

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: P251948

Luminaire Tested: **LD4B40D010 EU4B30508035 4LBDW1H**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P251948
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 EU4B30508035 4LBDW1H
Description: PORTFOLIO 4 INCH DOUBLE WALLWASH RECESSED DOWNLIGHT, WITH HAZE TRIM
Light Source: (1) HIGH LUMEN LED 80CRI / 3500K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 3616.0 lumens
Efficiency: N/A
Efficacy: 84.1 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

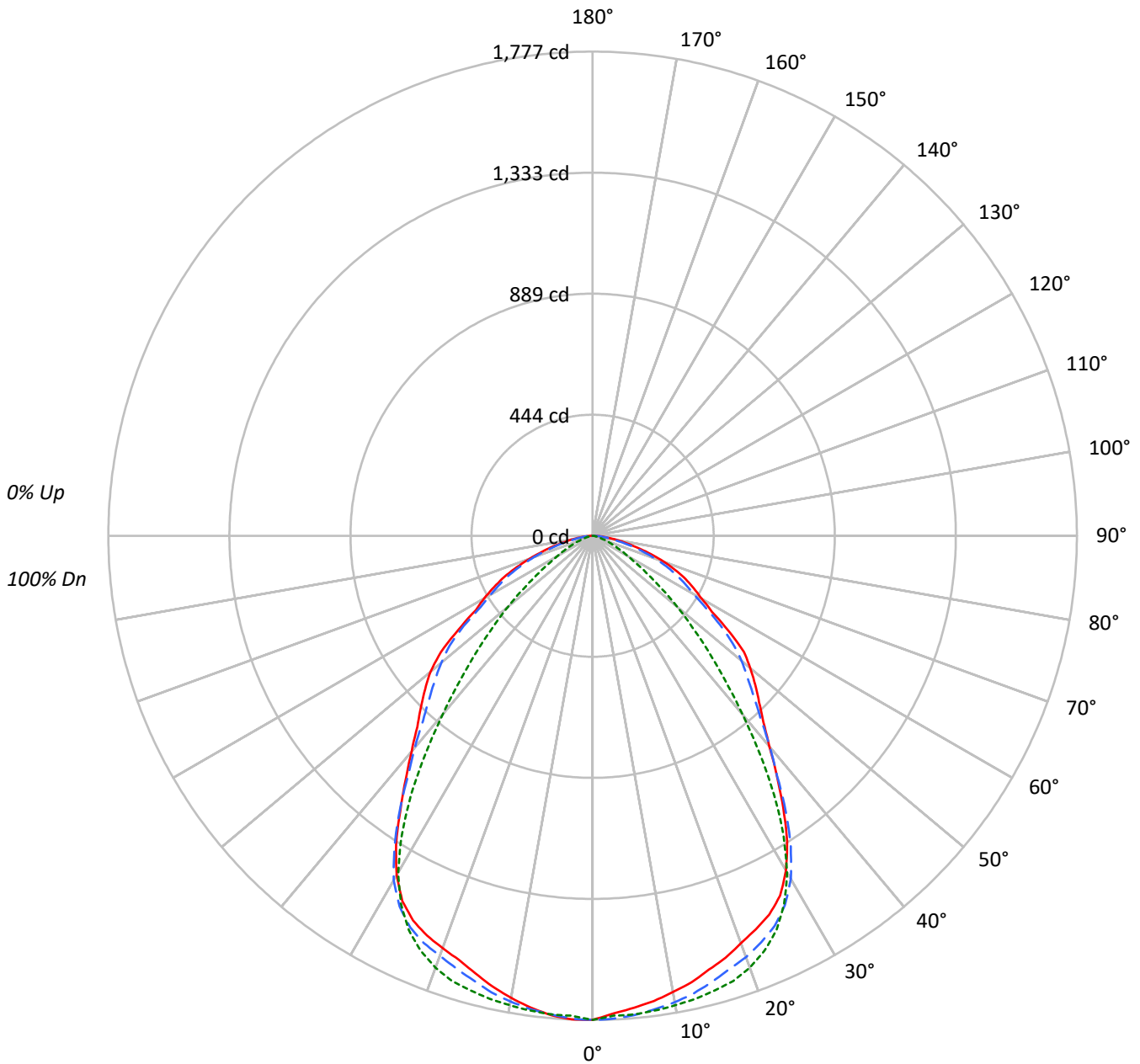
Input Watts (W): 43.02
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Luminous Intensity Polar Plot





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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

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

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	173164	173164	173164
5°	170078	172485	172749
10°	168254	173123	170422
15°	166307	174308	167689
20°	164997	174922	166977
25°	164902	171666	167547
30°	159653	160576	161803
35°	145042	138212	146350
40°	128329	108852	131459
45°	119055	82889	122817
50°	114381	61345	117701
55°	103579	42257	102186
60°	90051	28770	89505
65°	86984	20801	82580
70°	78674	14019	70097
75°	64842	9263	55579
80°	52139	6118	41419
85°	42827	3019	27508



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	167.7	4.6
10°-20°	479.6	13.3
20°-30°	724.5	20.0
30°-40°	758.2	21.0
40°-50°	614.1	17.0
50°-60°	446.7	12.4
60°-70°	275.5	7.6
70°-80°	124.5	3.4
80°-90°	25.3	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°	1371.8	37.9
0°-40°	2130.0	58.9
0°-60°	3190.8	88.2
0°-90°	3616.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3616.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	1777	1777	1777	1777	1777	
5°	1738	1766	1763	1763	1766	165
15°	1648	1695	1728	1689	1662	466
25°	1534	1580	1596	1585	1558	703
35°	1219	1236	1162	1236	1230	760
45°	864	836	601	847	891	671
55°	610	571	249	577	601	544
65°	377	339	90	334	358	369
75°	172	148	25	128	148	187
85°	38	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°	1776.8	1776.8	1776.8	1776.8	1776.8	1776.8	1776.8	1776.8	1776.8	1776.8	1776.8
2.5°	1754.9	1754.9	1771.3	1790.4	1774.0	1757.6	1768.6	1763.1	1782.2	1782.2	1774.0
5°	1738.5	1744.0	1757.6	1774.0	1760.4	1744.0	1757.6	1752.2	1771.3	1771.3	1765.8
7.5°	1722.1	1724.8	1741.2	1760.4	1746.7	1730.3	1741.2	1738.5	1754.9	1757.6	1752.2
10°	1700.2	1703.0	1719.4	1738.5	1724.8	1711.2	1722.1	1719.4	1741.2	1741.2	1738.5
12.5°	1678.4	1681.1	1697.5	1713.9	1700.2	1686.6	1697.5	1697.5	1719.4	1722.1	1719.4
15°	1648.3	1653.8	1667.4	1683.8	1675.6	1659.2	1670.2	1670.2	1689.3	1694.8	1694.8
17.5°	1623.7	1626.4	1640.1	1656.5	1645.6	1631.9	1642.8	1642.8	1662.0	1667.4	1667.4
20°	1590.9	1596.4	1610.0	1626.4	1618.2	1607.3	1615.5	1615.5	1637.4	1642.8	1645.6
22.5°	1563.5	1569.0	1580.0	1601.8	1588.2	1580.0	1590.9	1588.2	1612.8	1615.5	1615.5
25°	1533.5	1538.9	1552.6	1566.3	1558.1	1549.9	1558.1	1558.1	1577.2	1580.0	1580.0
27.5°	1489.7	1492.5	1506.1	1519.8	1511.6	1500.7	1511.6	1508.9	1528.0	1530.7	1528.0
30°	1418.7	1424.1	1429.6	1448.7	1440.5	1432.3	1443.3	1437.8	1456.9	1456.9	1454.2
32.5°	1328.5	1328.5	1339.4	1353.1	1342.1	1336.7	1344.9	1347.6	1361.3	1361.3	1353.1
35°	1219.1	1224.6	1232.8	1241.0	1232.8	1227.3	1235.5	1232.8	1249.2	1243.7	1235.5
37.5°	1109.8	1112.5	1120.7	1131.7	1120.7	1112.5	1115.3	1112.5	1126.2	1126.2	1112.5
40°	1008.7	1014.1	1019.6	1030.5	1019.6	1014.1	1016.9	1008.7	1025.1	1019.6	1011.4
42.5°	926.6	929.4	937.6	943.1	932.1	929.4	932.1	926.6	934.8	929.4	913.0
45°	863.8	863.8	866.5	874.7	863.8	861.0	861.0	855.6	863.8	852.8	836.4
47.5°	809.1	811.8	814.6	820.0	811.8	803.6	806.4	795.4	800.9	792.7	770.8
50°	754.4	759.9	762.6	768.1	759.9	754.4	757.2	746.2	746.2	732.6	713.4
52.5°	699.8	702.5	699.8	705.2	699.8	691.6	694.3	683.4	683.4	667.0	647.8
55°	609.6	612.3	615.0	620.5	615.0	606.8	612.3	604.1	604.1	593.2	571.3
57.5°	519.4	522.1	524.8	527.6	527.6	522.1	524.8	519.4	516.6	508.4	492.0
60°	462.0	462.0	462.0	464.7	462.0	459.2	459.2	453.8	453.8	442.8	426.4
62.5°	418.2	421.0	421.0	423.7	421.0	418.2	415.5	410.0	407.3	396.4	382.7
65°	377.2	377.2	374.5	380.0	377.2	374.5	374.5	369.0	363.6	352.6	339.0
67.5°	328.0	330.8	328.0	330.8	330.8	328.0	325.3	319.8	317.1	308.9	292.5
70°	276.1	276.1	276.1	278.8	276.1	276.1	278.8	270.6	267.9	256.9	243.3
72.5°	224.1	226.9	226.9	224.1	226.9	221.4	221.4	221.4	218.7	207.7	194.1
75°	172.2	174.9	174.9	177.7	174.9	172.2	172.2	169.5	166.7	158.5	147.6
77.5°	128.5	128.5	131.2	131.2	131.2	128.5	128.5	123.0	123.0	117.5	106.6
80°	92.9	92.9	90.2	92.9	92.9	90.2	90.2	87.5	87.5	82.0	73.8
82.5°	60.1	62.9	62.9	62.9	62.9	60.1	60.1	60.1	57.4	54.7	49.2
85°	38.3	38.3	38.3	38.3	41.0	38.3	41.0	38.3	38.3	32.8	30.1
87.5°	16.4	16.4	16.4	19.1	19.1	16.4	16.4	16.4	16.4	16.4	13.7
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°	1776.8	1776.8	1776.8	1776.8	1776.8	1776.8	1776.8	1776.8	1776.8	1776.8	1776.8
2.5°	1774.0	1776.8	1768.6	1779.5	1771.3	1774.0	1776.8	1774.0	1763.1	1763.1	1793.2
5°	1763.1	1768.6	1760.4	1774.0	1768.6	1768.6	1774.0	1771.3	1760.4	1763.1	1790.4
7.5°	1752.2	1760.4	1754.9	1768.6	1760.4	1760.4	1765.8	1765.8	1754.9	1757.6	1782.2
10°	1735.8	1746.7	1744.0	1757.6	1749.4	1749.4	1757.6	1757.6	1746.7	1749.4	1774.0
12.5°	1722.1	1733.0	1730.3	1744.0	1738.5	1741.2	1744.0	1749.4	1735.8	1741.2	1763.1
15°	1700.2	1711.2	1711.2	1724.8	1719.4	1724.8	1730.3	1738.5	1727.6	1727.6	1749.4
17.5°	1675.6	1689.3	1689.3	1700.2	1700.2	1703.0	1713.9	1722.1	1711.2	1713.9	1733.0
20°	1648.3	1664.7	1664.7	1678.4	1675.6	1681.1	1689.3	1697.5	1686.6	1686.6	1708.4
22.5°	1621.0	1634.6	1637.4	1645.6	1645.6	1648.3	1656.5	1662.0	1648.3	1648.3	1670.2
25°	1582.7	1596.4	1599.1	1604.6	1599.1	1599.1	1604.6	1610.0	1596.4	1596.4	1615.5
27.5°	1530.7	1544.4	1544.4	1541.7	1536.2	1538.9	1536.2	1538.9	1525.3	1522.5	1541.7
30°	1454.2	1462.4	1462.4	1459.7	1451.5	1451.5	1443.3	1446.0	1426.9	1426.9	1443.3
32.5°	1350.3	1358.5	1353.1	1347.6	1336.7	1331.2	1325.7	1323.0	1303.9	1303.9	1323.0
35°	1227.3	1232.8	1224.6	1213.7	1200.0	1191.8	1183.6	1172.7	1159.0	1161.7	1172.7
37.5°	1101.6	1101.6	1090.7	1068.8	1057.9	1044.2	1030.5	1030.5	1008.7	1005.9	1014.1
40°	995.0	984.1	964.9	934.8	915.7	902.0	882.9	872.0	855.6	855.6	869.2
42.5°	899.3	877.4	852.8	811.8	792.7	776.3	751.7	740.8	721.6	718.9	727.1
45°	814.6	792.7	757.2	713.4	688.8	669.7	634.2	620.5	604.1	601.4	606.8
47.5°	746.2	721.6	677.9	620.5	595.9	571.3	535.8	516.6	503.0	494.8	503.0
50°	686.1	653.3	606.8	546.7	513.9	492.0	448.3	429.2	410.0	404.6	407.3
52.5°	620.5	587.7	538.5	475.6	445.6	412.8	371.8	344.4	328.0	319.8	328.0
55°	549.4	516.6	467.4	404.6	371.8	341.7	297.9	276.1	256.9	248.7	256.9
57.5°	472.9	442.8	399.1	336.2	306.1	278.8	237.8	215.9	196.8	191.3	196.8
60°	407.3	382.7	339.0	278.8	254.2	224.1	188.6	166.7	150.3	147.6	150.3
62.5°	363.6	336.2	295.2	237.8	213.2	188.6	155.8	133.9	120.3	117.5	120.3
65°	319.8	289.7	251.5	202.3	177.7	158.5	125.7	106.6	92.9	90.2	92.9
67.5°	270.6	243.3	210.5	166.7	147.6	128.5	101.1	82.0	71.1	68.3	71.1
70°	224.1	199.5	166.7	133.9	114.8	101.1	76.5	62.9	51.9	49.2	51.9
72.5°	177.7	155.8	128.5	101.1	90.2	76.5	60.1	46.5	38.3	35.5	38.3
75°	136.7	120.3	98.4	73.8	65.6	57.4	41.0	32.8	27.3	24.6	27.3
77.5°	95.7	84.7	68.3	54.7	46.5	41.0	30.1	21.9	19.1	16.4	19.1
80°	65.6	57.4	46.5	35.5	30.1	24.6	19.1	13.7	10.9	10.9	10.9
82.5°	43.7	35.5	27.3	21.9	19.1	16.4	10.9	8.2	8.2	5.5	5.5
85°	24.6	21.9	16.4	13.7	10.9	8.2	5.5	5.5	2.7	2.7	2.7
87.5°	10.9	8.2	5.5	5.5	2.7	2.7	2.7	2.7	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°	1776.8	1776.8	1776.8	1776.8	1776.8	1776.8	1776.8	1776.8	1776.8	1776.8	1776.8
2.5°	1785.0	1776.8	1787.7	1776.8	1771.3	1776.8	1771.3	1787.7	1774.0	1763.1	1774.0
5°	1782.2	1771.3	1782.2	1774.0	1765.8	1768.6	1763.1	1779.5	1763.1	1754.9	1760.4
7.5°	1776.8	1768.6	1774.0	1765.8	1757.6	1760.4	1754.9	1768.6	1752.2	1744.0	1749.4
10°	1768.6	1760.4	1763.1	1757.6	1749.4	1749.4	1744.0	1754.9	1735.8	1724.8	1730.3
12.5°	1757.6	1746.7	1752.2	1744.0	1733.0	1733.0	1727.6	1735.8	1716.6	1705.7	1708.4
15°	1744.0	1733.0	1733.0	1724.8	1713.9	1713.9	1703.0	1711.2	1689.3	1678.4	1678.4
17.5°	1727.6	1713.9	1713.9	1705.7	1692.0	1689.3	1681.1	1689.3	1664.7	1653.8	1653.8
20°	1703.0	1692.0	1689.3	1683.8	1670.2	1667.4	1656.5	1659.2	1640.1	1631.9	1629.2
22.5°	1670.2	1659.2	1662.0	1653.8	1642.8	1640.1	1629.2	1637.4	1618.2	1610.0	1612.8
25°	1612.8	1607.3	1612.8	1610.0	1601.8	1601.8	1596.4	1601.8	1585.4	1580.0	1582.7
27.5°	1547.1	1544.4	1547.1	1547.1	1541.7	1541.7	1541.7	1549.9	1533.5	1530.7	1530.7
30°	1451.5	1451.5	1454.2	1456.9	1456.9	1462.4	1459.7	1470.6	1459.7	1454.2	1459.7
32.5°	1325.7	1336.7	1344.9	1344.9	1344.9	1350.3	1355.8	1364.0	1353.1	1355.8	1355.8
35°	1183.6	1191.8	1197.3	1210.9	1202.7	1221.9	1227.3	1238.3	1235.5	1241.0	1238.3
37.5°	1025.1	1036.0	1046.9	1066.1	1063.3	1085.2	1096.1	1118.0	1112.5	1123.5	1128.9
40°	877.4	893.8	910.2	923.9	934.8	956.7	978.6	1005.9	1014.1	1022.3	1025.1
42.5°	735.3	751.7	779.0	798.2	814.6	850.1	880.2	913.0	921.2	937.6	943.1
45°	620.5	634.2	667.0	691.6	705.2	757.2	792.7	833.7	847.4	866.5	874.7
47.5°	513.9	538.5	571.3	601.4	620.5	675.2	721.6	765.4	784.5	806.4	817.3
50°	421.0	448.3	492.0	519.4	546.7	606.8	658.8	705.2	724.4	749.0	759.9
52.5°	344.4	374.5	415.5	445.6	475.6	538.5	593.2	636.9	661.5	677.9	694.3
55°	270.6	303.4	344.4	377.2	401.8	470.2	516.6	560.4	576.8	590.4	598.6
57.5°	210.5	235.1	276.1	303.4	333.5	393.6	440.1	472.9	486.6	503.0	508.4
60°	164.0	188.6	226.9	254.2	281.5	339.0	385.4	418.2	431.9	445.6	453.8
62.5°	131.2	155.8	191.3	215.9	240.5	292.5	333.5	366.3	382.7	396.4	404.6
65°	103.9	125.7	155.8	180.4	199.5	246.0	287.0	317.1	333.5	347.2	355.4
67.5°	82.0	101.1	128.5	144.9	164.0	202.3	237.8	265.1	278.8	295.2	303.4
70°	62.9	76.5	101.1	114.8	128.5	161.3	188.6	215.9	229.6	240.5	246.0
72.5°	46.5	57.4	76.5	87.5	95.7	123.0	144.9	164.0	174.9	185.9	191.3
75°	32.8	41.0	54.7	62.9	68.3	87.5	106.6	120.3	128.5	136.7	144.9
77.5°	21.9	27.3	35.5	41.0	46.5	60.1	71.1	82.0	90.2	98.4	101.1
80°	13.7	19.1	24.6	27.3	30.1	38.3	49.2	54.7	60.1	65.6	68.3
82.5°	8.2	10.9	13.7	16.4	19.1	24.6	30.1	35.5	38.3	43.7	46.5
85°	2.7	5.5	5.5	8.2	8.2	13.7	16.4	19.1	21.9	24.6	27.3
87.5°	0.0	0.0	2.7	2.7	2.7	2.7	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: P251948

CATALOG NUMBER: LD4B40D010 EU4B30508035 4LBDW1H

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	1776.8	1776.8	1776.8	1776.8	1776.8	1776.8	1776.8	1776.8
2.5°	1785.0	1776.8	1771.3	1768.6	1787.7	1763.1	1774.0	1776.8
5°	1774.0	1765.8	1760.4	1757.6	1774.0	1752.2	1760.4	1765.8
7.5°	1757.6	1752.2	1744.0	1741.2	1757.6	1733.0	1744.0	1746.7
10°	1738.5	1730.3	1724.8	1722.1	1735.8	1711.2	1722.1	1722.1
12.5°	1713.9	1708.4	1697.5	1697.5	1708.4	1686.6	1694.8	1694.8
15°	1681.1	1675.6	1664.7	1664.7	1675.6	1653.8	1662.0	1662.0
17.5°	1653.8	1648.3	1640.1	1637.4	1648.3	1626.4	1634.6	1631.9
20°	1631.9	1626.4	1615.5	1615.5	1623.7	1601.8	1610.0	1610.0
22.5°	1612.8	1610.0	1599.1	1599.1	1610.0	1588.2	1593.6	1588.2
25°	1582.7	1580.0	1569.0	1571.8	1577.2	1555.3	1563.5	1558.1
27.5°	1533.5	1533.5	1522.5	1519.8	1528.0	1508.9	1514.3	1511.6
30°	1456.9	1459.7	1446.0	1446.0	1448.7	1432.3	1440.5	1437.8
32.5°	1353.1	1355.8	1344.9	1342.1	1350.3	1336.7	1342.1	1342.1
35°	1238.3	1241.0	1232.8	1232.8	1241.0	1232.8	1232.8	1230.1
37.5°	1123.5	1128.9	1123.5	1126.2	1131.7	1123.5	1128.9	1126.2
40°	1030.5	1036.0	1027.8	1033.3	1038.7	1030.5	1038.7	1033.3
42.5°	945.8	954.0	948.5	954.0	959.5	954.0	959.5	951.3
45°	882.9	888.4	885.6	888.4	893.8	891.1	893.8	891.1
47.5°	822.8	833.7	828.2	833.7	841.9	836.4	841.9	833.7
50°	768.1	776.3	773.6	779.0	781.8	779.0	784.5	776.3
52.5°	697.0	705.2	702.5	702.5	708.0	702.5	708.0	702.5
55°	604.1	606.8	606.8	609.6	606.8	604.1	606.8	601.4
57.5°	513.9	519.4	511.2	519.4	516.6	513.9	513.9	508.4
60°	456.5	464.7	459.2	464.7	462.0	462.0	462.0	459.2
62.5°	410.0	415.5	410.0	412.8	412.8	412.8	410.0	407.3
65°	358.1	366.3	360.8	363.6	360.8	358.1	360.8	358.1
67.5°	306.1	308.9	308.9	306.1	306.1	306.1	306.1	300.7
70°	248.7	251.5	248.7	254.2	251.5	248.7	251.5	246.0
72.5°	194.1	196.8	194.1	196.8	194.1	194.1	194.1	194.1
75°	144.9	147.6	147.6	147.6	147.6	147.6	142.1	147.6
77.5°	103.9	103.9	103.9	106.6	103.9	103.9	103.9	103.9
80°	71.1	71.1	71.1	73.8	71.1	73.8	71.1	73.8
82.5°	46.5	46.5	46.5	46.5	46.5	46.5	46.5	46.5
85°	24.6	27.3	27.3	24.6	24.6	24.6	24.6	24.6
87.5°	5.5	2.7	2.7	2.7	2.7	2.7	2.7	2.7
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)