

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: P219537

Luminaire Tested: **LDSQ4B40D010 EU4B30509035 4LBSQLWWLI**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P219537
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 EU4B30509035 4LBSQLWWLI
Description: PORTFOLIO 4 INCH SQUARE SINGLE WALLWASH RECESSED DOWNLIGHT, WITH SPECULAR CLEAR TRIM
Light Source: (1) HIGH LUMEN LED 90CRI / 3500K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 2763.2 lumens
Efficiency: N/A
Efficacy: 64.2 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

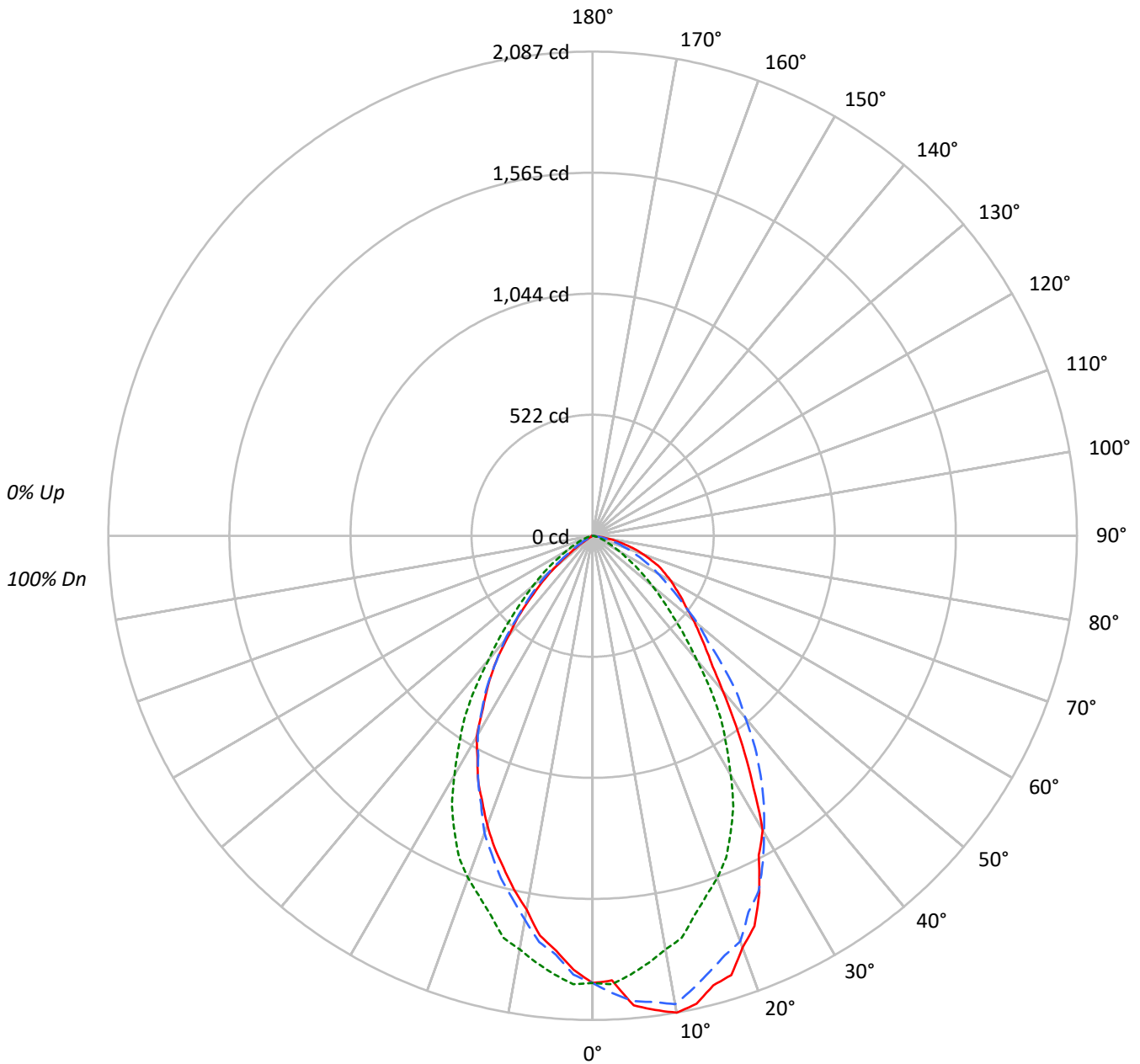
Input Watts (W): 43.02
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Luminous Intensity Polar Plot





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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20									20									20									20									
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°	186747	186747	186747
5°	197583	184543	174653
10°	205318	178040	160982
15°	201217	169926	148594
20°	194680	161804	136783
25°	181596	150469	124773
30°	163934	133161	111694
35°	135033	113994	92671
40°	110199	87980	71325
45°	94682	66816	51307
50°	85695	50865	32403
55°	78858	36701	11705
60°	75679	25071	1783
65°	73123	16963	527
70°	65458	11783	651
75°	53637	6064	0
80°	33529	2566	0
85°	0	0	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	180.6	6.5
10°-20°	486.6	17.6
20°-30°	649.8	23.5
30°-40°	616.8	22.3
40°-50°	426.4	15.4
50°-60°	235.6	8.5
60°-70°	117.0	4.2
70°-80°	46.1	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°	1317.0	47.7
0°-40°	1933.8	70.0
0°-60°	2595.8	93.9
0°-90°	2763.2	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2763.2	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	1928	1928	1928	1928	1928	
5°	2032	2013	1898	1812	1796	195
15°	2006	1946	1694	1528	1482	568
25°	1699	1692	1408	1167	1167	775
35°	1142	1262	964	793	784	715
45°	691	793	488	400	374	539
55°	467	439	217	111	69	420
65°	319	231	74	2	2	310
75°	143	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°	1927.7	1927.7	1927.7	1927.7	1927.7	1927.7	1927.7	1927.7	1927.7	1927.7	1927.7
2.5°	1918.5	1971.7	1976.3	1971.7	1978.6	1976.3	1987.8	1976.3	1990.1	1969.3	1974.0
5°	2031.8	2011.0	2054.9	2031.8	2031.8	2029.4	2022.5	2020.2	2029.4	1999.4	2013.3
7.5°	2061.8	2091.9	2131.1	2082.6	2084.9	2084.9	2071.0	2066.4	2066.4	2011.0	2027.1
10°	2087.2	2068.7	2089.5	2071.0	2087.2	2084.9	2094.2	2064.1	2084.9	2052.6	2050.2
12.5°	2066.4	2059.5	2087.2	2057.2	2047.9	2050.2	2038.7	2031.8	2038.7	2001.7	1999.4
15°	2006.3	2013.3	2054.9	2022.5	2017.9	2013.3	1999.4	1976.3	1994.8	1943.9	1946.2
17.5°	1985.5	1974.0	1980.9	1953.2	1960.1	1955.5	1953.2	1932.4	1927.7	1895.4	1895.4
20°	1888.4	1913.9	1913.9	1895.4	1895.4	1893.1	1863.0	1881.5	1860.7	1851.5	1860.7
22.5°	1821.4	1823.7	1823.7	1807.5	1809.9	1800.6	1784.4	1772.9	1784.4	1772.9	1754.4
25°	1698.9	1703.5	1731.3	1701.2	1696.6	1705.8	1692.0	1685.0	1682.7	1655.0	1692.0
27.5°	1551.0	1597.2	1594.9	1583.3	1597.2	1578.7	1571.8	1574.1	1581.0	1578.7	1588.0
30°	1465.5	1472.4	1479.3	1470.1	1472.4	1465.5	1465.5	1467.8	1486.3	1479.3	1477.0
32.5°	1292.1	1315.2	1333.7	1333.7	1336.0	1342.9	1340.6	1389.2	1400.7	1377.6	1373.0
35°	1141.8	1158.0	1174.2	1176.5	1206.6	1208.9	1211.2	1225.1	1257.4	1264.4	1262.0
37.5°	998.5	1014.7	1019.3	1040.1	1056.3	1072.5	1091.0	1109.5	1137.2	1160.3	1148.8
40°	871.4	878.3	889.9	899.1	931.5	931.5	940.8	977.7	1007.8	1026.3	1024.0
42.5°	765.1	767.4	776.6	792.8	822.9	815.9	822.9	848.3	892.2	894.5	920.0
45°	691.1	688.8	695.7	698.1	716.5	725.8	730.4	748.9	785.9	790.5	792.8
47.5°	624.1	621.8	633.3	638.0	644.9	654.1	654.1	656.4	670.3	681.9	672.6
50°	568.6	568.6	568.6	573.2	584.8	582.5	584.8	594.0	601.0	596.4	594.0
52.5°	508.5	517.8	524.7	527.0	529.3	529.3	531.6	527.0	524.7	517.8	503.9
55°	466.9	476.2	476.2	476.2	476.2	485.4	473.8	476.2	476.2	457.7	439.2
57.5°	425.3	434.6	441.5	432.2	441.5	432.2	427.6	425.3	420.7	402.2	374.5
60°	390.6	395.3	392.9	390.6	395.3	388.3	383.7	374.5	369.8	344.4	325.9
62.5°	351.3	353.6	356.0	351.3	346.7	344.4	335.2	321.3	312.0	291.2	275.1
65°	319.0	312.0	309.7	307.4	302.8	295.9	288.9	272.7	265.8	247.3	231.1
67.5°	270.4	268.1	272.7	265.8	254.3	254.3	247.3	233.5	217.3	205.7	189.5
70°	231.1	228.8	224.2	217.3	215.0	205.7	205.7	189.5	184.9	164.1	150.2
72.5°	189.5	189.5	182.6	175.7	168.7	164.1	161.8	150.2	143.3	131.8	120.2
75°	143.3	143.3	141.0	134.1	129.4	124.8	122.5	113.3	106.3	94.8	87.8
77.5°	101.7	101.7	92.5	87.8	90.1	85.5	80.9	78.6	76.3	69.3	60.1
80°	60.1	57.8	50.9	53.2	50.9	50.9	48.5	46.2	41.6	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	9.2	9.2	9.2	9.2	9.2	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°	1927.7	1927.7	1927.7	1927.7	1927.7	1927.7	1927.7	1927.7	1927.7	1927.7	1927.7
2.5°	1950.9	1948.5	1950.9	1934.7	1971.7	1943.9	1939.3	1934.7	1950.9	1934.7	1911.6
5°	1992.5	1969.3	1962.4	1955.5	1976.3	1943.9	1937.0	1939.3	1927.7	1897.7	1900.0
7.5°	2006.3	1985.5	1964.7	1920.8	1939.3	1932.4	1913.9	1900.0	1881.5	1856.1	1851.5
10°	2011.0	1987.8	1957.8	1943.9	1916.2	1906.9	1900.0	1876.9	1853.8	1809.9	1798.3
12.5°	1997.1	1969.3	1932.4	1920.8	1900.0	1870.0	1853.8	1830.7	1809.9	1775.2	1749.8
15°	1937.0	1913.9	1902.3	1863.0	1853.8	1835.3	1802.9	1770.6	1740.5	1694.3	1680.4
17.5°	1867.6	1858.4	1846.8	1816.8	1814.5	1796.0	1765.9	1738.2	1698.9	1627.3	1604.1
20°	1796.0	1796.0	1759.0	1747.4	1770.6	1733.6	1710.5	1685.0	1604.1	1569.5	1527.9
22.5°	1742.8	1717.4	1696.6	1678.1	1680.4	1657.3	1624.9	1574.1	1544.0	1502.4	1453.9
25°	1638.8	1648.1	1601.8	1594.9	1601.8	1548.7	1532.5	1490.9	1447.0	1407.7	1370.7
27.5°	1574.1	1548.7	1518.6	1493.2	1493.2	1472.4	1426.2	1416.9	1349.9	1312.9	1266.7
30°	1477.0	1458.5	1433.1	1396.1	1391.5	1375.3	1338.3	1315.2	1245.9	1190.4	1165.0
32.5°	1354.5	1347.6	1326.8	1285.2	1271.3	1252.8	1206.6	1167.3	1134.9	1072.5	1042.5
35°	1266.7	1241.2	1197.3	1162.7	1151.1	1118.7	1081.8	1054.0	1019.3	963.9	924.6
37.5°	1134.9	1109.5	1067.9	1026.3	1026.3	993.9	943.1	915.3	866.8	834.4	802.1
40°	1019.3	987.0	945.4	896.8	889.9	843.7	822.9	776.6	746.6	695.7	691.1
42.5°	889.9	859.9	822.9	785.9	758.2	735.0	681.9	647.2	614.8	589.4	582.5
45°	772.0	732.7	700.4	654.1	626.4	598.7	564.0	540.9	515.5	487.7	471.5
47.5°	670.3	638.0	591.7	550.1	522.4	508.5	469.2	443.8	423.0	404.5	392.9
50°	566.3	527.0	501.6	455.4	450.7	418.4	386.0	365.2	353.6	337.5	321.3
52.5°	487.7	450.7	416.1	381.4	362.9	351.3	321.3	300.5	284.3	272.7	263.5
55°	411.4	379.1	351.3	316.7	305.1	288.9	254.3	249.6	233.5	217.3	205.7
57.5°	353.6	323.6	291.2	268.1	247.3	235.8	208.0	189.5	180.3	166.4	154.9
60°	300.5	268.1	242.7	215.0	205.7	189.5	168.7	152.6	141.0	129.4	117.9
62.5°	251.9	224.2	196.5	173.4	159.5	150.2	134.1	120.2	108.6	99.4	90.1
65°	208.0	182.6	159.5	136.4	129.4	117.9	106.3	94.8	85.5	74.0	64.7
67.5°	171.0	147.9	124.8	108.6	101.7	97.1	83.2	71.7	64.7	57.8	48.5
70°	134.1	117.9	99.4	85.5	78.6	71.7	62.4	55.5	46.2	41.6	34.7
72.5°	104.0	90.1	74.0	62.4	57.8	53.2	43.9	37.0	32.4	27.7	23.1
75°	74.0	62.4	53.2	41.6	39.3	37.0	30.0	25.4	20.8	16.2	13.9
77.5°	50.9	41.6	32.4	27.7	25.4	20.8	18.5	13.9	11.6	9.2	6.9
80°	27.7	20.8	16.2	13.9	11.6	9.2	9.2	6.9	4.6	4.6	2.3
82.5°	9.2	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°	1927.7	1927.7	1927.7	1927.7	1927.7	1927.7	1927.7	1927.7	1927.7	1927.7	1927.7
2.5°	1925.4	1900.0	1906.9	1906.9	1902.3	1902.3	1897.7	1890.8	1893.1	1879.2	1849.1
5°	1904.6	1872.3	1867.6	1872.3	1853.8	1849.1	1839.9	1853.8	1812.2	1828.3	1809.9
7.5°	1844.5	1814.5	1807.5	1823.7	1800.6	1786.7	1784.4	1802.9	1765.9	1747.4	1726.6
10°	1777.5	1765.9	1745.1	1733.6	1726.6	1729.0	1710.5	1687.3	1680.4	1675.8	1657.3
12.5°	1717.4	1692.0	1673.5	1659.6	1655.0	1655.0	1624.9	1620.3	1599.5	1594.9	1567.2
15°	1645.7	1615.7	1604.1	1585.6	1569.5	1578.7	1544.0	1534.8	1527.9	1497.8	1502.4
17.5°	1583.3	1551.0	1523.2	1511.7	1497.8	1483.9	1451.6	1458.5	1442.3	1442.3	1400.7
20°	1502.4	1467.8	1447.0	1423.8	1423.8	1405.4	1382.2	1384.6	1363.7	1342.9	1306.0
22.5°	1416.9	1379.9	1354.5	1345.3	1322.1	1317.5	1289.8	1282.8	1255.1	1257.4	1225.1
25°	1326.8	1289.8	1255.1	1257.4	1236.6	1227.4	1211.2	1178.8	1167.3	1153.4	1144.2
27.5°	1220.4	1195.0	1165.0	1162.7	1123.4	1125.7	1104.9	1095.6	1067.9	1074.8	1054.0
30°	1123.4	1086.4	1058.6	1051.7	1035.5	1030.9	998.5	984.7	989.3	970.8	959.2
32.5°	1024.0	968.5	956.9	943.1	933.8	922.3	899.1	908.4	887.6	892.2	873.7
35°	892.2	869.1	839.1	839.1	829.8	820.6	804.4	813.6	792.8	783.6	765.1
37.5°	781.3	760.5	730.4	739.7	723.5	709.6	695.7	698.1	679.6	677.3	658.8
40°	661.1	649.5	628.7	628.7	617.2	617.2	610.2	603.3	591.7	577.9	557.1
42.5°	547.8	538.6	529.3	531.6	515.5	529.3	510.8	522.4	485.4	483.1	469.2
45°	464.6	443.8	446.1	436.9	427.6	432.2	416.1	420.7	399.9	395.3	381.4
47.5°	376.8	369.8	356.0	351.3	351.3	344.4	337.5	335.2	325.9	314.4	295.9
50°	309.7	284.3	279.7	272.7	268.1	268.1	258.9	245.0	247.3	235.8	217.3
52.5°	242.7	221.9	212.7	210.3	201.1	196.5	184.9	175.7	168.7	164.1	152.6
55°	187.2	168.7	157.2	157.2	143.3	143.3	127.1	120.2	110.9	101.7	94.8
57.5°	141.0	131.8	120.2	110.9	106.3	94.8	85.5	74.0	67.0	53.2	43.9
60°	106.3	97.1	85.5	78.6	74.0	62.4	50.9	41.6	25.4	20.8	18.5
62.5°	78.6	69.3	57.8	53.2	48.5	39.3	27.7	13.9	6.9	6.9	6.9
65°	57.8	46.2	37.0	32.4	27.7	20.8	9.2	4.6	2.3	2.3	2.3
67.5°	39.3	30.0	20.8	18.5	13.9	6.9	2.3	2.3	2.3	2.3	2.3
70°	25.4	18.5	9.2	6.9	4.6	2.3	2.3	2.3	2.3	2.3	2.3
72.5°	16.2	9.2	4.6	2.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
75°	9.2	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: P219537

CATALOG NUMBER: LDSQ4B40D010 EU4B30509035 4LBSQLWWLI

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	1927.7	1927.7	1927.7	1927.7	1927.7	1927.7	1927.7	1927.7
2.5°	1881.5	1865.3	1874.6	1853.8	1863.0	1879.2	1867.6	1872.3
5°	1816.8	1807.5	1796.0	1765.9	1789.1	1807.5	1798.3	1796.0
7.5°	1747.4	1715.1	1731.3	1722.0	1717.4	1735.9	1715.1	1738.2
10°	1675.8	1652.7	1650.4	1634.2	1634.2	1648.1	1650.4	1636.5
12.5°	1569.5	1557.9	1557.9	1555.6	1553.3	1567.2	1569.5	1562.5
15°	1493.2	1488.6	1477.0	1474.7	1460.8	1481.6	1483.9	1481.6
17.5°	1400.7	1403.0	1391.5	1391.5	1400.7	1407.7	1389.2	1407.7
20°	1338.3	1326.8	1322.1	1301.3	1312.9	1324.5	1324.5	1326.8
22.5°	1248.2	1229.7	1236.6	1225.1	1218.1	1234.3	1234.3	1241.2
25°	1146.5	1146.5	1151.1	1144.2	1148.8	1158.0	1151.1	1167.3
27.5°	1049.4	1058.6	1058.6	1049.4	1054.0	1081.8	1093.3	1074.8
30°	959.2	961.6	968.5	963.9	977.7	987.0	984.7	998.5
32.5°	857.5	869.1	873.7	866.8	871.4	892.2	880.7	878.3
35°	779.0	758.2	755.8	758.2	767.4	772.0	767.4	783.6
37.5°	665.7	658.8	649.5	651.8	658.8	668.0	672.6	684.2
40°	557.1	547.8	547.8	545.5	538.6	564.0	564.0	564.0
42.5°	462.3	460.0	448.4	448.4	457.7	464.6	460.0	476.2
45°	379.1	369.8	362.9	362.9	369.8	369.8	376.8	374.5
47.5°	298.2	288.9	291.2	284.3	291.2	300.5	288.9	291.2
50°	224.2	224.2	219.6	224.2	221.9	224.2	219.6	215.0
52.5°	152.6	173.4	175.7	166.4	145.6	127.1	115.6	124.8
55°	87.8	78.6	78.6	76.3	71.7	69.3	62.4	69.3
57.5°	43.9	39.3	39.3	39.3	37.0	34.7	30.0	30.0
60°	18.5	16.2	16.2	13.9	11.6	9.2	6.9	9.2
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



Report Generated By E9808895 / USPTCWHP6082093





— 0°-180° - - 45°-225° - - - - 90°-270°













(END OF REPORT)