

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: P219525

Luminaire Tested: **LDSQ4B30D010 EU4B30509040 4LBSQLWWLI**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-41-14  
Report Number: P219525  
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 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: 1976.1 lumens  
Efficiency: N/A  
Efficacy: 70.6 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

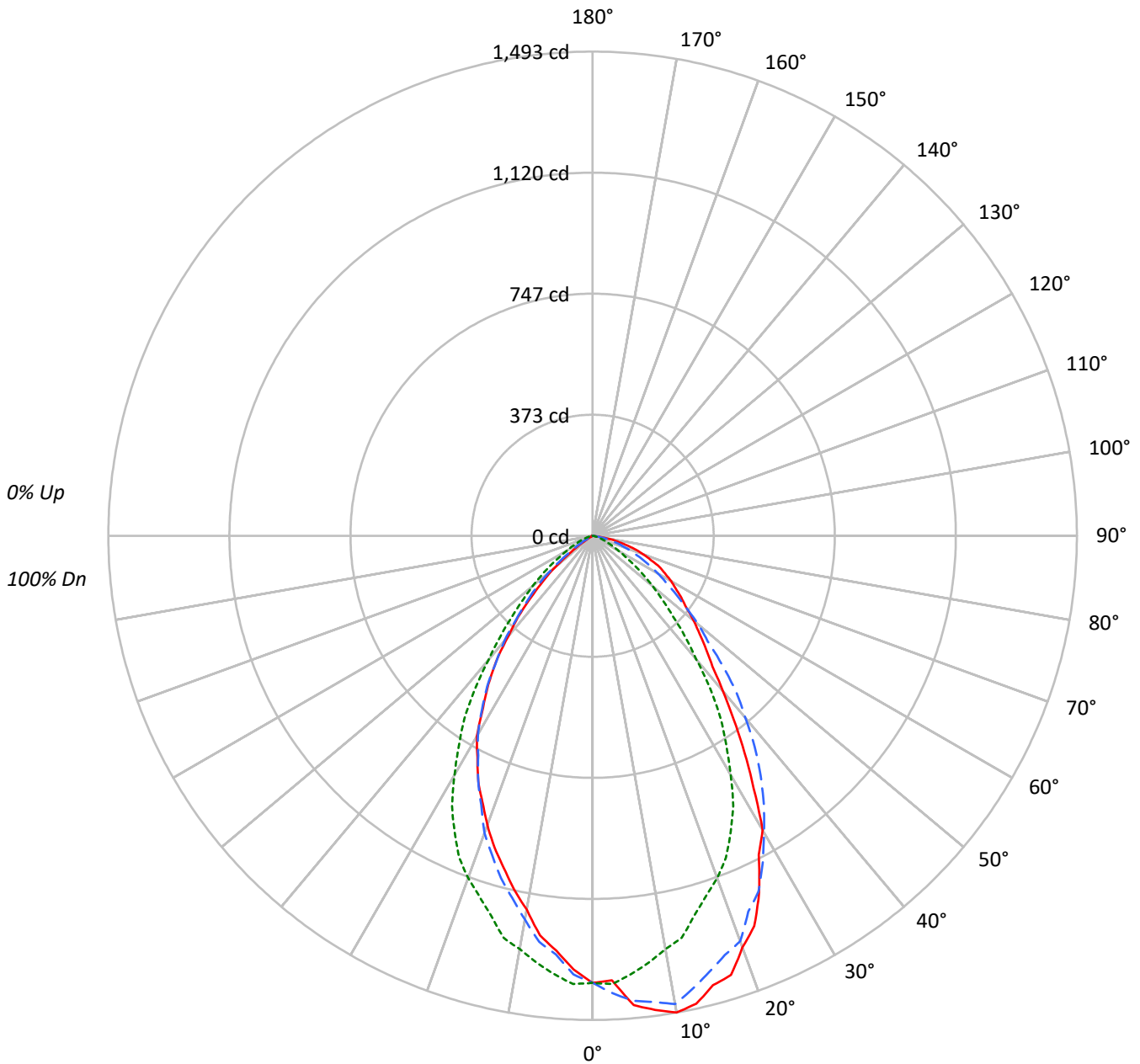
Input Watts (W): 28  
Input Voltage (V): NR  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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°	133552	133552	133552
5°	141298	131972	124902
10°	146827	127320	115122
15°	143900	121515	106270
20°	139227	115711	97814
25°	129861	107606	89232
30°	117231	95228	79881
35°	96574	81519	66275
40°	78811	62915	51002
45°	67707	47786	36689
50°	61279	36367	23164
55°	56395	26247	8377
60°	54134	17941	1279
65°	52287	12126	390
70°	46820	8441	482
75°	38366	4342	0
80°	23989	1841	0
85°	0	0	0



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	129.2	6.5
10°-20°	348.0	17.6
20°-30°	464.7	23.5
30°-40°	441.1	22.3
40°-50°	304.9	15.4
50°-60°	168.5	8.5
60°-70°	83.7	4.2
70°-80°	33.0	1.7
80°-90°	3.1	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°	941.8	47.7
0°-40°	1382.9	70.0
0°-60°	1856.3	93.9
0°-90°	1976.1	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1976.1	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	1379	1379	1379	1379	1379	
5°	1453	1440	1357	1296	1284	139
15°	1435	1392	1212	1093	1060	406
25°	1215	1210	1007	835	835	554
35°	817	902	689	567	560	512
45°	494	567	349	286	268	385
55°	334	314	155	79	50	301
65°	228	165	53	2	2	221
75°	102	63	12	0	0	109
85°	0	2	0	0	0	9
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°	1378.6	1378.6	1378.6	1378.6	1378.6	1378.6	1378.6	1378.6	1378.6	1378.6	1378.6
2.5°	1372.0	1410.0	1413.3	1410.0	1415.0	1413.3	1421.6	1413.3	1423.2	1408.3	1411.7
5°	1453.0	1438.1	1469.5	1453.0	1453.0	1451.3	1446.4	1444.7	1451.3	1429.8	1439.8
7.5°	1474.5	1496.0	1524.1	1489.3	1491.0	1491.0	1481.1	1477.8	1477.8	1438.1	1449.7
10°	1492.6	1479.4	1494.3	1481.1	1492.6	1491.0	1497.6	1476.1	1491.0	1467.9	1466.2
12.5°	1477.8	1472.8	1492.6	1471.2	1464.5	1466.2	1457.9	1453.0	1457.9	1431.5	1429.8
15°	1434.8	1439.8	1469.5	1446.4	1443.1	1439.8	1429.8	1413.3	1426.5	1390.2	1391.8
17.5°	1419.9	1411.7	1416.6	1396.8	1401.7	1398.4	1396.8	1381.9	1378.6	1355.4	1355.4
20°	1350.5	1368.7	1368.7	1355.4	1355.4	1353.8	1332.3	1345.5	1330.7	1324.0	1330.7
22.5°	1302.6	1304.2	1304.2	1292.6	1294.3	1287.7	1276.1	1267.8	1276.1	1267.8	1254.6
25°	1214.9	1218.3	1238.1	1216.6	1213.3	1219.9	1210.0	1205.0	1203.4	1183.5	1210.0
27.5°	1109.2	1142.2	1140.6	1132.3	1142.2	1129.0	1124.0	1125.7	1130.6	1129.0	1135.6
30°	1048.0	1053.0	1057.9	1051.3	1053.0	1048.0	1048.0	1049.6	1062.9	1057.9	1056.3
32.5°	924.0	940.5	953.8	953.8	955.4	960.4	958.7	993.4	1001.7	985.2	981.9
35°	816.6	828.1	839.7	841.4	862.9	864.5	866.2	876.1	899.2	904.2	902.5
37.5°	714.1	725.7	729.0	743.8	755.4	767.0	780.2	793.4	813.3	829.8	821.5
40°	623.2	628.1	636.4	643.0	666.2	666.2	672.8	699.2	720.7	733.9	732.3
42.5°	547.1	548.8	555.4	567.0	588.5	583.5	588.5	606.6	638.1	639.7	657.9
45°	494.2	492.6	497.5	499.2	512.4	519.0	522.3	535.6	562.0	565.3	567.0
47.5°	446.3	444.7	452.9	456.2	461.2	467.8	467.8	469.4	479.4	487.6	481.0
50°	406.6	406.6	406.6	409.9	418.2	416.6	418.2	424.8	429.8	426.5	424.8
52.5°	363.7	370.3	375.2	376.9	378.5	378.5	380.2	376.9	375.2	370.3	360.4
55°	333.9	340.5	340.5	340.5	340.5	347.1	338.9	340.5	340.5	327.3	314.1
57.5°	304.1	310.8	315.7	309.1	315.7	309.1	305.8	304.1	300.8	287.6	267.8
60°	279.4	282.7	281.0	279.4	282.7	277.7	274.4	267.8	264.5	246.3	233.1
62.5°	251.3	252.9	254.6	251.3	247.9	246.3	239.7	229.8	223.2	208.3	196.7
65°	228.1	223.2	221.5	219.8	216.5	211.6	206.6	195.1	190.1	176.9	165.3
67.5°	193.4	191.7	195.1	190.1	181.8	181.8	176.9	167.0	155.4	147.1	135.5
70°	165.3	163.6	160.3	155.4	153.7	147.1	147.1	135.5	132.2	117.4	107.4
72.5°	135.5	135.5	130.6	125.6	120.7	117.4	115.7	107.4	102.5	94.2	86.0
75°	102.5	102.5	100.8	95.9	92.6	89.3	87.6	81.0	76.0	67.8	62.8
77.5°	72.7	72.7	66.1	62.8	64.5	61.2	57.9	56.2	54.5	49.6	43.0
80°	43.0	41.3	36.4	38.0	36.4	36.4	34.7	33.1	29.8	26.4	23.1
82.5°	11.6	13.2	13.2	13.2	14.9	11.6	11.6	11.6	13.2	13.2	8.3
85°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.7	1.7	1.7
87.5°	1.7	3.3	6.6	6.6	6.6	6.6	6.6	5.0	5.0	5.0	3.3
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°	1378.6	1378.6	1378.6	1378.6	1378.6	1378.6	1378.6	1378.6	1378.6	1378.6	1378.6
2.5°	1395.1	1393.5	1395.1	1383.5	1410.0	1390.2	1386.9	1383.5	1395.1	1383.5	1367.0
5°	1424.9	1408.3	1403.4	1398.4	1413.3	1390.2	1385.2	1386.9	1378.6	1357.1	1358.8
7.5°	1434.8	1419.9	1405.0	1373.6	1386.9	1381.9	1368.7	1358.8	1345.5	1327.3	1324.0
10°	1438.1	1421.6	1400.1	1390.2	1370.3	1363.7	1358.8	1342.2	1325.7	1294.3	1286.0
12.5°	1428.2	1408.3	1381.9	1373.6	1358.8	1337.3	1325.7	1309.2	1294.3	1269.5	1251.3
15°	1385.2	1368.7	1360.4	1332.3	1325.7	1312.5	1289.3	1266.2	1244.7	1211.6	1201.7
17.5°	1335.6	1329.0	1320.7	1299.2	1297.6	1284.4	1262.9	1243.0	1214.9	1163.7	1147.2
20°	1284.4	1284.4	1257.9	1249.7	1266.2	1239.7	1223.2	1205.0	1147.2	1122.4	1092.6
22.5°	1246.4	1228.2	1213.3	1200.1	1201.7	1185.2	1162.0	1125.7	1104.2	1074.4	1039.7
25°	1172.0	1178.6	1145.5	1140.6	1145.5	1107.5	1095.9	1066.2	1034.8	1006.7	980.2
27.5°	1125.7	1107.5	1086.0	1067.8	1067.8	1053.0	1019.9	1013.3	965.3	938.9	905.8
30°	1056.3	1043.0	1024.9	998.4	995.1	983.5	957.1	940.5	891.0	851.3	833.1
32.5°	968.6	963.7	948.8	919.1	909.1	895.9	862.9	834.8	811.6	767.0	745.5
35°	905.8	887.7	856.2	831.5	823.2	800.0	773.6	753.8	729.0	689.3	661.2
37.5°	811.6	793.4	763.7	733.9	733.9	710.8	674.4	654.6	619.9	596.7	573.6
40°	729.0	705.8	676.1	641.4	636.4	603.3	588.5	555.4	533.9	497.5	494.2
42.5°	636.4	614.9	588.5	562.0	542.2	525.6	487.6	462.8	439.7	421.5	416.6
45°	552.1	524.0	500.9	467.8	448.0	428.1	403.3	386.8	368.6	348.8	337.2
47.5°	479.4	456.2	423.2	393.4	373.6	363.7	335.6	317.4	302.5	289.3	281.0
50°	405.0	376.9	358.7	325.6	322.3	299.2	276.0	261.2	252.9	241.3	229.8
52.5°	348.8	322.3	297.5	272.7	259.5	251.3	229.8	214.9	203.3	195.1	188.4
55°	294.2	271.1	251.3	226.5	218.2	206.6	181.8	178.5	167.0	155.4	147.1
57.5°	252.9	231.4	208.3	191.7	176.9	168.6	148.8	135.5	128.9	119.0	110.8
60°	214.9	191.7	173.6	153.7	147.1	135.5	120.7	109.1	100.8	92.6	84.3
62.5°	180.2	160.3	140.5	124.0	114.1	107.4	95.9	86.0	77.7	71.1	64.5
65°	148.8	130.6	114.1	97.5	92.6	84.3	76.0	67.8	61.2	52.9	46.3
67.5°	122.3	105.8	89.3	77.7	72.7	69.4	59.5	51.2	46.3	41.3	34.7
70°	95.9	84.3	71.1	61.2	56.2	51.2	44.6	39.7	33.1	29.8	24.8
72.5°	74.4	64.5	52.9	44.6	41.3	38.0	31.4	26.4	23.1	19.8	16.5
75°	52.9	44.6	38.0	29.8	28.1	26.4	21.5	18.2	14.9	11.6	9.9
77.5°	36.4	29.8	23.1	19.8	18.2	14.9	13.2	9.9	8.3	6.6	5.0
80°	19.8	14.9	11.6	9.9	8.3	6.6	6.6	5.0	3.3	3.3	1.7
82.5°	6.6	5.0	3.3	1.7	1.7	1.7	1.7	1.7	1.7	0.0	1.7
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°	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	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°	1378.6	1378.6	1378.6	1378.6	1378.6	1378.6	1378.6	1378.6	1378.6	1378.6	1378.6
2.5°	1376.9	1358.8	1363.7	1363.7	1360.4	1360.4	1357.1	1352.1	1353.8	1343.9	1322.4
5°	1362.1	1338.9	1335.6	1338.9	1325.7	1322.4	1315.8	1325.7	1295.9	1307.5	1294.3
7.5°	1319.1	1297.6	1292.6	1304.2	1287.7	1277.8	1276.1	1289.3	1262.9	1249.7	1234.8
10°	1271.1	1262.9	1248.0	1239.7	1234.8	1236.4	1223.2	1206.7	1201.7	1198.4	1185.2
12.5°	1228.2	1210.0	1196.8	1186.8	1183.5	1183.5	1162.0	1158.7	1143.9	1140.6	1120.7
15°	1176.9	1155.4	1147.2	1133.9	1122.4	1129.0	1104.2	1097.6	1092.6	1071.1	1074.4
17.5°	1132.3	1109.2	1089.3	1081.1	1071.1	1061.2	1038.1	1043.0	1031.5	1031.5	1001.7
20°	1074.4	1049.6	1034.8	1018.2	1018.2	1005.0	988.5	990.1	975.3	960.4	933.9
22.5°	1013.3	986.8	968.6	962.0	945.5	942.2	922.4	917.4	897.6	899.2	876.1
25°	948.8	922.4	897.6	899.2	884.3	877.7	866.2	843.0	834.8	824.8	818.2
27.5°	872.8	854.6	833.1	831.5	803.4	805.0	790.1	783.5	763.7	768.6	753.8
30°	803.4	776.9	757.1	752.1	740.5	737.2	714.1	704.2	707.5	694.3	686.0
32.5°	732.3	692.6	684.3	674.4	667.8	659.5	643.0	649.6	634.7	638.1	624.8
35°	638.1	621.5	600.0	600.0	593.4	586.8	575.2	581.9	567.0	560.4	547.1
37.5°	558.7	543.8	522.3	529.0	517.4	507.5	497.5	499.2	486.0	484.3	471.1
40°	472.8	464.5	449.6	449.6	441.3	441.3	436.4	431.4	423.2	413.2	398.4
42.5°	391.8	385.1	378.5	380.2	368.6	378.5	365.3	373.6	347.1	345.5	335.6
45°	332.3	317.4	319.0	312.4	305.8	309.1	297.5	300.8	286.0	282.7	272.7
47.5°	269.4	264.5	254.6	251.3	251.3	246.3	241.3	239.7	233.1	224.8	211.6
50°	221.5	203.3	200.0	195.1	191.7	191.7	185.1	175.2	176.9	168.6	155.4
52.5°	173.6	158.7	152.1	150.4	143.8	140.5	132.2	125.6	120.7	117.4	109.1
55°	133.9	120.7	112.4	112.4	102.5	102.5	90.9	86.0	79.3	72.7	67.8
57.5°	100.8	94.2	86.0	79.3	76.0	67.8	61.2	52.9	47.9	38.0	31.4
60°	76.0	69.4	61.2	56.2	52.9	44.6	36.4	29.8	18.2	14.9	13.2
62.5°	56.2	49.6	41.3	38.0	34.7	28.1	19.8	9.9	5.0	5.0	5.0
65°	41.3	33.1	26.4	23.1	19.8	14.9	6.6	3.3	1.7	1.7	1.7
67.5°	28.1	21.5	14.9	13.2	9.9	5.0	1.7	1.7	1.7	1.7	1.7
70°	18.2	13.2	6.6	5.0	3.3	1.7	1.7	1.7	1.7	1.7	1.7
72.5°	11.6	6.6	3.3	1.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0
75°	6.6	3.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
77.5°	3.3	1.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
80°	1.7	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	1.7	1.7	1.7
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: P219525

CATALOG NUMBER: LDSQ4B30D010 EU4B30509040 4LBSQLWWLI

**CANDELA DISTRIBUTION (continued):**

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	1378.6	1378.6	1378.6	1378.6	1378.6	1378.6	1378.6	1378.6
2.5°	1345.5	1334.0	1340.6	1325.7	1332.3	1343.9	1335.6	1338.9
5°	1299.2	1292.6	1284.4	1262.9	1279.4	1292.6	1286.0	1284.4
7.5°	1249.7	1226.5	1238.1	1231.5	1228.2	1241.4	1226.5	1243.0
10°	1198.4	1181.9	1180.2	1168.7	1168.7	1178.6	1180.2	1170.3
12.5°	1122.4	1114.1	1114.1	1112.5	1110.8	1120.7	1122.4	1117.4
15°	1067.8	1064.5	1056.3	1054.6	1044.7	1059.6	1061.2	1059.6
17.5°	1001.7	1003.4	995.1	995.1	1001.7	1006.7	993.4	1006.7
20°	957.1	948.8	945.5	930.6	938.9	947.2	947.2	948.8
22.5°	892.6	879.4	884.3	876.1	871.1	882.7	882.7	887.7
25°	819.9	819.9	823.2	818.2	821.5	828.1	823.2	834.8
27.5°	750.5	757.1	757.1	750.5	753.8	773.6	781.9	768.6
30°	686.0	687.6	692.6	689.3	699.2	705.8	704.2	714.1
32.5°	613.3	621.5	624.8	619.9	623.2	638.1	629.8	628.1
35°	557.1	542.2	540.5	542.2	548.8	552.1	548.8	560.4
37.5°	476.1	471.1	464.5	466.1	471.1	477.7	481.0	489.3
40°	398.4	391.8	391.8	390.1	385.1	403.3	403.3	403.3
42.5°	330.6	328.9	320.7	320.7	327.3	332.3	328.9	340.5
45°	271.1	264.5	259.5	259.5	264.5	264.5	269.4	267.8
47.5°	213.2	206.6	208.3	203.3	208.3	214.9	206.6	208.3
50°	160.3	160.3	157.0	160.3	158.7	160.3	157.0	153.7
52.5°	109.1	124.0	125.6	119.0	104.1	90.9	82.6	89.3
55°	62.8	56.2	56.2	54.5	51.2	49.6	44.6	49.6
57.5°	31.4	28.1	28.1	28.1	26.4	24.8	21.5	21.5
60°	13.2	11.6	11.6	9.9	8.3	6.6	5.0	6.6
62.5°	5.0	3.3	3.3	3.3	3.3	3.3	3.3	3.3
65°	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7
67.5°	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7
70°	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7
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)