

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: P219516

Luminaire Tested: **LDSQ4B30D010 EU4B30508027 4LBSQLWWLI**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P219516
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 EU4B30508027 4LBSQLWWLI
Description: PORTFOLIO 4 INCH SQUARE SINGLE WALLWASH RECESSED DOWNLIGHT, WITH SPECULAR CLEAR TRIM
Light Source: (1) HIGH LUMEN LED 80CRI / 2700K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 2178.5 lumens
Efficiency: N/A
Efficacy: 77.8 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

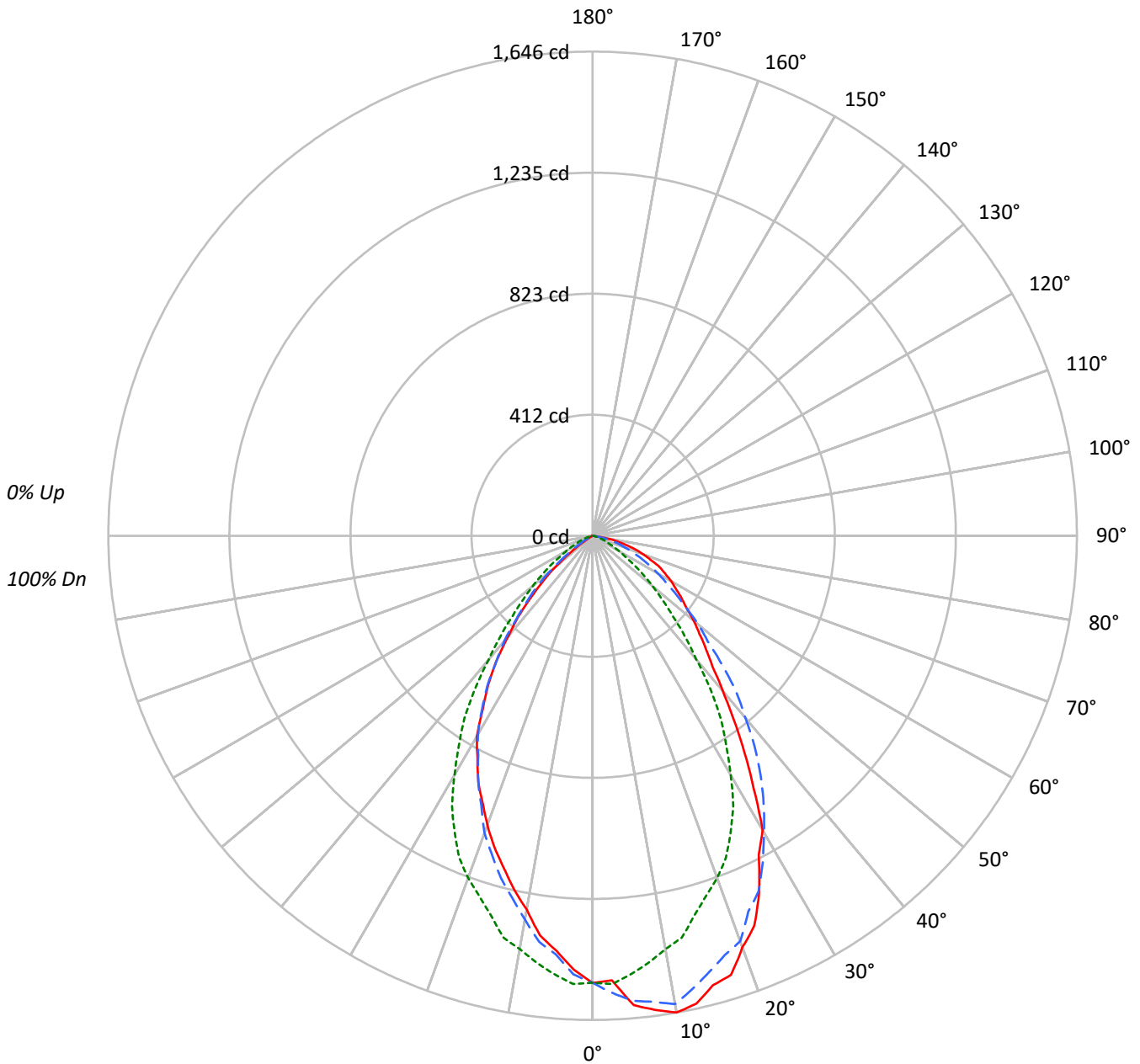
Input Watts (W): 28
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	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°	147231	147231	147231
5°	155768	145489	137690
10°	161868	140354	126917
15°	158633	133961	117152
20°	153484	127557	107835
25°	143169	118627	98371
30°	129234	104983	88058
35°	106460	89868	73063
40°	86879	69364	56225
45°	74653	52677	40443
50°	67564	40104	25546
55°	62171	28932	9239
60°	59675	19763	1414
65°	57651	13364	413
70°	51607	9290	510
75°	42296	4791	0
80°	26444	2008	0
85°	0	0	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	142.4	6.5
10°-20°	383.6	17.6
20°-30°	512.3	23.5
30°-40°	486.3	22.3
40°-50°	336.1	15.4
50°-60°	185.7	8.5
60°-70°	92.2	4.2
70°-80°	36.3	1.7
80°-90°	3.5	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°	1038.3	47.7
0°-40°	1524.6	70.0
0°-60°	2046.4	93.9
0°-90°	2178.5	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2178.5	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	1520	1520	1520	1520	1520	
5°	1602	1587	1496	1429	1416	153
15°	1582	1534	1336	1204	1168	447
25°	1339	1334	1110	920	920	611
35°	900	995	760	625	618	564
45°	545	625	384	315	295	425
55°	368	346	171	88	55	331
65°	252	182	58	2	2	244
75°	113	69	13	0	0	120
85°	0	2	0	0	0	10
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°	1519.8	1519.8	1519.8	1519.8	1519.8	1519.8	1519.8	1519.8	1519.8	1519.8	1519.8
2.5°	1512.5	1554.4	1558.1	1554.4	1559.9	1558.1	1567.2	1558.1	1569.0	1552.6	1556.2
5°	1601.8	1585.4	1620.0	1601.8	1601.8	1600.0	1594.5	1592.7	1600.0	1576.3	1587.2
7.5°	1625.5	1649.2	1680.1	1641.9	1643.7	1643.7	1632.8	1629.1	1629.1	1585.4	1598.1
10°	1645.5	1630.9	1647.3	1632.8	1645.5	1643.7	1651.0	1627.3	1643.7	1618.2	1616.4
12.5°	1629.1	1623.7	1645.5	1621.8	1614.5	1616.4	1607.3	1601.8	1607.3	1578.1	1576.3
15°	1581.7	1587.2	1620.0	1594.5	1590.9	1587.2	1576.3	1558.1	1572.6	1532.5	1534.4
17.5°	1565.3	1556.2	1561.7	1539.8	1545.3	1541.6	1539.8	1523.4	1519.8	1494.3	1494.3
20°	1488.8	1508.8	1508.8	1494.3	1494.3	1492.4	1468.8	1483.3	1466.9	1459.6	1466.9
22.5°	1436.0	1437.8	1437.8	1425.0	1426.8	1419.6	1406.8	1397.7	1406.8	1397.7	1383.1
25°	1339.4	1343.0	1364.9	1341.2	1337.6	1344.8	1333.9	1328.4	1326.6	1304.8	1333.9
27.5°	1222.8	1259.2	1257.4	1248.3	1259.2	1244.6	1239.2	1241.0	1246.4	1244.6	1251.9
30°	1155.3	1160.8	1166.3	1159.0	1160.8	1155.3	1155.3	1157.1	1171.7	1166.3	1164.4
32.5°	1018.7	1036.9	1051.5	1051.5	1053.3	1058.7	1056.9	1095.2	1104.3	1086.1	1082.4
35°	900.2	913.0	925.7	927.5	951.2	953.1	954.9	965.8	991.3	996.8	995.0
37.5°	787.2	800.0	803.6	820.0	832.8	845.5	860.1	874.7	896.6	914.8	905.7
40°	687.0	692.5	701.6	708.9	734.4	734.4	741.7	770.8	794.5	809.1	807.3
42.5°	603.2	605.0	612.3	625.0	648.7	643.3	648.7	668.8	703.4	705.2	725.3
45°	544.9	543.0	548.5	550.3	564.9	572.2	575.8	590.4	619.6	623.2	625.0
47.5°	492.0	490.2	499.3	502.9	508.4	515.7	515.7	517.5	528.5	537.6	530.3
50°	448.3	448.3	448.3	451.9	461.0	459.2	461.0	468.3	473.8	470.1	468.3
52.5°	400.9	408.2	413.7	415.5	417.3	417.3	419.1	415.5	413.7	408.2	397.3
55°	368.1	375.4	375.4	375.4	375.4	382.7	373.6	375.4	375.4	360.8	346.2
57.5°	335.3	342.6	348.1	340.8	348.1	340.8	337.1	335.3	331.7	317.1	295.2
60°	308.0	311.6	309.8	308.0	311.6	306.1	302.5	295.2	291.6	271.5	256.9
62.5°	277.0	278.8	280.6	277.0	273.3	271.5	264.2	253.3	246.0	229.6	216.9
65°	251.5	246.0	244.2	242.4	238.7	233.3	227.8	215.0	209.6	195.0	182.2
67.5°	213.2	211.4	215.0	209.6	200.5	200.5	195.0	184.1	171.3	162.2	149.4
70°	182.2	180.4	176.8	171.3	169.5	162.2	162.2	149.4	145.8	129.4	118.4
72.5°	149.4	149.4	144.0	138.5	133.0	129.4	127.6	118.4	113.0	103.9	94.8
75°	113.0	113.0	111.2	105.7	102.0	98.4	96.6	89.3	83.8	74.7	69.2
77.5°	80.2	80.2	72.9	69.2	71.1	67.4	63.8	62.0	60.1	54.7	47.4
80°	47.4	45.6	40.1	41.9	40.1	40.1	38.3	36.4	32.8	29.2	25.5
82.5°	12.8	14.6	14.6	14.6	16.4	12.8	12.8	12.8	14.6	14.6	9.1
85°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.8	1.8	1.8
87.5°	1.8	3.6	7.3	7.3	7.3	7.3	7.3	5.5	5.5	5.5	3.6
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°	1519.8	1519.8	1519.8	1519.8	1519.8	1519.8	1519.8	1519.8	1519.8	1519.8	1519.8
2.5°	1538.0	1536.2	1538.0	1525.2	1554.4	1532.5	1528.9	1525.2	1538.0	1525.2	1507.0
5°	1570.8	1552.6	1547.1	1541.6	1558.1	1532.5	1527.1	1528.9	1519.8	1496.1	1497.9
7.5°	1581.7	1565.3	1548.9	1514.3	1528.9	1523.4	1508.8	1497.9	1483.3	1463.3	1459.6
10°	1585.4	1567.2	1543.5	1532.5	1510.7	1503.4	1497.9	1479.7	1461.5	1426.8	1417.7
12.5°	1574.5	1552.6	1523.4	1514.3	1497.9	1474.2	1461.5	1443.2	1426.8	1399.5	1379.5
15°	1527.1	1508.8	1499.7	1468.8	1461.5	1446.9	1421.4	1395.9	1372.2	1335.7	1324.8
17.5°	1472.4	1465.1	1456.0	1432.3	1430.5	1415.9	1392.2	1370.4	1339.4	1282.9	1264.7
20°	1415.9	1415.9	1386.8	1377.6	1395.9	1366.7	1348.5	1328.4	1264.7	1237.3	1204.5
22.5°	1374.0	1354.0	1337.6	1323.0	1324.8	1306.6	1281.1	1241.0	1217.3	1184.5	1146.2
25°	1292.0	1299.3	1262.8	1257.4	1262.8	1220.9	1208.2	1175.4	1140.7	1109.8	1080.6
27.5°	1241.0	1220.9	1197.2	1177.2	1177.2	1160.8	1124.3	1117.1	1064.2	1035.1	998.6
30°	1164.4	1149.9	1129.8	1100.7	1097.0	1084.3	1055.1	1036.9	982.2	938.5	918.4
32.5°	1067.9	1062.4	1046.0	1013.2	1002.3	987.7	951.2	920.3	894.7	845.5	821.8
35°	998.6	978.6	943.9	916.6	907.5	882.0	852.8	831.0	803.6	759.9	728.9
37.5°	894.7	874.7	841.9	809.1	809.1	783.6	743.5	721.6	683.4	657.8	632.3
40°	803.6	778.1	745.3	707.0	701.6	665.1	648.7	612.3	588.6	548.5	544.9
42.5°	701.6	677.9	648.7	619.6	597.7	579.5	537.6	510.2	484.7	464.7	459.2
45°	608.6	577.7	552.2	515.7	493.8	472.0	444.6	426.4	406.4	384.5	371.7
47.5°	528.5	502.9	466.5	433.7	411.8	400.9	369.9	349.9	333.5	318.9	309.8
50°	446.5	415.5	395.4	359.0	355.3	329.8	304.3	287.9	278.8	266.1	253.3
52.5°	384.5	355.3	328.0	300.7	286.1	277.0	253.3	236.9	224.1	215.0	207.7
55°	324.4	298.9	277.0	249.7	240.5	227.8	200.5	196.8	184.1	171.3	162.2
57.5°	278.8	255.1	229.6	211.4	195.0	185.9	164.0	149.4	142.1	131.2	122.1
60°	236.9	211.4	191.3	169.5	162.2	149.4	133.0	120.3	111.2	102.0	92.9
62.5°	198.6	176.8	154.9	136.7	125.7	118.4	105.7	94.8	85.6	78.4	71.1
65°	164.0	144.0	125.7	107.5	102.0	92.9	83.8	74.7	67.4	58.3	51.0
67.5°	134.8	116.6	98.4	85.6	80.2	76.5	65.6	56.5	51.0	45.6	38.3
70°	105.7	92.9	78.4	67.4	62.0	56.5	49.2	43.7	36.4	32.8	27.3
72.5°	82.0	71.1	58.3	49.2	45.6	41.9	34.6	29.2	25.5	21.9	18.2
75°	58.3	49.2	41.9	32.8	31.0	29.2	23.7	20.0	16.4	12.8	10.9
77.5°	40.1	32.8	25.5	21.9	20.0	16.4	14.6	10.9	9.1	7.3	5.5
80°	21.9	16.4	12.8	10.9	9.1	7.3	7.3	5.5	3.6	3.6	1.8
82.5°	7.3	5.5	3.6	1.8	1.8	1.8	1.8	1.8	1.8	0.0	1.8
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°	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	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°	1519.8	1519.8	1519.8	1519.8	1519.8	1519.8	1519.8	1519.8	1519.8	1519.8	1519.8
2.5°	1518.0	1497.9	1503.4	1503.4	1499.7	1499.7	1496.1	1490.6	1492.4	1481.5	1457.8
5°	1501.6	1476.0	1472.4	1476.0	1461.5	1457.8	1450.5	1461.5	1428.7	1441.4	1426.8
7.5°	1454.2	1430.5	1425.0	1437.8	1419.6	1408.6	1406.8	1421.4	1392.2	1377.6	1361.2
10°	1401.3	1392.2	1375.8	1366.7	1361.2	1363.1	1348.5	1330.3	1324.8	1321.2	1306.6
12.5°	1354.0	1333.9	1319.3	1308.4	1304.8	1304.8	1281.1	1277.4	1261.0	1257.4	1235.5
15°	1297.5	1273.8	1264.7	1250.1	1237.3	1244.6	1217.3	1210.0	1204.5	1180.8	1184.5
17.5°	1248.3	1222.8	1200.9	1191.8	1180.8	1169.9	1144.4	1149.9	1137.1	1137.1	1104.3
20°	1184.5	1157.1	1140.7	1122.5	1122.5	1107.9	1089.7	1091.5	1075.1	1058.7	1029.6
22.5°	1117.1	1087.9	1067.9	1060.6	1042.3	1038.7	1016.8	1011.4	989.5	991.3	965.8
25°	1046.0	1016.8	989.5	991.3	974.9	967.6	954.9	929.4	920.3	909.3	902.0
27.5°	962.2	942.1	918.4	916.6	885.6	887.5	871.1	863.8	841.9	847.4	831.0
30°	885.6	856.5	834.6	829.1	816.4	812.7	787.2	776.3	779.9	765.4	756.2
32.5°	807.3	763.5	754.4	743.5	736.2	727.1	708.9	716.2	699.8	703.4	688.8
35°	703.4	685.2	661.5	661.5	654.2	646.9	634.2	641.4	625.0	617.8	603.2
37.5°	615.9	599.5	575.8	583.1	570.4	559.4	548.5	550.3	535.8	533.9	519.4
40°	521.2	512.1	495.7	495.7	486.5	486.5	481.1	475.6	466.5	455.6	439.2
42.5°	431.9	424.6	417.3	419.1	406.4	417.3	402.7	411.8	382.7	380.9	369.9
45°	366.3	349.9	351.7	344.4	337.1	340.8	328.0	331.7	315.3	311.6	300.7
47.5°	297.0	291.6	280.6	277.0	277.0	271.5	266.1	264.2	256.9	247.8	233.3
50°	244.2	224.1	220.5	215.0	211.4	211.4	204.1	193.2	195.0	185.9	171.3
52.5°	191.3	174.9	167.6	165.8	158.5	154.9	145.8	138.5	133.0	129.4	120.3
55°	147.6	133.0	123.9	123.9	113.0	113.0	100.2	94.8	87.5	80.2	74.7
57.5°	111.2	103.9	94.8	87.5	83.8	74.7	67.4	58.3	52.8	41.9	34.6
60°	83.8	76.5	67.4	62.0	58.3	49.2	40.1	32.8	20.0	16.4	14.6
62.5°	62.0	54.7	45.6	41.9	38.3	31.0	21.9	10.9	5.5	5.5	5.5
65°	45.6	36.4	29.2	25.5	21.9	16.4	7.3	3.6	1.8	1.8	1.8
67.5°	31.0	23.7	16.4	14.6	10.9	5.5	1.8	1.8	1.8	1.8	1.8
70°	20.0	14.6	7.3	5.5	3.6	1.8	1.8	1.8	1.8	1.8	1.8
72.5°	12.8	7.3	3.6	1.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0
75°	7.3	3.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
77.5°	3.6	1.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
80°	1.8	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	1.8	1.8	1.8
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: P219516

CATALOG NUMBER: LDSQ4B30D010 EU4B30508027 4LBSQLWWLI

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	1519.8	1519.8	1519.8	1519.8	1519.8	1519.8	1519.8	1519.8
2.5°	1483.3	1470.6	1477.9	1461.5	1468.8	1481.5	1472.4	1476.0
5°	1432.3	1425.0	1415.9	1392.2	1410.4	1425.0	1417.7	1415.9
7.5°	1377.6	1352.1	1364.9	1357.6	1354.0	1368.5	1352.1	1370.4
10°	1321.2	1302.9	1301.1	1288.4	1288.4	1299.3	1301.1	1290.2
12.5°	1237.3	1228.2	1228.2	1226.4	1224.6	1235.5	1237.3	1231.9
15°	1177.2	1173.5	1164.4	1162.6	1151.7	1168.1	1169.9	1168.1
17.5°	1104.3	1106.1	1097.0	1097.0	1104.3	1109.8	1095.2	1109.8
20°	1055.1	1046.0	1042.3	1025.9	1035.1	1044.2	1044.2	1046.0
22.5°	984.0	969.5	974.9	965.8	960.3	973.1	973.1	978.6
25°	903.9	903.9	907.5	902.0	905.7	913.0	907.5	920.3
27.5°	827.3	834.6	834.6	827.3	831.0	852.8	861.9	847.4
30°	756.2	758.1	763.5	759.9	770.8	778.1	776.3	787.2
32.5°	676.1	685.2	688.8	683.4	687.0	703.4	694.3	692.5
35°	614.1	597.7	595.9	597.7	605.0	608.6	605.0	617.8
37.5°	524.8	519.4	512.1	513.9	519.4	526.6	530.3	539.4
40°	439.2	431.9	431.9	430.1	424.6	444.6	444.6	444.6
42.5°	364.5	362.6	353.5	353.5	360.8	366.3	362.6	375.4
45°	298.9	291.6	286.1	286.1	291.6	291.6	297.0	295.2
47.5°	235.1	227.8	229.6	224.1	229.6	236.9	227.8	229.6
50°	176.8	176.8	173.1	176.8	174.9	176.8	173.1	169.5
52.5°	120.3	136.7	138.5	131.2	114.8	100.2	91.1	98.4
55°	69.2	62.0	62.0	60.1	56.5	54.7	49.2	54.7
57.5°	34.6	31.0	31.0	31.0	29.2	27.3	23.7	23.7
60°	14.6	12.8	12.8	10.9	9.1	7.3	5.5	7.3
62.5°	5.5	3.6	3.6	3.6	3.6	3.6	3.6	3.6
65°	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
67.5°	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
70°	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
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)