

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: P219533

Luminaire Tested: **LDSQ4B40D010 EU4B30508050 4LBSQLWWLI**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P219533
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P35471)
Test Lab: INNOVATION CENTER-P3
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: io LED
Catalog Number: LDSQ4B40D010 EU4B30508050 4LBSQLWWLI
Description: PORTFOLIO 4 INCH SQUARE SINGLE WALLWASH RECESSED DOWNLIGHT, WITH SPECULAR CLEAR TRIM
Light Source: (1) HIGH LUMEN LED 80CRI / 5000K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 3302.3 lumens
Efficiency: N/A
Efficacy: 76.8 lumens/watt
Spacing Criteria (0/90/45): 1.01 / 1 / 1.06
Luminous Opening: Rectangular (W 0.33' x L: 0.33' x H: 0')
CIE Type: Direct

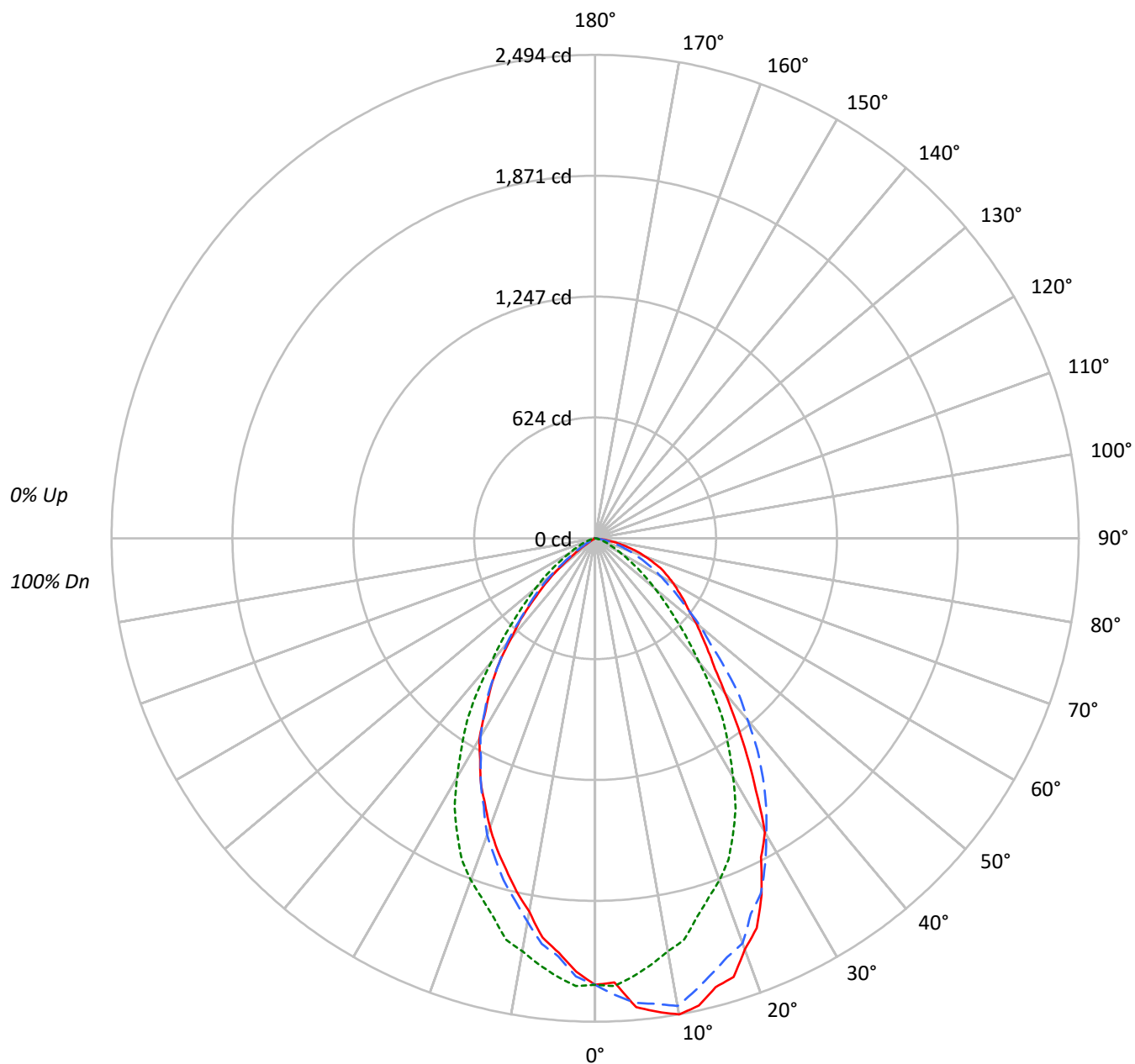
Input Watts (W): 43.02
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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
RW	70	50	30	10	70	50	30	10	50	30	10		50	30	10		50
RCR																	
0	119	119	119	119	116	116	116	116	111	111	111		106	106	106		102
1	112	108	105	102	109	106	103	101	102	100	98		98	96	95		95
2	104	98	93	89	102	96	92	88	93	89	86		90	87	84		87
3	97	89	83	78	95	88	82	77	85	80	76		82	78	75		80
4	91	81	74	69	89	80	74	69	78	72	68		76	71	67		74
5	85	75	67	62	83	74	67	62	72	66	61		70	65	60		68
6	80	69	61	56	78	68	61	56	66	60	55		65	59	55		63
7	75	63	56	51	73	63	56	51	61	55	50		60	54	50		59
8	70	59	52	47	69	58	51	46	57	51	46		56	50	46		55
9	66	55	48	43	65	54	47	43	53	47	43		52	46	42		51
10	62	51	44	40	61	51	44	40	50	44	39		49	43	39		48

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	223182	223182	223182
5°	236122	220543	208728
10°	245374	212764	192392
15°	240472	203073	177589
20°	232670	193371	163464
25°	217019	179821	149112
30°	195904	159135	133485
35°	161382	136227	110742
40°	131697	105153	85235
45°	113150	79859	61309
50°	102408	60782	38718
55°	94245	43863	14002
60°	90443	29973	2131
65°	87381	20264	642
70°	78232	14077	793
75°	64117	7224	0
80°	40056	3068	0
85°	0	0	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	215.9	6.5
10°-20°	581.5	17.6
20°-30°	776.5	23.5
30°-40°	737.2	22.3
40°-50°	509.6	15.4
50°-60°	281.5	8.5
60°-70°	139.8	4.2
70°-80°	55.1	1.7
80°-90°	5.2	0.2
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°	1573.9	47.7
0°-40°	2311.1	70.0
0°-60°	3102.2	93.9
0°-90°	3302.3	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3302.3	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	2304	2304	2304	2304	2304	
5°	2428	2406	2268	2166	2146	232
15°	2398	2326	2025	1826	1771	678
25°	2030	2022	1682	1395	1395	926
35°	1365	1508	1152	948	936	855
45°	826	948	583	478	448	644
55°	558	525	260	133	83	502
65°	381	276	88	3	3	370
75°	171	105	19	0	0	183
85°	0	3	0	0	0	16
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°	2303.8	2303.8	2303.8	2303.8	2303.8	2303.8	2303.8	2303.8	2303.8	2303.8	2303.8
2.5°	2292.8	2356.3	2361.8	2356.3	2364.6	2361.8	2375.6	2361.8	2378.4	2353.5	2359.1
5°	2428.1	2403.3	2455.7	2428.1	2428.1	2425.4	2417.1	2414.3	2425.4	2389.5	2406.0
7.5°	2464.0	2499.9	2546.9	2488.9	2491.7	2491.7	2475.1	2469.6	2469.6	2403.3	2422.6
10°	2494.4	2472.3	2497.2	2475.1	2494.4	2491.7	2502.7	2466.8	2491.7	2453.0	2450.2
12.5°	2469.6	2461.3	2494.4	2458.5	2447.5	2450.2	2436.4	2428.1	2436.4	2392.2	2389.5
15°	2397.7	2406.0	2455.7	2417.1	2411.6	2406.0	2389.5	2361.8	2383.9	2323.2	2325.9
17.5°	2372.9	2359.1	2367.4	2334.2	2342.5	2337.0	2334.2	2309.3	2303.8	2265.1	2265.1
20°	2256.9	2287.2	2287.2	2265.1	2265.1	2262.4	2226.5	2248.6	2223.7	2212.7	2223.7
22.5°	2176.8	2179.5	2179.5	2160.2	2162.9	2151.9	2132.6	2118.7	2132.6	2118.7	2096.6
25°	2030.3	2035.9	2069.0	2033.1	2027.6	2038.6	2022.1	2013.8	2011.0	1977.9	2022.1
27.5°	1853.6	1908.8	1906.0	1892.2	1908.8	1886.7	1878.4	1881.2	1889.5	1886.7	1897.8
30°	1751.3	1759.6	1767.9	1756.9	1759.6	1751.3	1751.3	1754.1	1776.2	1767.9	1765.2
32.5°	1544.2	1571.8	1593.9	1593.9	1596.7	1604.9	1602.2	1660.2	1674.0	1646.4	1640.8
35°	1364.6	1383.9	1403.3	1406.0	1442.0	1444.7	1447.5	1464.1	1502.7	1511.0	1508.3
37.5°	1193.3	1212.7	1218.2	1243.1	1262.4	1281.7	1303.8	1325.9	1359.1	1386.7	1372.9
40°	1041.4	1049.7	1063.5	1074.6	1113.2	1113.2	1124.3	1168.5	1204.4	1226.5	1223.7
42.5°	914.3	917.1	928.2	947.5	983.4	975.1	983.4	1013.8	1066.3	1069.0	1099.4
45°	825.9	823.2	831.5	834.2	856.3	867.4	872.9	895.0	939.2	944.7	947.5
47.5°	745.8	743.1	756.9	762.4	770.7	781.8	781.8	784.5	801.1	814.9	803.9
50°	679.5	679.5	679.5	685.1	698.9	696.1	698.9	709.9	718.2	712.7	709.9
52.5°	607.7	618.8	627.1	629.8	632.6	632.6	635.3	629.8	627.1	618.8	602.2
55°	558.0	569.0	569.0	569.0	569.0	580.1	566.3	569.0	569.0	546.9	524.9
57.5°	508.3	519.3	527.6	516.6	527.6	516.6	511.0	508.3	502.8	480.7	447.5
60°	466.8	472.4	469.6	466.8	472.4	464.1	458.6	447.5	442.0	411.6	389.5
62.5°	419.9	422.6	425.4	419.9	414.4	411.6	400.5	384.0	372.9	348.1	328.7
65°	381.2	372.9	370.2	367.4	361.9	353.6	345.3	326.0	317.7	295.6	276.2
67.5°	323.2	320.4	326.0	317.7	303.9	303.9	295.6	279.0	259.7	245.9	226.5
70°	276.2	273.5	268.0	259.7	256.9	245.9	245.9	226.5	221.0	196.1	179.6
72.5°	226.5	226.5	218.2	209.9	201.7	196.1	193.4	179.6	171.3	157.5	143.6
75°	171.3	171.3	168.5	160.2	154.7	149.2	146.4	135.4	127.1	113.3	105.0
77.5°	121.5	121.5	110.5	105.0	107.7	102.2	96.7	93.9	91.2	82.9	71.8
80°	71.8	69.1	60.8	63.5	60.8	60.8	58.0	55.2	49.7	44.2	38.7
82.5°	19.3	22.1	22.1	22.1	24.9	19.3	19.3	19.3	22.1	22.1	13.8
85°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.8	2.8	2.8
87.5°	2.8	5.5	11.0	11.0	11.0	11.0	11.0	8.3	8.3	8.3	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



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CANDELA DISTRIBUTION (continued):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
0°	2303.8	2303.8	2303.8	2303.8	2303.8	2303.8	2303.8	2303.8	2303.8	2303.8	2303.8
2.5°	2331.4	2328.7	2331.4	2312.1	2356.3	2323.2	2317.6	2312.1	2331.4	2312.1	2284.5
5°	2381.2	2353.5	2345.3	2337.0	2361.8	2323.2	2314.9	2317.6	2303.8	2267.9	2270.7
7.5°	2397.7	2372.9	2348.0	2295.5	2317.6	2309.3	2287.2	2270.7	2248.6	2218.2	2212.7
10°	2403.3	2375.6	2339.7	2323.2	2290.0	2279.0	2270.7	2243.0	2215.4	2162.9	2149.1
12.5°	2386.7	2353.5	2309.3	2295.5	2270.7	2234.8	2215.4	2187.8	2162.9	2121.5	2091.1
15°	2314.9	2287.2	2273.4	2226.5	2215.4	2193.3	2154.7	2116.0	2080.1	2024.8	2008.2
17.5°	2232.0	2220.9	2207.1	2171.2	2168.5	2146.4	2110.5	2077.3	2030.3	1944.7	1917.1
20°	2146.4	2146.4	2102.2	2088.4	2116.0	2071.8	2044.2	2013.8	1917.1	1875.7	1825.9
22.5°	2082.8	2052.4	2027.6	2005.5	2008.2	1980.6	1941.9	1881.2	1845.3	1795.5	1737.5
25°	1958.5	1969.6	1914.3	1906.0	1914.3	1850.8	1831.5	1781.7	1729.2	1682.3	1638.1
27.5°	1881.2	1850.8	1814.9	1784.5	1784.5	1759.6	1704.4	1693.3	1613.2	1569.0	1513.8
30°	1765.2	1743.1	1712.7	1668.5	1662.9	1643.6	1599.4	1571.8	1488.9	1422.6	1392.2
32.5°	1618.8	1610.5	1585.6	1535.9	1519.3	1497.2	1442.0	1395.0	1356.3	1281.7	1245.8
35°	1513.8	1483.4	1430.9	1389.5	1375.7	1337.0	1292.8	1259.6	1218.2	1151.9	1104.9
37.5°	1356.3	1325.9	1276.2	1226.5	1226.5	1187.8	1127.0	1093.9	1035.9	997.2	958.5
40°	1218.2	1179.5	1129.8	1071.8	1063.5	1008.3	983.4	928.2	892.2	831.5	825.9
42.5°	1063.5	1027.6	983.4	939.2	906.1	878.4	814.9	773.5	734.8	704.4	696.1
45°	922.6	875.7	837.0	781.8	748.6	715.5	674.0	646.4	616.0	582.9	563.5
47.5°	801.1	762.4	707.2	657.4	624.3	607.7	560.8	530.4	505.5	483.4	469.6
50°	676.8	629.8	599.4	544.2	538.7	500.0	461.3	436.5	422.6	403.3	384.0
52.5°	582.9	538.7	497.2	455.8	433.7	419.9	384.0	359.1	339.8	326.0	314.9
55°	491.7	453.0	419.9	378.4	364.6	345.3	303.9	298.3	279.0	259.7	245.9
57.5°	422.6	386.7	348.1	320.4	295.6	281.8	248.6	226.5	215.5	198.9	185.1
60°	359.1	320.4	290.0	256.9	245.9	226.5	201.7	182.3	168.5	154.7	140.9
62.5°	301.1	268.0	234.8	207.2	190.6	179.6	160.2	143.6	129.8	118.8	107.7
65°	248.6	218.2	190.6	163.0	154.7	140.9	127.1	113.3	102.2	88.4	77.3
67.5°	204.4	176.8	149.2	129.8	121.5	116.0	99.4	85.6	77.3	69.1	58.0
70°	160.2	140.9	118.8	102.2	93.9	85.6	74.6	66.3	55.2	49.7	41.4
72.5°	124.3	107.7	88.4	74.6	69.1	63.5	52.5	44.2	38.7	33.1	27.6
75°	88.4	74.6	63.5	49.7	47.0	44.2	35.9	30.4	24.9	19.3	16.6
77.5°	60.8	49.7	38.7	33.1	30.4	24.9	22.1	16.6	13.8	11.0	8.3
80°	33.1	24.9	19.3	16.6	13.8	11.0	11.0	8.3	5.5	5.5	2.8
82.5°	11.0	8.3	5.5	2.8	2.8	2.8	2.8	2.8	2.8	0.0	2.8
85°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
87.5°	2.8	2.8	2.8	2.8	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°	2303.8	2303.8	2303.8	2303.8	2303.8	2303.8	2303.8	2303.8	2303.8	2303.8	2303.8
2.5°	2301.1	2270.7	2279.0	2279.0	2273.4	2273.4	2267.9	2259.6	2262.4	2245.8	2209.9
5°	2276.2	2237.5	2232.0	2237.5	2215.4	2209.9	2198.8	2215.4	2165.7	2185.0	2162.9
7.5°	2204.4	2168.5	2160.2	2179.5	2151.9	2135.3	2132.6	2154.7	2110.5	2088.4	2063.5
10°	2124.3	2110.5	2085.6	2071.8	2063.5	2066.3	2044.2	2016.5	2008.2	2002.7	1980.6
12.5°	2052.4	2022.1	2000.0	1983.4	1977.9	1977.9	1941.9	1936.4	1911.6	1906.0	1872.9
15°	1966.8	1930.9	1917.1	1895.0	1875.7	1886.7	1845.3	1834.2	1825.9	1790.0	1795.5
17.5°	1892.2	1853.6	1820.4	1806.6	1790.0	1773.4	1734.8	1743.1	1723.7	1723.7	1674.0
20°	1795.5	1754.1	1729.2	1701.6	1701.6	1679.5	1651.9	1654.7	1629.8	1604.9	1560.7
22.5°	1693.3	1649.1	1618.8	1607.7	1580.1	1574.6	1541.4	1533.1	1500.0	1502.7	1464.1
25°	1585.6	1541.4	1500.0	1502.7	1477.9	1466.8	1447.5	1408.8	1395.0	1378.4	1367.4
27.5°	1458.5	1428.1	1392.2	1389.5	1342.5	1345.3	1320.4	1309.4	1276.2	1284.5	1259.6
30°	1342.5	1298.3	1265.2	1256.9	1237.5	1232.0	1193.3	1176.8	1182.3	1160.2	1146.4
32.5°	1223.7	1157.4	1143.6	1127.0	1116.0	1102.2	1074.6	1085.6	1060.8	1066.3	1044.2
35°	1066.3	1038.7	1002.7	1002.7	991.7	980.6	961.3	972.4	947.5	936.4	914.3
37.5°	933.7	908.8	872.9	884.0	864.6	848.0	831.5	834.2	812.1	809.4	787.3
40°	790.0	776.2	751.4	751.4	737.6	737.6	729.3	721.0	707.2	690.6	665.7
42.5°	654.7	643.6	632.6	635.3	616.0	632.6	610.5	624.3	580.1	577.3	560.8
45°	555.2	530.4	533.1	522.1	511.0	516.6	497.2	502.8	477.9	472.4	455.8
47.5°	450.3	442.0	425.4	419.9	419.9	411.6	403.3	400.5	389.5	375.7	353.6
50°	370.2	339.8	334.2	326.0	320.4	320.4	309.4	292.8	295.6	281.8	259.7
52.5°	290.0	265.2	254.1	251.4	240.3	234.8	221.0	209.9	201.7	196.1	182.3
55°	223.8	201.7	187.8	187.8	171.3	171.3	151.9	143.6	132.6	121.5	113.3
57.5°	168.5	157.5	143.6	132.6	127.1	113.3	102.2	88.4	80.1	63.5	52.5
60°	127.1	116.0	102.2	93.9	88.4	74.6	60.8	49.7	30.4	24.9	22.1
62.5°	93.9	82.9	69.1	63.5	58.0	47.0	33.1	16.6	8.3	8.3	8.3
65°	69.1	55.2	44.2	38.7	33.1	24.9	11.0	5.5	2.8	2.8	2.8
67.5°	47.0	35.9	24.9	22.1	16.6	8.3	2.8	2.8	2.8	2.8	2.8
70°	30.4	22.1	11.0	8.3	5.5	2.8	2.8	2.8	2.8	2.8	2.8
72.5°	19.3	11.0	5.5	2.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0
75°	11.0	5.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
77.5°	5.5	2.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
80°	2.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
82.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
85°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
87.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.8	2.8	2.8
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: P219533

CATALOG NUMBER: LDSQ4B40D010 EU4B30508050 4LBSQLWWLI

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	2303.8	2303.8	2303.8	2303.8	2303.8	2303.8	2303.8	2303.8
2.5°	2248.6	2229.2	2240.3	2215.4	2226.5	2245.8	2232.0	2237.5
5°	2171.2	2160.2	2146.4	2110.5	2138.1	2160.2	2149.1	2146.4
7.5°	2088.4	2049.7	2069.0	2058.0	2052.4	2074.5	2049.7	2077.3
10°	2002.7	1975.1	1972.3	1953.0	1953.0	1969.6	1972.3	1955.8
12.5°	1875.7	1861.8	1861.8	1859.1	1856.3	1872.9	1875.7	1867.4
15°	1784.5	1779.0	1765.2	1762.4	1745.8	1770.7	1773.4	1770.7
17.5°	1674.0	1676.8	1662.9	1662.9	1674.0	1682.3	1660.2	1682.3
20°	1599.4	1585.6	1580.1	1555.2	1569.0	1582.8	1582.8	1585.6
22.5°	1491.7	1469.6	1477.9	1464.1	1455.8	1475.1	1475.1	1483.4
25°	1370.1	1370.1	1375.7	1367.4	1372.9	1383.9	1375.7	1395.0
27.5°	1254.1	1265.2	1265.2	1254.1	1259.6	1292.8	1306.6	1284.5
30°	1146.4	1149.1	1157.4	1151.9	1168.5	1179.5	1176.8	1193.3
32.5°	1024.8	1038.7	1044.2	1035.9	1041.4	1066.3	1052.5	1049.7
35°	930.9	906.1	903.3	906.1	917.1	922.6	917.1	936.4
37.5°	795.6	787.3	776.2	779.0	787.3	798.3	803.9	817.7
40°	665.7	654.7	654.7	651.9	643.6	674.0	674.0	674.0
42.5°	552.5	549.7	535.9	535.9	546.9	555.2	549.7	569.0
45°	453.0	442.0	433.7	433.7	442.0	442.0	450.3	447.5
47.5°	356.3	345.3	348.1	339.8	348.1	359.1	345.3	348.1
50°	268.0	268.0	262.4	268.0	265.2	268.0	262.4	256.9
52.5°	182.3	207.2	209.9	198.9	174.0	151.9	138.1	149.2
55°	105.0	93.9	93.9	91.2	85.6	82.9	74.6	82.9
57.5°	52.5	47.0	47.0	47.0	44.2	41.4	35.9	35.9
60°	22.1	19.3	19.3	16.6	13.8	11.0	8.3	11.0
62.5°	8.3	5.5	5.5	5.5	5.5	5.5	5.5	5.5
65°	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8
67.5°	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8
70°	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8
72.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
75°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
77.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
80°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
82.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
85°	0.0	0.0	0.0	0.0	0.0	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)