

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: P219517

Luminaire Tested: **LDSQ4B30D010 EU4B30508030 4LBSQLWWLI**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-41-14  
Report Number: P219517  
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 EU4B30508030 4LBSQLWWLI  
Description: PORTFOLIO 4 INCH SQUARE SINGLE WALLWASH RECESSED DOWNLIGHT, WITH SPECULAR CLEAR TRIM  
Light Source: (1) HIGH LUMEN LED 80CRI / 3000K CCT  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 2277.3 lumens  
Efficiency: N/A  
Efficacy: 81.3 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

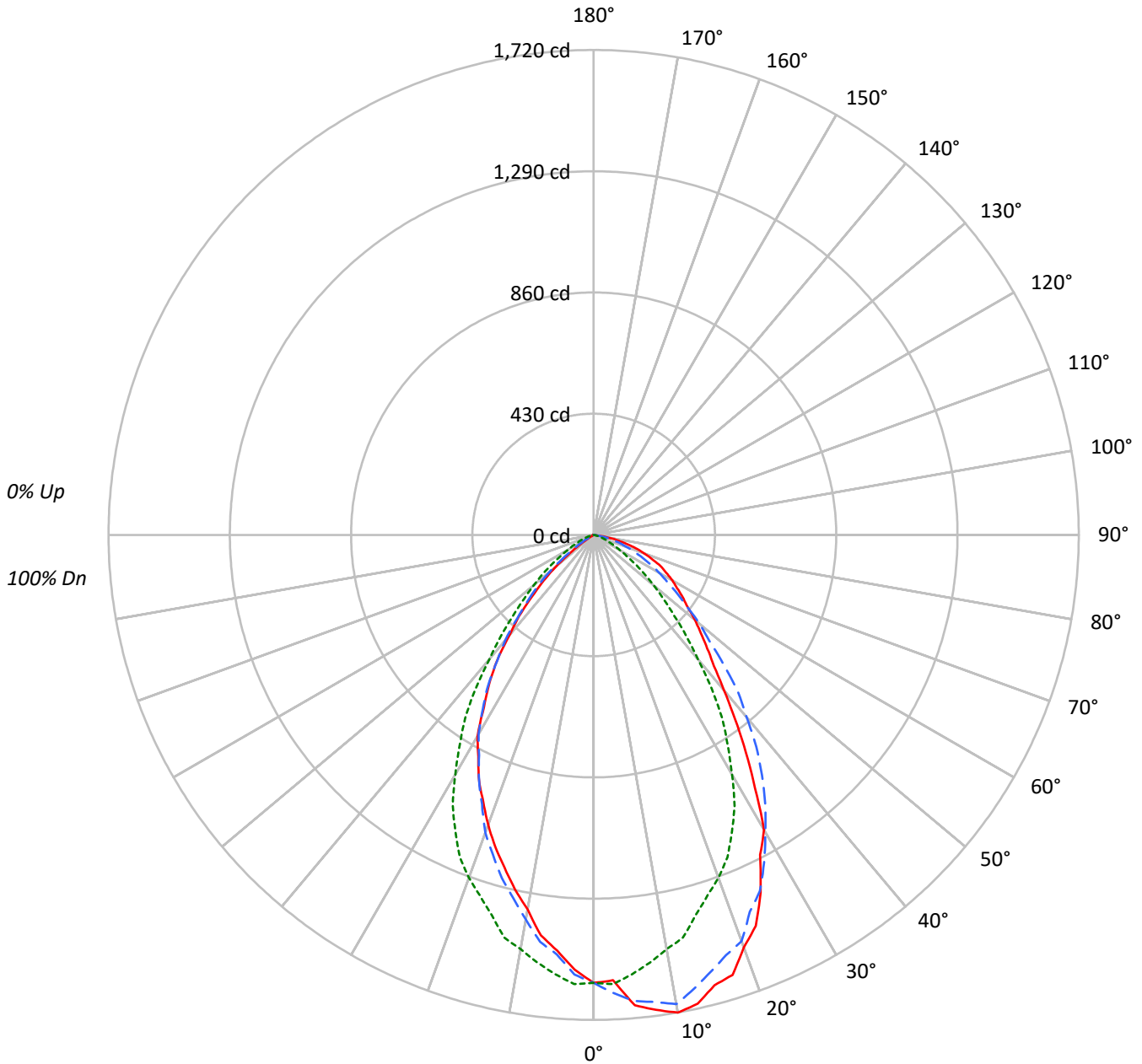
Input Watts (W): 28  
Input Voltage (V): NR  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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°	153916	153916	153916
5°	162838	152092	143943
10°	169216	146729	132671
15°	165834	140049	122468
20°	160453	133350	112732
25°	149668	124003	102828
30°	135107	109748	92063
35°	111297	93948	76374
40°	90825	72513	58779
45°	78037	55075	42279
50°	70623	41913	26706
55°	64992	30249	9644
60°	62368	20673	1473
65°	60264	13983	436
70°	53958	9715	538
75°	44205	4978	0
80°	27615	2120	0
85°	0	0	0



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	148.9	6.5
10°-20°	401.0	17.6
20°-30°	535.5	23.5
30°-40°	508.4	22.3
40°-50°	351.4	15.4
50°-60°	194.2	8.5
60°-70°	96.4	4.2
70°-80°	38.0	1.7
80°-90°	3.6	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°	1085.4	47.7
0°-40°	1593.8	70.0
0°-60°	2139.3	93.9
0°-90°	2277.3	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2277.3	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	1589	1589	1589	1589	1589	
5°	1674	1659	1564	1494	1480	160
15°	1654	1604	1396	1259	1221	468
25°	1400	1394	1160	962	962	638
35°	941	1040	794	653	646	590
45°	570	653	402	330	309	444
55°	385	362	179	91	57	346
65°	263	190	61	2	2	255
75°	118	72	13	0	0	126
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°	1588.8	1588.8	1588.8	1588.8	1588.8	1588.8	1588.8	1588.8	1588.8	1588.8	1588.8
2.5°	1581.1	1625.0	1628.8	1625.0	1630.7	1628.8	1638.3	1628.8	1640.2	1623.0	1626.9
5°	1674.5	1657.3	1693.5	1674.5	1674.5	1672.6	1666.9	1665.0	1672.6	1647.8	1659.2
7.5°	1699.2	1724.0	1756.4	1716.4	1718.3	1718.3	1706.9	1703.1	1703.1	1657.3	1670.7
10°	1720.2	1705.0	1722.1	1706.9	1720.2	1718.3	1725.9	1701.2	1718.3	1691.6	1689.7
12.5°	1703.1	1697.3	1720.2	1695.4	1687.8	1689.7	1680.2	1674.5	1680.2	1649.7	1647.8
15°	1653.5	1659.2	1693.5	1666.9	1663.1	1659.2	1647.8	1628.8	1644.0	1602.1	1604.0
17.5°	1636.4	1626.9	1632.6	1609.7	1615.4	1611.6	1609.7	1592.6	1588.8	1562.1	1562.1
20°	1556.4	1577.3	1577.3	1562.1	1562.1	1560.2	1535.4	1550.7	1533.5	1525.9	1533.5
22.5°	1501.1	1503.0	1503.0	1489.7	1491.6	1484.0	1470.6	1461.1	1470.6	1461.1	1445.9
25°	1400.2	1404.0	1426.8	1402.1	1398.3	1405.9	1394.4	1388.7	1386.8	1364.0	1394.4
27.5°	1278.2	1316.3	1314.4	1304.9	1316.3	1301.1	1295.4	1297.3	1303.0	1301.1	1308.7
30°	1207.8	1213.5	1219.2	1211.6	1213.5	1207.8	1207.8	1209.7	1224.9	1219.2	1217.3
32.5°	1064.9	1083.9	1099.2	1099.2	1101.1	1106.8	1104.9	1144.9	1154.4	1135.4	1131.6
35°	941.1	954.4	967.7	969.6	994.4	996.3	998.2	1009.6	1036.3	1042.0	1040.1
37.5°	823.0	836.3	840.1	857.2	870.6	883.9	899.2	914.4	937.3	956.3	946.8
40°	718.2	723.9	733.4	741.0	767.7	767.7	775.3	805.8	830.6	845.8	843.9
42.5°	630.6	632.5	640.1	653.4	678.2	672.5	678.2	699.1	735.3	737.2	758.2
45°	569.6	567.7	573.4	575.3	590.5	598.2	602.0	617.2	647.7	651.5	653.4
47.5°	514.3	512.4	522.0	525.8	531.5	539.1	539.1	541.0	552.4	562.0	554.4
50°	468.6	468.6	468.6	472.4	482.0	480.1	482.0	489.6	495.3	491.5	489.6
52.5°	419.1	426.7	432.4	434.3	436.2	436.2	438.1	434.3	432.4	426.7	415.3
55°	384.8	392.4	392.4	392.4	392.4	400.0	390.5	392.4	392.4	377.2	361.9
57.5°	350.5	358.1	363.9	356.2	363.9	356.2	352.4	350.5	346.7	331.5	308.6
60°	321.9	325.8	323.8	321.9	325.8	320.0	316.2	308.6	304.8	283.8	268.6
62.5°	289.6	291.5	293.4	289.6	285.7	283.8	276.2	264.8	257.2	240.0	226.7
65°	262.9	257.2	255.3	253.4	249.6	243.8	238.1	224.8	219.1	203.8	190.5
67.5°	222.9	221.0	224.8	219.1	209.5	209.5	203.8	192.4	179.1	169.5	156.2
70°	190.5	188.6	184.8	179.1	177.2	169.5	169.5	156.2	152.4	135.3	123.8
72.5°	156.2	156.2	150.5	144.8	139.1	135.3	133.3	123.8	118.1	108.6	99.1
75°	118.1	118.1	116.2	110.5	106.7	102.9	101.0	93.3	87.6	78.1	72.4
77.5°	83.8	83.8	76.2	72.4	74.3	70.5	66.7	64.8	62.9	57.1	49.5
80°	49.5	47.6	41.9	43.8	41.9	41.9	40.0	38.1	34.3	30.5	26.7
82.5°	13.3	15.2	15.2	15.2	17.1	13.3	13.3	13.3	15.2	15.2	9.5
85°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.9	1.9	1.9
87.5°	1.9	3.8	7.6	7.6	7.6	7.6	7.6	5.7	5.7	5.7	3.8
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°	1588.8	1588.8	1588.8	1588.8	1588.8	1588.8	1588.8	1588.8	1588.8	1588.8	1588.8
2.5°	1607.8	1605.9	1607.8	1594.5	1625.0	1602.1	1598.3	1594.5	1607.8	1594.5	1575.4
5°	1642.1	1623.0	1617.3	1611.6	1628.8	1602.1	1596.4	1598.3	1588.8	1564.0	1565.9
7.5°	1653.5	1636.4	1619.2	1583.0	1598.3	1592.6	1577.3	1565.9	1550.7	1529.7	1525.9
10°	1657.3	1638.3	1613.5	1602.1	1579.2	1571.6	1565.9	1546.8	1527.8	1491.6	1482.1
12.5°	1645.9	1623.0	1592.6	1583.0	1565.9	1541.1	1527.8	1508.7	1491.6	1463.0	1442.1
15°	1596.4	1577.3	1567.8	1535.4	1527.8	1512.6	1485.9	1459.2	1434.5	1396.4	1384.9
17.5°	1539.2	1531.6	1522.1	1497.3	1495.4	1480.2	1455.4	1432.5	1400.2	1341.1	1322.1
20°	1480.2	1480.2	1449.7	1440.2	1459.2	1428.7	1409.7	1388.7	1322.1	1293.5	1259.2
22.5°	1436.4	1415.4	1398.3	1383.0	1384.9	1365.9	1339.2	1297.3	1272.5	1238.2	1198.2
25°	1350.6	1358.3	1320.2	1314.4	1320.2	1276.3	1263.0	1228.7	1192.5	1160.1	1129.7
27.5°	1297.3	1276.3	1251.6	1230.6	1230.6	1213.5	1175.4	1167.8	1112.5	1082.0	1043.9
30°	1217.3	1202.0	1181.1	1150.6	1146.8	1133.5	1103.0	1083.9	1026.8	981.1	960.1
32.5°	1116.3	1110.6	1093.5	1059.2	1047.7	1032.5	994.4	962.0	935.3	883.9	859.1
35°	1043.9	1023.0	986.8	958.2	948.7	922.0	891.5	868.7	840.1	794.4	762.0
37.5°	935.3	914.4	880.1	845.8	845.8	819.1	777.2	754.4	714.4	687.7	661.0
40°	840.1	813.4	779.1	739.1	733.4	695.3	678.2	640.1	615.3	573.4	569.6
42.5°	733.4	708.7	678.2	647.7	624.8	605.8	562.0	533.4	506.7	485.8	480.1
45°	636.3	603.9	577.2	539.1	516.3	493.4	464.8	445.8	424.8	402.0	388.6
47.5°	552.4	525.8	487.7	453.4	430.5	419.1	386.7	365.8	348.6	333.4	323.8
50°	466.7	434.3	413.4	375.3	371.5	344.8	318.1	301.0	291.5	278.1	264.8
52.5°	402.0	371.5	342.9	314.3	299.1	289.6	264.8	247.6	234.3	224.8	217.2
55°	339.1	312.4	289.6	261.0	251.5	238.1	209.5	205.7	192.4	179.1	169.5
57.5°	291.5	266.7	240.0	221.0	203.8	194.3	171.4	156.2	148.6	137.2	127.6
60°	247.6	221.0	200.0	177.2	169.5	156.2	139.1	125.7	116.2	106.7	97.2
62.5°	207.6	184.8	161.9	142.9	131.4	123.8	110.5	99.1	89.5	81.9	74.3
65°	171.4	150.5	131.4	112.4	106.7	97.2	87.6	78.1	70.5	61.0	53.3
67.5°	141.0	121.9	102.9	89.5	83.8	80.0	68.6	59.1	53.3	47.6	40.0
70°	110.5	97.2	81.9	70.5	64.8	59.1	51.4	45.7	38.1	34.3	28.6
72.5°	85.7	74.3	61.0	51.4	47.6	43.8	36.2	30.5	26.7	22.9	19.0
75°	61.0	51.4	43.8	34.3	32.4	30.5	24.8	21.0	17.1	13.3	11.4
77.5°	41.9	34.3	26.7	22.9	21.0	17.1	15.2	11.4	9.5	7.6	5.7
80°	22.9	17.1	13.3	11.4	9.5	7.6	7.6	5.7	3.8	3.8	1.9
82.5°	7.6	5.7	3.8	1.9	1.9	1.9	1.9	1.9	1.9	0.0	1.9
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°	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	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°	1588.8	1588.8	1588.8	1588.8	1588.8	1588.8	1588.8	1588.8	1588.8	1588.8	1588.8
2.5°	1586.9	1565.9	1571.6	1571.6	1567.8	1567.8	1564.0	1558.3	1560.2	1548.8	1524.0
5°	1569.7	1543.0	1539.2	1543.0	1527.8	1524.0	1516.4	1527.8	1493.5	1506.8	1491.6
7.5°	1520.2	1495.4	1489.7	1503.0	1484.0	1472.6	1470.6	1485.9	1455.4	1440.2	1423.0
10°	1464.9	1455.4	1438.3	1428.7	1423.0	1424.9	1409.7	1390.6	1384.9	1381.1	1365.9
12.5°	1415.4	1394.4	1379.2	1367.8	1364.0	1364.0	1339.2	1335.4	1318.3	1314.4	1291.6
15°	1356.4	1331.6	1322.1	1306.8	1293.5	1301.1	1272.5	1264.9	1259.2	1234.4	1238.2
17.5°	1304.9	1278.2	1255.4	1245.9	1234.4	1223.0	1196.3	1202.0	1188.7	1188.7	1154.4
20°	1238.2	1209.7	1192.5	1173.5	1173.5	1158.2	1139.2	1141.1	1123.9	1106.8	1076.3
22.5°	1167.8	1137.3	1116.3	1108.7	1089.7	1085.8	1063.0	1057.3	1034.4	1036.3	1009.6
25°	1093.5	1063.0	1034.4	1036.3	1019.2	1011.5	998.2	971.5	962.0	950.6	943.0
27.5°	1005.8	984.9	960.1	958.2	925.8	927.7	910.6	903.0	880.1	885.8	868.7
30°	925.8	895.3	872.5	866.8	853.4	849.6	823.0	811.5	815.3	800.1	790.6
32.5°	843.9	798.2	788.7	777.2	769.6	760.1	741.0	748.7	731.5	735.3	720.1
35°	735.3	716.3	691.5	691.5	683.9	676.3	662.9	670.6	653.4	645.8	630.6
37.5°	643.9	626.7	602.0	609.6	596.3	584.8	573.4	575.3	560.1	558.2	542.9
40°	544.8	535.3	518.2	518.2	508.6	508.6	502.9	497.2	487.7	476.2	459.1
42.5°	451.5	443.9	436.2	438.1	424.8	436.2	421.0	430.5	400.0	398.1	386.7
45°	382.9	365.8	367.7	360.0	352.4	356.2	342.9	346.7	329.6	325.8	314.3
47.5°	310.5	304.8	293.4	289.6	289.6	283.8	278.1	276.2	268.6	259.1	243.8
50°	255.3	234.3	230.5	224.8	221.0	221.0	213.4	201.9	203.8	194.3	179.1
52.5°	200.0	182.9	175.3	173.4	165.7	161.9	152.4	144.8	139.1	135.3	125.7
55°	154.3	139.1	129.5	129.5	118.1	118.1	104.8	99.1	91.4	83.8	78.1
57.5°	116.2	108.6	99.1	91.4	87.6	78.1	70.5	61.0	55.2	43.8	36.2
60°	87.6	80.0	70.5	64.8	61.0	51.4	41.9	34.3	21.0	17.1	15.2
62.5°	64.8	57.1	47.6	43.8	40.0	32.4	22.9	11.4	5.7	5.7	5.7
65°	47.6	38.1	30.5	26.7	22.9	17.1	7.6	3.8	1.9	1.9	1.9
67.5°	32.4	24.8	17.1	15.2	11.4	5.7	1.9	1.9	1.9	1.9	1.9
70°	21.0	15.2	7.6	5.7	3.8	1.9	1.9	1.9	1.9	1.9	1.9
72.5°	13.3	7.6	3.8	1.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0
75°	7.6	3.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
77.5°	3.8	1.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
80°	1.9	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	1.9	1.9	1.9
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: P219517

CATALOG NUMBER: LDSQ4B30D010 EU4B30508030 4LBSQLWWLI

**CANDELA DISTRIBUTION (continued):**

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	1588.8	1588.8	1588.8	1588.8	1588.8	1588.8	1588.8	1588.8
2.5°	1550.7	1537.3	1544.9	1527.8	1535.4	1548.8	1539.2	1543.0
5°	1497.3	1489.7	1480.2	1455.4	1474.5	1489.7	1482.1	1480.2
7.5°	1440.2	1413.5	1426.8	1419.2	1415.4	1430.6	1413.5	1432.5
10°	1381.1	1362.1	1360.2	1346.8	1346.8	1358.3	1360.2	1348.7
12.5°	1293.5	1284.0	1284.0	1282.1	1280.2	1291.6	1293.5	1287.8
15°	1230.6	1226.8	1217.3	1215.4	1204.0	1221.1	1223.0	1221.1
17.5°	1154.4	1156.3	1146.8	1146.8	1154.4	1160.1	1144.9	1160.1
20°	1103.0	1093.5	1089.7	1072.5	1082.0	1091.6	1091.6	1093.5
22.5°	1028.7	1013.5	1019.2	1009.6	1003.9	1017.3	1017.3	1023.0
25°	944.9	944.9	948.7	943.0	946.8	954.4	948.7	962.0
27.5°	864.9	872.5	872.5	864.9	868.7	891.5	901.1	885.8
30°	790.6	792.5	798.2	794.4	805.8	813.4	811.5	823.0
32.5°	706.7	716.3	720.1	714.4	718.2	735.3	725.8	723.9
35°	642.0	624.8	622.9	624.8	632.5	636.3	632.5	645.8
37.5°	548.6	542.9	535.3	537.2	542.9	550.5	554.4	563.9
40°	459.1	451.5	451.5	449.6	443.9	464.8	464.8	464.8
42.5°	381.0	379.1	369.6	369.6	377.2	382.9	379.1	392.4
45°	312.4	304.8	299.1	299.1	304.8	304.8	310.5	308.6
47.5°	245.7	238.1	240.0	234.3	240.0	247.6	238.1	240.0
50°	184.8	184.8	181.0	184.8	182.9	184.8	181.0	177.2
52.5°	125.7	142.9	144.8	137.2	120.0	104.8	95.2	102.9
55°	72.4	64.8	64.8	62.9	59.1	57.1	51.4	57.1
57.5°	36.2	32.4	32.4	32.4	30.5	28.6	24.8	24.8
60°	15.2	13.3	13.3	11.4	9.5	7.6	5.7	7.6
62.5°	5.7	3.8	3.8	3.8	3.8	3.8	3.8	3.8
65°	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9
67.5°	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9
70°	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9
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)