

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: P219528

Luminaire Tested: **LDSQ4B30D010 EU4B30509730 4LBSQLWWLI**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P219528
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 EU4B30509730 4LBSQLWWLI
Description: PORTFOLIO 4 INCH SQUARE SINGLE WALLWASH RECESSED DOWNLIGHT, WITH SPECULAR CLEAR TRIM
Light Source: (1) HIGH LUMEN LED 97CRI / 3000K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 2381.2 lumens
Efficiency: N/A
Efficacy: 85.0 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

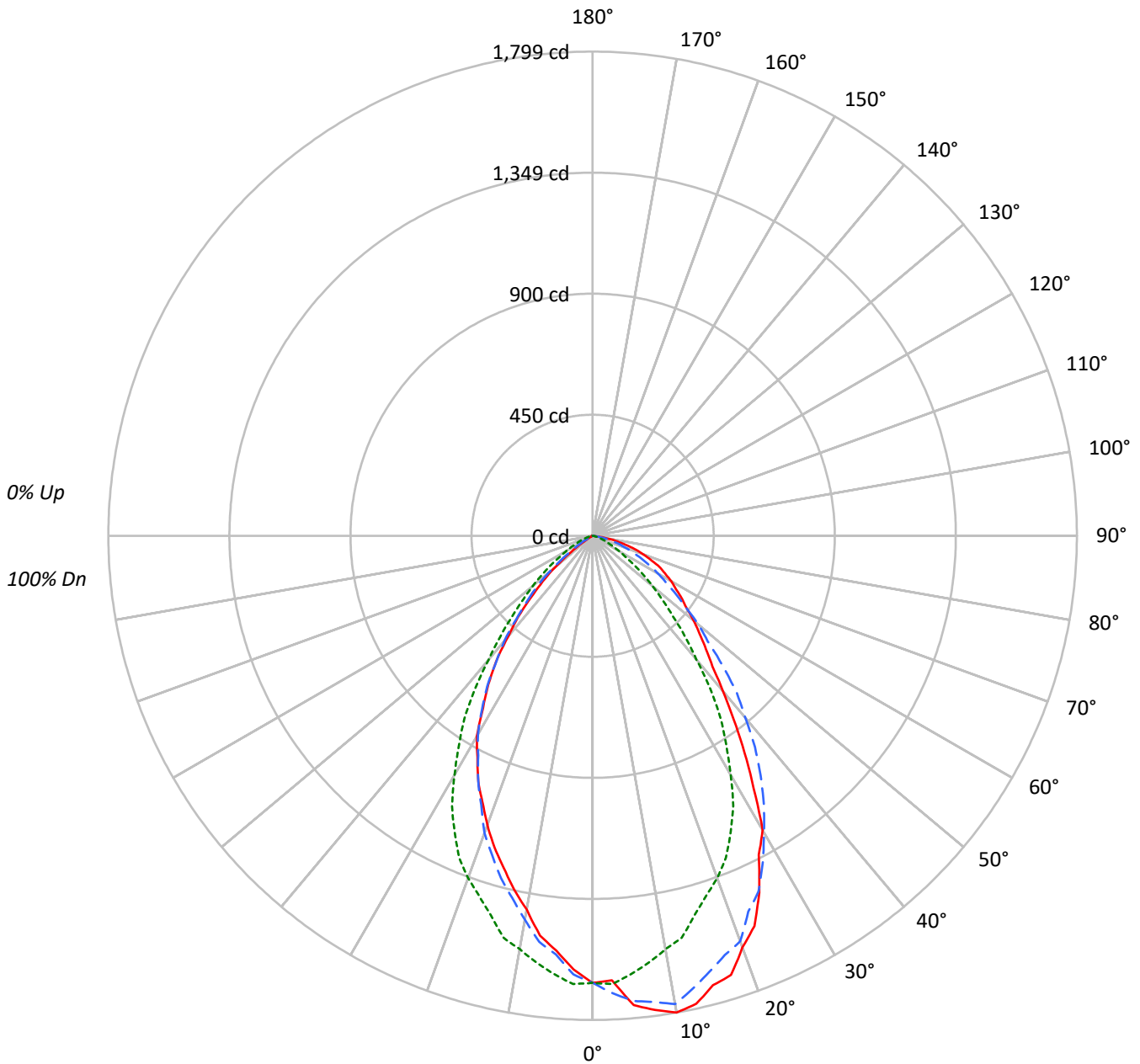
Input Watts (W): 28
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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°	160929	160929	160929
5°	170267	159026	150507
10°	176938	153428	138731
15°	173406	146438	128054
20°	167773	139433	117866
25°	156487	129669	107521
30°	141271	114748	96257
35°	116371	98229	79863
40°	94960	75827	61460
45°	81599	57582	44211
50°	73849	43827	27912
55°	67964	31618	10100
60°	65217	21603	1550
65°	63014	14602	458
70°	56422	10168	566
75°	46226	5203	0
80°	28898	2232	0
85°	0	0	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	155.6	6.5
10°-20°	419.3	17.6
20°-30°	559.9	23.5
30°-40°	531.6	22.3
40°-50°	367.4	15.4
50°-60°	203.0	8.5
60°-70°	100.8	4.2
70°-80°	39.7	1.7
80°-90°	3.8	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°	1134.9	47.7
0°-40°	1666.5	70.0
0°-60°	2236.9	93.9
0°-90°	2381.2	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2381.2	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	1661	1661	1661	1661	1661	
5°	1751	1735	1635	1562	1548	168
15°	1729	1677	1460	1317	1277	489
25°	1464	1458	1213	1006	1006	667
35°	984	1088	831	683	675	616
45°	596	683	420	345	323	465
55°	402	378	187	96	60	362
65°	275	199	64	2	2	267
75°	124	76	14	0	0	132
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°	1661.2	1661.2	1661.2	1661.2	1661.2	1661.2	1661.2	1661.2	1661.2	1661.2	1661.2
2.5°	1653.3	1699.1	1703.1	1699.1	1705.1	1703.1	1713.0	1703.1	1715.0	1697.1	1701.1
5°	1750.9	1732.9	1770.8	1750.9	1750.9	1748.9	1742.9	1740.9	1748.9	1723.0	1734.9
7.5°	1776.8	1802.7	1836.5	1794.7	1796.7	1796.7	1784.7	1780.8	1780.8	1732.9	1746.9
10°	1798.7	1782.7	1800.7	1784.7	1798.7	1796.7	1804.7	1778.8	1796.7	1768.8	1766.8
12.5°	1780.8	1774.8	1798.7	1772.8	1764.8	1766.8	1756.9	1750.9	1756.9	1725.0	1723.0
15°	1729.0	1734.9	1770.8	1742.9	1738.9	1734.9	1723.0	1703.1	1719.0	1675.2	1677.2
17.5°	1711.0	1701.1	1707.1	1683.2	1689.1	1685.1	1683.2	1665.2	1661.2	1633.4	1633.4
20°	1627.4	1649.3	1649.3	1633.4	1633.4	1631.4	1605.5	1621.4	1603.5	1595.5	1603.5
22.5°	1569.6	1571.6	1571.6	1557.7	1559.7	1551.7	1537.7	1527.8	1537.7	1527.8	1511.8
25°	1464.0	1468.0	1491.9	1466.0	1462.1	1470.0	1458.1	1452.1	1450.1	1426.2	1458.1
27.5°	1336.6	1376.4	1374.4	1364.4	1376.4	1360.5	1354.5	1356.5	1362.5	1360.5	1368.4
30°	1262.9	1268.8	1274.8	1266.8	1268.8	1262.9	1262.9	1264.9	1280.8	1274.8	1272.8
32.5°	1113.5	1133.4	1149.3	1149.3	1151.3	1157.3	1155.3	1197.1	1207.1	1187.2	1183.2
35°	984.0	997.9	1011.9	1013.9	1039.8	1041.8	1043.8	1055.7	1083.6	1089.6	1087.6
37.5°	860.5	874.4	878.4	896.4	910.3	924.2	940.2	956.1	980.0	999.9	990.0
40°	750.9	756.9	766.9	774.8	802.7	802.7	810.7	842.6	868.5	884.4	882.4
42.5°	659.3	661.3	669.3	683.2	709.1	703.1	709.1	731.0	768.9	770.9	792.8
45°	595.6	593.6	599.6	601.6	617.5	625.5	629.4	645.4	677.2	681.2	683.2
47.5°	537.8	535.8	545.8	549.8	555.7	563.7	563.7	565.7	577.6	587.6	579.6
50°	490.0	490.0	490.0	494.0	503.9	502.0	503.9	511.9	517.9	513.9	511.9
52.5°	438.2	446.2	452.2	454.2	456.1	456.1	458.1	454.2	452.2	446.2	434.2
55°	402.4	410.3	410.3	410.3	410.3	418.3	408.3	410.3	410.3	394.4	378.5
57.5°	366.5	374.5	380.5	372.5	380.5	372.5	368.5	366.5	362.5	346.6	322.7
60°	336.6	340.6	338.6	336.6	340.6	334.6	330.7	322.7	318.7	296.8	280.9
62.5°	302.8	304.8	306.8	302.8	298.8	296.8	288.8	276.9	268.9	251.0	237.0
65°	274.9	268.9	266.9	264.9	260.9	255.0	249.0	235.0	229.1	213.1	199.2
67.5°	233.1	231.1	235.0	229.1	219.1	219.1	213.1	201.2	187.2	177.3	163.3
70°	199.2	197.2	193.2	187.2	185.2	177.3	177.3	163.3	159.4	141.4	129.5
72.5°	163.3	163.3	157.4	151.4	145.4	141.4	139.4	129.5	123.5	113.5	103.6
75°	123.5	123.5	121.5	115.5	111.5	107.6	105.6	97.6	91.6	81.7	75.7
77.5°	87.6	87.6	79.7	75.7	77.7	73.7	69.7	67.7	65.7	59.8	51.8
80°	51.8	49.8	43.8	45.8	43.8	43.8	41.8	39.8	35.9	31.9	27.9
82.5°	13.9	15.9	15.9	15.9	17.9	13.9	13.9	13.9	15.9	15.9	10.0
85°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	2.0	2.0
87.5°	2.0	4.0	8.0	8.0	8.0	8.0	8.0	6.0	6.0	6.0	4.0
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):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
0°	1661.2	1661.2	1661.2	1661.2	1661.2	1661.2	1661.2	1661.2	1661.2	1661.2	1661.2
2.5°	1681.2	1679.2	1681.2	1667.2	1699.1	1675.2	1671.2	1667.2	1681.2	1667.2	1647.3
5°	1717.0	1697.1	1691.1	1685.1	1703.1	1675.2	1669.2	1671.2	1661.2	1635.3	1637.3
7.5°	1729.0	1711.0	1693.1	1655.3	1671.2	1665.2	1649.3	1637.3	1621.4	1599.5	1595.5
10°	1732.9	1713.0	1687.1	1675.2	1651.3	1643.3	1637.3	1617.4	1597.5	1559.7	1549.7
12.5°	1721.0	1697.1	1665.2	1655.3	1637.3	1611.4	1597.5	1577.6	1559.7	1529.8	1507.9
15°	1669.2	1649.3	1639.3	1605.5	1597.5	1581.6	1553.7	1525.8	1499.9	1460.1	1448.1
17.5°	1609.5	1601.5	1591.5	1565.6	1563.6	1547.7	1521.8	1497.9	1464.0	1402.3	1382.4
20°	1547.7	1547.7	1515.8	1505.9	1525.8	1493.9	1474.0	1452.1	1382.4	1352.5	1316.6
22.5°	1501.9	1480.0	1462.1	1446.1	1448.1	1428.2	1400.3	1356.5	1330.6	1294.7	1252.9
25°	1412.3	1420.2	1380.4	1374.4	1380.4	1334.6	1320.6	1284.8	1246.9	1213.1	1181.2
27.5°	1356.5	1334.6	1308.7	1286.8	1286.8	1268.8	1229.0	1221.0	1163.3	1131.4	1091.6
30°	1272.8	1256.9	1235.0	1203.1	1199.1	1185.2	1153.3	1133.4	1073.6	1025.8	1003.9
32.5°	1167.3	1161.3	1143.3	1107.5	1095.5	1079.6	1039.8	1005.9	978.0	924.2	898.3
35°	1091.6	1069.6	1031.8	1001.9	992.0	964.1	932.2	908.3	878.4	830.6	796.8
37.5°	978.0	956.1	920.3	884.4	884.4	856.5	812.7	788.8	747.0	719.1	691.2
40°	878.4	850.5	814.7	772.9	766.9	727.0	709.1	669.3	643.4	599.6	595.6
42.5°	766.9	741.0	709.1	677.2	653.3	633.4	587.6	557.7	529.8	507.9	502.0
45°	665.3	631.4	603.5	563.7	539.8	515.9	486.0	466.1	444.2	420.3	406.3
47.5°	577.6	549.8	509.9	474.1	450.2	438.2	404.4	382.4	364.5	348.6	338.6
50°	488.0	454.2	432.2	392.4	388.4	360.5	332.6	314.7	304.8	290.8	276.9
52.5°	420.3	388.4	358.5	328.7	312.7	302.8	276.9	258.9	245.0	235.0	227.1
55°	354.6	326.7	302.8	272.9	262.9	249.0	219.1	215.1	201.2	187.2	177.3
57.5°	304.8	278.9	251.0	231.1	213.1	203.2	179.3	163.3	155.4	143.4	133.5
60°	258.9	231.1	209.1	185.2	177.3	163.3	145.4	131.5	121.5	111.5	101.6
62.5°	217.1	193.2	169.3	149.4	137.4	129.5	115.5	103.6	93.6	85.7	77.7
65°	179.3	157.4	137.4	117.5	111.5	101.6	91.6	81.7	73.7	63.7	55.8
67.5°	147.4	127.5	107.6	93.6	87.6	83.7	71.7	61.7	55.8	49.8	41.8
70°	115.5	101.6	85.7	73.7	67.7	61.7	53.8	47.8	39.8	35.9	29.9
72.5°	89.6	77.7	63.7	53.8	49.8	45.8	37.8	31.9	27.9	23.9	19.9
75°	63.7	53.8	45.8	35.9	33.9	31.9	25.9	21.9	17.9	13.9	12.0
77.5°	43.8	35.9	27.9	23.9	21.9	17.9	15.9	12.0	10.0	8.0	6.0
80°	23.9	17.9	13.9	12.0	10.0	8.0	8.0	6.0	4.0	4.0	2.0
82.5°	8.0	6.0	4.0	2.0	2.0	2.0	2.0	2.0	2.0	0.0	2.0
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°	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	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°	1661.2	1661.2	1661.2	1661.2	1661.2	1661.2	1661.2	1661.2	1661.2	1661.2	1661.2
2.5°	1659.2	1637.3	1643.3	1643.3	1639.3	1639.3	1635.3	1629.4	1631.4	1619.4	1593.5
5°	1641.3	1613.4	1609.5	1613.4	1597.5	1593.5	1585.5	1597.5	1561.6	1575.6	1559.7
7.5°	1589.5	1563.6	1557.7	1571.6	1551.7	1539.7	1537.7	1553.7	1521.8	1505.9	1487.9
10°	1531.8	1521.8	1503.9	1493.9	1487.9	1489.9	1474.0	1454.1	1448.1	1444.1	1428.2
12.5°	1480.0	1458.1	1442.1	1430.2	1426.2	1426.2	1400.3	1396.3	1378.4	1374.4	1350.5
15°	1418.2	1392.3	1382.4	1366.4	1352.5	1360.5	1330.6	1322.6	1316.6	1290.7	1294.7
17.5°	1364.4	1336.6	1312.7	1302.7	1290.7	1278.8	1250.9	1256.9	1242.9	1242.9	1207.1
20°	1294.7	1264.9	1246.9	1227.0	1227.0	1211.1	1191.2	1193.1	1175.2	1157.3	1125.4
22.5°	1221.0	1189.2	1167.3	1159.3	1139.4	1135.4	1111.5	1105.5	1081.6	1083.6	1055.7
25°	1143.3	1111.5	1081.6	1083.6	1065.7	1057.7	1043.8	1015.9	1005.9	994.0	986.0
27.5°	1051.7	1029.8	1003.9	1001.9	968.1	970.1	952.1	944.2	920.3	926.2	908.3
30°	968.1	936.2	912.3	906.3	892.4	888.4	860.5	848.5	852.5	836.6	826.6
32.5°	882.4	834.6	824.6	812.7	804.7	794.8	774.8	782.8	764.9	768.9	752.9
35°	768.9	749.0	723.1	723.1	715.1	707.1	693.2	701.1	683.2	675.3	659.3
37.5°	673.3	655.3	629.4	637.4	623.5	611.5	599.6	601.6	585.6	583.6	567.7
40°	569.7	559.7	541.8	541.8	531.8	531.8	525.9	519.9	509.9	498.0	480.0
42.5°	472.1	464.1	456.1	458.1	444.2	456.1	440.2	450.2	418.3	416.3	404.4
45°	400.4	382.4	384.4	376.5	368.5	372.5	358.5	362.5	344.6	340.6	328.7
47.5°	324.7	318.7	306.8	302.8	302.8	296.8	290.8	288.8	280.9	270.9	255.0
50°	266.9	245.0	241.0	235.0	231.1	231.1	223.1	211.1	213.1	203.2	187.2
52.5°	209.1	191.2	183.3	181.3	173.3	169.3	159.4	151.4	145.4	141.4	131.5
55°	161.3	145.4	135.4	135.4	123.5	123.5	109.6	103.6	95.6	87.6	81.7
57.5°	121.5	113.5	103.6	95.6	91.6	81.7	73.7	63.7	57.8	45.8	37.8
60°	91.6	83.7	73.7	67.7	63.7	53.8	43.8	35.9	21.9	17.9	15.9
62.5°	67.7	59.8	49.8	45.8	41.8	33.9	23.9	12.0	6.0	6.0	6.0
65°	49.8	39.8	31.9	27.9	23.9	17.9	8.0	4.0	2.0	2.0	2.0
67.5°	33.9	25.9	17.9	15.9	12.0	6.0	2.0	2.0	2.0	2.0	2.0
70°	21.9	15.9	8.0	6.0	4.0	2.0	2.0	2.0	2.0	2.0	2.0
72.5°	13.9	8.0	4.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
75°	8.0	4.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
77.5°	4.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
80°	2.0	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	2.0	2.0	2.0
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: P219528

CATALOG NUMBER: LDSQ4B30D010 EU4B30509730 4LBSQLWWLI

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	1661.2	1661.2	1661.2	1661.2	1661.2	1661.2	1661.2	1661.2
2.5°	1621.4	1607.5	1615.4	1597.5	1605.5	1619.4	1609.5	1613.4
5°	1565.6	1557.7	1547.7	1521.8	1541.7	1557.7	1549.7	1547.7
7.5°	1505.9	1478.0	1491.9	1484.0	1480.0	1495.9	1478.0	1497.9
10°	1444.1	1424.2	1422.2	1408.3	1408.3	1420.2	1422.2	1410.3
12.5°	1352.5	1342.5	1342.5	1340.5	1338.6	1350.5	1352.5	1346.5
15°	1286.8	1282.8	1272.8	1270.8	1258.9	1276.8	1278.8	1276.8
17.5°	1207.1	1209.1	1199.1	1199.1	1207.1	1213.1	1197.1	1213.1
20°	1153.3	1143.3	1139.4	1121.4	1131.4	1141.4	1141.4	1143.3
22.5°	1075.6	1059.7	1065.7	1055.7	1049.7	1063.7	1063.7	1069.6
25°	988.0	988.0	992.0	986.0	990.0	997.9	992.0	1005.9
27.5°	904.3	912.3	912.3	904.3	908.3	932.2	942.2	926.2
30°	826.6	828.6	834.6	830.6	842.6	850.5	848.5	860.5
32.5°	739.0	749.0	752.9	747.0	750.9	768.9	758.9	756.9
35°	671.3	653.3	651.3	653.3	661.3	665.3	661.3	675.3
37.5°	573.7	567.7	559.7	561.7	567.7	575.7	579.6	589.6
40°	480.0	472.1	472.1	470.1	464.1	486.0	486.0	486.0
42.5°	398.4	396.4	386.4	386.4	394.4	400.4	396.4	410.3
45°	326.7	318.7	312.7	312.7	318.7	318.7	324.7	322.7
47.5°	257.0	249.0	251.0	245.0	251.0	258.9	249.0	251.0
50°	193.2	193.2	189.2	193.2	191.2	193.2	189.2	185.2
52.5°	131.5	149.4	151.4	143.4	125.5	109.6	99.6	107.6
55°	75.7	67.7	67.7	65.7	61.7	59.8	53.8	59.8
57.5°	37.8	33.9	33.9	33.9	31.9	29.9	25.9	25.9
60°	15.9	13.9	13.9	12.0	10.0	8.0	6.0	8.0
62.5°	6.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
65°	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
67.5°	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
70°	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
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)