

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: P251642

Luminaire Tested: **LD4B40D010 EU4B30509035 4LBSW1H**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P251642
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G1-1712-453-13)
Test Lab: INNOVATION CENTER(G1)
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: io LED
Catalog Number: LD4B40D010 EU4B30509035 4LBSW1H
Description: PORTFOLIO 4 INCH SINGLE WALLWASH RECESSED DOWNLIGHT, WITH HAZE TRIM
Light Source: (1) HIGH LUMEN LED 90CRI / 3500K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 3142.0 lumens
Efficiency: N/A
Efficacy: 73.0 lumens/watt
Spacing Criteria (0/90/45): 1.17 / 1.17 / 1.15
Luminous Opening: Circular (Dia: 0.38' x H: 0')
CIE Type: Direct

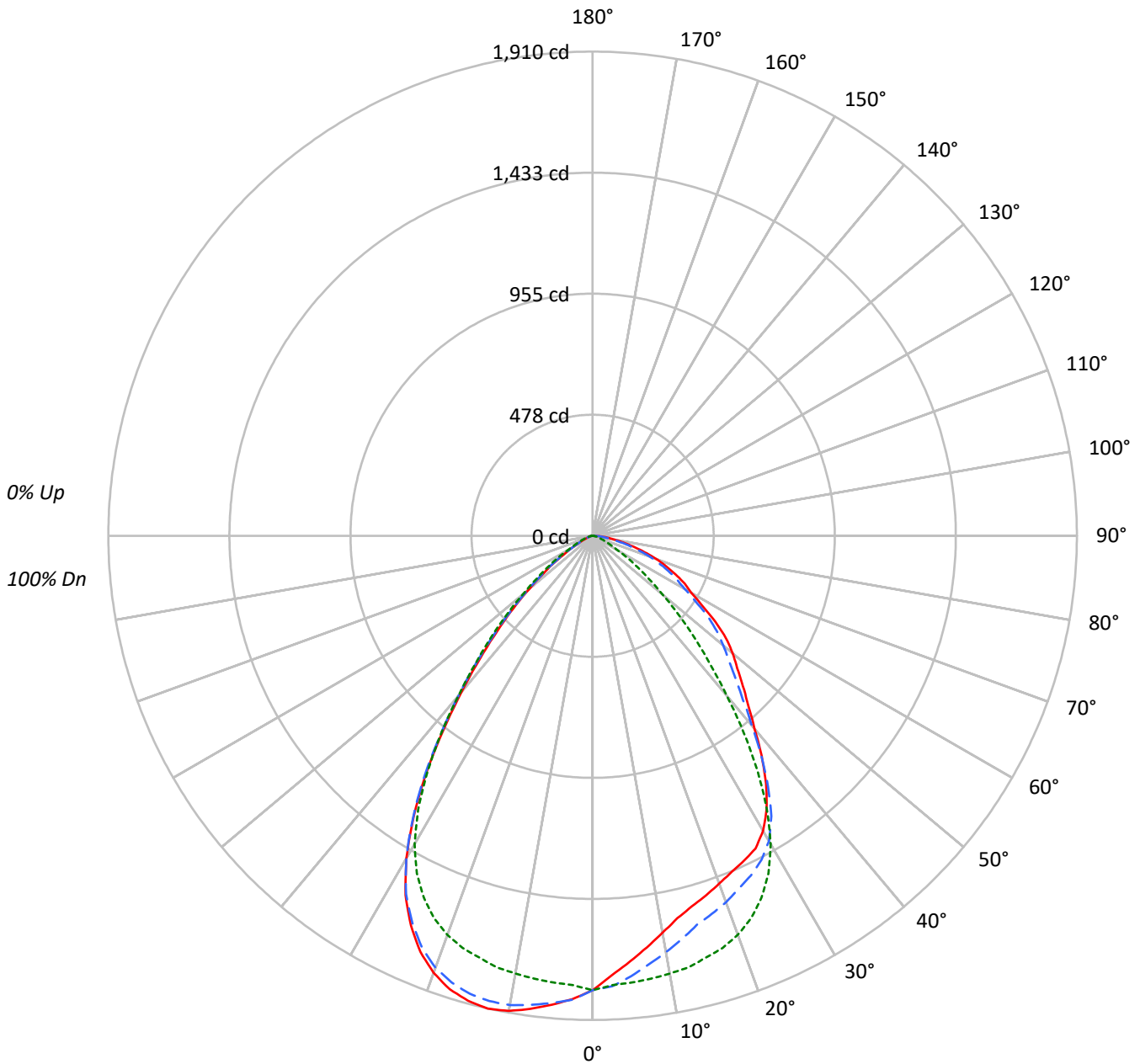
Input Watts (W): 43.02
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	111	108	104	101	109	106	103	100	101	99	97	98	96	94	94	93	91	89								
2	104	97	92	87	101	95	90	86	92	88	84	89	85	82	86	83	81	79								
3	96	88	81	76	94	86	80	75	83	78	74	81	76	73	78	75	72	70								
4	90	80	72	67	88	78	72	66	76	70	66	74	69	65	72	68	64	62								
5	83	73	65	60	82	72	65	59	70	63	59	68	62	58	66	61	58	56								
6	78	67	59	53	76	66	59	53	64	58	53	62	57	52	61	56	52	50								
7	73	61	54	48	71	61	53	48	59	53	48	58	52	48	56	51	47	46								
8	68	57	49	44	67	56	49	44	55	48	44	54	48	43	52	47	43	42								
9	64	52	45	40	63	52	45	40	51	44	40	50	44	40	49	44	40	38								
10	61	49	42	37	59	48	42	37	47	41	37	47	41	37	46	40	37	35								

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	174694	174694	174694
5°	164962	173101	181681
10°	157270	173499	188353
15°	152656	173864	191571
20°	151400	173688	190209
25°	152009	169397	182322
30°	151292	158044	165325
35°	141806	134941	136309
40°	126370	104615	102261
45°	115568	77996	73227
50°	109271	54628	49382
55°	100470	36888	31009
60°	87790	21616	17114
65°	83087	13859	9593
70°	75682	9859	5927
75°	62620	6966	4330
80°	49277	3873	2582
85°	43945	2572	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	169.4	5.4
10°-20°	485.9	15.5
20°-30°	720.2	22.9
30°-40°	721.2	23.0
40°-50°	504.1	16.0
50°-60°	299.9	9.5
60°-70°	156.5	5.0
70°-80°	69.6	2.2
80°-90°	15.2	0.5
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°	1375.5	43.8
0°-40°	2096.7	66.7
0°-60°	2900.7	92.3
0°-90°	3142.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3142.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	1792	1792	1792	1792	1792	
5°	1686	1744	1769	1850	1857	158
15°	1513	1589	1723	1871	1899	428
25°	1414	1478	1575	1684	1696	651
35°	1192	1206	1134	1155	1146	739
45°	838	797	566	547	531	651
55°	591	554	217	189	182	525
65°	360	330	60	44	42	356
75°	166	146	18	12	12	180
85°	39	30	2	2	0	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°	1792.5	1792.5	1792.5	1792.5	1792.5	1792.5	1792.5	1792.5	1792.5	1792.5	1792.5
2.5°	1734.7	1755.5	1734.7	1741.7	1769.4	1744.0	1757.8	1757.8	1750.9	1767.1	1778.6
5°	1686.2	1707.0	1686.2	1695.5	1725.5	1700.1	1716.2	1711.6	1713.9	1727.8	1744.0
7.5°	1637.7	1653.9	1635.4	1646.9	1674.7	1653.9	1667.7	1667.7	1670.0	1690.8	1704.7
10°	1589.2	1603.1	1589.2	1598.4	1628.5	1610.0	1619.2	1621.5	1628.5	1646.9	1667.7
12.5°	1545.3	1556.9	1543.0	1556.9	1582.3	1563.8	1575.3	1577.7	1584.6	1605.4	1628.5
15°	1513.0	1524.5	1510.7	1522.2	1545.3	1531.5	1540.7	1545.3	1549.9	1568.4	1589.2
17.5°	1487.6	1496.8	1485.3	1499.1	1517.6	1501.4	1515.3	1515.3	1522.2	1540.7	1563.8
20°	1459.8	1469.1	1459.8	1471.4	1492.2	1478.3	1489.9	1489.9	1496.8	1517.6	1538.4
22.5°	1434.4	1439.1	1434.4	1443.7	1464.5	1452.9	1459.8	1462.2	1469.1	1487.6	1506.0
25°	1413.6	1422.9	1418.3	1427.5	1441.4	1429.8	1436.7	1439.1	1446.0	1462.2	1478.3
27.5°	1390.6	1395.2	1390.6	1402.1	1413.6	1404.4	1411.3	1409.0	1413.6	1427.5	1441.4
30°	1344.4	1349.0	1349.0	1355.9	1365.1	1360.5	1367.5	1360.5	1365.1	1376.7	1390.6
32.5°	1277.4	1279.7	1282.0	1288.9	1295.8	1288.9	1293.5	1293.5	1293.5	1302.8	1312.0
35°	1191.9	1196.5	1194.2	1198.8	1205.8	1203.5	1203.5	1201.1	1196.5	1201.1	1205.8
37.5°	1094.9	1088.0	1088.0	1094.9	1099.5	1090.3	1094.9	1090.3	1090.3	1092.6	1092.6
40°	993.3	986.3	993.3	995.6	997.9	993.3	990.9	986.3	979.4	981.7	977.1
42.5°	907.8	903.2	905.5	905.5	907.8	903.2	905.5	896.2	889.3	884.7	877.8
45°	838.5	831.6	838.5	833.9	833.9	831.6	829.2	824.6	815.4	808.5	796.9
47.5°	773.8	773.8	776.1	776.1	776.1	771.5	771.5	762.3	753.0	743.8	727.6
50°	720.7	716.1	725.3	725.3	718.4	716.1	718.4	706.8	699.9	688.3	672.2
52.5°	662.9	662.9	665.2	665.2	662.9	658.3	660.6	651.4	644.5	632.9	616.7
55°	591.3	586.7	593.6	593.6	591.3	589.0	591.3	584.4	577.5	568.2	554.4
57.5°	510.5	508.2	512.8	515.1	510.5	510.5	512.8	505.9	503.6	494.3	480.5
60°	450.4	448.1	452.7	455.0	450.4	450.4	450.4	441.2	436.6	427.3	418.1
62.5°	408.8	406.5	411.2	408.8	406.5	404.2	406.5	397.3	392.7	383.4	374.2
65°	360.3	362.7	365.0	365.0	362.7	360.3	360.3	355.7	351.1	341.9	330.3
67.5°	314.1	314.1	316.5	318.8	316.5	316.5	316.5	309.5	304.9	298.0	284.1
70°	265.6	263.3	270.3	270.3	265.6	267.9	265.6	263.3	258.7	249.5	237.9
72.5°	214.8	214.8	217.1	217.1	214.8	214.8	214.8	212.5	205.6	201.0	189.4
75°	166.3	166.3	168.6	170.9	166.3	166.3	168.6	164.0	159.4	152.5	145.5
77.5°	124.7	122.4	124.7	124.7	122.4	122.4	122.4	120.1	117.8	110.9	103.9
80°	87.8	85.5	87.8	87.8	87.8	85.5	85.5	83.2	83.2	78.5	71.6
82.5°	60.1	57.7	60.1	60.1	60.1	57.7	57.7	57.7	55.4	53.1	48.5
85°	39.3	37.0	37.0	39.3	37.0	37.0	37.0	37.0	34.6	32.3	30.0
87.5°	18.5	18.5	18.5	18.5	18.5	18.5	18.5	16.2	16.2	16.2	13.9
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°	1792.5	1792.5	1792.5	1792.5	1792.5	1792.5	1792.5	1792.5	1792.5	1792.5	1792.5
2.5°	1769.4	1764.8	1778.6	1774.0	1776.3	1764.8	1783.2	1774.0	1785.5	1774.0	1797.1
5°	1739.3	1734.7	1755.5	1753.2	1755.5	1746.3	1767.1	1764.8	1778.6	1769.4	1794.8
7.5°	1707.0	1702.4	1725.5	1727.8	1732.4	1723.2	1750.9	1750.9	1764.8	1762.4	1790.2
10°	1670.0	1672.4	1695.5	1700.1	1709.3	1704.7	1730.1	1737.0	1755.5	1753.2	1787.9
12.5°	1635.4	1635.4	1665.4	1674.7	1681.6	1679.3	1709.3	1718.6	1739.3	1744.0	1776.3
15°	1600.8	1603.1	1630.8	1644.6	1653.9	1651.6	1683.9	1695.5	1720.9	1723.2	1762.4
17.5°	1573.0	1570.7	1600.8	1612.3	1626.2	1623.8	1658.5	1672.4	1697.8	1704.7	1741.7
20°	1549.9	1547.6	1575.3	1589.2	1598.4	1596.1	1630.8	1646.9	1670.0	1674.7	1711.6
22.5°	1522.2	1517.6	1545.3	1556.9	1566.1	1563.8	1593.8	1605.4	1628.5	1633.1	1667.7
25°	1489.9	1485.3	1510.7	1517.6	1524.5	1519.9	1545.3	1552.2	1570.7	1575.3	1610.0
27.5°	1452.9	1441.4	1462.2	1462.2	1466.8	1459.8	1478.3	1485.3	1501.4	1501.4	1533.8
30°	1395.2	1379.0	1390.6	1388.2	1390.6	1381.3	1392.9	1395.2	1406.7	1404.4	1427.5
32.5°	1314.3	1291.2	1298.2	1291.2	1284.3	1270.4	1284.3	1279.7	1288.9	1279.7	1300.5
35°	1203.5	1180.4	1178.0	1168.8	1161.9	1150.3	1150.3	1138.8	1141.1	1134.2	1148.0
37.5°	1083.3	1053.3	1048.7	1030.2	1018.7	1004.8	1004.8	995.6	984.0	979.4	990.9
40°	965.5	933.2	921.6	891.6	880.1	866.2	857.0	845.4	840.8	822.3	831.6
42.5°	863.9	829.2	803.8	771.5	760.0	739.2	725.3	711.4	704.5	683.7	693.0
45°	778.4	736.9	709.1	667.6	651.4	628.3	607.5	591.3	575.2	565.9	561.3
47.5°	706.8	662.9	626.0	579.8	554.4	533.6	505.9	489.7	468.9	457.4	450.4
50°	646.8	598.3	556.7	503.6	478.1	455.0	422.7	397.3	378.8	360.3	355.7
52.5°	593.6	542.8	496.6	436.6	406.5	378.8	344.2	316.5	300.3	279.5	277.2
55°	531.3	487.4	436.6	374.2	344.2	316.5	279.5	251.8	231.0	217.1	212.5
57.5°	464.3	422.7	374.2	311.8	281.8	251.8	217.1	191.7	173.2	161.7	159.4
60°	401.9	362.7	316.5	254.1	224.1	198.7	161.7	136.3	120.1	110.9	106.3
62.5°	355.7	318.8	274.9	217.1	189.4	164.0	129.4	106.3	92.4	83.2	78.5
65°	311.8	274.9	235.6	182.5	159.4	136.3	103.9	83.2	69.3	60.1	55.4
67.5°	265.6	233.3	196.3	152.5	129.4	110.9	83.2	64.7	53.1	46.2	41.6
70°	219.4	189.4	159.4	122.4	106.3	87.8	64.7	50.8	39.3	34.6	30.0
72.5°	173.2	150.1	124.7	94.7	80.8	69.3	50.8	37.0	30.0	25.4	20.8
75°	129.4	113.2	92.4	71.6	60.1	50.8	37.0	27.7	23.1	18.5	16.2
77.5°	92.4	78.5	64.7	48.5	43.9	37.0	25.4	20.8	16.2	11.5	9.2
80°	62.4	55.4	43.9	34.6	27.7	25.4	18.5	13.9	9.2	6.9	6.9
82.5°	41.6	34.6	27.7	20.8	18.5	16.2	11.5	9.2	6.9	4.6	4.6
85°	25.4	20.8	16.2	11.5	11.5	9.2	6.9	4.6	2.3	2.3	2.3
87.5°	11.5	9.2	6.9	4.6	4.6	2.3	2.3	2.3	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°	1792.5	1792.5	1792.5	1792.5	1792.5	1792.5	1792.5	1792.5	1792.5	1792.5	1792.5
2.5°	1815.6	1801.7	1792.5	1804.0	1808.6	1801.7	1808.6	1820.2	1831.7	1834.0	1801.7
5°	1817.9	1804.0	1799.4	1813.3	1815.6	1813.3	1820.2	1836.4	1850.2	1854.8	1822.5
7.5°	1817.9	1808.6	1806.3	1822.5	1824.8	1822.5	1834.0	1852.5	1866.4	1875.6	1843.3
10°	1813.3	1808.6	1810.9	1824.8	1829.4	1829.4	1845.6	1866.4	1880.2	1889.5	1857.1
12.5°	1806.3	1806.3	1806.3	1822.5	1827.1	1829.4	1843.3	1871.0	1880.2	1894.1	1861.8
15°	1794.8	1794.8	1794.8	1810.9	1817.9	1817.9	1834.0	1859.5	1871.0	1884.9	1852.5
17.5°	1774.0	1774.0	1776.3	1790.2	1797.1	1797.1	1813.3	1841.0	1847.9	1864.1	1831.7
20°	1744.0	1744.0	1746.3	1760.1	1767.1	1762.4	1783.2	1806.3	1813.3	1827.1	1794.8
22.5°	1700.1	1700.1	1700.1	1713.9	1718.6	1716.2	1737.0	1757.8	1757.8	1776.3	1741.7
25°	1635.4	1640.0	1635.4	1649.3	1653.9	1651.6	1670.0	1688.5	1683.9	1704.7	1670.0
27.5°	1556.9	1554.6	1554.6	1566.1	1566.1	1563.8	1577.7	1598.4	1593.8	1607.7	1575.3
30°	1448.3	1455.2	1443.7	1459.8	1452.9	1448.3	1457.5	1476.0	1469.1	1480.6	1455.2
32.5°	1323.6	1314.3	1314.3	1314.3	1318.9	1307.4	1316.6	1325.9	1318.9	1330.5	1302.8
35°	1159.6	1161.9	1154.9	1157.3	1159.6	1145.7	1154.9	1164.2	1154.9	1161.9	1136.5
37.5°	995.6	997.9	981.7	990.9	981.7	977.1	986.3	990.9	981.7	988.6	960.9
40°	831.6	826.9	824.6	824.6	826.9	815.4	822.3	829.2	822.3	826.9	801.5
42.5°	688.3	686.0	681.4	683.7	676.8	674.5	676.8	683.7	676.8	681.4	662.9
45°	563.6	559.0	552.1	554.4	554.4	542.8	549.8	554.4	547.4	549.8	533.6
47.5°	448.1	441.2	441.2	438.9	438.9	434.3	441.2	438.9	431.9	436.6	420.4
50°	348.8	344.2	344.2	344.2	344.2	337.2	339.6	344.2	337.2	337.2	328.0
52.5°	272.6	265.6	261.0	261.0	261.0	258.7	258.7	261.0	254.1	254.1	251.8
55°	205.6	203.3	196.3	196.3	196.3	189.4	191.7	191.7	189.4	189.4	182.5
57.5°	152.5	145.5	140.9	140.9	136.3	136.3	134.0	136.3	131.7	131.7	127.0
60°	101.6	97.0	94.7	92.4	92.4	90.1	92.4	90.1	90.1	87.8	85.5
62.5°	73.9	69.3	64.7	64.7	64.7	62.4	62.4	62.4	62.4	62.4	60.1
65°	53.1	48.5	48.5	46.2	46.2	43.9	43.9	43.9	43.9	43.9	41.6
67.5°	37.0	34.6	32.3	32.3	32.3	32.3	32.3	32.3	30.0	30.0	30.0
70°	27.7	25.4	23.1	23.1	23.1	23.1	23.1	20.8	23.1	23.1	20.8
72.5°	18.5	18.5	16.2	16.2	16.2	16.2	16.2	16.2	16.2	16.2	16.2
75°	13.9	13.9	11.5	11.5	11.5	11.5	11.5	11.5	11.5	11.5	11.5
77.5°	9.2	9.2	6.9	6.9	6.9	6.9	6.9	6.9	6.9	6.9	6.9
80°	6.9	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6
82.5°	4.6	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3
85°	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	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: P251642

CATALOG NUMBER: LD4B40D010 EU4B30509035 4LBSW1H

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	1792.5	1792.5	1792.5	1792.5	1792.5	1792.5	1792.5	1792.5
2.5°	1836.4	1834.0	1829.4	1836.4	1817.9	1810.9	1808.6	1829.4
5°	1861.8	1857.1	1857.1	1864.1	1843.3	1838.7	1834.0	1857.1
7.5°	1884.9	1880.2	1880.2	1887.2	1868.7	1864.1	1859.5	1882.6
10°	1898.7	1898.7	1898.7	1903.3	1887.2	1882.6	1880.2	1903.3
12.5°	1905.7	1905.7	1903.3	1912.6	1891.8	1891.8	1887.2	1910.3
15°	1896.4	1896.4	1896.4	1903.3	1884.9	1880.2	1880.2	1898.7
17.5°	1873.3	1873.3	1871.0	1877.9	1857.1	1857.1	1854.8	1875.6
20°	1838.7	1838.7	1834.0	1843.3	1822.5	1815.6	1813.3	1834.0
22.5°	1783.2	1780.9	1778.6	1783.2	1764.8	1760.1	1757.8	1776.3
25°	1711.6	1709.3	1704.7	1709.3	1688.5	1681.6	1681.6	1695.5
27.5°	1610.0	1610.0	1603.1	1610.0	1586.9	1584.6	1582.3	1598.4
30°	1485.3	1476.0	1471.4	1480.6	1457.5	1457.5	1452.9	1469.1
32.5°	1330.5	1321.3	1318.9	1323.6	1302.8	1295.8	1305.1	1314.3
35°	1152.6	1154.9	1145.7	1145.7	1127.2	1129.5	1131.8	1145.7
37.5°	981.7	977.1	974.8	977.1	963.2	958.6	954.0	967.8
40°	822.3	810.8	808.5	808.5	796.9	794.6	796.9	803.8
42.5°	672.2	669.9	660.6	665.2	653.7	658.3	656.0	656.0
45°	542.8	545.1	535.9	542.8	533.6	526.7	526.7	531.3
47.5°	429.6	429.6	427.3	427.3	420.4	422.7	418.1	425.0
50°	332.6	332.6	328.0	330.3	325.7	325.7	323.4	325.7
52.5°	254.1	251.8	251.8	249.5	244.8	247.2	249.5	244.8
55°	184.8	187.1	182.5	184.8	180.2	182.5	180.2	182.5
57.5°	127.0	129.4	124.7	129.4	124.7	127.0	124.7	124.7
60°	87.8	87.8	85.5	87.8	85.5	85.5	83.2	87.8
62.5°	60.1	60.1	60.1	60.1	60.1	57.7	60.1	60.1
65°	43.9	41.6	41.6	41.6	41.6	41.6	41.6	41.6
67.5°	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0
70°	20.8	20.8	20.8	20.8	20.8	20.8	20.8	20.8
72.5°	16.2	16.2	16.2	16.2	16.2	16.2	16.2	16.2
75°	11.5	11.5	11.5	11.5	11.5	11.5	11.5	11.5
77.5°	6.9	6.9	6.9	6.9	6.9	6.9	6.9	6.9
80°	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6
82.5°	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3
85°	2.3	2.3	2.3	0.0	2.3	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)