

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: P251637

Luminaire Tested: **LD4B40D010 EU4B30508040 4LBSW1H**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P251637
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 EU4B30508040 4LBSW1H
Description: PORTFOLIO 4 INCH SINGLE 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: 3757.0 lumens
Efficiency: N/A
Efficacy: 87.3 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

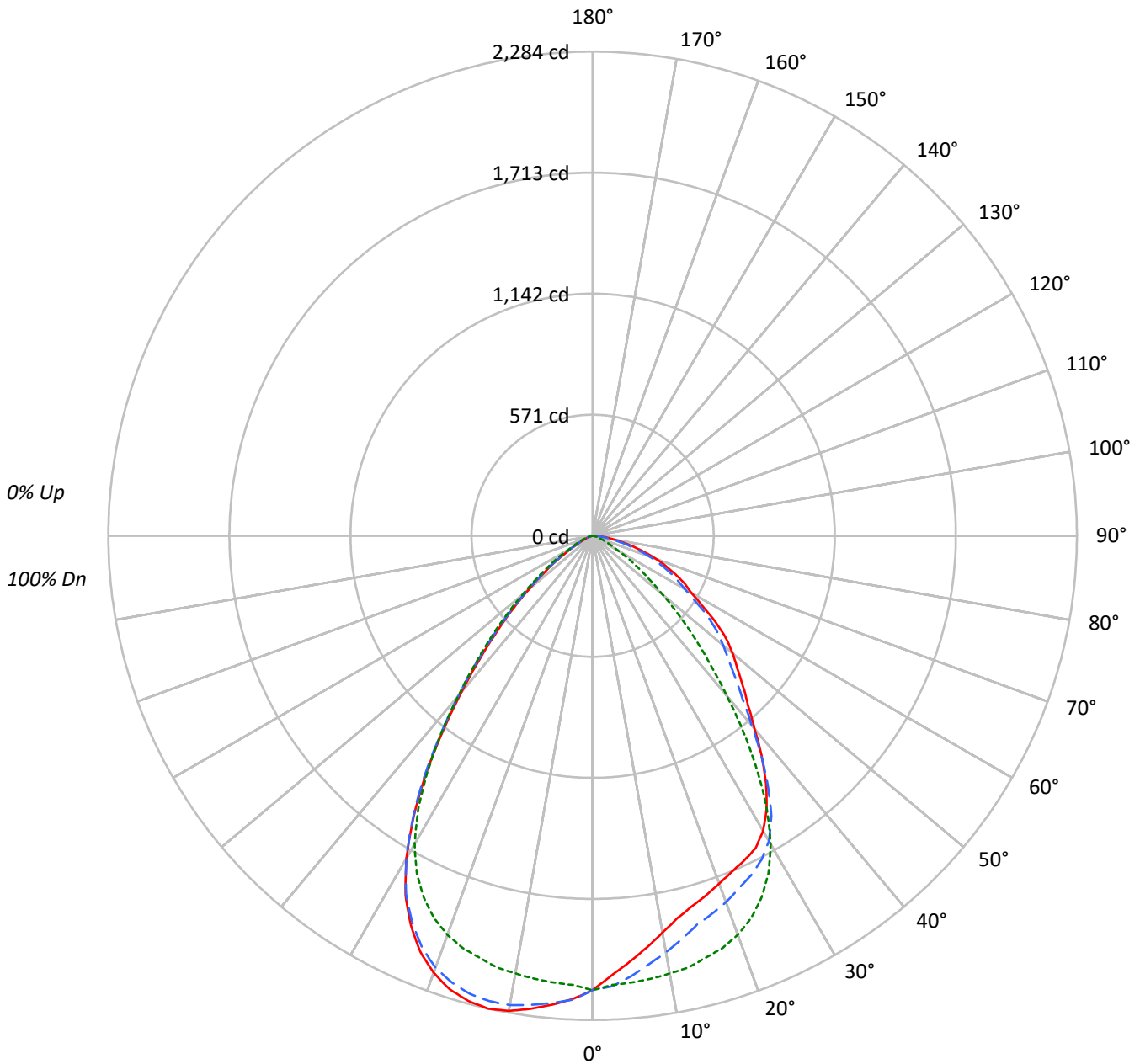
Input Watts (W): 43.02
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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°	208882	208882	208882
5°	197255	206980	217252
10°	188057	207463	225227
15°	182531	207896	229074
20°	181041	207685	227442
25°	181774	202560	218002
30°	180900	188980	197679
35°	169562	161341	162995
40°	151102	125098	122286
45°	138185	93267	87561
50°	130649	65332	59040
55°	120145	44109	37075
60°	104982	25846	20466
65°	99368	16557	11461
70°	90500	11797	7095
75°	74896	8322	5196
80°	58930	4658	3087
85°	52556	3131	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	202.5	5.4
10°-20°	581.0	15.5
20°-30°	861.2	22.9
30°-40°	862.4	23.0
40°-50°	602.7	16.0
50°-60°	358.6	9.5
60°-70°	187.2	5.0
70°-80°	83.2	2.2
80°-90°	18.1	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°	1644.7	43.8
0°-40°	2507.1	66.7
0°-60°	3468.5	92.3
0°-90°	3757.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3757.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	2143	2143	2143	2143	2143	
5°	2016	2085	2116	2212	2221	189
15°	1809	1900	2060	2237	2270	512
25°	1690	1768	1884	2014	2027	779
35°	1425	1442	1356	1381	1370	884
45°	1003	953	677	655	635	778
55°	707	663	260	226	218	627
65°	431	395	72	52	50	426
75°	199	174	22	14	14	215
85°	47	36	3	3	0	53
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°	2143.3	2143.3	2143.3	2143.3	2143.3	2143.3	2143.3	2143.3	2143.3	2143.3	2143.3
2.5°	2074.3	2099.1	2074.3	2082.6	2115.7	2085.3	2101.9	2101.9	2093.6	2112.9	2126.7
5°	2016.3	2041.1	2016.3	2027.3	2063.2	2032.8	2052.2	2046.7	2049.4	2066.0	2085.3
7.5°	1958.3	1977.6	1955.5	1969.3	2002.5	1977.6	1994.2	1994.2	1996.9	2021.8	2038.4
10°	1900.3	1916.8	1900.3	1911.3	1947.2	1925.1	1936.2	1938.9	1947.2	1969.3	1994.2
12.5°	1847.8	1861.6	1845.0	1861.6	1892.0	1869.9	1883.7	1886.5	1894.7	1919.6	1947.2
15°	1809.1	1822.9	1806.4	1820.2	1847.8	1831.2	1842.3	1847.8	1853.3	1875.4	1900.3
17.5°	1778.7	1789.8	1776.0	1792.5	1814.6	1795.3	1811.9	1811.9	1820.2	1842.3	1869.9
20°	1745.6	1756.6	1745.6	1759.4	1784.3	1767.7	1781.5	1781.5	1789.8	1814.6	1839.5
22.5°	1715.2	1720.7	1715.2	1726.3	1751.1	1737.3	1745.6	1748.4	1756.6	1778.7	1800.8
25°	1690.4	1701.4	1695.9	1706.9	1723.5	1709.7	1718.0	1720.7	1729.0	1748.4	1767.7
27.5°	1662.7	1668.3	1662.7	1676.5	1690.4	1679.3	1687.6	1684.8	1690.4	1706.9	1723.5
30°	1607.5	1613.0	1613.0	1621.3	1632.3	1626.8	1635.1	1626.8	1632.3	1646.2	1662.7
32.5°	1527.4	1530.2	1532.9	1541.2	1549.5	1541.2	1546.7	1546.7	1546.7	1557.8	1568.8
35°	1425.2	1430.7	1428.0	1433.5	1441.8	1439.0	1439.0	1436.2	1430.7	1436.2	1441.8
37.5°	1309.2	1300.9	1300.9	1309.2	1314.7	1303.7	1309.2	1303.7	1303.7	1306.4	1306.4
40°	1187.7	1179.4	1187.7	1190.4	1193.2	1187.7	1184.9	1179.4	1171.1	1173.9	1168.3
42.5°	1085.5	1079.9	1082.7	1082.7	1085.5	1079.9	1082.7	1071.7	1063.4	1057.9	1049.6
45°	1002.6	994.3	1002.6	997.1	997.1	994.3	991.6	986.0	975.0	966.7	952.9
47.5°	925.3	925.3	928.0	928.0	928.0	922.5	922.5	911.5	900.4	889.4	870.0
50°	861.7	856.2	867.3	867.3	859.0	856.2	859.0	845.2	836.9	823.1	803.7
52.5°	792.7	792.7	795.5	795.5	792.7	787.2	789.9	778.9	770.6	756.8	737.5
55°	707.1	701.6	709.8	709.8	707.1	704.3	707.1	698.8	690.5	679.5	662.9
57.5°	610.4	607.6	613.2	615.9	610.4	610.4	613.2	604.9	602.1	591.1	574.5
60°	538.6	535.8	541.4	544.1	538.6	538.6	538.6	527.5	522.0	511.0	499.9
62.5°	488.9	486.1	491.6	488.9	486.1	483.4	486.1	475.1	469.5	458.5	447.4
65°	430.9	433.6	436.4	436.4	433.6	430.9	430.9	425.3	419.8	408.8	395.0
67.5°	375.6	375.6	378.4	381.2	378.4	378.4	378.4	370.1	364.6	356.3	339.7
70°	317.6	314.9	323.2	323.2	317.6	320.4	317.6	314.9	309.3	298.3	284.5
72.5°	256.9	256.9	259.6	259.6	256.9	256.9	256.9	254.1	245.8	240.3	226.5
75°	198.9	198.9	201.6	204.4	198.9	198.9	201.6	196.1	190.6	182.3	174.0
77.5°	149.1	146.4	149.1	149.1	146.4	146.4	146.4	143.6	140.9	132.6	124.3
80°	105.0	102.2	105.0	105.0	105.0	102.2	102.2	99.4	99.4	93.9	85.6
82.5°	71.8	69.1	71.8	71.8	71.8	69.1	69.1	69.1	66.3	63.5	58.0
85°	47.0	44.2	44.2	47.0	44.2	44.2	44.2	44.2	41.4	38.7	35.9
87.5°	22.1	22.1	22.1	22.1	22.1	22.1	22.1	19.3	19.3	19.3	16.6
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°	2143.3	2143.3	2143.3	2143.3	2143.3	2143.3	2143.3	2143.3	2143.3	2143.3	2143.3
2.5°	2115.7	2110.2	2126.7	2121.2	2124.0	2110.2	2132.3	2121.2	2135.0	2121.2	2148.8
5°	2079.8	2074.3	2099.1	2096.4	2099.1	2088.1	2112.9	2110.2	2126.7	2115.7	2146.1
7.5°	2041.1	2035.6	2063.2	2066.0	2071.5	2060.5	2093.6	2093.6	2110.2	2107.4	2140.6
10°	1996.9	1999.7	2027.3	2032.8	2043.9	2038.4	2068.7	2077.0	2099.1	2096.4	2137.8
12.5°	1955.5	1955.5	1991.4	2002.5	2010.7	2008.0	2043.9	2054.9	2079.8	2085.3	2124.0
15°	1914.1	1916.8	1950.0	1966.6	1977.6	1974.8	2013.5	2027.3	2057.7	2060.5	2107.4
17.5°	1880.9	1878.2	1914.1	1927.9	1944.5	1941.7	1983.1	1999.7	2030.1	2038.4	2082.6
20°	1853.3	1850.5	1883.7	1900.3	1911.3	1908.5	1950.0	1969.3	1996.9	2002.5	2046.7
22.5°	1820.2	1814.6	1847.8	1861.6	1872.6	1869.9	1905.8	1919.6	1947.2	1952.7	1994.2
25°	1781.5	1776.0	1806.4	1814.6	1822.9	1817.4	1847.8	1856.1	1878.2	1883.7	1925.1
27.5°	1737.3	1723.5	1748.4	1748.4	1753.9	1745.6	1767.7	1776.0	1795.3	1795.3	1834.0
30°	1668.3	1648.9	1662.7	1660.0	1662.7	1651.7	1665.5	1668.3	1682.1	1679.3	1706.9
32.5°	1571.6	1544.0	1552.3	1544.0	1535.7	1519.1	1535.7	1530.2	1541.2	1530.2	1555.0
35°	1439.0	1411.4	1408.6	1397.6	1389.3	1375.5	1375.5	1361.7	1364.4	1356.1	1372.7
37.5°	1295.4	1259.5	1254.0	1231.9	1218.0	1201.5	1201.5	1190.4	1176.6	1171.1	1184.9
40°	1154.5	1115.9	1102.0	1066.1	1052.3	1035.8	1024.7	1010.9	1005.4	983.3	994.3
42.5°	1033.0	991.6	961.2	922.5	908.7	883.8	867.3	850.7	842.4	817.6	828.6
45°	930.8	881.1	847.9	798.2	778.9	751.3	726.4	707.1	687.7	676.7	671.2
47.5°	845.2	792.7	748.5	693.3	662.9	638.0	604.9	585.5	560.7	546.9	538.6
50°	773.4	715.4	665.6	602.1	571.7	544.1	505.4	475.1	453.0	430.9	425.3
52.5°	709.8	649.1	593.8	522.0	486.1	453.0	411.5	378.4	359.1	334.2	331.4
55°	635.3	582.8	522.0	447.4	411.5	378.4	334.2	301.1	276.2	259.6	254.1
57.5°	555.2	505.4	447.4	372.9	337.0	301.1	259.6	229.2	207.2	193.3	190.6
60°	480.6	433.6	378.4	303.8	267.9	237.5	193.3	163.0	143.6	132.6	127.1
62.5°	425.3	381.2	328.7	259.6	226.5	196.1	154.7	127.1	110.5	99.4	93.9
65°	372.9	328.7	281.7	218.2	190.6	163.0	124.3	99.4	82.9	71.8	66.3
67.5°	317.6	279.0	234.8	182.3	154.7	132.6	99.4	77.3	63.5	55.2	49.7
70°	262.4	226.5	190.6	146.4	127.1	105.0	77.3	60.8	47.0	41.4	35.9
72.5°	207.2	179.5	149.1	113.2	96.7	82.9	60.8	44.2	35.9	30.4	24.9
75°	154.7	135.3	110.5	85.6	71.8	60.8	44.2	33.1	27.6	22.1	19.3
77.5°	110.5	93.9	77.3	58.0	52.5	44.2	30.4	24.9	19.3	13.8	11.0
80°	74.6	66.3	52.5	41.4	33.1	30.4	22.1	16.6	11.0	8.3	8.3
82.5°	49.7	41.4	33.1	24.9	22.1	19.3	13.8	11.0	8.3	5.5	5.5
85°	30.4	24.9	19.3	13.8	13.8	11.0	8.3	5.5	2.8	2.8	2.8
87.5°	13.8	11.0	8.3	5.5	5.5	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°	2143.3	2143.3	2143.3	2143.3	2143.3	2143.3	2143.3	2143.3	2143.3	2143.3	2143.3
2.5°	2170.9	2154.4	2143.3	2157.1	2162.7	2154.4	2162.7	2176.5	2190.3	2193.0	2154.4
5°	2173.7	2157.1	2151.6	2168.2	2170.9	2168.2	2176.5	2195.8	2212.4	2217.9	2179.2
7.5°	2173.7	2162.7	2159.9	2179.2	2182.0	2179.2	2193.0	2215.1	2231.7	2242.8	2204.1
10°	2168.2	2162.7	2165.4	2182.0	2187.5	2187.5	2206.8	2231.7	2248.3	2259.3	2220.7
12.5°	2159.9	2159.9	2159.9	2179.2	2184.8	2187.5	2204.1	2237.2	2248.3	2264.8	2226.2
15°	2146.1	2146.1	2146.1	2165.4	2173.7	2173.7	2193.0	2223.4	2237.2	2253.8	2215.1
17.5°	2121.2	2121.2	2124.0	2140.6	2148.8	2148.8	2168.2	2201.3	2209.6	2228.9	2190.3
20°	2085.3	2085.3	2088.1	2104.7	2112.9	2107.4	2132.3	2159.9	2168.2	2184.8	2146.1
22.5°	2032.8	2032.8	2032.8	2049.4	2054.9	2052.2	2077.0	2101.9	2101.9	2124.0	2082.6
25°	1955.5	1961.0	1955.5	1972.1	1977.6	1974.8	1996.9	2019.0	2013.5	2038.4	1996.9
27.5°	1861.6	1858.8	1858.8	1872.6	1872.6	1869.9	1886.5	1911.3	1905.8	1922.4	1883.7
30°	1731.8	1740.1	1726.3	1745.6	1737.3	1731.8	1742.8	1764.9	1756.6	1770.4	1740.1
32.5°	1582.6	1571.6	1571.6	1571.6	1577.1	1563.3	1574.3	1585.4	1577.1	1590.9	1557.8
35°	1386.5	1389.3	1381.0	1383.8	1386.5	1370.0	1381.0	1392.1	1381.0	1389.3	1358.9
37.5°	1190.4	1193.2	1173.9	1184.9	1173.9	1168.3	1179.4	1184.9	1173.9	1182.1	1149.0
40°	994.3	988.8	986.0	986.0	988.8	975.0	983.3	991.6	983.3	988.8	958.4
42.5°	823.1	820.3	814.8	817.6	809.3	806.5	809.3	817.6	809.3	814.8	792.7
45°	673.9	668.4	660.1	662.9	662.9	649.1	657.4	662.9	654.6	657.4	638.0
47.5°	535.8	527.5	527.5	524.8	524.8	519.3	527.5	524.8	516.5	522.0	502.7
50°	417.1	411.5	411.5	411.5	411.5	403.3	406.0	411.5	403.3	403.3	392.2
52.5°	325.9	317.6	312.1	312.1	312.1	309.3	309.3	312.1	303.8	303.8	301.1
55°	245.8	243.1	234.8	234.8	234.8	226.5	229.2	229.2	226.5	226.5	218.2
57.5°	182.3	174.0	168.5	168.5	163.0	163.0	160.2	163.0	157.4	157.4	151.9
60°	121.5	116.0	113.2	110.5	110.5	107.7	110.5	107.7	107.7	105.0	102.2
62.5°	88.4	82.9	77.3	77.3	77.3	74.6	74.6	74.6	74.6	74.6	71.8
65°	63.5	58.0	58.0	55.2	55.2	52.5	52.5	52.5	52.5	52.5	49.7
67.5°	44.2	41.4	38.7	38.7	38.7	38.7	38.7	38.7	35.9	35.9	35.9
70°	33.1	30.4	27.6	27.6	27.6	27.6	27.6	24.9	27.6	27.6	24.9
72.5°	22.1	22.1	19.3	19.3	19.3	19.3	19.3	19.3	19.3	19.3	19.3
75°	16.6	16.6	13.8	13.8	13.8	13.8	13.8	13.8	13.8	13.8	13.8
77.5°	11.0	11.0	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3
80°	8.3	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
82.5°	5.5	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8
85°	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	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: P251637

CATALOG NUMBER: LD4B40D010 EU4B30508040 4LBSW1H

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	2143.3	2143.3	2143.3	2143.3	2143.3	2143.3	2143.3	2143.3
2.5°	2195.8	2193.0	2187.5	2195.8	2173.7	2165.4	2162.7	2187.5
5°	2226.2	2220.7	2220.7	2228.9	2204.1	2198.6	2193.0	2220.7
7.5°	2253.8	2248.3	2248.3	2256.6	2234.5	2228.9	2223.4	2251.0
10°	2270.4	2270.4	2270.4	2275.9	2256.6	2251.0	2248.3	2275.9
12.5°	2278.7	2278.7	2275.9	2286.9	2262.1	2262.1	2256.6	2284.2
15°	2267.6	2267.6	2267.6	2275.9	2253.8	2248.3	2248.3	2270.4
17.5°	2240.0	2240.0	2237.2	2245.5	2220.7	2220.7	2217.9	2242.8
20°	2198.6	2198.6	2193.0	2204.1	2179.2	2170.9	2168.2	2193.0
22.5°	2132.3	2129.5	2126.7	2132.3	2110.2	2104.7	2101.9	2124.0
25°	2046.7	2043.9	2038.4	2043.9	2019.0	2010.7	2010.7	2027.3
27.5°	1925.1	1925.1	1916.8	1925.1	1897.5	1894.7	1892.0	1911.3
30°	1776.0	1764.9	1759.4	1770.4	1742.8	1742.8	1737.3	1756.6
32.5°	1590.9	1579.9	1577.1	1582.6	1557.8	1549.5	1560.5	1571.6
35°	1378.2	1381.0	1370.0	1370.0	1347.9	1350.6	1353.4	1370.0
37.5°	1173.9	1168.3	1165.6	1168.3	1151.8	1146.2	1140.7	1157.3
40°	983.3	969.5	966.7	966.7	952.9	950.1	952.9	961.2
42.5°	803.7	801.0	789.9	795.5	781.6	787.2	784.4	784.4
45°	649.1	651.8	640.8	649.1	638.0	629.7	629.7	635.3
47.5°	513.7	513.7	511.0	511.0	502.7	505.4	499.9	508.2
50°	397.7	397.7	392.2	395.0	389.4	389.4	386.7	389.4
52.5°	303.8	301.1	301.1	298.3	292.8	295.5	298.3	292.8
55°	221.0	223.7	218.2	221.0	215.4	218.2	215.4	218.2
57.5°	151.9	154.7	149.1	154.7	149.1	151.9	149.1	149.1
60°	105.0	105.0	102.2	105.0	102.2	102.2	99.4	105.0
62.5°	71.8	71.8	71.8	71.8	71.8	69.1	71.8	71.8
65°	52.5	49.7	49.7	49.7	49.7	49.7	49.7	49.7
67.5°	35.9	35.9	35.9	35.9	35.9	35.9	35.9	35.9
70°	24.9	24.9	24.9	24.9	24.9	24.9	24.9	24.9
72.5°	19.3	19.3	19.3	19.3	19.3	19.3	19.3	19.3
75°	13.8	13.8	13.8	13.8	13.8	13.8	13.8	13.8
77.5°	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3
80°	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
82.5°	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8
85°	2.8	2.8	2.8	0.0	2.8	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)