

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: P219522

Luminaire Tested: **LDSQ4B30D010 EU4B30509027 4LBSQLWWLI**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P219522
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 EU4B30509027 4LBSQLWWLI
Description: PORTFOLIO 4 INCH SQUARE SINGLE WALLWASH RECESSED DOWNLIGHT, WITH SPECULAR CLEAR TRIM
Light Source: (1) HIGH LUMEN LED 90CRI / 2700K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1870.6 lumens
Efficiency: N/A
Efficacy: 66.8 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

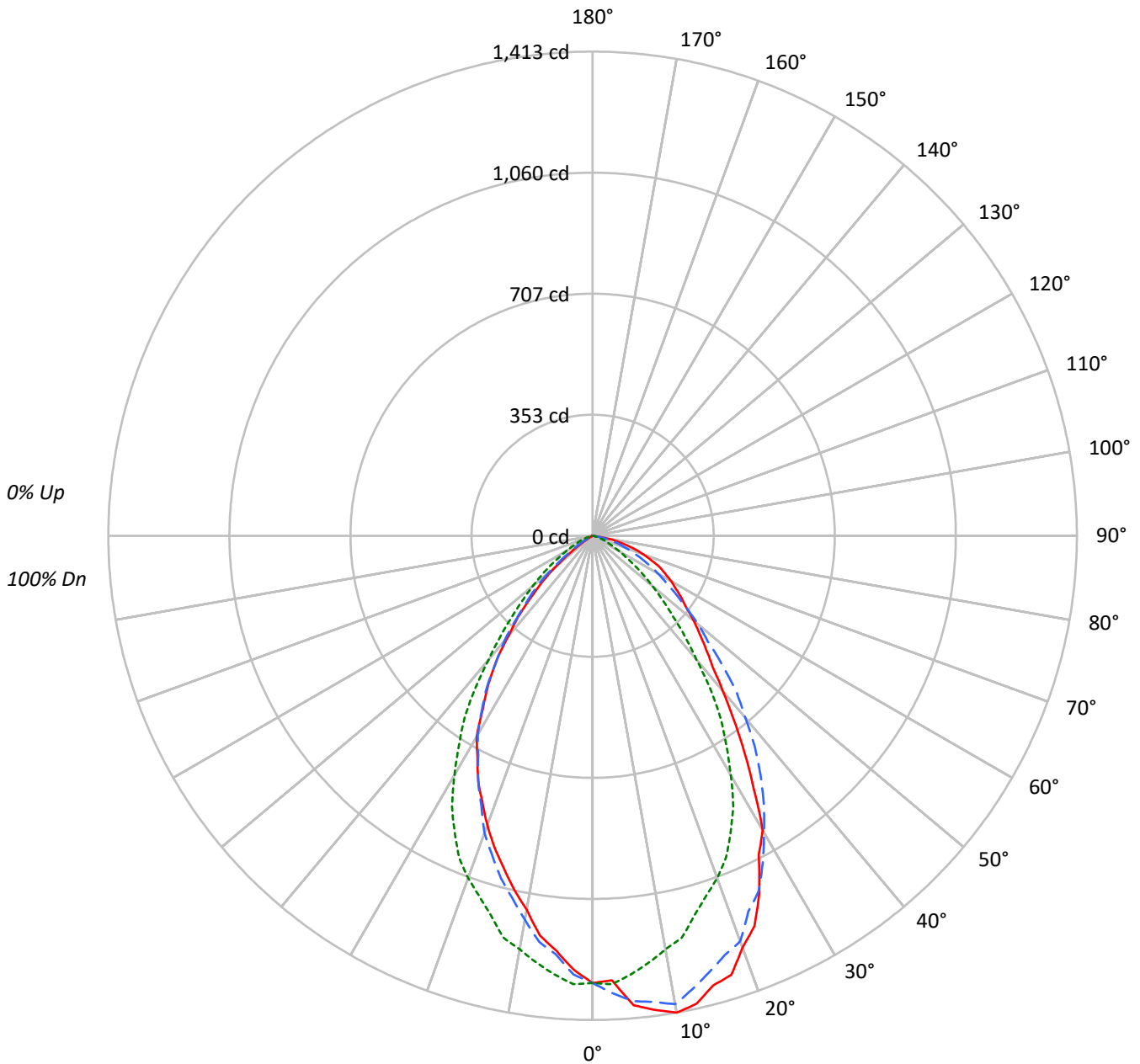
Input Watts (W): 28
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



TEST NUMBER: P219522

CATALOG NUMBER: LDSQ4B30D010 EU4B30509027 4LBSQLWWLI

Luminous Intensity Polar Plot





TEST NUMBER: P219522

CATALOG NUMBER: LDSQ4B30D010 EU4B30509027 4LBSQLWWLI

COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20				20				20				20				20				20	
RC	80				70				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				100
1	112	108	105	102	109	106	103	101	102	100	98	98	96	95	95	93	92	90				90
2	104	98	93	89	102	96	92	88	93	89	86	90	87	84	87	84	82	80				80
3	97	89	83	78	95	88	82	77	85	80	76	82	78	75	80	77	74	72				72
4	91	81	74	69	89	80	74	69	78	72	68	76	71	67	74	70	66	64				64
5	85	75	67	62	83	74	67	62	72	66	61	70	65	60	68	64	60	58				58
6	80	69	61	56	78	68	61	56	66	60	55	65	59	55	63	58	54	53				53
7	75	63	56	51	73	63	56	51	61	55	50	60	54	50	59	54	50	48				48
8	70	59	52	47	69	58	51	46	57	51	46	56	50	46	55	50	46	44				44
9	66	55	48	43	65	54	47	43	53	47	43	52	46	42	51	46	42	41				41
10	62	51	44	40	61	51	44	40	50	44	39	49	43	39	48	43	39	38				38

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	126422	126422	126422
5°	133751	124922	118231
10°	138997	120523	108974
15°	136218	115026	100594
20°	131794	109536	92598
25°	122934	101856	84465
30°	110967	90138	75619
35°	91417	77167	62727
40°	74600	59564	48283
45°	64103	45238	34730
50°	58009	34438	21929
55°	53388	24845	7921
60°	51228	16973	1221
65°	49490	11484	367
70°	44328	7988	453
75°	36307	4117	0
80°	22706	1729	0
85°	0	0	0



TEST NUMBER: P219522

CATALOG NUMBER: LDSQ4B30D010 EU4B30509027 4LBSQLWWLI

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	122.3	6.5
10°-20°	329.4	17.6
20°-30°	439.9	23.5
30°-40°	417.6	22.3
40°-50°	288.6	15.4
50°-60°	159.5	8.5
60°-70°	79.2	4.2
70°-80°	31.2	1.7
80°-90°	3.0	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°	891.5	47.7
0°-40°	1309.1	70.0
0°-60°	1757.2	93.9
0°-90°	1870.6	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1870.6	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	1305	1305	1305	1305	1305	
5°	1375	1363	1285	1227	1216	132
15°	1358	1318	1147	1034	1003	384
25°	1150	1145	953	790	790	524
35°	773	854	652	537	530	484
45°	468	537	330	271	254	365
55°	316	297	147	75	47	284
65°	216	156	50	2	2	210
75°	97	60	11	0	0	103
85°	0	2	0	0	0	9
90°	0	0	0	0	0	



TEST NUMBER: P219522

CATALOG NUMBER: LDSQ4B30D010 EU4B30509027 4LBSQLWWLI

CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
0°	1305.0	1305.0	1305.0	1305.0	1305.0	1305.0	1305.0	1305.0	1305.0	1305.0	1305.0
2.5°	1298.7	1334.7	1337.8	1334.7	1339.4	1337.8	1345.7	1337.8	1347.2	1333.2	1336.3
5°	1375.4	1361.3	1391.0	1375.4	1375.4	1373.8	1369.1	1367.6	1373.8	1353.5	1362.9
7.5°	1395.7	1416.1	1442.7	1409.8	1411.4	1411.4	1402.0	1398.9	1398.9	1361.3	1372.3
10°	1413.0	1400.4	1414.5	1402.0	1413.0	1411.4	1417.6	1397.3	1411.4	1389.5	1387.9
12.5°	1398.9	1394.2	1413.0	1392.6	1386.4	1387.9	1380.1	1375.4	1380.1	1355.1	1353.5
15°	1358.2	1362.9	1391.0	1369.1	1366.0	1362.9	1353.5	1337.8	1350.4	1315.9	1317.5
17.5°	1344.1	1336.3	1341.0	1322.2	1326.9	1323.8	1322.2	1308.1	1305.0	1283.1	1283.1
20°	1278.4	1295.6	1295.6	1283.1	1283.1	1281.5	1261.2	1273.7	1259.6	1253.3	1259.6
22.5°	1233.0	1234.6	1234.6	1223.6	1225.2	1218.9	1208.0	1200.1	1208.0	1200.1	1187.6
25°	1150.1	1153.2	1172.0	1151.6	1148.5	1154.8	1145.4	1140.7	1139.1	1120.3	1145.4
27.5°	1049.9	1081.2	1079.7	1071.8	1081.2	1068.7	1064.0	1065.6	1070.3	1068.7	1075.0
30°	992.0	996.7	1001.4	995.2	996.7	992.0	992.0	993.6	1006.1	1001.4	999.9
32.5°	874.7	890.3	902.8	902.8	904.4	909.1	907.5	940.4	948.2	932.6	929.4
35°	773.0	783.9	794.9	796.4	816.8	818.4	819.9	829.3	851.2	855.9	854.3
37.5°	676.0	686.9	690.0	704.1	715.1	726.0	738.6	751.1	769.8	785.5	777.7
40°	589.9	594.6	602.4	608.7	630.6	630.6	636.8	661.9	682.2	694.7	693.2
42.5°	517.9	519.5	525.7	536.7	557.0	552.3	557.0	574.3	604.0	605.6	622.8
45°	467.9	466.3	471.0	472.5	485.1	491.3	494.5	507.0	532.0	535.1	536.7
47.5°	422.5	420.9	428.7	431.9	436.6	442.8	442.8	444.4	453.8	461.6	455.3
50°	384.9	384.9	384.9	388.1	395.9	394.3	395.9	402.1	406.8	403.7	402.1
52.5°	344.2	350.5	355.2	356.8	358.3	358.3	359.9	356.8	355.2	350.5	341.1
55°	316.1	322.3	322.3	322.3	322.3	328.6	320.8	322.3	322.3	309.8	297.3
57.5°	287.9	294.2	298.9	292.6	298.9	292.6	289.5	287.9	284.8	272.3	253.5
60°	264.4	267.6	266.0	264.4	267.6	262.9	259.7	253.5	250.4	233.1	220.6
62.5°	237.8	239.4	241.0	237.8	234.7	233.1	226.9	217.5	211.2	197.2	186.2
65°	215.9	211.2	209.7	208.1	205.0	200.3	195.6	184.6	179.9	167.4	156.5
67.5°	183.1	181.5	184.6	179.9	172.1	172.1	167.4	158.0	147.1	139.3	128.3
70°	156.5	154.9	151.8	147.1	145.5	139.3	139.3	128.3	125.2	111.1	101.7
72.5°	128.3	128.3	123.6	118.9	114.2	111.1	109.5	101.7	97.0	89.2	81.4
75°	97.0	97.0	95.4	90.8	87.6	84.5	82.9	76.7	72.0	64.2	59.5
77.5°	68.8	68.8	62.6	59.5	61.0	57.9	54.8	53.2	51.6	46.9	40.7
80°	40.7	39.1	34.4	36.0	34.4	34.4	32.9	31.3	28.2	25.0	21.9
82.5°	11.0	12.5	12.5	12.5	14.1	11.0	11.0	11.0	12.5	12.5	7.8
85°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.6	1.6	1.6
87.5°	1.6	3.1	6.3	6.3	6.3	6.3	6.3	4.7	4.7	4.7	3.1
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: P219522

CATALOG NUMBER: LDSQ4B30D010 EU4B30509027 4LBSQLWWLI

CANDELA DISTRIBUTION (continued):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
0°	1305.0	1305.0	1305.0	1305.0	1305.0	1305.0	1305.0	1305.0	1305.0	1305.0	1305.0
2.5°	1320.6	1319.1	1320.6	1309.7	1334.7	1315.9	1312.8	1309.7	1320.6	1309.7	1294.0
5°	1348.8	1333.2	1328.5	1323.8	1337.8	1315.9	1311.2	1312.8	1305.0	1284.6	1286.2
7.5°	1358.2	1344.1	1330.0	1300.3	1312.8	1308.1	1295.6	1286.2	1273.7	1256.5	1253.3
10°	1361.3	1345.7	1325.3	1315.9	1297.2	1290.9	1286.2	1270.6	1254.9	1225.2	1217.4
12.5°	1351.9	1333.2	1308.1	1300.3	1286.2	1265.9	1254.9	1239.3	1225.2	1201.7	1184.5
15°	1311.2	1295.6	1287.8	1261.2	1254.9	1242.4	1220.5	1198.6	1178.2	1146.9	1137.6
17.5°	1264.3	1258.0	1250.2	1229.9	1228.3	1215.8	1195.5	1176.7	1150.1	1101.6	1085.9
20°	1215.8	1215.8	1190.8	1182.9	1198.6	1173.5	1157.9	1140.7	1085.9	1062.5	1034.3
22.5°	1179.8	1162.6	1148.5	1136.0	1137.6	1121.9	1100.0	1065.6	1045.2	1017.1	984.2
25°	1109.4	1115.7	1084.4	1079.7	1084.4	1048.4	1037.4	1009.3	979.5	952.9	927.9
27.5°	1065.6	1048.4	1028.0	1010.8	1010.8	996.7	965.4	959.2	913.8	888.8	857.5
30°	999.9	987.3	970.1	945.1	942.0	931.0	906.0	890.3	843.4	805.8	788.6
32.5°	916.9	912.2	898.2	870.0	860.6	848.1	816.8	790.2	768.3	726.0	705.7
35°	857.5	840.3	810.5	787.1	779.2	757.3	732.3	713.5	690.0	652.5	625.9
37.5°	768.3	751.1	722.9	694.7	694.7	672.8	638.4	619.6	586.8	564.9	543.0
40°	690.0	668.1	640.0	607.1	602.4	571.1	557.0	525.7	505.4	471.0	467.9
42.5°	602.4	582.1	557.0	532.0	513.2	497.6	461.6	438.1	416.2	399.0	394.3
45°	522.6	496.0	474.1	442.8	424.0	405.3	381.8	366.1	348.9	330.2	319.2
47.5°	453.8	431.9	400.6	372.4	353.6	344.2	317.6	300.4	286.3	273.8	266.0
50°	383.4	356.8	339.5	308.3	305.1	283.2	261.3	247.2	239.4	228.5	217.5
52.5°	330.2	305.1	281.7	258.2	245.7	237.8	217.5	203.4	192.5	184.6	178.4
55°	278.5	256.6	237.8	214.4	206.5	195.6	172.1	169.0	158.0	147.1	139.3
57.5°	239.4	219.1	197.2	181.5	167.4	159.6	140.8	128.3	122.0	112.7	104.8
60°	203.4	181.5	164.3	145.5	139.3	128.3	114.2	103.3	95.4	87.6	79.8
62.5°	170.6	151.8	133.0	117.4	108.0	101.7	90.8	81.4	73.5	67.3	61.0
65°	140.8	123.6	108.0	92.3	87.6	79.8	72.0	64.2	57.9	50.1	43.8
67.5°	115.8	100.1	84.5	73.5	68.8	65.7	56.3	48.5	43.8	39.1	32.9
70°	90.8	79.8	67.3	57.9	53.2	48.5	42.2	37.6	31.3	28.2	23.5
72.5°	70.4	61.0	50.1	42.2	39.1	36.0	29.7	25.0	21.9	18.8	15.6
75°	50.1	42.2	36.0	28.2	26.6	25.0	20.3	17.2	14.1	11.0	9.4
77.5°	34.4	28.2	21.9	18.8	17.2	14.1	12.5	9.4	7.8	6.3	4.7
80°	18.8	14.1	11.0	9.4	7.8	6.3	6.3	4.7	3.1	3.1	1.6
82.5°	6.3	4.7	3.1	1.6	1.6	1.6	1.6	1.6	1.6	0.0	1.6
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°	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	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



TEST NUMBER: P219522

CATALOG NUMBER: LDSQ4B30D010 EU4B30509027 4LBSQLWWLI

CANDELA DISTRIBUTION (continued):

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
0°	1305.0	1305.0	1305.0	1305.0	1305.0	1305.0	1305.0	1305.0	1305.0	1305.0	1305.0
2.5°	1303.4	1286.2	1290.9	1290.9	1287.8	1287.8	1284.6	1279.9	1281.5	1272.1	1251.8
5°	1289.3	1267.4	1264.3	1267.4	1254.9	1251.8	1245.5	1254.9	1226.7	1237.7	1225.2
7.5°	1248.7	1228.3	1223.6	1234.6	1218.9	1209.5	1208.0	1220.5	1195.5	1182.9	1168.9
10°	1203.3	1195.5	1181.4	1173.5	1168.9	1170.4	1157.9	1142.3	1137.6	1134.4	1121.9
12.5°	1162.6	1145.4	1132.9	1123.5	1120.3	1120.3	1100.0	1096.9	1082.8	1079.7	1060.9
15°	1114.1	1093.7	1085.9	1073.4	1062.5	1068.7	1045.2	1039.0	1034.3	1013.9	1017.1
17.5°	1071.8	1049.9	1031.2	1023.3	1013.9	1004.6	982.7	987.3	976.4	976.4	948.2
20°	1017.1	993.6	979.5	963.9	963.9	951.4	935.7	937.3	923.2	909.1	884.1
22.5°	959.2	934.1	916.9	910.7	895.0	891.9	873.1	868.4	849.6	851.2	829.3
25°	898.2	873.1	849.6	851.2	837.1	830.9	819.9	798.0	790.2	780.8	774.5
27.5°	826.2	809.0	788.6	787.1	760.5	762.0	747.9	741.7	722.9	727.6	713.5
30°	760.5	735.4	716.6	712.0	701.0	697.9	676.0	666.6	669.7	657.2	649.4
32.5°	693.2	655.6	647.8	638.4	632.2	624.3	608.7	614.9	600.9	604.0	591.5
35°	604.0	588.3	568.0	568.0	561.7	555.5	544.5	550.8	536.7	530.4	517.9
37.5°	528.9	514.8	494.5	500.7	489.8	480.4	471.0	472.5	460.0	458.5	445.9
40°	447.5	439.7	425.6	425.6	417.8	417.8	413.1	408.4	400.6	391.2	377.1
42.5°	370.8	364.6	358.3	359.9	348.9	358.3	345.8	353.6	328.6	327.0	317.6
45°	314.5	300.4	302.0	295.7	289.5	292.6	281.7	284.8	270.7	267.6	258.2
47.5°	255.1	250.4	241.0	237.8	237.8	233.1	228.5	226.9	220.6	212.8	200.3
50°	209.7	192.5	189.3	184.6	181.5	181.5	175.2	165.9	167.4	159.6	147.1
52.5°	164.3	150.2	144.0	142.4	136.1	133.0	125.2	118.9	114.2	111.1	103.3
55°	126.7	114.2	106.4	106.4	97.0	97.0	86.1	81.4	75.1	68.8	64.2
57.5°	95.4	89.2	81.4	75.1	72.0	64.2	57.9	50.1	45.4	36.0	29.7
60°	72.0	65.7	57.9	53.2	50.1	42.2	34.4	28.2	17.2	14.1	12.5
62.5°	53.2	46.9	39.1	36.0	32.9	26.6	18.8	9.4	4.7	4.7	4.7
65°	39.1	31.3	25.0	21.9	18.8	14.1	6.3	3.1	1.6	1.6	1.6
67.5°	26.6	20.3	14.1	12.5	9.4	4.7	1.6	1.6	1.6	1.6	1.6
70°	17.2	12.5	6.3	4.7	3.1	1.6	1.6	1.6	1.6	1.6	1.6
72.5°	11.0	6.3	3.1	1.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0
75°	6.3	3.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
77.5°	3.1	1.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
80°	1.6	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	1.6	1.6	1.6
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: P219522

CATALOG NUMBER: LDSQ4B30D010 EU4B30509027 4LBSQLWWLI

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	1305.0	1305.0	1305.0	1305.0	1305.0	1305.0	1305.0	1305.0
2.5°	1273.7	1262.7	1269.0	1254.9	1261.2	1272.1	1264.3	1267.4
5°	1229.9	1223.6	1215.8	1195.5	1211.1	1223.6	1217.4	1215.8
7.5°	1182.9	1161.0	1172.0	1165.7	1162.6	1175.1	1161.0	1176.7
10°	1134.4	1118.8	1117.2	1106.3	1106.3	1115.7	1117.2	1107.8
12.5°	1062.5	1054.6	1054.6	1053.1	1051.5	1060.9	1062.5	1057.8
15°	1010.8	1007.7	999.9	998.3	988.9	1003.0	1004.6	1003.0
17.5°	948.2	949.8	942.0	942.0	948.2	952.9	940.4	952.9
20°	906.0	898.2	895.0	880.9	888.8	896.6	896.6	898.2
22.5°	845.0	832.4	837.1	829.3	824.6	835.6	835.6	840.3
25°	776.1	776.1	779.2	774.5	777.7	783.9	779.2	790.2
27.5°	710.4	716.6	716.6	710.4	713.5	732.3	740.1	727.6
30°	649.4	650.9	655.6	652.5	661.9	668.1	666.6	676.0
32.5°	580.5	588.3	591.5	586.8	589.9	604.0	596.2	594.6
35°	527.3	513.2	511.7	513.2	519.5	522.6	519.5	530.4
37.5°	450.6	445.9	439.7	441.3	445.9	452.2	455.3	463.2
40°	377.1	370.8	370.8	369.3	364.6	381.8	381.8	381.8
42.5°	312.9	311.4	303.6	303.6	309.8	314.5	311.4	322.3
45°	256.6	250.4	245.7	245.7	250.4	250.4	255.1	253.5
47.5°	201.9	195.6	197.2	192.5	197.2	203.4	195.6	197.2
50°	151.8	151.8	148.6	151.8	150.2	151.8	148.6	145.5
52.5°	103.3	117.4	118.9	112.7	98.6	86.1	78.2	84.5
55°	59.5	53.2	53.2	51.6	48.5	46.9	42.2	46.9
57.5°	29.7	26.6	26.6	26.6	25.0	23.5	20.3	20.3
60°	12.5	11.0	11.0	9.4	7.8	6.3	4.7	6.3
62.5°	4.7	3.1	3.1	3.1	3.1	3.1	3.1	3.1
65°	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6
67.5°	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6
70°	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6
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)