

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: P219521

Luminaire Tested: **LDSQ4B30D010 EU4B30509024 4LBSQLWWLI**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P219521
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 EU4B30509024 4LBSQLWWLI
Description: PORTFOLIO 4 INCH SQUARE SINGLE WALLWASH RECESSED DOWNLIGHT, WITH SPECULAR CLEAR TRIM
Light Source: (1) HIGH LUMEN LED 90CRI / 2400K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1645.6 lumens
Efficiency: N/A
Efficacy: 58.8 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

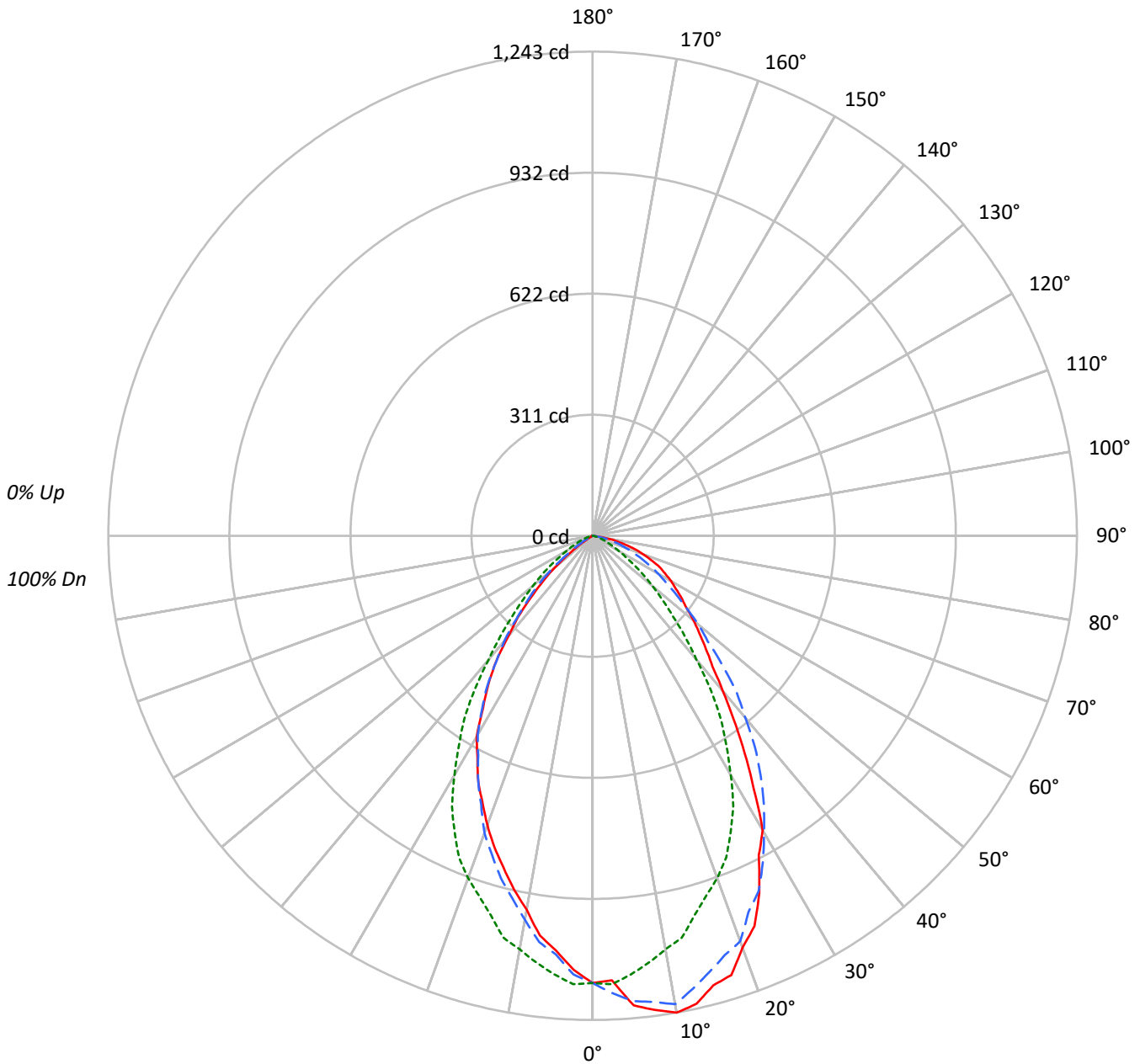
Input Watts (W): 28
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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					0
RW	70	50	30	10	70	50	30	10	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°	111223	111223	111223
5°	117667	109907	104014
10°	122274	106023	95871
15°	119840	101195	88498
20°	115948	96361	81454
25°	108152	89606	74310
30°	97622	79299	66524
35°	80419	67883	55193
40°	65634	52393	42479
45°	56390	39799	30552
50°	51031	30293	19291
55°	46970	21855	6975
60°	45066	14938	1066
65°	43553	10109	321
70°	39003	7024	397
75°	31928	3593	0
80°	19972	1562	0
85°	0	0	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	107.6	6.5
10°-20°	289.8	17.6
20°-30°	387.0	23.5
30°-40°	367.3	22.3
40°-50°	253.9	15.4
50°-60°	140.3	8.5
60°-70°	69.7	4.2
70°-80°	27.5	1.7
80°-90°	2.6	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°	784.3	47.7
0°-40°	1151.7	70.0
0°-60°	1545.9	93.9
0°-90°	1645.6	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1645.6	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	1148	1148	1148	1148	1148	
5°	1210	1199	1130	1079	1070	116
15°	1195	1159	1009	910	882	338
25°	1012	1008	838	695	695	461
35°	680	752	574	472	467	426
45°	412	472	290	238	223	321
55°	278	262	129	66	41	250
65°	190	138	44	1	1	184
75°	85	52	10	0	0	91
85°	0	1	0	0	0	8
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°	1148.1	1148.1	1148.1	1148.1	1148.1	1148.1	1148.1	1148.1	1148.1	1148.1	1148.1
2.5°	1142.5	1174.2	1177.0	1174.2	1178.3	1177.0	1183.8	1177.0	1185.2	1172.8	1175.6
5°	1210.0	1197.6	1223.8	1210.0	1210.0	1208.6	1204.5	1203.1	1208.6	1190.7	1199.0
7.5°	1227.9	1245.8	1269.2	1240.3	1241.7	1241.7	1233.4	1230.6	1230.6	1197.6	1207.2
10°	1243.0	1232.0	1244.4	1233.4	1243.0	1241.7	1247.2	1229.3	1241.7	1222.4	1221.0
12.5°	1230.6	1226.5	1243.0	1225.1	1219.6	1221.0	1214.1	1210.0	1214.1	1192.1	1190.7
15°	1194.9	1199.0	1223.8	1204.5	1201.7	1199.0	1190.7	1177.0	1188.0	1157.7	1159.1
17.5°	1182.5	1175.6	1179.7	1163.2	1167.3	1164.6	1163.2	1150.8	1148.1	1128.8	1128.8
20°	1124.7	1139.8	1139.8	1128.8	1128.8	1127.4	1109.5	1120.5	1108.1	1102.6	1108.1
22.5°	1084.7	1086.1	1086.1	1076.5	1077.8	1072.3	1062.7	1055.8	1062.7	1055.8	1044.8
25°	1011.8	1014.5	1031.0	1013.2	1010.4	1015.9	1007.6	1003.5	1002.1	985.6	1007.6
27.5°	923.7	951.2	949.8	942.9	951.2	940.2	936.1	937.4	941.6	940.2	945.7
30°	872.7	876.9	881.0	875.5	876.9	872.7	872.7	874.1	885.1	881.0	879.6
32.5°	769.5	783.3	794.3	794.3	795.7	799.8	798.4	827.3	834.2	820.4	817.7
35°	680.0	689.7	699.3	700.7	718.6	719.9	721.3	729.6	748.9	753.0	751.6
37.5°	594.7	604.3	607.1	619.5	629.1	638.7	649.7	660.8	677.3	691.0	684.2
40°	519.0	523.1	530.0	535.5	554.8	554.8	560.3	582.3	600.2	611.2	609.8
42.5°	455.6	457.0	462.5	472.2	490.1	485.9	490.1	505.2	531.4	532.7	547.9
45°	411.6	410.2	414.3	415.7	426.7	432.2	435.0	446.0	468.0	470.8	472.2
47.5°	371.7	370.3	377.2	379.9	384.1	389.6	389.6	390.9	399.2	406.1	400.6
50°	338.6	338.6	338.6	341.4	348.3	346.9	348.3	353.8	357.9	355.2	353.8
52.5°	302.8	308.4	312.5	313.9	315.2	315.2	316.6	313.9	312.5	308.4	300.1
55°	278.1	283.6	283.6	283.6	283.6	289.1	282.2	283.6	283.6	272.6	261.5
57.5°	253.3	258.8	262.9	257.4	262.9	257.4	254.7	253.3	250.5	239.5	223.0
60°	232.6	235.4	234.0	232.6	235.4	231.3	228.5	223.0	220.3	205.1	194.1
62.5°	209.2	210.6	212.0	209.2	206.5	205.1	199.6	191.3	185.8	173.4	163.8
65°	190.0	185.8	184.5	183.1	180.3	176.2	172.1	162.4	158.3	147.3	137.7
67.5°	161.1	159.7	162.4	158.3	151.4	151.4	147.3	139.0	129.4	122.5	112.9
70°	137.7	136.3	133.5	129.4	128.0	122.5	122.5	112.9	110.1	97.7	89.5
72.5°	112.9	112.9	108.7	104.6	100.5	97.7	96.4	89.5	85.3	78.5	71.6
75°	85.3	85.3	84.0	79.8	77.1	74.3	73.0	67.5	63.3	56.4	52.3
77.5°	60.6	60.6	55.1	52.3	53.7	50.9	48.2	46.8	45.4	41.3	35.8
80°	35.8	34.4	30.3	31.7	30.3	30.3	28.9	27.5	24.8	22.0	19.3
82.5°	9.6	11.0	11.0	11.0	12.4	9.6	9.6	9.6	11.0	11.0	6.9
85°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.4	1.4	1.4
87.5°	1.4	2.8	5.5	5.5	5.5	5.5	5.5	4.1	4.1	4.1	2.8
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°	1148.1	1148.1	1148.1	1148.1	1148.1	1148.1	1148.1	1148.1	1148.1	1148.1	1148.1
2.5°	1161.8	1160.4	1161.8	1152.2	1174.2	1157.7	1154.9	1152.2	1161.8	1152.2	1138.4
5°	1186.6	1172.8	1168.7	1164.6	1177.0	1157.7	1153.6	1154.9	1148.1	1130.2	1131.5
7.5°	1194.9	1182.5	1170.1	1143.9	1154.9	1150.8	1139.8	1131.5	1120.5	1105.4	1102.6
10°	1197.6	1183.8	1165.9	1157.7	1141.2	1135.7	1131.5	1117.8	1104.0	1077.8	1071.0
12.5°	1189.4	1172.8	1150.8	1143.9	1131.5	1113.6	1104.0	1090.2	1077.8	1057.2	1042.1
15°	1153.6	1139.8	1132.9	1109.5	1104.0	1093.0	1073.7	1054.4	1036.6	1009.0	1000.8
17.5°	1112.3	1106.8	1099.9	1082.0	1080.6	1069.6	1051.7	1035.2	1011.8	969.1	955.3
20°	1069.6	1069.6	1047.6	1040.7	1054.4	1032.4	1018.7	1003.5	955.3	934.7	909.9
22.5°	1037.9	1022.8	1010.4	999.4	1000.8	987.0	967.7	937.4	919.5	894.8	865.9
25°	976.0	981.5	954.0	949.8	954.0	922.3	912.7	887.9	861.7	838.3	816.3
27.5°	937.4	922.3	904.4	889.3	889.3	876.9	849.3	843.8	803.9	781.9	754.4
30°	879.6	868.6	853.5	831.4	828.7	819.1	797.0	783.3	742.0	708.9	693.8
32.5°	806.7	802.5	790.1	765.4	757.1	746.1	718.6	695.2	675.9	638.7	620.8
35°	754.4	739.2	713.1	692.4	685.5	666.3	644.2	627.7	607.1	574.0	550.6
37.5°	675.9	660.8	636.0	611.2	611.2	591.9	561.6	545.1	516.2	496.9	477.7
40°	607.1	587.8	563.0	534.1	530.0	502.4	490.1	462.5	444.6	414.3	411.6
42.5°	530.0	512.1	490.1	468.0	451.5	437.7	406.1	385.4	366.2	351.0	346.9
45°	459.8	436.4	417.1	389.6	373.0	356.5	335.9	322.1	307.0	290.5	280.8
47.5°	399.2	379.9	352.4	327.6	311.1	302.8	279.4	264.3	251.9	240.9	234.0
50°	337.3	313.9	298.7	271.2	268.4	249.2	229.9	217.5	210.6	201.0	191.3
52.5°	290.5	268.4	247.8	227.1	216.1	209.2	191.3	179.0	169.3	162.4	156.9
55°	245.0	225.8	209.2	188.6	181.7	172.1	151.4	148.7	139.0	129.4	122.5
57.5°	210.6	192.7	173.4	159.7	147.3	140.4	123.9	112.9	107.4	99.1	92.2
60°	179.0	159.7	144.5	128.0	122.5	112.9	100.5	90.9	84.0	77.1	70.2
62.5°	150.0	133.5	117.0	103.2	95.0	89.5	79.8	71.6	64.7	59.2	53.7
65°	123.9	108.7	95.0	81.2	77.1	70.2	63.3	56.4	50.9	44.1	38.5
67.5°	101.9	88.1	74.3	64.7	60.6	57.8	49.6	42.7	38.5	34.4	28.9
70°	79.8	70.2	59.2	50.9	46.8	42.7	37.2	33.0	27.5	24.8	20.6
72.5°	61.9	53.7	44.1	37.2	34.4	31.7	26.2	22.0	19.3	16.5	13.8
75°	44.1	37.2	31.7	24.8	23.4	22.0	17.9	15.1	12.4	9.6	8.3
77.5°	30.3	24.8	19.3	16.5	15.1	12.4	11.0	8.3	6.9	5.5	4.1
80°	16.5	12.4	9.6	8.3	6.9	5.5	5.5	4.1	2.8	2.8	1.4
82.5°	5.5	4.1	2.8	1.4	1.4	1.4	1.4	1.4	1.4	0.0	1.4
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°	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	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°	1148.1	1148.1	1148.1	1148.1	1148.1	1148.1	1148.1	1148.1	1148.1	1148.1	1148.1
2.5°	1146.7	1131.5	1135.7	1135.7	1132.9	1132.9	1130.2	1126.0	1127.4	1119.1	1101.3
5°	1134.3	1115.0	1112.3	1115.0	1104.0	1101.3	1095.7	1104.0	1079.2	1088.9	1077.8
7.5°	1098.5	1080.6	1076.5	1086.1	1072.3	1064.1	1062.7	1073.7	1051.7	1040.7	1028.3
10°	1058.6	1051.7	1039.3	1032.4	1028.3	1029.7	1018.7	1004.9	1000.8	998.0	987.0
12.5°	1022.8	1007.6	996.6	988.4	985.6	985.6	967.7	965.0	952.6	949.8	933.3
15°	980.1	962.2	955.3	944.3	934.7	940.2	919.5	914.0	909.9	892.0	894.8
17.5°	942.9	923.7	907.2	900.3	892.0	883.8	864.5	868.6	859.0	859.0	834.2
20°	894.8	874.1	861.7	848.0	848.0	837.0	823.2	824.6	812.2	799.8	777.8
22.5°	843.8	821.8	806.7	801.2	787.4	784.6	768.1	764.0	747.5	748.9	729.6
25°	790.1	768.1	747.5	748.9	736.5	731.0	721.3	702.0	695.2	686.9	681.4
27.5°	726.8	711.7	693.8	692.4	669.0	670.4	658.0	652.5	636.0	640.1	627.7
30°	669.0	647.0	630.5	626.3	616.7	613.9	594.7	586.4	589.2	578.2	571.3
32.5°	609.8	576.8	569.9	561.6	556.1	549.2	535.5	541.0	528.6	531.4	520.3
35°	531.4	517.6	499.7	499.7	494.2	488.7	479.0	484.6	472.2	466.7	455.6
37.5°	465.3	452.9	435.0	440.5	430.9	422.6	414.3	415.7	404.7	403.3	392.3
40°	393.7	386.8	374.4	374.4	367.5	367.5	363.4	359.3	352.4	344.1	331.8
42.5°	326.2	320.7	315.2	316.6	307.0	315.2	304.2	311.1	289.1	287.7	279.4
45°	276.7	264.3	265.7	260.2	254.7	257.4	247.8	250.5	238.1	235.4	227.1
47.5°	224.4	220.3	212.0	209.2	209.2	205.1	201.0	199.6	194.1	187.2	176.2
50°	184.5	169.3	166.6	162.4	159.7	159.7	154.2	145.9	147.3	140.4	129.4
52.5°	144.5	132.2	126.6	125.3	119.8	117.0	110.1	104.6	100.5	97.7	90.9
55°	111.5	100.5	93.6	93.6	85.3	85.3	75.7	71.6	66.1	60.6	56.4
57.5°	84.0	78.5	71.6	66.1	63.3	56.4	50.9	44.1	39.9	31.7	26.2
60°	63.3	57.8	50.9	46.8	44.1	37.2	30.3	24.8	15.1	12.4	11.0
62.5°	46.8	41.3	34.4	31.7	28.9	23.4	16.5	8.3	4.1	4.1	4.1
65°	34.4	27.5	22.0	19.3	16.5	12.4	5.5	2.8	1.4	1.4	1.4
67.5°	23.4	17.9	12.4	11.0	8.3	4.1	1.4	1.4	1.4	1.4	1.4
70°	15.1	11.0	5.5	4.1	2.8	1.4	1.4	1.4	1.4	1.4	1.4
72.5°	9.6	5.5	2.8	1.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
75°	5.5	2.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
77.5°	2.8	1.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
80°	1.4	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	1.4	1.4	1.4
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: P219521

CATALOG NUMBER: LDSQ4B30D010 EU4B30509024 4LBSQLWWLI

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	1148.1	1148.1	1148.1	1148.1	1148.1	1148.1	1148.1	1148.1
2.5°	1120.5	1110.9	1116.4	1104.0	1109.5	1119.1	1112.3	1115.0
5°	1082.0	1076.5	1069.6	1051.7	1065.5	1076.5	1071.0	1069.6
7.5°	1040.7	1021.4	1031.0	1025.5	1022.8	1033.8	1021.4	1035.2
10°	998.0	984.2	982.9	973.2	973.2	981.5	982.9	974.6
12.5°	934.7	927.8	927.8	926.4	925.1	933.3	934.7	930.6
15°	889.3	886.5	879.6	878.2	870.0	882.4	883.8	882.4
17.5°	834.2	835.6	828.7	828.7	834.2	838.3	827.3	838.3
20°	797.0	790.1	787.4	775.0	781.9	788.8	788.8	790.1
22.5°	743.3	732.3	736.5	729.6	725.4	735.1	735.1	739.2
25°	682.8	682.8	685.5	681.4	684.2	689.7	685.5	695.2
27.5°	625.0	630.5	630.5	625.0	627.7	644.2	651.1	640.1
30°	571.3	572.7	576.8	574.0	582.3	587.8	586.4	594.7
32.5°	510.7	517.6	520.3	516.2	519.0	531.4	524.5	523.1
35°	463.9	451.5	450.1	451.5	457.0	459.8	457.0	466.7
37.5°	396.5	392.3	386.8	388.2	392.3	397.8	400.6	407.5
40°	331.8	326.2	326.2	324.9	320.7	335.9	335.9	335.9
42.5°	275.3	273.9	267.1	267.1	272.6	276.7	273.9	283.6
45°	225.8	220.3	216.1	216.1	220.3	220.3	224.4	223.0
47.5°	177.6	172.1	173.4	169.3	173.4	179.0	172.1	173.4
50°	133.5	133.5	130.8	133.5	132.2	133.5	130.8	128.0
52.5°	90.9	103.2	104.6	99.1	86.7	75.7	68.8	74.3
55°	52.3	46.8	46.8	45.4	42.7	41.3	37.2	41.3
57.5°	26.2	23.4	23.4	23.4	22.0	20.6	17.9	17.9
60°	11.0	9.6	9.6	8.3	6.9	5.5	4.1	5.5
62.5°	4.1	2.8	2.8	2.8	2.8	2.8	2.8	2.8
65°	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4
67.5°	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4
70°	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4
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)