

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: P251950

Luminaire Tested: **LD4B40D010 EU4B30508050 4LBDW1H**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P251950
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 EU4B30508050 4LBDW1H
Description: PORTFOLIO 4 INCH DOUBLE 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: 3653.0 lumens
Efficiency: N/A
Efficacy: 84.9 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

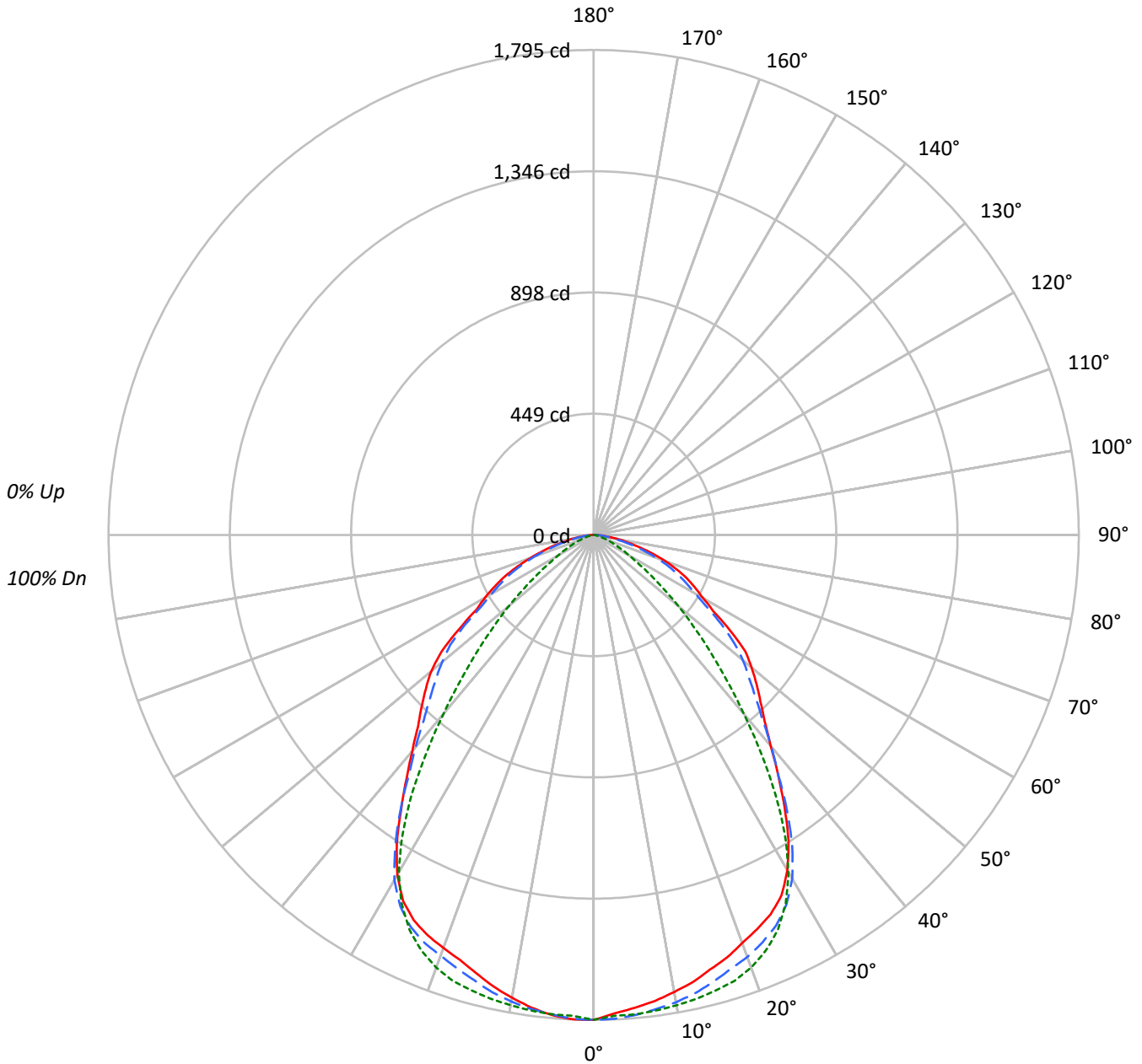
Input Watts (W): 43.02
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Luminous Intensity Polar Plot





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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20					20					20					20					20					
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°	174928	174928	174928
5°	171819	174246	174520
10°	169976	174895	172163
15°	168012	176084	169404
20°	166687	176706	168689
25°	166590	173419	169257
30°	161285	162219	163457
35°	146529	139628	147849
40°	129640	109958	132795
45°	120267	83730	124071
50°	115563	61966	118914
55°	104632	42699	103222
60°	90967	29062	90422
65°	87884	21008	83410
70°	79472	14162	70810
75°	65520	9376	56143
80°	52700	6174	41868
85°	43275	3131	27843



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	169.4	4.6
10°-20°	484.5	13.3
20°-30°	731.9	20.0
30°-40°	766.0	21.0
40°-50°	620.4	17.0
50°-60°	451.2	12.4
60°-70°	278.3	7.6
70°-80°	125.7	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°	1385.8	37.9
0°-40°	2151.8	58.9
0°-60°	3223.4	88.2
0°-90°	3653.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3653.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	1795	1795	1795	1795	1795	
5°	1756	1784	1781	1781	1784	167
15°	1665	1712	1745	1707	1679	471
25°	1549	1596	1613	1602	1574	710
35°	1232	1248	1174	1248	1243	768
45°	873	845	608	856	900	678
55°	616	577	251	583	608	549
65°	381	342	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°	1794.9	1794.9	1794.9	1794.9	1794.9	1794.9	1794.9	1794.9	1794.9	1794.9	1794.9
2.5°	1772.8	1772.8	1789.4	1808.7	1792.2	1775.6	1786.7	1781.1	1800.5	1800.5	1792.2
5°	1756.3	1761.8	1775.6	1792.2	1778.4	1761.8	1775.6	1770.1	1789.4	1789.4	1783.9
7.5°	1739.7	1742.5	1759.0	1778.4	1764.6	1748.0	1759.0	1756.3	1772.8	1775.6	1770.1
10°	1717.6	1720.4	1737.0	1756.3	1742.5	1728.7	1739.7	1737.0	1759.0	1759.0	1756.3
12.5°	1695.5	1698.3	1714.9	1731.4	1717.6	1703.8	1714.9	1714.9	1737.0	1739.7	1737.0
15°	1665.2	1670.7	1684.5	1701.1	1692.8	1676.2	1687.2	1687.2	1706.6	1712.1	1712.1
17.5°	1640.3	1643.1	1656.9	1673.4	1662.4	1648.6	1659.6	1659.6	1679.0	1684.5	1684.5
20°	1607.2	1612.7	1626.5	1643.1	1634.8	1623.7	1632.0	1632.0	1654.1	1659.6	1662.4
22.5°	1579.5	1585.1	1596.1	1618.2	1604.4	1596.1	1607.2	1604.4	1629.3	1632.0	1632.0
25°	1549.2	1554.7	1568.5	1582.3	1574.0	1565.7	1574.0	1574.0	1593.4	1596.1	1596.1
27.5°	1505.0	1507.8	1521.6	1535.4	1527.1	1516.0	1527.1	1524.3	1543.6	1546.4	1543.6
30°	1433.2	1438.7	1444.2	1463.6	1455.3	1447.0	1458.0	1452.5	1471.9	1471.9	1469.1
32.5°	1342.1	1342.1	1353.1	1366.9	1355.9	1350.3	1358.6	1361.4	1375.2	1375.2	1366.9
35°	1231.6	1237.1	1245.4	1253.7	1245.4	1239.9	1248.2	1245.4	1262.0	1256.5	1248.2
37.5°	1121.1	1123.9	1132.2	1143.2	1132.2	1123.9	1126.7	1123.9	1137.7	1137.7	1123.9
40°	1019.0	1024.5	1030.0	1041.1	1030.0	1024.5	1027.3	1019.0	1035.5	1030.0	1021.7
42.5°	936.1	938.9	947.2	952.7	941.7	938.9	941.7	936.1	944.4	938.9	922.3
45°	872.6	872.6	875.4	883.7	872.6	869.9	869.9	864.3	872.6	861.6	845.0
47.5°	817.4	820.2	822.9	828.4	820.2	811.9	814.6	803.6	809.1	800.8	778.7
50°	762.2	767.7	770.4	776.0	767.7	762.2	764.9	753.9	753.9	740.1	720.7
52.5°	706.9	709.7	706.9	712.5	706.9	698.6	701.4	690.4	690.4	673.8	654.5
55°	615.8	618.6	621.3	626.8	621.3	613.0	618.6	610.3	610.3	599.2	577.1
57.5°	524.7	527.4	530.2	533.0	533.0	527.4	530.2	524.7	521.9	513.6	497.1
60°	466.7	466.7	466.7	469.4	466.7	463.9	463.9	458.4	458.4	447.4	430.8
62.5°	422.5	425.3	425.3	428.0	425.3	422.5	419.7	414.2	411.5	400.4	386.6
65°	381.1	381.1	378.3	383.8	381.1	378.3	378.3	372.8	367.3	356.2	342.4
67.5°	331.4	334.1	331.4	334.1	334.1	331.4	328.6	323.1	320.3	312.0	295.5
70°	278.9	278.9	278.9	281.7	278.9	278.9	281.7	273.4	270.6	259.6	245.8
72.5°	226.4	229.2	229.2	226.4	229.2	223.7	223.7	223.7	220.9	209.9	196.1
75°	174.0	176.7	176.7	179.5	176.7	174.0	174.0	171.2	168.4	160.2	149.1
77.5°	129.8	129.8	132.5	132.5	132.5	129.8	129.8	124.3	124.3	118.7	107.7
80°	93.9	93.9	91.1	93.9	93.9	91.1	91.1	88.4	88.4	82.8	74.6
82.5°	60.8	63.5	63.5	63.5	63.5	60.8	60.8	60.8	58.0	55.2	49.7
85°	38.7	38.7	38.7	38.7	41.4	38.7	41.4	38.7	38.7	33.1	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°	1794.9	1794.9	1794.9	1794.9	1794.9	1794.9	1794.9	1794.9	1794.9	1794.9	1794.9
2.5°	1792.2	1794.9	1786.7	1797.7	1789.4	1792.2	1794.9	1792.2	1781.1	1781.1	1811.5
5°	1781.1	1786.7	1778.4	1792.2	1786.7	1786.7	1792.2	1789.4	1778.4	1781.1	1808.7
7.5°	1770.1	1778.4	1772.8	1786.7	1778.4	1778.4	1783.9	1783.9	1772.8	1775.6	1800.5
10°	1753.5	1764.6	1761.8	1775.6	1767.3	1767.3	1775.6	1775.6	1764.6	1767.3	1792.2
12.5°	1739.7	1750.8	1748.0	1761.8	1756.3	1759.0	1761.8	1767.3	1753.5	1759.0	1781.1
15°	1717.6	1728.7	1728.7	1742.5	1737.0	1742.5	1748.0	1756.3	1745.2	1745.2	1767.3
17.5°	1692.8	1706.6	1706.6	1717.6	1717.6	1720.4	1731.4	1739.7	1728.7	1731.4	1750.8
20°	1665.2	1681.7	1681.7	1695.5	1692.8	1698.3	1706.6	1714.9	1703.8	1703.8	1725.9
22.5°	1637.5	1651.3	1654.1	1662.4	1662.4	1665.2	1673.4	1679.0	1665.2	1665.2	1687.2
25°	1598.9	1612.7	1615.4	1621.0	1615.4	1615.4	1621.0	1626.5	1612.7	1612.7	1632.0
27.5°	1546.4	1560.2	1560.2	1557.5	1551.9	1554.7	1551.9	1554.7	1540.9	1538.1	1557.5
30°	1469.1	1477.4	1477.4	1474.6	1466.3	1466.3	1458.0	1460.8	1441.5	1441.5	1458.0
32.5°	1364.2	1372.4	1366.9	1361.4	1350.3	1344.8	1339.3	1336.5	1317.2	1317.2	1336.5
35°	1239.9	1245.4	1237.1	1226.1	1212.3	1204.0	1195.7	1184.7	1170.9	1173.6	1184.7
37.5°	1112.9	1112.9	1101.8	1079.7	1068.7	1054.9	1041.1	1041.1	1019.0	1016.2	1024.5
40°	1005.2	994.1	974.8	944.4	925.1	911.3	891.9	880.9	864.3	864.3	878.1
42.5°	908.5	886.4	861.6	820.2	800.8	784.3	759.4	748.4	729.0	726.3	734.5
45°	822.9	800.8	764.9	720.7	695.9	676.6	640.7	626.8	610.3	607.5	613.0
47.5°	753.9	729.0	684.8	626.8	602.0	577.1	541.2	521.9	508.1	499.8	508.1
50°	693.1	660.0	613.0	552.3	519.2	497.1	452.9	433.5	414.2	408.7	411.5
52.5°	626.8	593.7	544.0	480.5	450.1	417.0	375.6	347.9	331.4	323.1	331.4
55°	555.1	521.9	472.2	408.7	375.6	345.2	301.0	278.9	259.6	251.3	259.6
57.5°	477.7	447.4	403.2	339.7	309.3	281.7	240.2	218.2	198.8	193.3	198.8
60°	411.5	386.6	342.4	281.7	256.8	226.4	190.5	168.4	151.9	149.1	151.9
62.5°	367.3	339.7	298.2	240.2	215.4	190.5	157.4	135.3	121.5	118.7	121.5
65°	323.1	292.7	254.1	204.3	179.5	160.2	127.0	107.7	93.9	91.1	93.9
67.5°	273.4	245.8	212.6	168.4	149.1	129.8	102.2	82.8	71.8	69.0	71.8
70°	226.4	201.6	168.4	135.3	116.0	102.2	77.3	63.5	52.5	49.7	52.5
72.5°	179.5	157.4	129.8	102.2	91.1	77.3	60.8	46.9	38.7	35.9	38.7
75°	138.1	121.5	99.4	74.6	66.3	58.0	41.4	33.1	27.6	24.9	27.6
77.5°	96.7	85.6	69.0	55.2	46.9	41.4	30.4	22.1	19.3	16.6	19.3
80°	66.3	58.0	46.9	35.9	30.4	24.9	19.3	13.8	11.0	11.0	11.0
82.5°	44.2	35.9	27.6	22.1	19.3	16.6	11.0	8.3	8.3	5.5	5.5
85°	24.9	22.1	16.6	13.8	11.0	8.3	5.5	5.5	2.8	2.8	2.8
87.5°	11.0	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°	1794.9	1794.9	1794.9	1794.9	1794.9	1794.9	1794.9	1794.9	1794.9	1794.9	1794.9
2.5°	1803.2	1794.9	1806.0	1794.9	1789.4	1794.9	1789.4	1806.0	1792.2	1781.1	1792.2
5°	1800.5	1789.4	1800.5	1792.2	1783.9	1786.7	1781.1	1797.7	1781.1	1772.8	1778.4
7.5°	1794.9	1786.7	1792.2	1783.9	1775.6	1778.4	1772.8	1786.7	1770.1	1761.8	1767.3
10°	1786.7	1778.4	1781.1	1775.6	1767.3	1767.3	1761.8	1772.8	1753.5	1742.5	1748.0
12.5°	1775.6	1764.6	1770.1	1761.8	1750.8	1750.8	1745.2	1753.5	1734.2	1723.1	1725.9
15°	1761.8	1750.8	1750.8	1742.5	1731.4	1731.4	1720.4	1728.7	1706.6	1695.5	1695.5
17.5°	1745.2	1731.4	1731.4	1723.1	1709.3	1706.6	1698.3	1706.6	1681.7	1670.7	1670.7
20°	1720.4	1709.3	1706.6	1701.1	1687.2	1684.5	1673.4	1676.2	1656.9	1648.6	1645.8
22.5°	1687.2	1676.2	1679.0	1670.7	1659.6	1656.9	1645.8	1654.1	1634.8	1626.5	1629.3
25°	1629.3	1623.7	1629.3	1626.5	1618.2	1618.2	1612.7	1618.2	1601.6	1596.1	1598.9
27.5°	1563.0	1560.2	1563.0	1563.0	1557.5	1557.5	1557.5	1565.7	1549.2	1546.4	1546.4
30°	1466.3	1466.3	1469.1	1471.9	1471.9	1477.4	1474.6	1485.7	1474.6	1469.1	1474.6
32.5°	1339.3	1350.3	1358.6	1358.6	1358.6	1364.2	1369.7	1378.0	1366.9	1369.7	1369.7
35°	1195.7	1204.0	1209.5	1223.3	1215.0	1234.4	1239.9	1250.9	1248.2	1253.7	1250.9
37.5°	1035.5	1046.6	1057.6	1077.0	1074.2	1096.3	1107.3	1129.4	1123.9	1135.0	1140.5
40°	886.4	903.0	919.6	933.4	944.4	966.5	988.6	1016.2	1024.5	1032.8	1035.5
42.5°	742.8	759.4	787.0	806.3	822.9	858.8	889.2	922.3	930.6	947.2	952.7
45°	626.8	640.7	673.8	698.6	712.5	764.9	800.8	842.2	856.0	875.4	883.7
47.5°	519.2	544.0	577.1	607.5	626.8	682.1	729.0	773.2	792.5	814.6	825.7
50°	425.3	452.9	497.1	524.7	552.3	613.0	665.5	712.5	731.8	756.6	767.7
52.5°	347.9	378.3	419.7	450.1	480.5	544.0	599.2	643.4	668.3	684.8	701.4
55°	273.4	306.5	347.9	381.1	405.9	475.0	521.9	566.1	582.7	596.5	604.8
57.5°	212.6	237.5	278.9	306.5	336.9	397.6	444.6	477.7	491.5	508.1	513.6
60°	165.7	190.5	229.2	256.8	284.4	342.4	389.4	422.5	436.3	450.1	458.4
62.5°	132.5	157.4	193.3	218.2	243.0	295.5	336.9	370.0	386.6	400.4	408.7
65°	104.9	127.0	157.4	182.3	201.6	248.5	290.0	320.3	336.9	350.7	359.0
67.5°	82.8	102.2	129.8	146.4	165.7	204.3	240.2	267.9	281.7	298.2	306.5
70°	63.5	77.3	102.2	116.0	129.8	162.9	190.5	218.2	232.0	243.0	248.5
72.5°	46.9	58.0	77.3	88.4	96.7	124.3	146.4	165.7	176.7	187.8	193.3
75°	33.1	41.4	55.2	63.5	69.0	88.4	107.7	121.5	129.8	138.1	146.4
77.5°	22.1	27.6	35.9	41.4	46.9	60.8	71.8	82.8	91.1	99.4	102.2
80°	13.8	19.3	24.9	27.6	30.4	38.7	49.7	55.2	60.8	66.3	69.0
82.5°	8.3	11.0	13.8	16.6	19.3	24.9	30.4	35.9	38.7	44.2	46.9
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: P251950

CATALOG NUMBER: LD4B40D010 EU4B30508050 4LBDW1H

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	1794.9	1794.9	1794.9	1794.9	1794.9	1794.9	1794.9	1794.9
2.5°	1803.2	1794.9	1789.4	1786.7	1806.0	1781.1	1792.2	1794.9
5°	1792.2	1783.9	1778.4	1775.6	1792.2	1770.1	1778.4	1783.9
7.5°	1775.6	1770.1	1761.8	1759.0	1775.6	1750.8	1761.8	1764.6
10°	1756.3	1748.0	1742.5	1739.7	1753.5	1728.7	1739.7	1739.7
12.5°	1731.4	1725.9	1714.9	1714.9	1725.9	1703.8	1712.1	1712.1
15°	1698.3	1692.8	1681.7	1681.7	1692.8	1670.7	1679.0	1679.0
17.5°	1670.7	1665.2	1656.9	1654.1	1665.2	1643.1	1651.3	1648.6
20°	1648.6	1643.1	1632.0	1632.0	1640.3	1618.2	1626.5	1626.5
22.5°	1629.3	1626.5	1615.4	1615.4	1626.5	1604.4	1609.9	1604.4
25°	1598.9	1596.1	1585.1	1587.8	1593.4	1571.3	1579.5	1574.0
27.5°	1549.2	1549.2	1538.1	1535.4	1543.6	1524.3	1529.8	1527.1
30°	1471.9	1474.6	1460.8	1460.8	1463.6	1447.0	1455.3	1452.5
32.5°	1366.9	1369.7	1358.6	1355.9	1364.2	1350.3	1355.9	1355.9
35°	1250.9	1253.7	1245.4	1245.4	1253.7	1245.4	1245.4	1242.7
37.5°	1135.0	1140.5	1135.0	1137.7	1143.2	1135.0	1140.5	1137.7
40°	1041.1	1046.6	1038.3	1043.8	1049.4	1041.1	1049.4	1043.8
42.5°	955.5	963.7	958.2	963.7	969.3	963.7	969.3	961.0
45°	891.9	897.5	894.7	897.5	903.0	900.2	903.0	900.2
47.5°	831.2	842.2	836.7	842.2	850.5	845.0	850.5	842.2
50°	776.0	784.3	781.5	787.0	789.8	787.0	792.5	784.3
52.5°	704.2	712.5	709.7	709.7	715.2	709.7	715.2	709.7
55°	610.3	613.0	613.0	615.8	613.0	610.3	613.0	607.5
57.5°	519.2	524.7	516.4	524.7	521.9	519.2	519.2	513.6
60°	461.2	469.4	463.9	469.4	466.7	466.7	466.7	463.9
62.5°	414.2	419.7	414.2	417.0	417.0	417.0	414.2	411.5
65°	361.7	370.0	364.5	367.3	364.5	361.7	364.5	361.7
67.5°	309.3	312.0	312.0	309.3	309.3	309.3	309.3	303.8
70°	251.3	254.1	251.3	256.8	254.1	251.3	254.1	248.5
72.5°	196.1	198.8	196.1	198.8	196.1	196.1	196.1	196.1
75°	146.4	149.1	149.1	149.1	149.1	149.1	143.6	149.1
77.5°	104.9	104.9	104.9	107.7	104.9	104.9	104.9	104.9
80°	71.8	71.8	71.8	74.6	71.8	74.6	71.8	74.6
82.5°	46.9	46.9	46.9	46.9	46.9	46.9	46.9	46.9
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)