

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: P219532

Luminaire Tested: **LDSQ4B40D010 EU4B30508040 4LBSQLWWLI**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-41-14  
Report Number: P219532  
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 EU4B30508040 4LBSQLWWLI  
Description: PORTFOLIO 4 INCH SQUARE SINGLE WALLWASH RECESSED DOWNLIGHT, WITH SPECULAR CLEAR TRIM  
Light Source: (1) HIGH LUMEN LED 80CRI / 4000K CCT  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 3304.2 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')

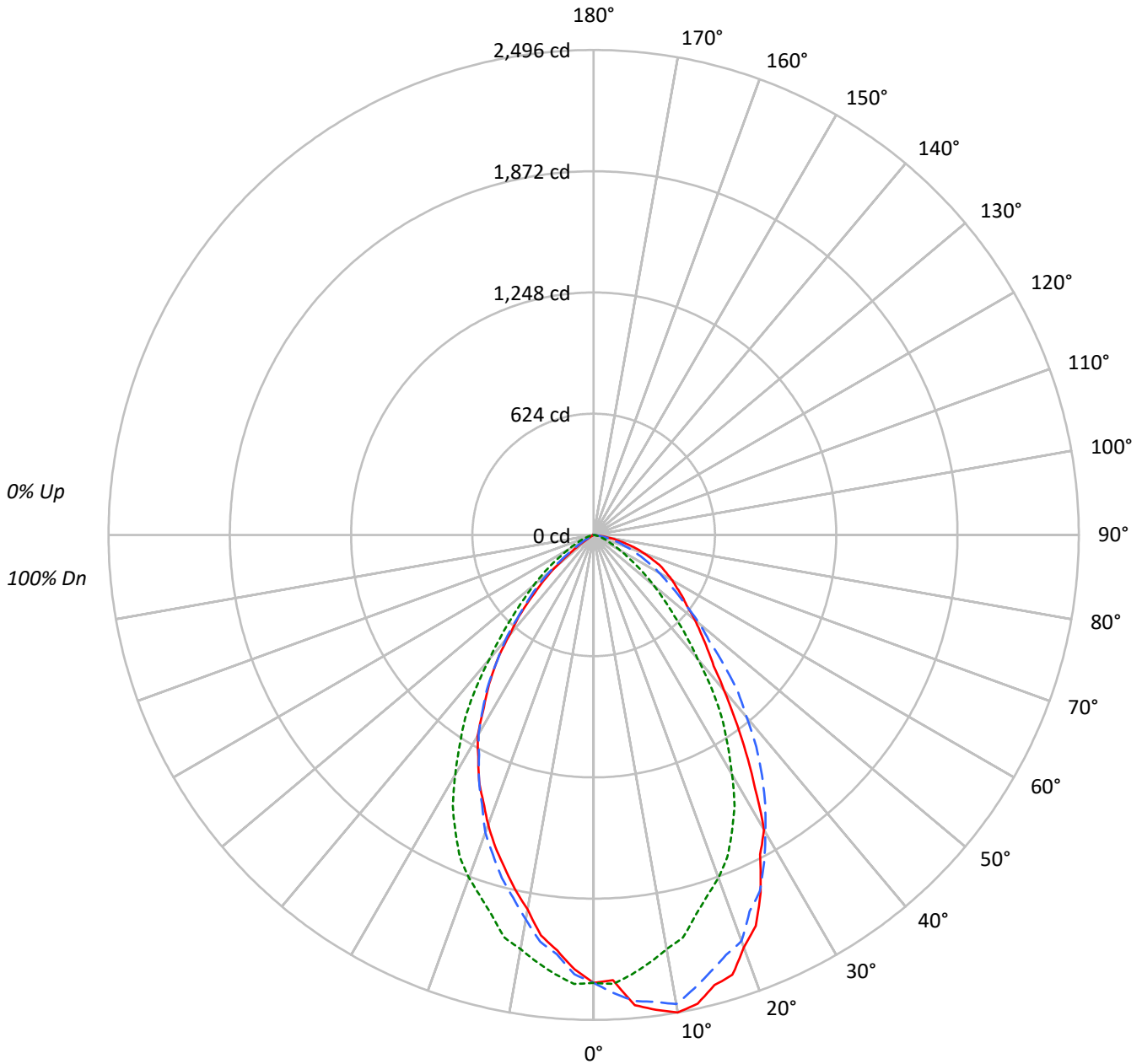
CIE Type: Direct  
Input Watts (W): 43.02  
Input Voltage (V): NR  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 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	112	108	105	102	109	106	103	101	102	100	98	98	96	95	95	93	92	90																			
2	104	98	93	89	102	96	92	88	93	89	86	90	87	84	87	84	82	80																			
3	97	89	83	78	95	88	82	77	85	80	76	82	78	75	80	77	74	72																			
4	91	81	74	69	89	80	74	69	78	72	68	76	71	67	74	70	66	64																			
5	85	75	67	62	83	74	67	62	72	66	61	70	65	60	68	64	60	58																			
6	80	69	61	56	78	68	61	56	66	60	55	65	59	55	63	58	54	53																			
7	75	63	56	51	73	63	56	51	61	55	50	60	54	50	59	54	50	48																			
8	70	59	52	47	69	58	51	46	57	51	46	56	50	46	55	50	46	44																			
9	66	55	48	43	65	54	47	43	53	47	43	52	46	42	51	46	42	41																			
10	62	51	44	40	61	51	44	40	50	44	39	49	43	39	48	43	39	38																			

**AVERAGE LUMINANCE (cd/sqm):**

	0°	90°	180°
0°	223308	223308	223308
5°	236258	220669	208844
10°	245512	212892	192500
15°	240613	203193	177689
20°	232794	193474	163557
25°	217147	179918	149197
30°	196016	159225	133563
35°	161476	136310	110812
40°	131773	105204	85286
45°	113219	79900	61350
50°	102469	60812	38733
55°	94295	43879	14002
60°	90501	29993	2151
65°	87427	20264	642
70°	78289	14106	793
75°	64155	7224	0
80°	40112	3068	0
85°	0	0	0



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	216.0	6.5
10°-20°	581.9	17.6
20°-30°	777.0	23.5
30°-40°	737.6	22.3
40°-50°	509.8	15.4
50°-60°	281.7	8.5
60°-70°	139.9	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°	1574.8	47.7
0°-40°	2312.4	70.0
0°-60°	3103.9	93.9
0°-90°	3304.2	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3304.2	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	2305	2305	2305	2305	2305	
5°	2430	2407	2269	2167	2148	233
15°	2399	2327	2026	1827	1772	679
25°	2032	2023	1683	1396	1396	926
35°	1365	1509	1153	948	937	855
45°	826	948	583	478	448	645
55°	558	525	260	133	83	503
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°	2305.1	2305.1	2305.1	2305.1	2305.1	2305.1	2305.1	2305.1	2305.1	2305.1	2305.1
2.5°	2294.1	2357.6	2363.2	2357.6	2365.9	2363.2	2377.0	2363.2	2379.7	2354.9	2360.4
5°	2429.5	2404.6	2457.1	2429.5	2429.5	2426.7	2418.4	2415.7	2426.7	2390.8	2407.4
7.5°	2465.4	2501.4	2548.3	2490.3	2493.1	2493.1	2476.5	2471.0	2471.0	2404.6	2424.0
10°	2495.8	2473.7	2498.6	2476.5	2495.8	2493.1	2504.1	2468.2	2493.1	2454.4	2451.6
12.5°	2471.0	2462.7	2495.8	2459.9	2448.8	2451.6	2437.8	2429.5	2437.8	2393.6	2390.8
15°	2399.1	2407.4	2457.1	2418.4	2412.9	2407.4	2390.8	2363.2	2385.3	2324.5	2327.2
17.5°	2374.2	2360.4	2368.7	2335.5	2343.8	2338.3	2335.5	2310.6	2305.1	2266.4	2266.4
20°	2258.1	2288.5	2288.5	2266.4	2266.4	2263.7	2227.7	2249.8	2225.0	2213.9	2225.0
22.5°	2178.0	2180.7	2180.7	2161.4	2164.2	2153.1	2133.8	2119.9	2133.8	2119.9	2097.8
25°	2031.5	2037.0	2070.2	2034.3	2028.7	2039.8	2023.2	2014.9	2012.1	1979.0	2023.2
27.5°	1854.6	1909.9	1907.1	1893.3	1909.9	1887.8	1879.5	1882.2	1890.5	1887.8	1898.8
30°	1752.3	1760.6	1768.9	1757.9	1760.6	1752.3	1752.3	1755.1	1777.2	1768.9	1766.2
32.5°	1545.0	1572.7	1594.8	1594.8	1597.6	1605.8	1603.1	1661.1	1674.9	1647.3	1641.8
35°	1365.4	1384.7	1404.1	1406.8	1442.8	1445.5	1448.3	1464.9	1503.6	1511.9	1509.1
37.5°	1194.0	1213.4	1218.9	1243.8	1263.1	1282.5	1304.6	1326.7	1359.9	1387.5	1373.7
40°	1042.0	1050.3	1064.1	1075.2	1113.9	1113.9	1124.9	1169.1	1205.1	1227.2	1224.4
42.5°	914.9	917.6	928.7	948.0	984.0	975.7	984.0	1014.4	1066.9	1069.6	1100.0
45°	826.4	823.7	831.9	834.7	856.8	867.9	873.4	895.5	939.7	945.3	948.0
47.5°	746.3	743.5	757.3	762.8	771.1	782.2	782.2	785.0	801.5	815.4	804.3
50°	679.9	679.9	679.9	685.5	699.3	696.5	699.3	710.3	718.6	713.1	710.3
52.5°	608.1	619.1	627.4	630.2	632.9	632.9	635.7	630.2	627.4	619.1	602.5
55°	558.3	569.4	569.4	569.4	569.4	580.4	566.6	569.4	569.4	547.3	525.1
57.5°	508.6	519.6	527.9	516.9	527.9	516.9	511.3	508.6	503.0	480.9	447.8
60°	467.1	472.6	469.9	467.1	472.6	464.3	458.8	447.8	442.2	411.8	389.7
62.5°	420.1	422.9	425.6	420.1	414.6	411.8	400.8	384.2	373.1	348.3	328.9
65°	381.4	373.1	370.4	367.6	362.1	353.8	345.5	326.1	317.9	295.7	276.4
67.5°	323.4	320.6	326.1	317.9	304.0	304.0	295.7	279.2	259.8	246.0	226.6
70°	276.4	273.6	268.1	259.8	257.0	246.0	246.0	226.6	221.1	196.2	179.7
72.5°	226.6	226.6	218.4	210.1	201.8	196.2	193.5	179.7	171.4	157.5	143.7
75°	171.4	171.4	168.6	160.3	154.8	149.3	146.5	135.4	127.1	113.3	105.0
77.5°	121.6	121.6	110.6	105.0	107.8	102.3	96.7	94.0	91.2	82.9	71.9
80°	71.9	69.1	60.8	63.6	60.8	60.8	58.0	55.3	49.8	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	11.1	11.1	11.1	11.1	11.1	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°	2305.1	2305.1	2305.1	2305.1	2305.1	2305.1	2305.1	2305.1	2305.1	2305.1	2305.1
2.5°	2332.8	2330.0	2332.8	2313.4	2357.6	2324.5	2318.9	2313.4	2332.8	2313.4	2285.8
5°	2382.5	2354.9	2346.6	2338.3	2363.2	2324.5	2316.2	2318.9	2305.1	2269.2	2271.9
7.5°	2399.1	2374.2	2349.3	2296.8	2318.9	2310.6	2288.5	2271.9	2249.8	2219.4	2213.9
10°	2404.6	2377.0	2341.0	2324.5	2291.3	2280.2	2271.9	2244.3	2216.7	2164.2	2150.3
12.5°	2388.0	2354.9	2310.6	2296.8	2271.9	2236.0	2216.7	2189.0	2164.2	2122.7	2092.3
15°	2316.2	2288.5	2274.7	2227.7	2216.7	2194.6	2155.9	2117.2	2081.2	2026.0	2009.4
17.5°	2233.3	2222.2	2208.4	2172.4	2169.7	2147.6	2111.6	2078.5	2031.5	1945.8	1918.2
20°	2147.6	2147.6	2103.3	2089.5	2117.2	2072.9	2045.3	2014.9	1918.2	1876.7	1827.0
22.5°	2084.0	2053.6	2028.7	2006.6	2009.4	1981.7	1943.0	1882.2	1846.3	1796.6	1738.5
25°	1959.6	1970.7	1915.4	1907.1	1915.4	1851.8	1832.5	1782.7	1730.2	1683.2	1639.0
27.5°	1882.2	1851.8	1815.9	1785.5	1785.5	1760.6	1705.3	1694.3	1614.1	1569.9	1514.6
30°	1766.2	1744.0	1713.6	1669.4	1663.9	1644.5	1600.3	1572.7	1489.8	1423.4	1393.0
32.5°	1619.7	1611.4	1586.5	1536.7	1520.2	1498.0	1442.8	1395.8	1357.1	1282.5	1246.5
35°	1514.6	1484.2	1431.7	1390.3	1376.4	1337.7	1293.5	1260.4	1218.9	1152.6	1105.6
37.5°	1357.1	1326.7	1276.9	1227.2	1227.2	1188.5	1127.7	1094.5	1036.5	997.8	959.1
40°	1218.9	1180.2	1130.4	1072.4	1064.1	1008.8	984.0	928.7	892.7	831.9	826.4
42.5°	1064.1	1028.2	984.0	939.7	906.6	878.9	815.4	773.9	735.2	704.8	696.5
45°	923.2	876.2	837.5	782.2	749.0	715.9	674.4	646.8	616.4	583.2	563.8
47.5°	801.5	762.8	707.6	657.8	624.6	608.1	561.1	530.7	505.8	483.7	469.9
50°	677.2	630.2	599.8	544.5	539.0	500.3	461.6	436.7	422.9	403.5	384.2
52.5°	583.2	539.0	497.5	456.0	433.9	420.1	384.2	359.3	340.0	326.1	315.1
55°	492.0	453.3	420.1	378.7	364.8	345.5	304.0	298.5	279.2	259.8	246.0
57.5°	422.9	386.9	348.3	320.6	295.7	281.9	248.8	226.6	215.6	199.0	185.2
60°	359.3	320.6	290.2	257.0	246.0	226.6	201.8	182.4	168.6	154.8	141.0
62.5°	301.3	268.1	234.9	207.3	190.7	179.7	160.3	143.7	129.9	118.8	107.8
65°	248.8	218.4	190.7	163.1	154.8	141.0	127.1	113.3	102.3	88.4	77.4
67.5°	204.5	176.9	149.3	129.9	121.6	116.1	99.5	85.7	77.4	69.1	58.0
70°	160.3	141.0	118.8	102.3	94.0	85.7	74.6	66.3	55.3	49.8	41.5
72.5°	124.4	107.8	88.4	74.6	69.1	63.6	52.5	44.2	38.7	33.2	27.6
75°	88.4	74.6	63.6	49.8	47.0	44.2	35.9	30.4	24.9	19.3	16.6
77.5°	60.8	49.8	38.7	33.2	30.4	24.9	22.1	16.6	13.8	11.1	8.3
80°	33.2	24.9	19.3	16.6	13.8	11.1	11.1	8.3	5.5	5.5	2.8
82.5°	11.1	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°	2305.1	2305.1	2305.1	2305.1	2305.1	2305.1	2305.1	2305.1	2305.1	2305.1	2305.1
2.5°	2302.4	2271.9	2280.2	2280.2	2274.7	2274.7	2269.2	2260.9	2263.7	2247.1	2211.1
5°	2277.5	2238.8	2233.3	2238.8	2216.7	2211.1	2200.1	2216.7	2166.9	2186.3	2164.2
7.5°	2205.6	2169.7	2161.4	2180.7	2153.1	2136.5	2133.8	2155.9	2111.6	2089.5	2064.7
10°	2125.5	2111.6	2086.8	2072.9	2064.7	2067.4	2045.3	2017.7	2009.4	2003.8	1981.7
12.5°	2053.6	2023.2	2001.1	1984.5	1979.0	1979.0	1943.0	1937.5	1912.6	1907.1	1873.9
15°	1967.9	1932.0	1918.2	1896.1	1876.7	1887.8	1846.3	1835.2	1827.0	1791.0	1796.6
17.5°	1893.3	1854.6	1821.4	1807.6	1791.0	1774.4	1735.7	1744.0	1724.7	1724.7	1674.9
20°	1796.6	1755.1	1730.2	1702.6	1702.6	1680.5	1652.8	1655.6	1630.7	1605.8	1561.6
22.5°	1694.3	1650.1	1619.7	1608.6	1581.0	1575.4	1542.3	1534.0	1500.8	1503.6	1464.9
25°	1586.5	1542.3	1500.8	1503.6	1478.7	1467.6	1448.3	1409.6	1395.8	1379.2	1368.1
27.5°	1459.4	1429.0	1393.0	1390.3	1343.3	1346.0	1321.2	1310.1	1276.9	1285.2	1260.4
30°	1343.3	1299.0	1265.9	1257.6	1238.2	1232.7	1194.0	1177.4	1183.0	1160.8	1147.0
32.5°	1224.4	1158.1	1144.3	1127.7	1116.6	1102.8	1075.2	1086.2	1061.3	1066.9	1044.8
35°	1066.9	1039.2	1003.3	1003.3	992.3	981.2	961.8	972.9	948.0	937.0	914.9
37.5°	934.2	909.3	873.4	884.5	865.1	848.5	831.9	834.7	812.6	809.8	787.7
40°	790.5	776.7	751.8	751.8	738.0	738.0	729.7	721.4	707.6	691.0	666.1
42.5°	655.1	644.0	632.9	635.7	616.4	632.9	610.8	624.6	580.4	577.7	561.1
45°	555.5	530.7	533.4	522.4	511.3	516.9	497.5	503.0	478.2	472.6	456.0
47.5°	450.5	442.2	425.6	420.1	420.1	411.8	403.5	400.8	389.7	375.9	353.8
50°	370.4	340.0	334.4	326.1	320.6	320.6	309.6	293.0	295.7	281.9	259.8
52.5°	290.2	265.3	254.3	251.5	240.5	234.9	221.1	210.1	201.8	196.2	182.4
55°	223.9	201.8	187.9	187.9	171.4	171.4	152.0	143.7	132.7	121.6	113.3
57.5°	168.6	157.5	143.7	132.7	127.1	113.3	102.3	88.4	80.2	63.6	52.5
60°	127.1	116.1	102.3	94.0	88.4	74.6	60.8	49.8	30.4	24.9	22.1
62.5°	94.0	82.9	69.1	63.6	58.0	47.0	33.2	16.6	8.3	8.3	8.3
65°	69.1	55.3	44.2	38.7	33.2	24.9	11.1	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	11.1	8.3	5.5	2.8	2.8	2.8	2.8	2.8	2.8
72.5°	19.3	11.1	5.5	2.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0
75°	11.1	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: P219532

CATALOG NUMBER: LDSQ4B40D010 EU4B30508040 4LBSQLWWLI

**CANDELA DISTRIBUTION (continued):**

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	2305.1	2305.1	2305.1	2305.1	2305.1	2305.1	2305.1	2305.1
2.5°	2249.8	2230.5	2241.5	2216.7	2227.7	2247.1	2233.3	2238.8
5°	2172.4	2161.4	2147.6	2111.6	2139.3	2161.4	2150.3	2147.6
7.5°	2089.5	2050.8	2070.2	2059.1	2053.6	2075.7	2050.8	2078.5
10°	2003.8	1976.2	1973.4	1954.1	1954.1	1970.7	1973.4	1956.9
12.5°	1876.7	1862.9	1862.9	1860.1	1857.4	1873.9	1876.7	1868.4
15°	1785.5	1780.0	1766.2	1763.4	1746.8	1771.7	1774.4	1771.7
17.5°	1674.9	1677.7	1663.9	1663.9	1674.9	1683.2	1661.1	1683.2
20°	1600.3	1586.5	1581.0	1556.1	1569.9	1583.7	1583.7	1586.5
22.5°	1492.5	1470.4	1478.7	1464.9	1456.6	1475.9	1475.9	1484.2
25°	1370.9	1370.9	1376.4	1368.1	1373.7	1384.7	1376.4	1395.8
27.5°	1254.8	1265.9	1265.9	1254.8	1260.4	1293.5	1307.3	1285.2
30°	1147.0	1149.8	1158.1	1152.6	1169.1	1180.2	1177.4	1194.0
32.5°	1025.4	1039.2	1044.8	1036.5	1042.0	1066.9	1053.1	1050.3
35°	931.4	906.6	903.8	906.6	917.6	923.2	917.6	937.0
37.5°	796.0	787.7	776.7	779.4	787.7	798.8	804.3	818.1
40°	666.1	655.1	655.1	652.3	644.0	674.4	674.4	674.4
42.5°	552.8	550.0	536.2	536.2	547.3	555.5	550.0	569.4
45°	453.3	442.2	433.9	433.9	442.2	442.2	450.5	447.8
47.5°	356.5	345.5	348.3	340.0	348.3	359.3	345.5	348.3
50°	268.1	268.1	262.6	268.1	265.3	268.1	262.6	257.0
52.5°	182.4	207.3	210.1	199.0	174.1	152.0	138.2	149.3
55°	105.0	94.0	94.0	91.2	85.7	82.9	74.6	82.9
57.5°	52.5	47.0	47.0	47.0	44.2	41.5	35.9	35.9
60°	22.1	19.3	19.3	16.6	13.8	11.1	8.3	11.1
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)