

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: P219518

Luminaire Tested: **LDSQ4B30D010 EU4B30508035 4LBSQLWWLI**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P219518
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 EU4B30508035 4LBSQLWWLI
Description: PORTFOLIO 4 INCH SQUARE SINGLE WALLWASH RECESSED DOWNLIGHT, WITH SPECULAR CLEAR TRIM
Light Source: (1) HIGH LUMEN LED 80CRI / 3500K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 2333.7 lumens
Efficiency: N/A
Efficacy: 83.3 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

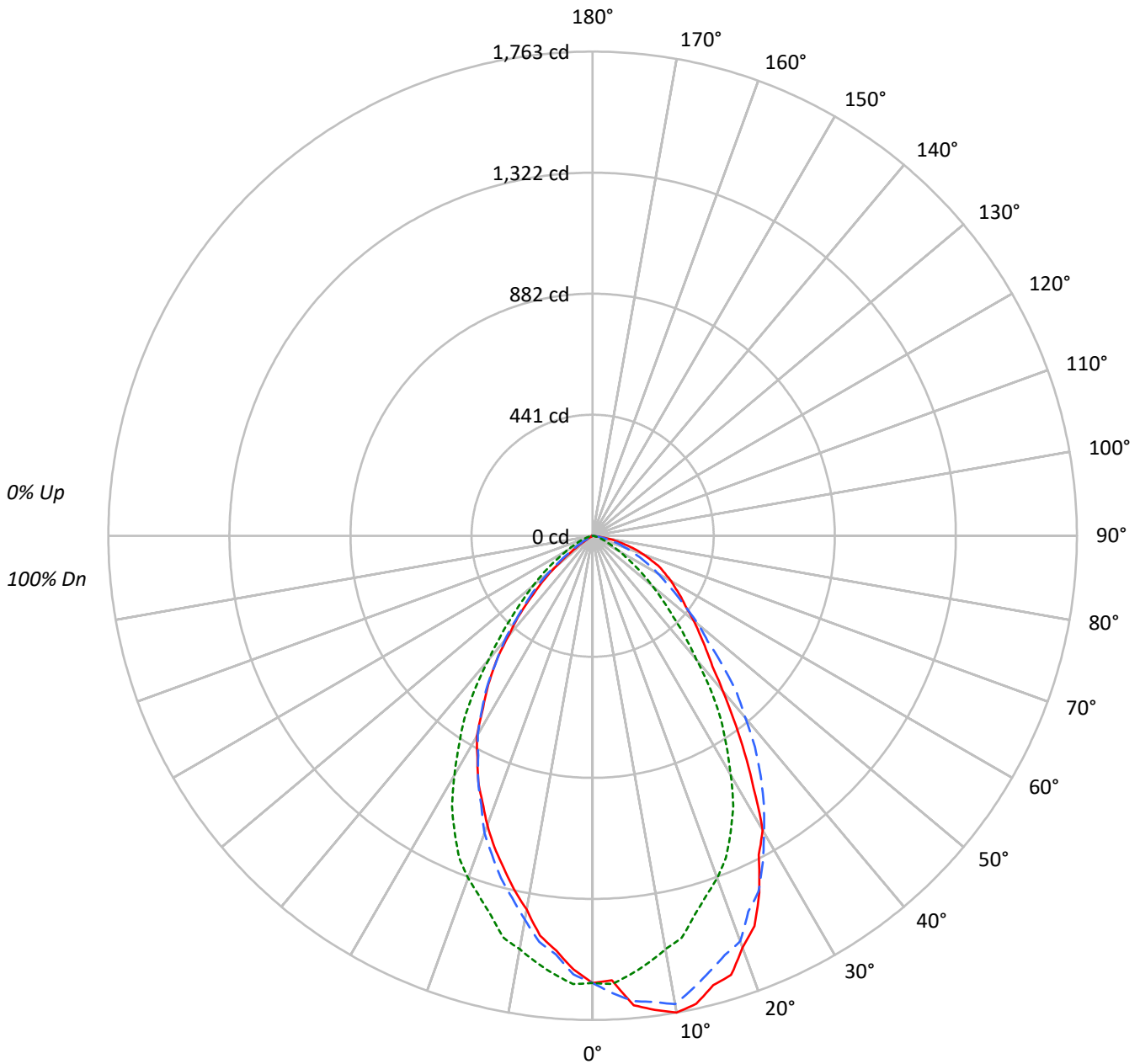
Input Watts (W): 28
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



TEST NUMBER: P219518

CATALOG NUMBER: LDSQ4B30D010 EU4B30508035 4LBSQLWWLI

Luminous Intensity Polar Plot





TEST NUMBER: P219518

CATALOG NUMBER: LDSQ4B30D010 EU4B30508035 4LBSQLWWLI

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°	157723	157723	157723
5°	166873	155855	147502
10°	173406	150358	135957
15°	169946	143509	125496
20°	164423	136649	115515
25°	153366	127082	105372
30°	138452	112466	94333
35°	114053	96278	78266
40°	93076	74309	60234
45°	79968	56431	43334
50°	72372	42953	27369
55°	66596	30993	9897
60°	63918	21177	1511
65°	61754	14327	458
70°	55289	9942	566
75°	45290	5128	0
80°	28340	2176	0
85°	0	0	0



TEST NUMBER: P219518

CATALOG NUMBER: LDSQ4B30D010 EU4B30508035 4LBSQLWWLI

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	152.5	6.5
10°-20°	411.0	17.6
20°-30°	548.8	23.5
30°-40°	521.0	22.3
40°-50°	360.1	15.4
50°-60°	199.0	8.5
60°-70°	98.8	4.2
70°-80°	38.9	1.7
80°-90°	3.7	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°	1112.3	47.7
0°-40°	1633.2	70.0
0°-60°	2192.3	93.9
0°-90°	2333.7	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2333.7	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	1628	1628	1628	1628	1628	
5°	1716	1700	1603	1530	1517	164
15°	1694	1644	1431	1290	1251	479
25°	1435	1429	1189	986	986	654
35°	964	1066	814	670	662	604
45°	584	670	412	338	316	455
55°	394	371	184	94	59	355
65°	269	195	62	2	2	261
75°	121	74	14	0	0	129
85°	0	2	0	0	0	11
90°	0	0	0	0	0	



TEST NUMBER: P219518

CATALOG NUMBER: LDSQ4B30D010 EU4B30508035 4LBSQLWWLI

CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
0°	1628.1	1628.1	1628.1	1628.1	1628.1	1628.1	1628.1	1628.1	1628.1	1628.1	1628.1
2.5°	1620.3	1665.2	1669.1	1665.2	1671.1	1669.1	1678.9	1669.1	1680.8	1663.2	1667.2
5°	1716.0	1698.4	1735.5	1716.0	1716.0	1714.0	1708.1	1706.2	1714.0	1688.6	1700.3
7.5°	1741.3	1766.7	1799.9	1758.9	1760.9	1760.9	1749.1	1745.2	1745.2	1698.4	1712.1
10°	1762.8	1747.2	1764.8	1749.1	1762.8	1760.9	1768.7	1743.3	1760.9	1733.5	1731.6
12.5°	1745.2	1739.4	1762.8	1737.4	1729.6	1731.6	1721.8	1716.0	1721.8	1690.6	1688.6
15°	1694.5	1700.3	1735.5	1708.1	1704.2	1700.3	1688.6	1669.1	1684.7	1641.8	1643.7
17.5°	1676.9	1667.2	1673.0	1649.6	1655.4	1651.5	1649.6	1632.0	1628.1	1600.8	1600.8
20°	1594.9	1616.4	1616.4	1600.8	1600.8	1598.8	1573.4	1589.1	1571.5	1563.7	1571.5
22.5°	1538.3	1540.3	1540.3	1526.6	1528.5	1520.7	1507.1	1497.3	1507.1	1497.3	1481.7
25°	1434.8	1438.7	1462.2	1436.8	1432.9	1440.7	1429.0	1423.1	1421.2	1397.8	1429.0
27.5°	1309.9	1348.9	1347.0	1337.2	1348.9	1333.3	1327.5	1329.4	1335.3	1333.3	1341.1
30°	1237.7	1243.5	1249.4	1241.6	1243.5	1237.7	1237.7	1239.6	1255.2	1249.4	1247.4
32.5°	1091.3	1110.8	1126.4	1126.4	1128.4	1134.2	1132.3	1173.3	1183.0	1163.5	1159.6
35°	964.4	978.0	991.7	993.7	1019.0	1021.0	1022.9	1034.6	1062.0	1067.8	1065.9
37.5°	843.3	857.0	860.9	878.5	892.1	905.8	921.4	937.0	960.5	980.0	970.2
40°	736.0	741.8	751.6	759.4	786.7	786.7	794.5	825.8	851.1	866.8	864.8
42.5°	646.2	648.1	655.9	669.6	695.0	689.1	695.0	716.4	753.5	755.5	777.0
45°	583.7	581.7	587.6	589.6	605.2	613.0	616.9	632.5	663.7	667.6	669.6
47.5°	527.1	525.1	534.9	538.8	544.7	552.5	552.5	554.4	566.1	575.9	568.1
50°	480.2	480.2	480.2	484.1	493.9	491.9	493.9	501.7	507.6	503.7	501.7
52.5°	429.5	437.3	443.1	445.1	447.0	447.0	449.0	445.1	443.1	437.3	425.6
55°	394.3	402.1	402.1	402.1	402.1	410.0	400.2	402.1	402.1	386.5	370.9
57.5°	359.2	367.0	372.9	365.1	372.9	365.1	361.2	359.2	355.3	339.7	316.3
60°	329.9	333.8	331.9	329.9	333.8	328.0	324.1	316.3	312.3	290.9	275.3
62.5°	296.7	298.7	300.6	296.7	292.8	290.9	283.1	271.4	263.5	246.0	232.3
65°	269.4	263.5	261.6	259.6	255.7	249.9	244.0	230.4	224.5	208.9	195.2
67.5°	228.4	226.5	230.4	224.5	214.7	214.7	208.9	197.2	183.5	173.7	160.1
70°	195.2	193.3	189.4	183.5	181.6	173.7	173.7	160.1	156.2	138.6	126.9
72.5°	160.1	160.1	154.2	148.4	142.5	138.6	136.7	126.9	121.0	111.3	101.5
75°	121.0	121.0	119.1	113.2	109.3	105.4	103.5	95.7	89.8	80.0	74.2
77.5°	85.9	85.9	78.1	74.2	76.1	72.2	68.3	66.4	64.4	58.6	50.8
80°	50.8	48.8	42.9	44.9	42.9	42.9	41.0	39.0	35.1	31.2	27.3
82.5°	13.7	15.6	15.6	15.6	17.6	13.7	13.7	13.7	15.6	15.6	9.8
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	3.9	7.8	7.8	7.8	7.8	7.8	5.9	5.9	5.9	3.9
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: P219518

CATALOG NUMBER: LDSQ4B30D010 EU4B30508035 4LBSQLWWLI

CANDELA DISTRIBUTION (continued):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
0°	1628.1	1628.1	1628.1	1628.1	1628.1	1628.1	1628.1	1628.1	1628.1	1628.1	1628.1
2.5°	1647.6	1645.7	1647.6	1634.0	1665.2	1641.8	1637.9	1634.0	1647.6	1634.0	1614.4
5°	1682.8	1663.2	1657.4	1651.5	1669.1	1641.8	1635.9	1637.9	1628.1	1602.7	1604.7
7.5°	1694.5	1676.9	1659.3	1622.3	1637.9	1632.0	1616.4	1604.7	1589.1	1567.6	1563.7
10°	1698.4	1678.9	1653.5	1641.8	1618.3	1610.5	1604.7	1585.2	1565.6	1528.5	1518.8
12.5°	1686.7	1663.2	1632.0	1622.3	1604.7	1579.3	1565.6	1546.1	1528.5	1499.3	1477.8
15°	1635.9	1616.4	1606.6	1573.4	1565.6	1550.0	1522.7	1495.4	1470.0	1430.9	1419.2
17.5°	1577.4	1569.5	1559.8	1534.4	1532.5	1516.8	1491.5	1468.0	1434.8	1374.3	1354.8
20°	1516.8	1516.8	1485.6	1475.8	1495.4	1464.1	1444.6	1423.1	1354.8	1325.5	1290.4
22.5°	1471.9	1450.5	1432.9	1417.3	1419.2	1399.7	1372.4	1329.4	1304.0	1268.9	1227.9
25°	1384.1	1391.9	1352.9	1347.0	1352.9	1308.0	1294.3	1259.1	1222.1	1188.9	1157.6
27.5°	1329.4	1308.0	1282.6	1261.1	1261.1	1243.5	1204.5	1196.7	1140.1	1108.8	1069.8
30°	1247.4	1231.8	1210.3	1179.1	1175.2	1161.5	1130.3	1110.8	1052.2	1005.4	983.9
32.5°	1144.0	1138.1	1120.5	1085.4	1073.7	1058.1	1019.0	985.8	958.5	905.8	880.4
35°	1069.8	1048.3	1011.2	981.9	972.2	944.8	913.6	890.2	860.9	814.1	780.9
37.5°	958.5	937.0	901.9	866.8	866.8	839.4	796.5	773.1	732.1	704.7	677.4
40°	860.9	833.6	798.4	757.4	751.6	712.5	695.0	655.9	630.5	587.6	583.7
42.5°	751.6	726.2	695.0	663.7	640.3	620.8	575.9	546.6	519.3	497.8	491.9
45°	652.0	618.8	591.5	552.5	529.0	505.6	476.3	456.8	435.3	411.9	398.2
47.5°	566.1	538.8	499.8	464.6	441.2	429.5	396.3	374.8	357.2	341.6	331.9
50°	478.3	445.1	423.6	384.6	380.7	353.3	326.0	308.4	298.7	285.0	271.4
52.5°	411.9	380.7	351.4	322.1	306.5	296.7	271.4	253.8	240.1	230.4	222.5
55°	347.5	320.2	296.7	267.4	257.7	244.0	214.7	210.8	197.2	183.5	173.7
57.5°	298.7	273.3	246.0	226.5	208.9	199.1	175.7	160.1	152.3	140.6	130.8
60°	253.8	226.5	205.0	181.6	173.7	160.1	142.5	128.8	119.1	109.3	99.6
62.5°	212.8	189.4	165.9	146.4	134.7	126.9	113.2	101.5	91.8	83.9	76.1
65°	175.7	154.2	134.7	115.2	109.3	99.6	89.8	80.0	72.2	62.5	54.7
67.5°	144.5	124.9	105.4	91.8	85.9	82.0	70.3	60.5	54.7	48.8	41.0
70°	113.2	99.6	83.9	72.2	66.4	60.5	52.7	46.9	39.0	35.1	29.3
72.5°	87.8	76.1	62.5	52.7	48.8	44.9	37.1	31.2	27.3	23.4	19.5
75°	62.5	52.7	44.9	35.1	33.2	31.2	25.4	21.5	17.6	13.7	11.7
77.5°	42.9	35.1	27.3	23.4	21.5	17.6	15.6	11.7	9.8	7.8	5.9
80°	23.4	17.6	13.7	11.7	9.8	7.8	7.8	5.9	3.9	3.9	2.0
82.5°	7.8	5.9	3.9	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



TEST NUMBER: P219518

CATALOG NUMBER: LDSQ4B30D010 EU4B30508035 4LBSQLWWLI

CANDELA DISTRIBUTION (continued):

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
0°	1628.1	1628.1	1628.1	1628.1	1628.1	1628.1	1628.1	1628.1	1628.1	1628.1	1628.1
2.5°	1626.2	1604.7	1610.5	1610.5	1606.6	1606.6	1602.7	1596.9	1598.8	1587.1	1561.7
5°	1608.6	1581.3	1577.4	1581.3	1565.6	1561.7	1553.9	1565.6	1530.5	1544.2	1528.5
7.5°	1557.8	1532.5	1526.6	1540.3	1520.7	1509.0	1507.1	1522.7	1491.5	1475.8	1458.3
10°	1501.2	1491.5	1473.9	1464.1	1458.3	1460.2	1444.6	1425.1	1419.2	1415.3	1399.7
12.5°	1450.5	1429.0	1413.4	1401.7	1397.8	1397.8	1372.4	1368.5	1350.9	1347.0	1323.6
15°	1389.9	1364.6	1354.8	1339.2	1325.5	1333.3	1304.0	1296.2	1290.4	1265.0	1268.9
17.5°	1337.2	1309.9	1286.5	1276.7	1265.0	1253.3	1226.0	1231.8	1218.2	1218.2	1183.0
20°	1268.9	1239.6	1222.1	1202.5	1202.5	1186.9	1167.4	1169.3	1151.8	1134.2	1103.0
22.5°	1196.7	1165.4	1144.0	1136.2	1116.6	1112.7	1089.3	1083.5	1060.0	1062.0	1034.6
25°	1120.5	1089.3	1060.0	1062.0	1044.4	1036.6	1022.9	995.6	985.8	974.1	966.3
27.5°	1030.7	1009.3	983.9	981.9	948.8	950.7	933.1	925.3	901.9	907.8	890.2
30°	948.8	917.5	894.1	888.2	874.6	870.7	843.3	831.6	835.5	819.9	810.1
32.5°	864.8	818.0	808.2	796.5	788.7	778.9	759.4	767.2	749.6	753.5	737.9
35°	753.5	734.0	708.6	708.6	700.8	693.0	679.4	687.2	669.6	661.8	646.2
37.5°	659.8	642.3	616.9	624.7	611.0	599.3	587.6	589.6	573.9	572.0	556.4
40°	558.3	548.6	531.0	531.0	521.2	521.2	515.4	509.5	499.8	488.0	470.5
42.5°	462.7	454.9	447.0	449.0	435.3	447.0	431.4	441.2	410.0	408.0	396.3
45°	392.4	374.8	376.8	369.0	361.2	365.1	351.4	355.3	337.7	333.8	322.1
47.5°	318.2	312.3	300.6	296.7	296.7	290.9	285.0	283.1	275.3	265.5	249.9
50°	261.6	240.1	236.2	230.4	226.5	226.5	218.6	206.9	208.9	199.1	183.5
52.5°	205.0	187.4	179.6	177.6	169.8	165.9	156.2	148.4	142.5	138.6	128.8
55°	158.1	142.5	132.7	132.7	121.0	121.0	107.4	101.5	93.7	85.9	80.0
57.5°	119.1	111.3	101.5	93.7	89.8	80.0	72.2	62.5	56.6	44.9	37.1
60°	89.8	82.0	72.2	66.4	62.5	52.7	42.9	35.1	21.5	17.6	15.6
62.5°	66.4	58.6	48.8	44.9	41.0	33.2	23.4	11.7	5.9	5.9	5.9
65°	48.8	39.0	31.2	27.3	23.4	17.6	7.8	3.9	2.0	2.0	2.0
67.5°	33.2	25.4	17.6	15.6	11.7	5.9	2.0	2.0	2.0	2.0	2.0
70°	21.5	15.6	7.8	5.9	3.9	2.0	2.0	2.0	2.0	2.0	2.0
72.5°	13.7	7.8	3.9	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
75°	7.8	3.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
77.5°	3.9	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: P219518

CATALOG NUMBER: LDSQ4B30D010 EU4B30508035 4LBSQLWWLI

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	1628.1	1628.1	1628.1	1628.1	1628.1	1628.1	1628.1	1628.1
2.5°	1589.1	1575.4	1583.2	1565.6	1573.4	1587.1	1577.4	1581.3
5°	1534.4	1526.6	1516.8	1491.5	1511.0	1526.6	1518.8	1516.8
7.5°	1475.8	1448.5	1462.2	1454.4	1450.5	1466.1	1448.5	1468.0
10°	1415.3	1395.8	1393.8	1380.2	1380.2	1391.9	1393.8	1382.1
12.5°	1325.5	1315.8	1315.8	1313.8	1311.9	1323.6	1325.5	1319.7
15°	1261.1	1257.2	1247.4	1245.5	1233.8	1251.3	1253.3	1251.3
17.5°	1183.0	1185.0	1175.2	1175.2	1183.0	1188.9	1173.3	1188.9
20°	1130.3	1120.5	1116.6	1099.1	1108.8	1118.6	1118.6	1120.5
22.5°	1054.2	1038.6	1044.4	1034.6	1028.8	1042.5	1042.5	1048.3
25°	968.3	968.3	972.2	966.3	970.2	978.0	972.2	985.8
27.5°	886.3	894.1	894.1	886.3	890.2	913.6	923.4	907.8
30°	810.1	812.1	818.0	814.1	825.8	833.6	831.6	843.3
32.5°	724.3	734.0	737.9	732.1	736.0	753.5	743.8	741.8
35°	657.9	640.3	638.4	640.3	648.1	652.0	648.1	661.8
37.5°	562.2	556.4	548.6	550.5	556.4	564.2	568.1	577.8
40°	470.5	462.7	462.7	460.7	454.9	476.3	476.3	476.3
42.5°	390.4	388.5	378.7	378.7	386.5	392.4	388.5	402.1
45°	320.2	312.3	306.5	306.5	312.3	312.3	318.2	316.3
47.5°	251.8	244.0	246.0	240.1	246.0	253.8	244.0	246.0
50°	189.4	189.4	185.5	189.4	187.4	189.4	185.5	181.6
52.5°	128.8	146.4	148.4	140.6	123.0	107.4	97.6	105.4
55°	74.2	66.4	66.4	64.4	60.5	58.6	52.7	58.6
57.5°	37.1	33.2	33.2	33.2	31.2	29.3	25.4	25.4
60°	15.6	13.7	13.7	11.7	9.8	7.8	5.9	7.8
62.5°	5.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9
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)