

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: P219520

Luminaire Tested: **LDSQ4B30D010 EU4B30508050 4LBSQLWWLI**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P219520
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: LDSQ4B30D010 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: 2357.6 lumens
Efficiency: N/A
Efficacy: 84.2 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

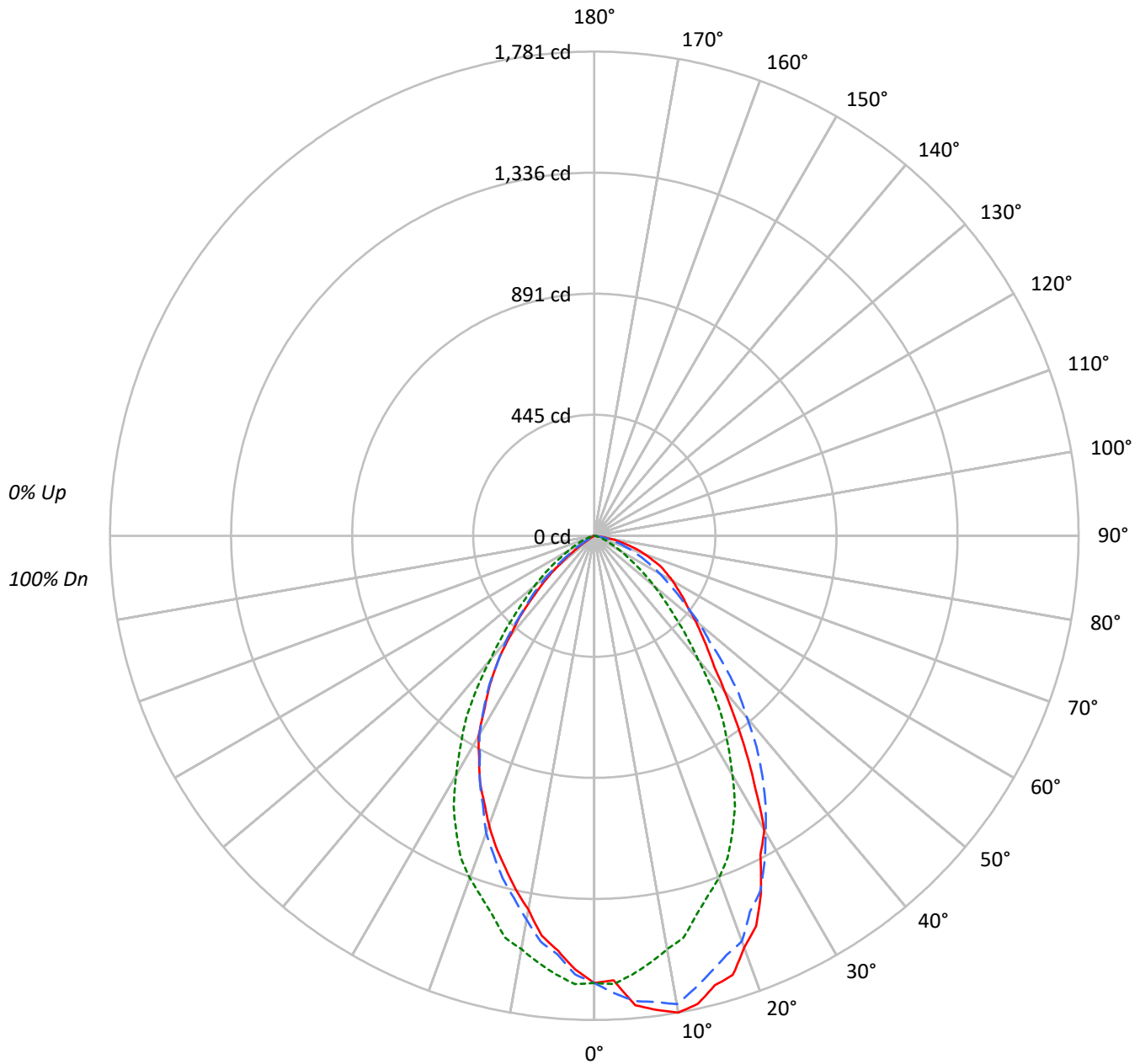
Input Watts (W): 28
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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°	159341	159341	159341
5°	168575	157450	149019
10°	175187	151903	137354
15°	171681	144983	126780
20°	166103	138051	116701
25°	154937	128375	106452
30°	139861	113618	95307
35°	115212	97260	79071
40°	94024	75068	60853
45°	80790	57007	43772
50°	73110	43390	27640
55°	67289	31314	9999
60°	64577	21390	1531
65°	62396	14464	458
70°	55856	10055	566
75°	45777	5165	0
80°	28619	2176	0
85°	0	0	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	154.1	6.5
10°-20°	415.2	17.6
20°-30°	554.4	23.5
30°-40°	526.3	22.3
40°-50°	363.8	15.4
50°-60°	201.0	8.5
60°-70°	99.8	4.2
70°-80°	39.3	1.7
80°-90°	3.7	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°	1123.7	47.7
0°-40°	1650.0	70.0
0°-60°	2214.7	93.9
0°-90°	2357.6	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2357.6	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	1645	1645	1645	1645	1645	
5°	1734	1718	1619	1546	1532	166
15°	1712	1660	1446	1304	1264	484
25°	1450	1444	1201	996	996	661
35°	974	1077	822	676	669	610
45°	590	676	416	341	320	460
55°	398	375	185	95	59	359
65°	272	197	63	2	2	264
75°	122	75	14	0	0	130
85°	0	2	0	0	0	11
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°	1644.8	1644.8	1644.8	1644.8	1644.8	1644.8	1644.8	1644.8	1644.8	1644.8	1644.8
2.5°	1636.9	1682.2	1686.2	1682.2	1688.2	1686.2	1696.0	1686.2	1698.0	1680.3	1684.2
5°	1733.5	1715.8	1753.2	1733.5	1733.5	1731.5	1725.6	1723.7	1731.5	1705.9	1717.7
7.5°	1759.2	1784.8	1818.3	1776.9	1778.9	1778.9	1767.0	1763.1	1763.1	1715.8	1729.6
10°	1780.9	1765.1	1782.8	1767.0	1780.9	1778.9	1786.8	1761.1	1778.9	1751.3	1749.3
12.5°	1763.1	1757.2	1780.9	1755.2	1747.3	1749.3	1739.4	1733.5	1739.4	1707.9	1705.9
15°	1711.8	1717.7	1753.2	1725.6	1721.7	1717.7	1705.9	1686.2	1702.0	1658.6	1660.5
17.5°	1694.1	1684.2	1690.1	1666.5	1672.4	1668.4	1666.5	1648.7	1644.8	1617.2	1617.2
20°	1611.2	1632.9	1632.9	1617.2	1617.2	1615.2	1589.6	1605.3	1587.6	1579.7	1587.6
22.5°	1554.1	1556.0	1556.0	1542.2	1544.2	1536.3	1522.5	1512.6	1522.5	1512.6	1496.9
25°	1449.5	1453.5	1477.1	1451.5	1447.6	1455.4	1443.6	1437.7	1435.7	1412.1	1443.6
27.5°	1323.3	1362.8	1360.8	1350.9	1362.8	1347.0	1341.1	1343.0	1348.9	1347.0	1354.9
30°	1250.3	1256.3	1262.2	1254.3	1256.3	1250.3	1250.3	1252.3	1268.1	1262.2	1260.2
32.5°	1102.4	1122.2	1137.9	1137.9	1139.9	1145.8	1143.8	1185.3	1195.1	1175.4	1171.5
35°	974.2	988.0	1001.9	1003.8	1029.5	1031.4	1033.4	1045.2	1072.8	1078.8	1076.8
37.5°	852.0	865.8	869.7	887.5	901.3	915.1	930.9	946.6	970.3	990.0	980.2
40°	743.5	749.4	759.3	767.2	794.8	794.8	802.7	834.2	859.9	875.6	873.7
42.5°	652.8	654.8	662.6	676.4	702.1	696.2	702.1	723.8	761.2	763.2	784.9
45°	589.7	587.7	593.6	595.6	611.4	619.3	623.2	639.0	670.5	674.5	676.4
47.5°	532.5	530.5	540.4	544.3	550.2	558.1	558.1	560.1	571.9	581.8	573.9
50°	485.1	485.1	485.1	489.1	499.0	497.0	499.0	506.8	512.8	508.8	506.8
52.5°	433.9	441.8	447.7	449.6	451.6	451.6	453.6	449.6	447.7	441.8	429.9
55°	398.4	406.3	406.3	406.3	406.3	414.2	404.3	406.3	406.3	390.5	374.7
57.5°	362.9	370.8	376.7	368.8	376.7	368.8	364.8	362.9	358.9	343.2	319.5
60°	333.3	337.2	335.3	333.3	337.2	331.3	327.4	319.5	315.5	293.9	278.1
62.5°	299.8	301.7	303.7	299.8	295.8	293.9	286.0	274.1	266.2	248.5	234.7
65°	272.2	266.2	264.3	262.3	258.4	252.4	246.5	232.7	226.8	211.0	197.2
67.5°	230.7	228.8	232.7	226.8	216.9	216.9	211.0	199.2	185.4	175.5	161.7
70°	197.2	195.2	191.3	185.4	183.4	175.5	175.5	161.7	157.8	140.0	128.2
72.5°	161.7	161.7	155.8	149.9	144.0	140.0	138.1	128.2	122.3	112.4	102.6
75°	122.3	122.3	120.3	114.4	110.4	106.5	104.5	96.6	90.7	80.9	74.9
77.5°	86.8	86.8	78.9	74.9	76.9	73.0	69.0	67.1	65.1	59.2	51.3
80°	51.3	49.3	43.4	45.4	43.4	43.4	41.4	39.4	35.5	31.6	27.6
82.5°	13.8	15.8	15.8	15.8	17.7	13.8	13.8	13.8	15.8	15.8	9.9
85°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	2.0	2.0
87.5°	2.0	3.9	7.9	7.9	7.9	7.9	7.9	5.9	5.9	5.9	3.9
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°	1644.8	1644.8	1644.8	1644.8	1644.8	1644.8	1644.8	1644.8	1644.8	1644.8	1644.8
2.5°	1664.5	1662.5	1664.5	1650.7	1682.2	1658.6	1654.6	1650.7	1664.5	1650.7	1631.0
5°	1700.0	1680.3	1674.4	1668.4	1686.2	1658.6	1652.7	1654.6	1644.8	1619.1	1621.1
7.5°	1711.8	1694.1	1676.3	1638.9	1654.6	1648.7	1632.9	1621.1	1605.3	1583.6	1579.7
10°	1715.8	1696.0	1670.4	1658.6	1634.9	1627.0	1621.1	1601.4	1581.7	1544.2	1534.3
12.5°	1703.9	1680.3	1648.7	1638.9	1621.1	1595.5	1581.7	1561.9	1544.2	1514.6	1492.9
15°	1652.7	1632.9	1623.1	1589.6	1581.7	1565.9	1538.3	1510.7	1485.0	1445.6	1433.8
17.5°	1593.5	1585.6	1575.7	1550.1	1548.1	1532.4	1506.7	1483.1	1449.5	1388.4	1368.7
20°	1532.4	1532.4	1500.8	1490.9	1510.7	1479.1	1459.4	1437.7	1368.7	1339.1	1303.6
22.5°	1487.0	1465.3	1447.6	1431.8	1433.8	1414.0	1386.4	1343.0	1317.4	1281.9	1240.5
25°	1398.3	1406.1	1366.7	1360.8	1366.7	1321.3	1307.5	1272.0	1234.6	1201.0	1169.5
27.5°	1343.0	1321.3	1295.7	1274.0	1274.0	1256.3	1216.8	1208.9	1151.7	1120.2	1080.7
30°	1260.2	1244.4	1222.7	1191.2	1187.2	1173.4	1141.9	1122.2	1063.0	1015.7	994.0
32.5°	1155.7	1149.8	1132.0	1096.5	1084.7	1068.9	1029.5	995.9	968.3	915.1	889.4
35°	1080.7	1059.0	1021.6	992.0	982.1	954.5	923.0	899.3	869.7	822.4	788.9
37.5°	968.3	946.6	911.1	875.6	875.6	848.0	804.6	781.0	739.6	711.9	684.3
40°	869.7	842.1	806.6	765.2	759.3	719.8	702.1	662.6	637.0	593.6	589.7
42.5°	759.3	733.6	702.1	670.5	646.9	627.1	581.8	552.2	524.6	502.9	497.0
45°	658.7	625.2	597.6	558.1	534.5	510.8	481.2	461.5	439.8	416.1	402.3
47.5°	571.9	544.3	504.9	469.4	445.7	433.9	400.3	378.7	360.9	345.1	335.3
50°	483.2	449.6	428.0	388.5	384.6	357.0	329.3	311.6	301.7	287.9	274.1
52.5°	416.1	384.6	355.0	325.4	309.6	299.8	274.1	256.4	242.6	232.7	224.8
55°	351.0	323.4	299.8	270.2	260.3	246.5	216.9	213.0	199.2	185.4	175.5
57.5°	301.7	276.1	248.5	228.8	211.0	201.2	177.5	161.7	153.8	142.0	132.1
60°	256.4	228.8	207.1	183.4	175.5	161.7	144.0	130.2	120.3	110.4	100.6
62.5°	215.0	191.3	167.6	147.9	136.1	128.2	114.4	102.6	92.7	84.8	76.9
65°	177.5	155.8	136.1	116.4	110.4	100.6	90.7	80.9	73.0	63.1	55.2
67.5°	145.9	126.2	106.5	92.7	86.8	82.8	71.0	61.1	55.2	49.3	41.4
70°	114.4	100.6	84.8	73.0	67.1	61.1	53.2	47.3	39.4	35.5	29.6
72.5°	88.7	76.9	63.1	53.2	49.3	45.4	37.5	31.6	27.6	23.7	19.7
75°	63.1	53.2	45.4	35.5	33.5	31.6	25.6	21.7	17.7	13.8	11.8
77.5°	43.4	35.5	27.6	23.7	21.7	17.7	15.8	11.8	9.9	7.9	5.9
80°	23.7	17.7	13.8	11.8	9.9	7.9	7.9	5.9	3.9	3.9	2.0
82.5°	7.9	5.9	3.9	2.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0
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°	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	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°	1644.8	1644.8	1644.8	1644.8	1644.8	1644.8	1644.8	1644.8	1644.8	1644.8	1644.8
2.5°	1642.8	1621.1	1627.0	1627.0	1623.1	1623.1	1619.1	1613.2	1615.2	1603.4	1577.7
5°	1625.1	1597.4	1593.5	1597.4	1581.7	1577.7	1569.8	1581.7	1546.2	1560.0	1544.2
7.5°	1573.8	1548.1	1542.2	1556.0	1536.3	1524.5	1522.5	1538.3	1506.7	1490.9	1473.2
10°	1516.6	1506.7	1489.0	1479.1	1473.2	1475.2	1459.4	1439.7	1433.8	1429.8	1414.0
12.5°	1465.3	1443.6	1427.8	1416.0	1412.1	1412.1	1386.4	1382.5	1364.7	1360.8	1337.1
15°	1404.2	1378.5	1368.7	1352.9	1339.1	1347.0	1317.4	1309.5	1303.6	1278.0	1281.9
17.5°	1350.9	1323.3	1299.6	1289.8	1278.0	1266.1	1238.5	1244.4	1230.6	1230.6	1195.1
20°	1281.9	1252.3	1234.6	1214.8	1214.8	1199.1	1179.3	1181.3	1163.6	1145.8	1114.3
22.5°	1208.9	1177.4	1155.7	1147.8	1128.1	1124.1	1100.5	1094.5	1070.9	1072.8	1045.2
25°	1132.0	1100.5	1070.9	1072.8	1055.1	1047.2	1033.4	1005.8	995.9	984.1	976.2
27.5°	1041.3	1019.6	994.0	992.0	958.5	960.4	942.7	934.8	911.1	917.0	899.3
30°	958.5	926.9	903.2	897.3	883.5	879.6	852.0	840.1	844.1	828.3	818.4
32.5°	873.7	826.3	816.5	804.6	796.7	786.9	767.2	775.1	757.3	761.2	745.5
35°	761.2	741.5	715.9	715.9	708.0	700.1	686.3	694.2	676.4	668.6	652.8
37.5°	666.6	648.8	623.2	631.1	617.3	605.4	593.6	595.6	579.8	577.8	562.1
40°	564.0	554.2	536.4	536.4	526.6	526.6	520.6	514.7	504.9	493.0	475.3
42.5°	467.4	459.5	451.6	453.6	439.8	451.6	435.8	445.7	414.2	412.2	400.3
45°	396.4	378.7	380.6	372.7	364.8	368.8	355.0	358.9	341.2	337.2	325.4
47.5°	321.5	315.5	303.7	299.8	299.8	293.9	287.9	286.0	278.1	268.2	252.4
50°	264.3	242.6	238.6	232.7	228.8	228.8	220.9	209.0	211.0	201.2	185.4
52.5°	207.1	189.3	181.4	179.5	171.6	167.6	157.8	149.9	144.0	140.0	130.2
55°	159.7	144.0	134.1	134.1	122.3	122.3	108.5	102.6	94.7	86.8	80.9
57.5°	120.3	112.4	102.6	94.7	90.7	80.9	73.0	63.1	57.2	45.4	37.5
60°	90.7	82.8	73.0	67.1	63.1	53.2	43.4	35.5	21.7	17.7	15.8
62.5°	67.1	59.2	49.3	45.4	41.4	33.5	23.7	11.8	5.9	5.9	5.9
65°	49.3	39.4	31.6	27.6	23.7	17.7	7.9	3.9	2.0	2.0	2.0
67.5°	33.5	25.6	17.7	15.8	11.8	5.9	2.0	2.0	2.0	2.0	2.0
70°	21.7	15.8	7.9	5.9	3.9	2.0	2.0	2.0	2.0	2.0	2.0
72.5°	13.8	7.9	3.9	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
75°	7.9	3.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
77.5°	3.9	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
80°	2.0	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	2.0	2.0	2.0
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: P219520

CATALOG NUMBER: LDSQ4B30D010 EU4B30508050 4LBSQLWWLI

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	1644.8	1644.8	1644.8	1644.8	1644.8	1644.8	1644.8	1644.8
2.5°	1605.3	1591.5	1599.4	1581.7	1589.6	1603.4	1593.5	1597.4
5°	1550.1	1542.2	1532.4	1506.7	1526.4	1542.2	1534.3	1532.4
7.5°	1490.9	1463.3	1477.1	1469.3	1465.3	1481.1	1463.3	1483.1
10°	1429.8	1410.1	1408.1	1394.3	1394.3	1406.1	1408.1	1396.3
12.5°	1339.1	1329.2	1329.2	1327.3	1325.3	1337.1	1339.1	1333.2
15°	1274.0	1270.1	1260.2	1258.2	1246.4	1264.1	1266.1	1264.1
17.5°	1195.1	1197.1	1187.2	1187.2	1195.1	1201.0	1185.3	1201.0
20°	1141.9	1132.0	1128.1	1110.3	1120.2	1130.0	1130.0	1132.0
22.5°	1065.0	1049.2	1055.1	1045.2	1039.3	1053.1	1053.1	1059.0
25°	978.2	978.2	982.1	976.2	980.2	988.0	982.1	995.9
27.5°	895.4	903.2	903.2	895.4	899.3	923.0	932.8	917.0
30°	818.4	820.4	826.3	822.4	834.2	842.1	840.1	852.0
32.5°	731.7	741.5	745.5	739.6	743.5	761.2	751.4	749.4
35°	664.6	646.9	644.9	646.9	654.8	658.7	654.8	668.6
37.5°	568.0	562.1	554.2	556.1	562.1	570.0	573.9	583.8
40°	475.3	467.4	467.4	465.4	459.5	481.2	481.2	481.2
42.5°	394.4	392.5	382.6	382.6	390.5	396.4	392.5	406.3
45°	323.4	315.5	309.6	309.6	315.5	315.5	321.5	319.5
47.5°	254.4	246.5	248.5	242.6	248.5	256.4	246.5	248.5
50°	191.3	191.3	187.4	191.3	189.3	191.3	187.4	183.4
52.5°	130.2	147.9	149.9	142.0	124.2	108.5	98.6	106.5
55°	74.9	67.1	67.1	65.1	61.1	59.2	53.2	59.2
57.5°	37.5	33.5	33.5	33.5	31.6	29.6	25.6	25.6
60°	15.8	13.8	13.8	11.8	9.9	7.9	5.9	7.9
62.5°	5.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9
65°	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
67.5°	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
70°	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
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)