

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: P251641

Luminaire Tested: **LD4B40D010 EU4B30509030 4LBSW1H**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P251641
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 EU4B30509030 4LBSW1H
Description: PORTFOLIO 4 INCH SINGLE WALLWASH RECESSED DOWNLIGHT, WITH HAZE TRIM
Light Source: (1) HIGH LUMEN LED 90CRI / 3000K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 3098.0 lumens
Efficiency: N/A
Efficacy: 72.0 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

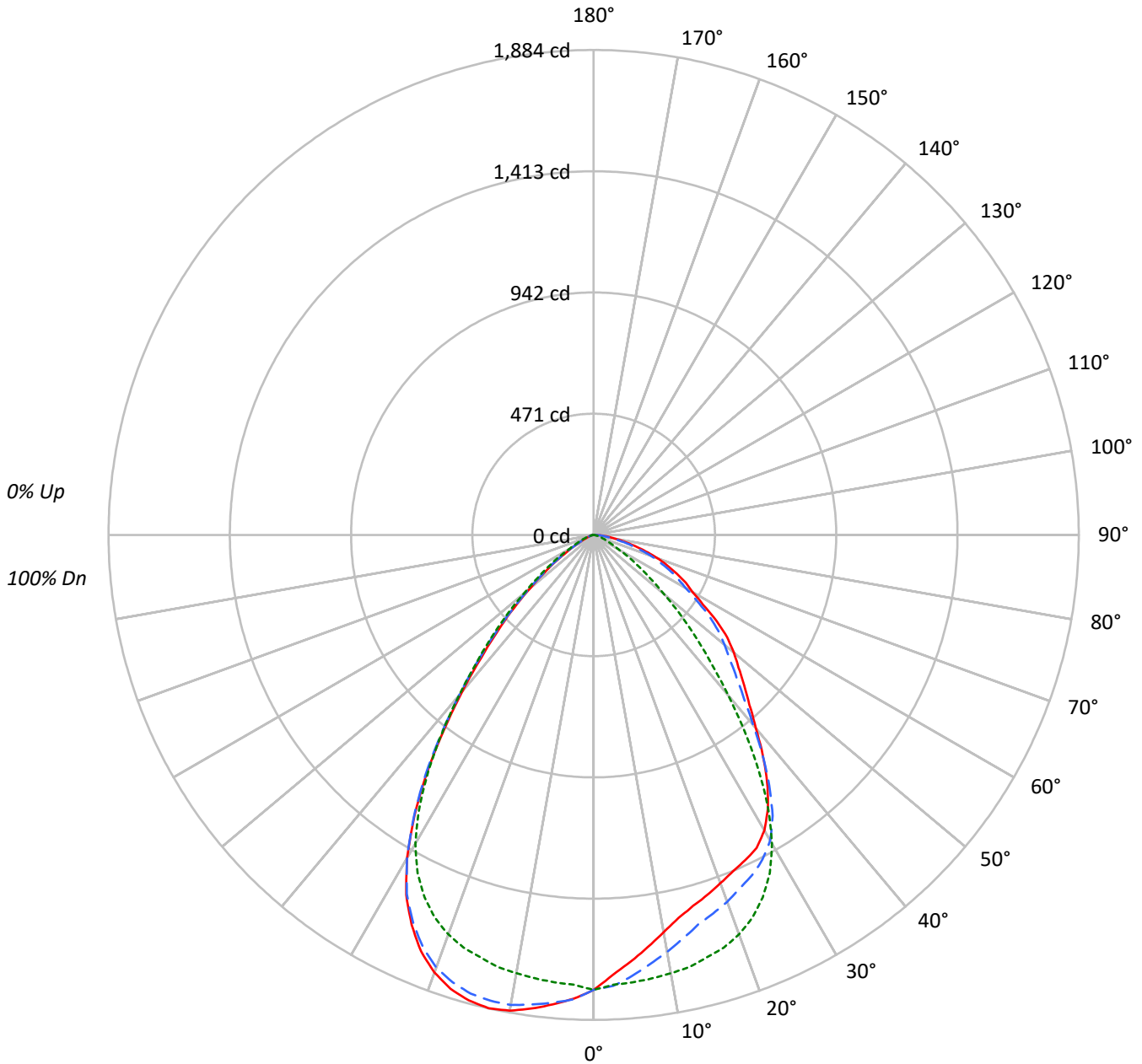
Input Watts (W): 43.02
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Luminous Intensity Polar Plot





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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20									20									20									20									
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	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°	172247	172247	172247
5°	162653	170675	179137
10°	155063	171075	185721
15°	150517	171422	188887
20°	149284	171250	187554
25°	149890	167031	179763
30°	149165	155827	163007
35°	139819	133049	134405
40°	124589	103152	100837
45°	113941	76907	72194
50°	107740	53870	48684
55°	99059	36378	30567
60°	86562	21304	16860
65°	81934	13652	9455
70°	74628	9745	5841
75°	61754	6853	4293
80°	48547	3816	2582
85°	43275	2572	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	167.0	5.4
10°-20°	479.1	15.5
20°-30°	710.2	22.9
30°-40°	711.1	23.0
40°-50°	497.0	16.0
50°-60°	295.7	9.5
60°-70°	154.3	5.0
70°-80°	68.6	2.2
80°-90°	15.0	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°	1356.2	43.8
0°-40°	2067.3	66.7
0°-60°	2860.1	92.3
0°-90°	3098.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3098.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	1767	1767	1767	1767	1767	
5°	1663	1720	1745	1824	1831	156
15°	1492	1567	1699	1845	1872	422
25°	1394	1458	1553	1660	1672	642
35°	1175	1189	1118	1139	1130	729
45°	827	786	558	540	524	642
55°	583	547	214	187	180	517
65°	355	326	59	43	41	351
75°	164	144	18	11	11	177
85°	39	30	2	2	0	43
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°	1767.4	1767.4	1767.4	1767.4	1767.4	1767.4	1767.4	1767.4	1767.4	1767.4	1767.4
2.5°	1710.4	1730.9	1710.4	1717.3	1744.6	1719.5	1733.2	1733.2	1726.4	1742.3	1753.7
5°	1662.6	1683.1	1662.6	1671.7	1701.3	1676.3	1692.2	1687.7	1689.9	1703.6	1719.5
7.5°	1614.8	1630.7	1612.5	1623.9	1651.2	1630.7	1644.4	1644.4	1646.7	1667.2	1680.8
10°	1566.9	1580.6	1566.9	1576.1	1605.7	1587.4	1596.6	1598.8	1605.7	1623.9	1644.4
12.5°	1523.7	1535.1	1521.4	1535.1	1560.1	1541.9	1553.3	1555.6	1562.4	1582.9	1605.7
15°	1491.8	1503.2	1489.5	1500.9	1523.7	1510.0	1519.1	1523.7	1528.2	1546.4	1566.9
17.5°	1466.7	1475.8	1464.5	1478.1	1496.3	1480.4	1494.1	1494.1	1500.9	1519.1	1541.9
20°	1439.4	1448.5	1439.4	1450.8	1471.3	1457.6	1469.0	1469.0	1475.8	1496.3	1516.8
22.5°	1414.4	1418.9	1414.4	1423.5	1444.0	1432.6	1439.4	1441.7	1448.5	1466.7	1485.0
25°	1393.9	1403.0	1398.4	1407.5	1421.2	1409.8	1416.6	1418.9	1425.7	1441.7	1457.6
27.5°	1371.1	1375.6	1371.1	1382.5	1393.9	1384.7	1391.6	1389.3	1393.9	1407.5	1421.2
30°	1325.5	1330.1	1330.1	1336.9	1346.0	1341.5	1348.3	1341.5	1346.0	1357.4	1371.1
32.5°	1259.5	1261.8	1264.0	1270.9	1277.7	1270.9	1275.4	1275.4	1275.4	1284.5	1293.6
35°	1175.2	1179.8	1177.5	1182.0	1188.9	1186.6	1186.6	1184.3	1179.8	1184.3	1188.9
37.5°	1079.6	1072.7	1072.7	1079.6	1084.1	1075.0	1079.6	1075.0	1075.0	1077.3	1077.3
40°	979.3	972.5	979.3	981.6	983.9	979.3	977.1	972.5	965.7	968.0	963.4
42.5°	895.1	890.5	892.8	892.8	895.1	890.5	892.8	883.7	876.9	872.3	865.5
45°	826.7	819.9	826.7	822.2	822.2	819.9	817.6	813.1	804.0	797.1	785.8
47.5°	763.0	763.0	765.3	765.3	765.3	760.7	760.7	751.6	742.5	733.4	717.4
50°	710.6	706.0	715.1	715.1	708.3	706.0	708.3	696.9	690.1	678.7	662.8
52.5°	653.7	653.7	655.9	655.9	653.7	649.1	651.4	642.3	635.4	624.0	608.1
55°	583.0	578.5	585.3	585.3	583.0	580.8	583.0	576.2	569.4	560.3	546.6
57.5°	503.3	501.1	505.6	507.9	503.3	503.3	505.6	498.8	496.5	487.4	473.7
60°	444.1	441.8	446.4	448.7	444.1	444.1	444.1	435.0	430.5	421.3	412.2
62.5°	403.1	400.8	405.4	403.1	400.8	398.6	400.8	391.7	387.2	378.1	369.0
65°	355.3	357.6	359.9	359.9	357.6	355.3	355.3	350.7	346.2	337.1	325.7
67.5°	309.7	309.7	312.0	314.3	312.0	312.0	312.0	305.2	300.6	293.8	280.1
70°	261.9	259.6	266.5	266.5	261.9	264.2	261.9	259.6	255.1	246.0	234.6
72.5°	211.8	211.8	214.1	214.1	211.8	211.8	211.8	209.5	202.7	198.1	186.8
75°	164.0	164.0	166.3	168.5	164.0	164.0	166.3	161.7	157.2	150.3	143.5
77.5°	123.0	120.7	123.0	123.0	120.7	120.7	120.7	118.4	116.2	109.3	102.5
80°	86.5	84.3	86.5	86.5	86.5	84.3	84.3	82.0	82.0	77.4	70.6
82.5°	59.2	56.9	59.2	59.2	59.2	56.9	56.9	56.9	54.7	52.4	47.8
85°	38.7	36.4	36.4	38.7	36.4	36.4	36.4	36.4	34.2	31.9	29.6
87.5°	18.2	18.2	18.2	18.2	18.2	18.2	18.2	15.9	15.9	15.9	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°	1767.4	1767.4	1767.4	1767.4	1767.4	1767.4	1767.4	1767.4	1767.4	1767.4	1767.4
2.5°	1744.6	1740.0	1753.7	1749.1	1751.4	1740.0	1758.3	1749.1	1760.5	1749.1	1771.9
5°	1715.0	1710.4	1730.9	1728.7	1730.9	1721.8	1742.3	1740.0	1753.7	1744.6	1769.6
7.5°	1683.1	1678.5	1701.3	1703.6	1708.2	1699.0	1726.4	1726.4	1740.0	1737.8	1765.1
10°	1646.7	1648.9	1671.7	1676.3	1685.4	1680.8	1705.9	1712.7	1730.9	1728.7	1762.8
12.5°	1612.5	1612.5	1642.1	1651.2	1658.0	1655.8	1685.4	1694.5	1715.0	1719.5	1751.4
15°	1578.3	1580.6	1607.9	1621.6	1630.7	1628.4	1660.3	1671.7	1696.8	1699.0	1737.8
17.5°	1551.0	1548.7	1578.3	1589.7	1603.4	1601.1	1635.3	1648.9	1674.0	1680.8	1717.3
20°	1528.2	1526.0	1553.3	1566.9	1576.1	1573.8	1607.9	1623.9	1646.7	1651.2	1687.7
22.5°	1500.9	1496.3	1523.7	1535.1	1544.2	1541.9	1571.5	1582.9	1605.7	1610.2	1644.4
25°	1469.0	1464.5	1489.5	1496.3	1503.2	1498.6	1523.7	1530.5	1548.7	1553.3	1587.4
27.5°	1432.6	1421.2	1441.7	1441.7	1446.2	1439.4	1457.6	1464.5	1480.4	1480.4	1512.3
30°	1375.6	1359.7	1371.1	1368.8	1371.1	1362.0	1373.4	1375.6	1387.0	1384.7	1407.5
32.5°	1295.9	1273.1	1280.0	1273.1	1266.3	1252.6	1266.3	1261.8	1270.9	1261.8	1282.3
35°	1186.6	1163.8	1161.5	1152.4	1145.6	1134.2	1134.2	1122.8	1125.1	1118.3	1131.9
37.5°	1068.2	1038.6	1034.0	1015.8	1004.4	990.7	990.7	981.6	970.2	965.7	977.1
40°	952.0	920.1	908.7	879.1	867.7	854.1	845.0	833.6	829.0	810.8	819.9
42.5°	851.8	817.6	792.6	760.7	749.3	728.8	715.1	701.5	694.6	674.2	683.3
45°	767.5	726.5	699.2	658.2	642.3	619.5	599.0	583.0	567.1	558.0	553.4
47.5°	696.9	653.7	617.2	571.7	546.6	526.1	498.8	482.8	462.3	451.0	444.1
50°	637.7	589.9	548.9	496.5	471.5	448.7	416.8	391.7	373.5	355.3	350.7
52.5°	585.3	535.2	489.7	430.5	400.8	373.5	339.4	312.0	296.1	275.6	273.3
55°	523.8	480.6	430.5	369.0	339.4	312.0	275.6	248.3	227.8	214.1	209.5
57.5°	457.8	416.8	369.0	307.5	277.9	248.3	214.1	189.0	170.8	159.4	157.2
60°	396.3	357.6	312.0	250.5	220.9	195.9	159.4	134.4	118.4	109.3	104.8
62.5°	350.7	314.3	271.0	214.1	186.8	161.7	127.5	104.8	91.1	82.0	77.4
65°	307.5	271.0	232.3	179.9	157.2	134.4	102.5	82.0	68.3	59.2	54.7
67.5°	261.9	230.0	193.6	150.3	127.5	109.3	82.0	63.8	52.4	45.6	41.0
70°	216.4	186.8	157.2	120.7	104.8	86.5	63.8	50.1	38.7	34.2	29.6
72.5°	170.8	148.0	123.0	93.4	79.7	68.3	50.1	36.4	29.6	25.1	20.5
75°	127.5	111.6	91.1	70.6	59.2	50.1	36.4	27.3	22.8	18.2	15.9
77.5°	91.1	77.4	63.8	47.8	43.3	36.4	25.1	20.5	15.9	11.4	9.1
80°	61.5	54.7	43.3	34.2	27.3	25.1	18.2	13.7	9.1	6.8	6.8
82.5°	41.0	34.2	27.3	20.5	18.2	15.9	11.4	9.1	6.8	4.6	4.6
85°	25.1	20.5	15.9	11.4	11.4	9.1	6.8	4.6	2.3	2.3	2.3
87.5°	11.4	9.1	6.8	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°	1767.4	1767.4	1767.4	1767.4	1767.4	1767.4	1767.4	1767.4	1767.4	1767.4	1767.4
2.5°	1790.1	1776.5	1767.4	1778.8	1783.3	1776.5	1783.3	1794.7	1806.1	1808.4	1776.5
5°	1792.4	1778.8	1774.2	1787.9	1790.1	1787.9	1794.7	1810.6	1824.3	1828.9	1797.0
7.5°	1792.4	1783.3	1781.0	1797.0	1799.3	1797.0	1808.4	1826.6	1840.3	1849.4	1817.5
10°	1787.9	1783.3	1785.6	1799.3	1803.8	1803.8	1819.8	1840.3	1853.9	1863.0	1831.1
12.5°	1781.0	1781.0	1781.0	1797.0	1801.5	1803.8	1817.5	1844.8	1853.9	1867.6	1835.7
15°	1769.6	1769.6	1769.6	1785.6	1792.4	1792.4	1808.4	1833.4	1844.8	1858.5	1826.6
17.5°	1749.1	1749.1	1751.4	1765.1	1771.9	1771.9	1787.9	1815.2	1822.0	1838.0	1806.1
20°	1719.5	1719.5	1721.8	1735.5	1742.3	1737.8	1758.3	1781.0	1787.9	1801.5	1769.6
22.5°	1676.3	1676.3	1676.3	1689.9	1694.5	1692.2	1712.7	1733.2	1733.2	1751.4	1717.3
25°	1612.5	1617.1	1612.5	1626.2	1630.7	1628.4	1646.7	1664.9	1660.3	1680.8	1646.7
27.5°	1535.1	1532.8	1532.8	1544.2	1544.2	1541.9	1555.6	1576.1	1571.5	1585.2	1553.3
30°	1428.0	1434.8	1423.5	1439.4	1432.6	1428.0	1437.1	1455.3	1448.5	1459.9	1434.8
32.5°	1305.0	1295.9	1295.9	1295.9	1300.5	1289.1	1298.2	1307.3	1300.5	1311.9	1284.5
35°	1143.3	1145.6	1138.8	1141.0	1143.3	1129.7	1138.8	1147.9	1138.8	1145.6	1120.5
37.5°	981.6	983.9	968.0	977.1	968.0	963.4	972.5	977.1	968.0	974.8	947.5
40°	819.9	815.4	813.1	813.1	815.4	804.0	810.8	817.6	810.8	815.4	790.3
42.5°	678.7	676.4	671.9	674.2	667.3	665.0	667.3	674.2	667.3	671.9	653.7
45°	555.7	551.2	544.3	546.6	546.6	535.2	542.1	546.6	539.8	542.1	526.1
47.5°	441.8	435.0	435.0	432.7	432.7	428.2	435.0	432.7	425.9	430.5	414.5
50°	343.9	339.4	339.4	339.4	339.4	332.5	334.8	339.4	332.5	332.5	323.4
52.5°	268.7	261.9	257.4	257.4	257.4	255.1	255.1	257.4	250.5	250.5	248.3
55°	202.7	200.4	193.6	193.6	193.6	186.8	189.0	189.0	186.8	186.8	179.9
57.5°	150.3	143.5	138.9	138.9	134.4	134.4	132.1	134.4	129.8	129.8	125.3
60°	100.2	95.7	93.4	91.1	91.1	88.8	91.1	88.8	88.8	86.5	84.3
62.5°	72.9	68.3	63.8	63.8	63.8	61.5	61.5	61.5	61.5	61.5	59.2
65°	52.4	47.8	47.8	45.6	45.6	43.3	43.3	43.3	43.3	43.3	41.0
67.5°	36.4	34.2	31.9	31.9	31.9	31.9	31.9	31.9	29.6	29.6	29.6
70°	27.3	25.1	22.8	22.8	22.8	22.8	22.8	20.5	22.8	22.8	20.5
72.5°	18.2	18.2	15.9	15.9	15.9	15.9	15.9	15.9	15.9	15.9	15.9
75°	13.7	13.7	11.4	11.4	11.4	11.4	11.4	11.4	11.4	11.4	11.4
77.5°	9.1	9.1	6.8	6.8	6.8	6.8	6.8	6.8	6.8	6.8	6.8
80°	6.8	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: P251641

CATALOG NUMBER: LD4B40D010 EU4B30509030 4LBSW1H

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	1767.4	1767.4	1767.4	1767.4	1767.4	1767.4	1767.4	1767.4
2.5°	1810.6	1808.4	1803.8	1810.6	1792.4	1785.6	1783.3	1803.8
5°	1835.7	1831.1	1831.1	1838.0	1817.5	1812.9	1808.4	1831.1
7.5°	1858.5	1853.9	1853.9	1860.7	1842.5	1838.0	1833.4	1856.2
10°	1872.1	1872.1	1872.1	1876.7	1860.7	1856.2	1853.9	1876.7
12.5°	1879.0	1879.0	1876.7	1885.8	1865.3	1865.3	1860.7	1883.5
15°	1869.9	1869.9	1869.9	1876.7	1858.5	1853.9	1853.9	1872.1
17.5°	1847.1	1847.1	1844.8	1851.6	1831.1	1831.1	1828.9	1849.4
20°	1812.9	1812.9	1808.4	1817.5	1797.0	1790.1	1787.9	1808.4
22.5°	1758.3	1756.0	1753.7	1758.3	1740.0	1735.5	1733.2	1751.4
25°	1687.7	1685.4	1680.8	1685.4	1664.9	1658.0	1658.0	1671.7
27.5°	1587.4	1587.4	1580.6	1587.4	1564.7	1562.4	1560.1	1576.1
30°	1464.5	1455.3	1450.8	1459.9	1437.1	1437.1	1432.6	1448.5
32.5°	1311.9	1302.8	1300.5	1305.0	1284.5	1277.7	1286.8	1295.9
35°	1136.5	1138.8	1129.7	1129.7	1111.4	1113.7	1116.0	1129.7
37.5°	968.0	963.4	961.1	963.4	949.7	945.2	940.6	954.3
40°	810.8	799.4	797.1	797.1	785.8	783.5	785.8	792.6
42.5°	662.8	660.5	651.4	655.9	644.5	649.1	646.8	646.8
45°	535.2	537.5	528.4	535.2	526.1	519.3	519.3	523.8
47.5°	423.6	423.6	421.3	421.3	414.5	416.8	412.2	419.1
50°	328.0	328.0	323.4	325.7	321.1	321.1	318.9	321.1
52.5°	250.5	248.3	248.3	246.0	241.4	243.7	246.0	241.4
55°	182.2	184.5	179.9	182.2	177.6	179.9	177.6	179.9
57.5°	125.3	127.5	123.0	127.5	123.0	125.3	123.0	123.0
60°	86.5	86.5	84.3	86.5	84.3	84.3	82.0	86.5
62.5°	59.2	59.2	59.2	59.2	59.2	56.9	59.2	59.2
65°	43.3	41.0	41.0	41.0	41.0	41.0	41.0	41.0
67.5°	29.6	29.6	29.6	29.6	29.6	29.6	29.6	29.6
70°	20.5	20.5	20.5	20.5	20.5	20.5	20.5	20.5
72.5°	15.9	15.9	15.9	15.9	15.9	15.9	15.9	15.9
75°	11.4	11.4	11.4	11.4	11.4	11.4	11.4	11.4
77.5°	6.8	6.8	6.8	6.8	6.8	6.8	6.8	6.8
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)