

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: P219538

Luminaire Tested: **LDSQ4B40D010 EU4B30509040 4LBSQLWWLI**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-41-14  
Report Number: P219538  
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 EU4B30509040 4LBSQLWWLI  
Description: PORTFOLIO 4 INCH SQUARE SINGLE WALLWASH RECESSED DOWNLIGHT, WITH SPECULAR CLEAR TRIM  
Light Source: (1) HIGH LUMEN LED 90CRI / 4000K CCT  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 2767.9 lumens  
Efficiency: N/A  
Efficacy: 64.3 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

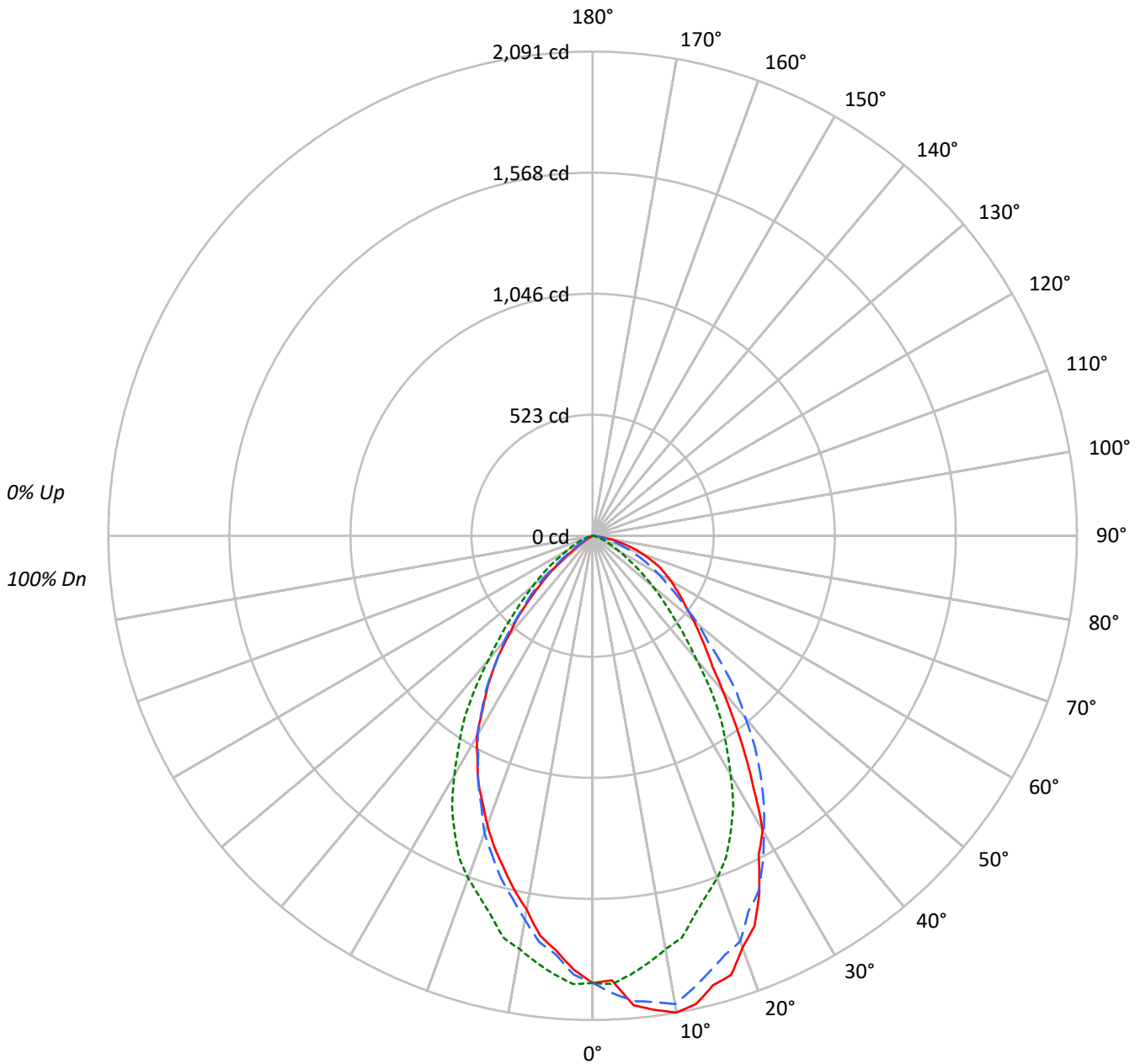
Input Watts (W): 43.02  
Input Voltage (V): NR  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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°	187066	187066	187066
5°	197914	184854	174945
10°	205662	178335	161248
15°	201558	170207	148845
20°	195010	162072	137010
25°	181906	150715	124976
30°	164202	133384	111884
35°	135269	114183	92825
40°	110389	88131	71438
45°	94847	66926	51390
50°	85845	50940	32448
55°	78993	36752	11738
60°	75815	25129	1802
65°	73238	16986	527
70°	65571	11811	651
75°	53749	6064	0
80°	33585	2566	0
85°	0	0	0



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	180.9	6.5
10°-20°	487.4	17.6
20°-30°	650.9	23.5
30°-40°	617.9	22.3
40°-50°	427.1	15.4
50°-60°	236.0	8.5
60°-70°	117.2	4.2
70°-80°	46.2	1.7
80°-90°	4.4	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°	1319.2	47.7
0°-40°	1937.1	70.0
0°-60°	2600.1	93.9
0°-90°	2767.9	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2767.9	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	1931	1931	1931	1931	1931	
5°	2035	2017	1901	1815	1799	195
15°	2010	1950	1697	1530	1484	569
25°	1702	1695	1410	1169	1169	776
35°	1144	1264	966	794	785	717
45°	692	794	488	401	375	540
55°	468	440	218	111	70	421
65°	320	232	74	2	2	310
75°	144	88	16	0	0	153
85°	0	2	0	0	0	13
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°	1931.0	1931.0	1931.0	1931.0	1931.0	1931.0	1931.0	1931.0	1931.0	1931.0	1931.0
2.5°	1921.7	1975.0	1979.6	1975.0	1981.9	1979.6	1991.2	1979.6	1993.5	1972.7	1977.3
5°	2035.2	2014.3	2058.3	2035.2	2035.2	2032.9	2025.9	2023.6	2032.9	2002.8	2016.6
7.5°	2065.3	2095.4	2134.7	2086.1	2088.4	2088.4	2074.5	2069.9	2069.9	2014.3	2030.5
10°	2090.7	2072.2	2093.1	2074.5	2090.7	2088.4	2097.7	2067.6	2088.4	2056.0	2053.7
12.5°	2069.9	2063.0	2090.7	2060.6	2051.4	2053.7	2042.1	2035.2	2042.1	2005.1	2002.8
15°	2009.7	2016.6	2058.3	2025.9	2021.3	2016.6	2002.8	1979.6	1998.1	1947.2	1949.5
17.5°	1988.9	1977.3	1984.2	1956.4	1963.4	1958.8	1956.4	1935.6	1931.0	1898.6	1898.6
20°	1891.6	1917.1	1917.1	1898.6	1898.6	1896.3	1866.2	1884.7	1863.8	1854.6	1863.8
22.5°	1824.5	1826.8	1826.8	1810.6	1812.9	1803.6	1787.4	1775.9	1787.4	1775.9	1757.3
25°	1701.8	1706.4	1734.2	1704.1	1699.4	1708.7	1694.8	1687.9	1685.6	1657.8	1694.8
27.5°	1553.6	1599.9	1597.6	1586.0	1599.9	1581.4	1574.4	1576.7	1583.7	1581.4	1590.6
30°	1467.9	1474.9	1481.8	1472.5	1474.9	1467.9	1467.9	1470.2	1488.8	1481.8	1479.5
32.5°	1294.3	1317.4	1335.9	1335.9	1338.3	1345.2	1342.9	1391.5	1403.1	1379.9	1375.3
35°	1143.8	1160.0	1176.2	1178.5	1208.6	1210.9	1213.2	1227.1	1259.5	1266.5	1264.2
37.5°	1000.2	1016.4	1021.1	1041.9	1058.1	1074.3	1092.8	1111.4	1139.1	1162.3	1150.7
40°	872.9	879.8	891.4	900.7	933.1	933.1	942.3	979.4	1009.5	1028.0	1025.7
42.5°	766.4	768.7	777.9	794.2	824.3	817.3	824.3	849.7	893.7	896.0	921.5
45°	692.3	690.0	696.9	699.2	717.8	727.0	731.6	750.2	787.2	791.8	794.2
47.5°	625.1	622.8	634.4	639.0	646.0	655.2	655.2	657.6	671.4	683.0	673.8
50°	569.6	569.6	569.6	574.2	585.8	583.5	585.8	595.0	602.0	597.4	595.0
52.5°	509.4	518.6	525.6	527.9	530.2	530.2	532.5	527.9	525.6	518.6	504.7
55°	467.7	477.0	477.0	477.0	477.0	486.2	474.6	477.0	477.0	458.4	439.9
57.5°	426.0	435.3	442.2	433.0	442.2	433.0	428.3	426.0	421.4	402.9	375.1
60°	391.3	395.9	393.6	391.3	395.9	389.0	384.3	375.1	370.5	345.0	326.5
62.5°	351.9	354.2	356.6	351.9	347.3	345.0	335.7	321.8	312.6	291.7	275.5
65°	319.5	312.6	310.3	307.9	303.3	296.4	289.4	273.2	266.3	247.7	231.5
67.5°	270.9	268.6	273.2	266.3	254.7	254.7	247.7	233.8	217.6	206.1	189.9
70°	231.5	229.2	224.6	217.6	215.3	206.1	206.1	189.9	185.2	164.4	150.5
72.5°	189.9	189.9	182.9	176.0	169.0	164.4	162.1	150.5	143.6	132.0	120.4
75°	143.6	143.6	141.2	134.3	129.7	125.0	122.7	113.5	106.5	94.9	88.0
77.5°	101.9	101.9	92.6	88.0	90.3	85.7	81.0	78.7	76.4	69.5	60.2
80°	60.2	57.9	50.9	53.3	50.9	50.9	48.6	46.3	41.7	37.0	32.4
82.5°	16.2	18.5	18.5	18.5	20.8	16.2	16.2	16.2	18.5	18.5	11.6
85°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.3	2.3	2.3
87.5°	2.3	4.6	9.3	9.3	9.3	9.3	9.3	6.9	6.9	6.9	4.6
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°	1931.0	1931.0	1931.0	1931.0	1931.0	1931.0	1931.0	1931.0	1931.0	1931.0	1931.0
2.5°	1954.1	1951.8	1954.1	1937.9	1975.0	1947.2	1942.6	1937.9	1954.1	1937.9	1914.8
5°	1995.8	1972.7	1965.7	1958.8	1979.6	1947.2	1940.2	1942.6	1931.0	1900.9	1903.2
7.5°	2009.7	1988.9	1968.0	1924.0	1942.6	1935.6	1917.1	1903.2	1884.7	1859.2	1854.6
10°	2014.3	1991.2	1961.1	1947.2	1919.4	1910.1	1903.2	1880.0	1856.9	1812.9	1801.3
12.5°	2000.4	1972.7	1935.6	1924.0	1903.2	1873.1	1856.9	1833.7	1812.9	1778.2	1752.7
15°	1940.2	1917.1	1905.5	1866.2	1856.9	1838.4	1806.0	1773.5	1743.4	1697.1	1683.2
17.5°	1870.8	1861.5	1849.9	1819.8	1817.5	1799.0	1768.9	1741.1	1701.8	1630.0	1606.8
20°	1799.0	1799.0	1762.0	1750.4	1773.5	1736.5	1713.3	1687.9	1606.8	1572.1	1530.4
22.5°	1745.8	1720.3	1699.4	1680.9	1683.2	1660.1	1627.7	1576.7	1546.6	1505.0	1456.3
25°	1641.6	1650.8	1604.5	1597.6	1604.5	1551.3	1535.1	1493.4	1449.4	1410.0	1373.0
27.5°	1576.7	1551.3	1521.2	1495.7	1495.7	1474.9	1428.6	1419.3	1352.1	1315.1	1268.8
30°	1479.5	1461.0	1435.5	1398.5	1393.8	1377.6	1340.6	1317.4	1248.0	1192.4	1166.9
32.5°	1356.8	1349.8	1329.0	1287.3	1273.4	1254.9	1208.6	1169.2	1136.8	1074.3	1044.2
35°	1268.8	1243.3	1199.3	1164.6	1153.0	1120.6	1083.6	1055.8	1021.1	965.5	926.1
37.5°	1136.8	1111.4	1069.7	1028.0	1028.0	995.6	944.7	916.9	868.2	835.8	803.4
40°	1021.1	988.6	947.0	898.3	891.4	845.1	824.3	777.9	747.8	696.9	692.3
42.5°	891.4	861.3	824.3	787.2	759.4	736.3	683.0	648.3	615.9	590.4	583.5
45°	773.3	734.0	701.5	655.2	627.5	599.7	564.9	541.8	516.3	488.5	472.3
47.5°	671.4	639.0	592.7	551.0	523.3	509.4	470.0	444.5	423.7	405.2	393.6
50°	567.3	527.9	502.4	456.1	451.5	419.1	386.7	365.8	354.2	338.0	321.8
52.5°	488.5	451.5	416.8	382.0	363.5	351.9	321.8	301.0	284.8	273.2	263.9
55°	412.1	379.7	351.9	317.2	305.6	289.4	254.7	250.1	233.8	217.6	206.1
57.5°	354.2	324.1	291.7	268.6	247.7	236.2	208.4	189.9	180.6	166.7	155.1
60°	301.0	268.6	243.1	215.3	206.1	189.9	169.0	152.8	141.2	129.7	118.1
62.5°	252.4	224.6	196.8	173.6	159.8	150.5	134.3	120.4	108.8	99.6	90.3
65°	208.4	182.9	159.8	136.6	129.7	118.1	106.5	94.9	85.7	74.1	64.8
67.5°	171.3	148.2	125.0	108.8	101.9	97.2	83.4	71.8	64.8	57.9	48.6
70°	134.3	118.1	99.6	85.7	78.7	71.8	62.5	55.6	46.3	41.7	34.7
72.5°	104.2	90.3	74.1	62.5	57.9	53.3	44.0	37.0	32.4	27.8	23.2
75°	74.1	62.5	53.3	41.7	39.4	37.0	30.1	25.5	20.8	16.2	13.9
77.5°	50.9	41.7	32.4	27.8	25.5	20.8	18.5	13.9	11.6	9.3	6.9
80°	27.8	20.8	16.2	13.9	11.6	9.3	9.3	6.9	4.6	4.6	2.3
82.5°	9.3	6.9	4.6	2.3	2.3	2.3	2.3	2.3	2.3	0.0	2.3
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°	2.3	2.3	2.3	2.3	2.3	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°	1931.0	1931.0	1931.0	1931.0	1931.0	1931.0	1931.0	1931.0	1931.0	1931.0	1931.0
2.5°	1928.7	1903.2	1910.1	1910.1	1905.5	1905.5	1900.9	1893.9	1896.3	1882.4	1852.3
5°	1907.8	1875.4	1870.8	1875.4	1856.9	1852.3	1843.0	1856.9	1815.2	1831.4	1812.9
7.5°	1847.6	1817.5	1810.6	1826.8	1803.6	1789.7	1787.4	1806.0	1768.9	1750.4	1729.5
10°	1780.5	1768.9	1748.1	1736.5	1729.5	1731.9	1713.3	1690.2	1683.2	1678.6	1660.1
12.5°	1720.3	1694.8	1676.3	1662.4	1657.8	1657.8	1627.7	1623.0	1602.2	1597.6	1569.8
15°	1648.5	1618.4	1606.8	1588.3	1572.1	1581.4	1546.6	1537.4	1530.4	1500.3	1505.0
17.5°	1586.0	1553.6	1525.8	1514.2	1500.3	1486.4	1454.0	1461.0	1444.8	1444.8	1403.1
20°	1505.0	1470.2	1449.4	1426.2	1426.2	1407.7	1384.6	1386.9	1366.0	1345.2	1308.2
22.5°	1419.3	1382.2	1356.8	1347.5	1324.4	1319.7	1292.0	1285.0	1257.2	1259.5	1227.1
25°	1329.0	1292.0	1257.2	1259.5	1238.7	1229.4	1213.2	1180.8	1169.2	1155.3	1146.1
27.5°	1222.5	1197.0	1166.9	1164.6	1125.2	1127.6	1106.7	1097.5	1069.7	1076.6	1055.8
30°	1125.2	1088.2	1060.4	1053.5	1037.3	1032.6	1000.2	986.3	991.0	972.4	960.9
32.5°	1025.7	970.1	958.5	944.7	935.4	923.8	900.7	909.9	889.1	893.7	875.2
35°	893.7	870.6	840.5	840.5	831.2	821.9	805.7	815.0	794.2	784.9	766.4
37.5°	782.6	761.7	731.6	740.9	724.7	710.8	696.9	699.2	680.7	678.4	659.9
40°	662.2	650.6	629.8	629.8	618.2	618.2	611.2	604.3	592.7	578.8	558.0
42.5°	548.7	539.5	530.2	532.5	516.3	530.2	511.7	523.3	486.2	483.9	470.0
45°	465.4	444.5	446.9	437.6	428.3	433.0	416.8	421.4	400.6	395.9	382.0
47.5°	377.4	370.5	356.6	351.9	351.9	345.0	338.0	335.7	326.5	314.9	296.4
50°	310.3	284.8	280.2	273.2	268.6	268.6	259.3	245.4	247.7	236.2	217.6
52.5°	243.1	222.3	213.0	210.7	201.4	196.8	185.2	176.0	169.0	164.4	152.8
55°	187.5	169.0	157.4	157.4	143.6	143.6	127.3	120.4	111.1	101.9	94.9
57.5°	141.2	132.0	120.4	111.1	106.5	94.9	85.7	74.1	67.1	53.3	44.0
60°	106.5	97.2	85.7	78.7	74.1	62.5	50.9	41.7	25.5	20.8	18.5
62.5°	78.7	69.5	57.9	53.3	48.6	39.4	27.8	13.9	6.9	6.9	6.9
65°	57.9	46.3	37.0	32.4	27.8	20.8	9.3	4.6	2.3	2.3	2.3
67.5°	39.4	30.1	20.8	18.5	13.9	6.9	2.3	2.3	2.3	2.3	2.3
70°	25.5	18.5	9.3	6.9	4.6	2.3	2.3	2.3	2.3	2.3	2.3
72.5°	16.2	9.3	4.6	2.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
75°	9.3	4.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
77.5°	4.6	2.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
80°	2.3	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	2.3	2.3	2.3
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: P219538

CATALOG NUMBER: LDSQ4B40D010 EU4B30509040 4LBSQLWWLI

**CANDELA DISTRIBUTION (continued):**

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	1931.0	1931.0	1931.0	1931.0	1931.0	1931.0	1931.0	1931.0
2.5°	1884.7	1868.5	1877.7	1856.9	1866.2	1882.4	1870.8	1875.4
5°	1819.8	1810.6	1799.0	1768.9	1792.1	1810.6	1801.3	1799.0
7.5°	1750.4	1718.0	1734.2	1724.9	1720.3	1738.8	1718.0	1741.1
10°	1678.6	1655.5	1653.1	1636.9	1636.9	1650.8	1653.1	1639.2
12.5°	1572.1	1560.5	1560.5	1558.2	1555.9	1569.8	1572.1	1565.2
15°	1495.7	1491.1	1479.5	1477.2	1463.3	1484.1	1486.4	1484.1
17.5°	1403.1	1405.4	1393.8	1393.8	1403.1	1410.0	1391.5	1410.0
20°	1340.6	1329.0	1324.4	1303.5	1315.1	1326.7	1326.7	1329.0
22.5°	1250.3	1231.8	1238.7	1227.1	1220.2	1236.4	1236.4	1243.3
25°	1148.4	1148.4	1153.0	1146.1	1150.7	1160.0	1153.0	1169.2
27.5°	1051.2	1060.4	1060.4	1051.2	1055.8	1083.6	1095.1	1076.6
30°	960.9	963.2	970.1	965.5	979.4	988.6	986.3	1000.2
32.5°	859.0	870.6	875.2	868.2	872.9	893.7	882.1	879.8
35°	780.3	759.4	757.1	759.4	768.7	773.3	768.7	784.9
37.5°	666.8	659.9	650.6	652.9	659.9	669.1	673.8	685.3
40°	558.0	548.7	548.7	546.4	539.5	564.9	564.9	564.9
42.5°	463.1	460.7	449.2	449.2	458.4	465.4	460.7	477.0
45°	379.7	370.5	363.5	363.5	370.5	370.5	377.4	375.1
47.5°	298.7	289.4	291.7	284.8	291.7	301.0	289.4	291.7
50°	224.6	224.6	220.0	224.6	222.3	224.6	220.0	215.3
52.5°	152.8	173.6	176.0	166.7	145.9	127.3	115.8	125.0
55°	88.0	78.7	78.7	76.4	71.8	69.5	62.5	69.5
57.5°	44.0	39.4	39.4	39.4	37.0	34.7	30.1	30.1
60°	18.5	16.2	16.2	13.9	11.6	9.3	6.9	9.3
62.5°	6.9	4.6	4.6	4.6	4.6	4.6	4.6	4.6
65°	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3
67.5°	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3
70°	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3
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)