

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: P219529

Luminaire Tested: **LDSQ4B40D010 EU4B30508027 4LBSQLWWLI**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P219529
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 EU4B30508027 4LBSQLWWLI
Description: PORTFOLIO 4 INCH SQUARE SINGLE WALLWASH RECESSED DOWNLIGHT, WITH SPECULAR CLEAR TRIM
Light Source: (1) HIGH LUMEN LED 80CRI / 2700K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 3051.4 lumens
Efficiency: N/A
Efficacy: 70.9 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

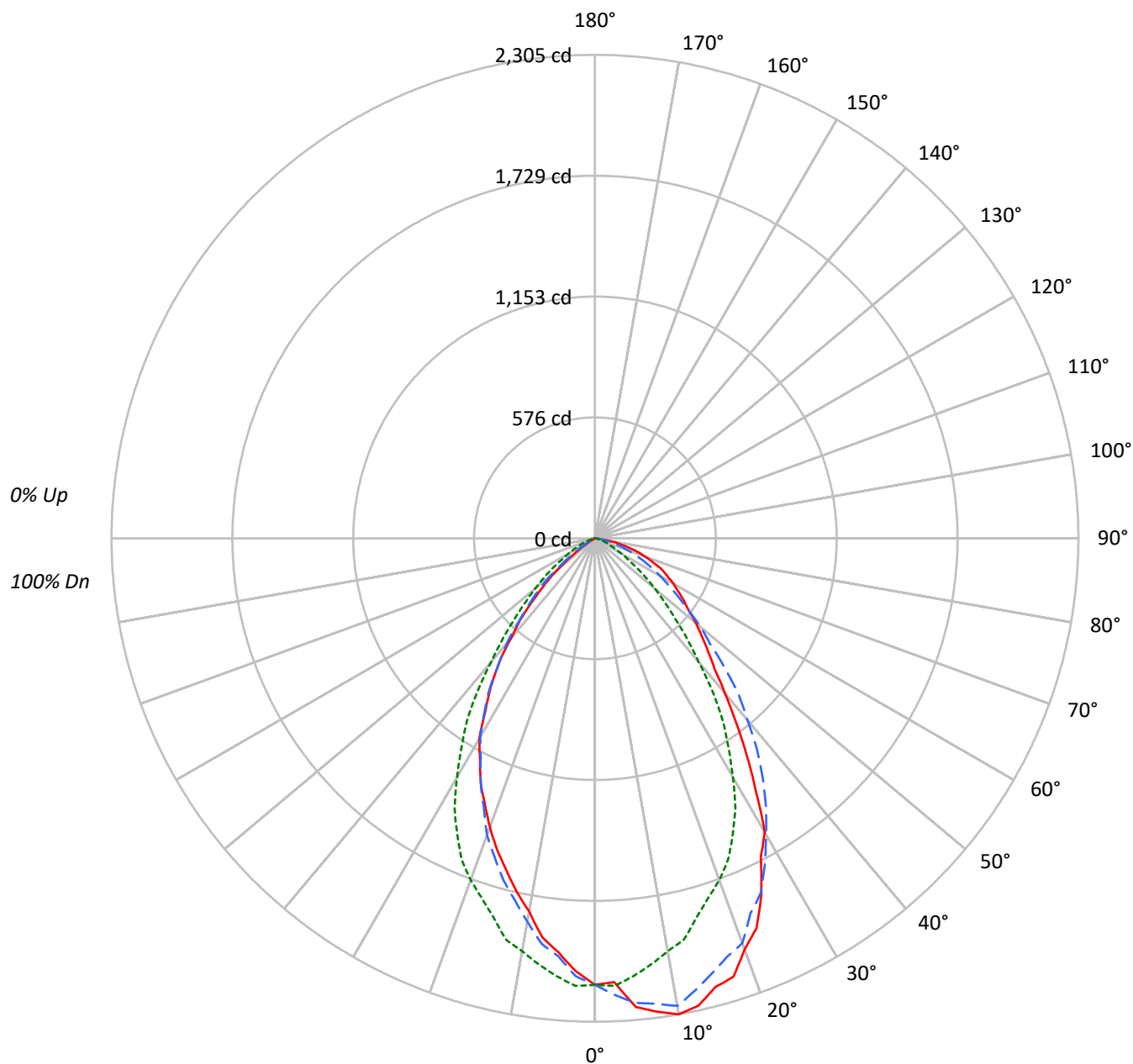
Input Watts (W): 43.02
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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				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°	206219	206219	206219
5°	218180	203788	192867
10°	226733	196602	177764
15°	222199	187638	164089
20°	214989	178670	151041
25°	200537	166150	137781
30°	181026	147043	123350
35°	149118	125879	102333
40°	121694	97161	78760
45°	104560	73790	56651
50°	94632	56170	35779
55°	87083	40518	12938
60°	83584	27687	1976
65°	80734	18728	596
70°	72284	13001	736
75°	59251	6700	0
80°	37043	2845	0
85°	0	0	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	199.4	6.5
10°-20°	537.3	17.6
20°-30°	717.5	23.5
30°-40°	681.1	22.3
40°-50°	470.8	15.4
50°-60°	260.1	8.5
60°-70°	129.2	4.2
70°-80°	50.9	1.7
80°-90°	4.8	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°	1454.3	47.7
0°-40°	2135.5	70.0
0°-60°	2866.4	93.9
0°-90°	3051.4	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3051.4	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	2129	2129	2129	2129	2129	
5°	2244	2223	2096	2001	1983	215
15°	2216	2149	1871	1687	1636	627
25°	1876	1868	1554	1289	1289	855
35°	1261	1394	1064	876	865	790
45°	763	876	539	442	414	595
55°	516	485	240	122	77	464
65°	352	255	82	3	3	342
75°	158	97	18	0	0	169
85°	0	3	0	0	0	15
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°	2128.7	2128.7	2128.7	2128.7	2128.7	2128.7	2128.7	2128.7	2128.7	2128.7	2128.7
2.5°	2118.5	2177.2	2182.3	2177.2	2184.9	2182.3	2195.1	2182.3	2197.7	2174.7	2179.8
5°	2243.6	2220.6	2269.1	2243.6	2243.6	2241.1	2233.4	2230.8	2241.1	2207.9	2223.2
7.5°	2276.8	2310.0	2353.4	2299.8	2302.3	2302.3	2287.0	2281.9	2281.9	2220.6	2238.5
10°	2304.9	2284.4	2307.4	2287.0	2304.9	2302.3	2312.5	2279.3	2302.3	2266.6	2264.0
12.5°	2281.9	2274.2	2304.9	2271.7	2261.5	2264.0	2251.3	2243.6	2251.3	2210.4	2207.9
15°	2215.5	2223.2	2269.1	2233.4	2228.3	2223.2	2207.9	2182.3	2202.8	2146.6	2149.2
17.5°	2192.6	2179.8	2187.5	2156.8	2164.5	2159.4	2156.8	2133.9	2128.7	2093.0	2093.0
20°	2085.4	2113.4	2113.4	2093.0	2093.0	2090.5	2057.3	2077.7	2054.7	2044.5	2054.7
22.5°	2011.3	2013.9	2013.9	1996.0	1998.6	1988.4	1970.5	1957.7	1970.5	1957.7	1937.3
25°	1876.1	1881.2	1911.8	1878.6	1873.5	1883.7	1868.4	1860.7	1858.2	1827.6	1868.4
27.5°	1712.7	1763.7	1761.2	1748.4	1763.7	1743.3	1735.7	1738.2	1745.9	1743.3	1753.5
30°	1618.3	1625.9	1633.6	1623.4	1625.9	1618.3	1618.3	1620.8	1641.2	1633.6	1631.0
32.5°	1426.8	1452.3	1472.8	1472.8	1475.3	1483.0	1480.4	1534.0	1546.8	1521.3	1516.2
35°	1260.9	1278.8	1296.6	1299.2	1332.4	1334.9	1337.5	1352.8	1388.5	1396.2	1393.6
37.5°	1102.7	1120.5	1125.6	1148.6	1166.5	1184.3	1204.8	1225.2	1255.8	1281.3	1268.6
40°	962.3	969.9	982.7	992.9	1028.6	1028.6	1038.8	1079.7	1112.9	1133.3	1130.7
42.5°	844.9	847.4	857.6	875.5	908.7	901.0	908.7	936.8	985.2	987.8	1015.9
45°	763.2	760.6	768.3	770.8	791.3	801.5	806.6	827.0	867.8	872.9	875.5
47.5°	689.2	686.6	699.4	704.5	712.1	722.3	722.3	724.9	740.2	753.0	742.8
50°	627.9	627.9	627.9	633.0	645.8	643.2	645.8	656.0	663.6	658.5	656.0
52.5°	561.5	571.7	579.4	582.0	584.5	584.5	587.1	582.0	579.4	571.7	556.4
55°	515.6	525.8	525.8	525.8	525.8	536.0	523.3	525.8	525.8	505.4	485.0
57.5°	469.7	479.9	487.5	477.3	487.5	477.3	472.2	469.7	464.5	444.1	413.5
60°	431.4	436.5	433.9	431.4	436.5	428.8	423.7	413.5	408.4	380.3	359.9
62.5°	388.0	390.5	393.1	388.0	382.9	380.3	370.1	354.8	344.6	321.6	303.7
65°	352.2	344.6	342.0	339.5	334.4	326.7	319.1	301.2	293.5	273.1	255.2
67.5°	298.6	296.1	301.2	293.5	280.8	280.8	273.1	257.8	239.9	227.2	209.3
70°	255.2	252.7	247.6	239.9	237.4	227.2	227.2	209.3	204.2	181.2	165.9
72.5°	209.3	209.3	201.6	194.0	186.3	181.2	178.7	165.9	158.3	145.5	132.7
75°	158.3	158.3	155.7	148.0	142.9	137.8	135.3	125.1	117.4	104.7	97.0
77.5°	112.3	112.3	102.1	97.0	99.5	94.4	89.3	86.8	84.2	76.6	66.4
80°	66.4	63.8	56.2	58.7	56.2	56.2	53.6	51.0	45.9	40.8	35.7
82.5°	17.9	20.4	20.4	20.4	23.0	17.9	17.9	17.9	20.4	20.4	12.8
85°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.6	2.6	2.6
87.5°	2.6	5.1	10.2	10.2	10.2	10.2	10.2	7.7	7.7	7.7	5.1
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°	2128.7	2128.7	2128.7	2128.7	2128.7	2128.7	2128.7	2128.7	2128.7	2128.7	2128.7
2.5°	2154.3	2151.7	2154.3	2136.4	2177.2	2146.6	2141.5	2136.4	2154.3	2136.4	2110.9
5°	2200.2	2174.7	2167.0	2159.4	2182.3	2146.6	2139.0	2141.5	2128.7	2095.6	2098.1
7.5°	2215.5	2192.6	2169.6	2121.1	2141.5	2133.9	2113.4	2098.1	2077.7	2049.6	2044.5
10°	2220.6	2195.1	2161.9	2146.6	2116.0	2105.8	2098.1	2072.6	2047.1	1998.6	1985.8
12.5°	2205.3	2174.7	2133.9	2121.1	2098.1	2064.9	2047.1	2021.5	1998.6	1960.3	1932.2
15°	2139.0	2113.4	2100.7	2057.3	2047.1	2026.6	1990.9	1955.2	1922.0	1870.9	1855.6
17.5°	2062.4	2052.2	2039.4	2006.2	2003.7	1983.3	1950.1	1919.4	1876.1	1796.9	1771.4
20°	1983.3	1983.3	1942.4	1929.7	1955.2	1914.3	1888.8	1860.7	1771.4	1733.1	1687.2
22.5°	1924.6	1896.5	1873.5	1853.1	1855.6	1830.1	1794.4	1738.2	1705.0	1659.1	1605.5
25°	1809.7	1819.9	1768.9	1761.2	1768.9	1710.1	1692.3	1646.3	1597.8	1554.4	1513.6
27.5°	1738.2	1710.1	1677.0	1648.9	1648.9	1625.9	1574.9	1564.7	1490.6	1449.8	1398.7
30°	1631.0	1610.6	1582.5	1541.7	1536.6	1518.7	1477.9	1452.3	1375.8	1314.5	1286.4
32.5°	1495.7	1488.1	1465.1	1419.2	1403.9	1383.4	1332.4	1289.0	1253.3	1184.3	1151.2
35°	1398.7	1370.7	1322.2	1283.9	1271.1	1235.4	1194.5	1163.9	1125.6	1064.4	1021.0
37.5°	1253.3	1225.2	1179.2	1133.3	1133.3	1097.6	1041.4	1010.8	957.2	921.4	885.7
40°	1125.6	1089.9	1044.0	990.4	982.7	931.6	908.7	857.6	824.4	768.3	763.2
42.5°	982.7	949.5	908.7	867.8	837.2	811.7	753.0	714.7	679.0	650.9	643.2
45°	852.5	809.1	773.4	722.3	691.7	661.1	622.8	597.3	569.2	538.6	520.7
47.5°	740.2	704.5	653.4	607.5	576.9	561.5	518.1	490.1	467.1	446.7	433.9
50°	625.4	582.0	553.9	502.8	497.7	462.0	426.3	403.3	390.5	372.7	354.8
52.5°	538.6	497.7	459.4	421.2	400.7	388.0	354.8	331.8	314.0	301.2	291.0
55°	454.3	418.6	388.0	349.7	336.9	319.1	280.8	275.7	257.8	239.9	227.2
57.5°	390.5	357.3	321.6	296.1	273.1	260.4	229.7	209.3	199.1	183.8	171.0
60°	331.8	296.1	268.0	237.4	227.2	209.3	186.3	168.5	155.7	142.9	130.2
62.5°	278.2	247.6	217.0	191.4	176.1	165.9	148.0	132.7	120.0	109.8	99.5
65°	229.7	201.6	176.1	150.6	142.9	130.2	117.4	104.7	94.4	81.7	71.5
67.5°	188.9	163.4	137.8	120.0	112.3	107.2	91.9	79.1	71.5	63.8	53.6
70°	148.0	130.2	109.8	94.4	86.8	79.1	68.9	61.3	51.0	45.9	38.3
72.5°	114.9	99.5	81.7	68.9	63.8	58.7	48.5	40.8	35.7	30.6	25.5
75°	81.7	68.9	58.7	45.9	43.4	40.8	33.2	28.1	23.0	17.9	15.3
77.5°	56.2	45.9	35.7	30.6	28.1	23.0	20.4	15.3	12.8	10.2	7.7
80°	30.6	23.0	17.9	15.3	12.8	10.2	10.2	7.7	5.1	5.1	2.6
82.5°	10.2	7.7	5.1	2.6	2.6	2.6	2.6	2.6	2.6	0.0	2.6
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°	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	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°	2128.7	2128.7	2128.7	2128.7	2128.7	2128.7	2128.7	2128.7	2128.7	2128.7	2128.7
2.5°	2126.2	2098.1	2105.8	2105.8	2100.7	2100.7	2095.6	2087.9	2090.5	2075.1	2042.0
5°	2103.2	2067.5	2062.4	2067.5	2047.1	2042.0	2031.8	2047.1	2001.1	2019.0	1998.6
7.5°	2036.9	2003.7	1996.0	2013.9	1988.4	1973.0	1970.5	1990.9	1950.1	1929.7	1906.7
10°	1962.8	1950.1	1927.1	1914.3	1906.7	1909.2	1888.8	1863.3	1855.6	1850.5	1830.1
12.5°	1896.5	1868.4	1848.0	1832.7	1827.6	1827.6	1794.4	1789.3	1766.3	1761.2	1730.6
15°	1817.3	1784.2	1771.4	1751.0	1733.1	1743.3	1705.0	1694.8	1687.2	1654.0	1659.1
17.5°	1748.4	1712.7	1682.1	1669.3	1654.0	1638.7	1602.9	1610.6	1592.7	1592.7	1546.8
20°	1659.1	1620.8	1597.8	1572.3	1572.3	1551.9	1526.4	1528.9	1505.9	1483.0	1442.1
22.5°	1564.7	1523.8	1495.7	1485.5	1460.0	1454.9	1424.3	1416.6	1386.0	1388.5	1352.8
25°	1465.1	1424.3	1386.0	1388.5	1365.6	1355.4	1337.5	1301.8	1289.0	1273.7	1263.5
27.5°	1347.7	1319.6	1286.4	1283.9	1240.5	1243.0	1220.1	1209.9	1179.2	1186.9	1163.9
30°	1240.5	1199.7	1169.0	1161.4	1143.5	1138.4	1102.7	1087.3	1092.5	1072.0	1059.3
32.5°	1130.7	1069.5	1056.7	1041.4	1031.2	1018.4	992.9	1003.1	980.1	985.2	964.8
35°	985.2	959.7	926.5	926.5	916.3	906.1	888.3	898.5	875.5	865.3	844.9
37.5°	862.7	839.8	806.6	816.8	798.9	783.6	768.3	770.8	750.4	747.9	727.4
40°	730.0	717.2	694.3	694.3	681.5	681.5	673.8	666.2	653.4	638.1	615.1
42.5°	604.9	594.7	584.5	587.1	569.2	584.5	564.1	576.9	536.0	533.5	518.1
45°	513.0	490.1	492.6	482.4	472.2	477.3	459.4	464.5	441.6	436.5	421.2
47.5°	416.1	408.4	393.1	388.0	388.0	380.3	372.7	370.1	359.9	347.1	326.7
50°	342.0	314.0	308.8	301.2	296.1	296.1	285.9	270.6	273.1	260.4	239.9
52.5°	268.0	245.0	234.8	232.3	222.1	217.0	204.2	194.0	186.3	181.2	168.5
55°	206.7	186.3	173.6	173.6	158.3	158.3	140.4	132.7	122.5	112.3	104.7
57.5°	155.7	145.5	132.7	122.5	117.4	104.7	94.4	81.7	74.0	58.7	48.5
60°	117.4	107.2	94.4	86.8	81.7	68.9	56.2	45.9	28.1	23.0	20.4
62.5°	86.8	76.6	63.8	58.7	53.6	43.4	30.6	15.3	7.7	7.7	7.7
65°	63.8	51.0	40.8	35.7	30.6	23.0	10.2	5.1	2.6	2.6	2.6
67.5°	43.4	33.2	23.0	20.4	15.3	7.7	2.6	2.6	2.6	2.6	2.6
70°	28.1	20.4	10.2	7.7	5.1	2.6	2.6	2.6	2.6	2.6	2.6
72.5°	17.9	10.2	5.1	2.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0
75°	10.2	5.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
77.5°	5.1	2.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
80°	2.6	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	2.6	2.6	2.6
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: P219529

CATALOG NUMBER: LDSQ4B40D010 EU4B30508027 4LBSQLWWLI

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	2128.7	2128.7	2128.7	2128.7	2128.7	2128.7	2128.7	2128.7
2.5°	2077.7	2059.8	2070.0	2047.1	2057.3	2075.1	2062.4	2067.5
5°	2006.2	1996.0	1983.3	1950.1	1975.6	1996.0	1985.8	1983.3
7.5°	1929.7	1893.9	1911.8	1901.6	1896.5	1916.9	1893.9	1919.4
10°	1850.5	1825.0	1822.5	1804.6	1804.6	1819.9	1822.5	1807.1
12.5°	1733.1	1720.4	1720.4	1717.8	1715.2	1730.6	1733.1	1725.5
15°	1648.9	1643.8	1631.0	1628.5	1613.2	1636.1	1638.7	1636.1
17.5°	1546.8	1549.3	1536.6	1536.6	1546.8	1554.4	1534.0	1554.4
20°	1477.9	1465.1	1460.0	1437.0	1449.8	1462.6	1462.6	1465.1
22.5°	1378.3	1357.9	1365.6	1352.8	1345.1	1363.0	1363.0	1370.7
25°	1266.0	1266.0	1271.1	1263.5	1268.6	1278.8	1271.1	1289.0
27.5°	1158.8	1169.0	1169.0	1158.8	1163.9	1194.5	1207.3	1186.9
30°	1059.3	1061.8	1069.5	1064.4	1079.7	1089.9	1087.3	1102.7
32.5°	947.0	959.7	964.8	957.2	962.3	985.2	972.5	969.9
35°	860.2	837.2	834.7	837.2	847.4	852.5	847.4	865.3
37.5°	735.1	727.4	717.2	719.8	727.4	737.7	742.8	755.5
40°	615.1	604.9	604.9	602.4	594.7	622.8	622.8	622.8
42.5°	510.5	507.9	495.2	495.2	505.4	513.0	507.9	525.8
45°	418.6	408.4	400.7	400.7	408.4	408.4	416.1	413.5
47.5°	329.3	319.1	321.6	314.0	321.6	331.8	319.1	321.6
50°	247.6	247.6	242.5	247.6	245.0	247.6	242.5	237.4
52.5°	168.5	191.4	194.0	183.8	160.8	140.4	127.6	137.8
55°	97.0	86.8	86.8	84.2	79.1	76.6	68.9	76.6
57.5°	48.5	43.4	43.4	43.4	40.8	38.3	33.2	33.2
60°	20.4	17.9	17.9	15.3	12.8	10.2	7.7	10.2
62.5°	7.7	5.1	5.1	5.1	5.1	5.1	5.1	5.1
65°	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
67.5°	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
70°	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
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)