652.1	1641.1	1638.3	1630.0	1624.5	1621.7	1621.7	1616.2	1605.1	1610.7
15°	1607.9	1591.3	1583.0	1577.5	1569.2	1563.7	1558.2	1560.9	1558.2	1547.1	1549.9
17.5°	1541.6	1525.0	1516.7	1514.0	1502.9	1497.4	1494.6	1494.6	1491.9	1480.8	1483.6
20°	1469.8	1453.2	1447.7	1442.1	1436.6	1431.1	1428.3	1425.6	1422.8	1411.8	1420.0
22.5°	1397.9	1378.6	1370.3	1370.3	1359.3	1356.5	1353.7	1356.5	1353.7	1342.7	1348.2
25°	1323.3	1304.0	1298.5	1290.2	1284.7	1281.9	1281.9	1281.9	1279.1	1273.6	1279.1
27.5°	1240.5	1226.7	1218.4	1215.6	1210.1	1207.3	1204.5	1207.3	1207.3	1199.0	1204.5
30°	1157.6	1146.5	1141.0	1138.2	1130.0	1127.2	1130.0	1130.0	1130.0	1121.7	1130.0
32.5°	1074.7	1066.4	1063.6	1055.4	1049.8	1049.8	1049.8	1052.6	1049.8	1044.3	1052.6
35°	991.8	980.8	978.0	975.2	975.2	969.7	975.2	972.5	978.0	969.7	975.2
37.5°	903.4	897.9	895.1	895.1	889.6	892.4	892.4	892.4	897.9	889.6	895.1
40°	820.5	815.0	815.0	815.0	812.2	812.2	812.2	815.0	817.8	812.2	817.8
42.5°	737.6	734.9	734.9	732.1	729.4	732.1	734.9	734.9	737.6	732.1	734.9
45°	657.5	654.8	657.5	654.8	654.8	652.0	654.8	657.5	657.5	654.8	654.8
47.5°	582.9	582.9	580.2	580.2	580.2	580.2	580.2	580.2	580.2	574.6	580.2
50°	516.6	511.1	513.9	511.1	511.1	508.3	508.3	505.6	502.8	500.1	500.1
52.5°	453.1	447.6	447.6	444.8	442.0	442.0	439.3	436.5	433.7	428.2	428.2
55°	392.3	386.8	384.0	381.3	378.5	375.7	373.0	370.2	364.7	361.9	361.9
57.5°	337.1	331.5	326.0	326.0	320.5	317.7	312.2	306.7	303.9	298.4	298.4
60°	287.3	281.8	273.5	270.7	268.0	262.5	254.2	251.4	248.6	243.1	245.9
62.5°	240.4	232.1	223.8	221.0	218.3	212.7	207.2	201.7	198.9	201.7	201.7
65°	196.2	187.9	182.3	176.8	174.1	168.5	165.8	163.0	163.0	163.0	165.8
67.5°	157.5	149.2	143.7	140.9	135.4	132.6	132.6	132.6	132.6	132.6	132.6
70°	124.3	118.8	113.3	107.7	107.7	105.0	105.0	105.0	105.0	105.0	105.0
72.5°	93.9	88.4	85.6	85.6	82.9	82.9	82.9	82.9	80.1	80.1	82.9
75°	69.1	66.3	63.5	63.5	63.5	60.8	60.8	60.8	60.8	60.8	60.8
77.5°	49.7	47.0	47.0	44.2	44.2	44.2	44.2	44.2	44.2	41.4	41.4
80°	33.2	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°	11.1	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: P251793

CATALOG NUMBER: LD4B40D010 EU4B30508040 4LBLWW1H

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	1795.8	1795.8	1795.8	1795.8	1795.8	1795.8	1795.8	1795.8
2.5°	1762.6	1773.7	1776.4	1768.1	1770.9	1765.4	1768.1	1762.6
5°	1732.2	1740.5	1743.3	1737.8	1737.8	1732.2	1735.0	1729.5
7.5°	1693.6	1701.8	1704.6	1699.1	1699.1	1693.6	1693.6	1690.8
10°	1649.3	1652.1	1657.6	1649.3	1652.1	1646.6	1646.6	1641.1
12.5°	1594.1	1599.6	1605.1	1596.9	1596.9	1594.1	1594.1	1585.8
15°	1536.1	1541.6	1544.4	1538.8	1538.8	1536.1	1533.3	1530.6
17.5°	1475.3	1478.1	1483.6	1475.3	1480.8	1475.3	1475.3	1469.8
20°	1406.2	1414.5	1417.3	1409.0	1411.8	1409.0	1409.0	1409.0
22.5°	1339.9	1345.4	1348.2	1342.7	1345.4	1339.9	1342.7	1337.2
25°	1270.9	1273.6	1276.4	1270.9	1276.4	1273.6	1270.9	1270.9
27.5°	1199.0	1201.8	1204.5	1199.0	1204.5	1201.8	1204.5	1199.0
30°	1121.7	1127.2	1132.7	1127.2	1130.0	1127.2	1127.2	1124.4
32.5°	1044.3	1049.8	1055.4	1049.8	1055.4	1049.8	1052.6	1047.1
35°	972.5	975.2	978.0	972.5	975.2	975.2	975.2	972.5
37.5°	892.4	897.9	897.9	895.1	900.6	897.9	897.9	892.4
40°	815.0	817.8	820.5	815.0	817.8	815.0	817.8	815.0
42.5°	734.9	740.4	743.2	737.6	737.6	737.6	734.9	737.6
45°	652.0	657.5	663.1	654.8	657.5	657.5	657.5	654.8
47.5°	577.4	577.4	580.2	577.4	580.2	574.6	580.2	577.4
50°	500.1	500.1	505.6	500.1	500.1	500.1	500.1	500.1
52.5°	425.5	428.2	428.2	422.7	425.5	422.7	425.5	422.7
55°	356.4	356.4	359.2	356.4	356.4	356.4	356.4	356.4
57.5°	295.6	298.4	298.4	295.6	298.4	295.6	295.6	295.6
60°	245.9	245.9	245.9	243.1	245.9	243.1	245.9	243.1
62.5°	198.9	201.7	201.7	198.9	201.7	198.9	198.9	198.9
65°	163.0	163.0	163.0	163.0	163.0	163.0	163.0	160.2
67.5°	129.8	129.8	132.6	129.8	132.6	132.6	132.6	132.6
70°	105.0	105.0	105.0	105.0	105.0	105.0	105.0	105.0
72.5°	80.1	80.1	82.9	80.1	80.1	80.1	80.1	80.1
75°	60.8	60.8	60.8	60.8	60.8	58.0	58.0	60.8
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	24.9	24.9	27.6	24.9
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)