

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: P251953

Luminaire Tested: **LD4B40D010 EU4B30509030 4LBDW1H**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P251953
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G1-1712-453-15)
Test Lab: INNOVATION CENTER(G1)
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: io LED
Catalog Number: LD4B40D010 EU4B30509030 4LBDW1H
Description: PORTFOLIO 4 INCH DOUBLE WALLWASH RECESSED DOWNLIGHT, WITH HAZE TRIM
Light Source: (1) HIGH LUMEN LED 90CRI / 3000K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 3013.0 lumens
Efficiency: N/A
Efficacy: 70.0 lumens/watt
Spacing Criteria (0/90/45): 1.19 / 1.18 / 1.19
Luminous Opening: Circular (Dia: 0.38' x H: 0')
CIE Type: Direct

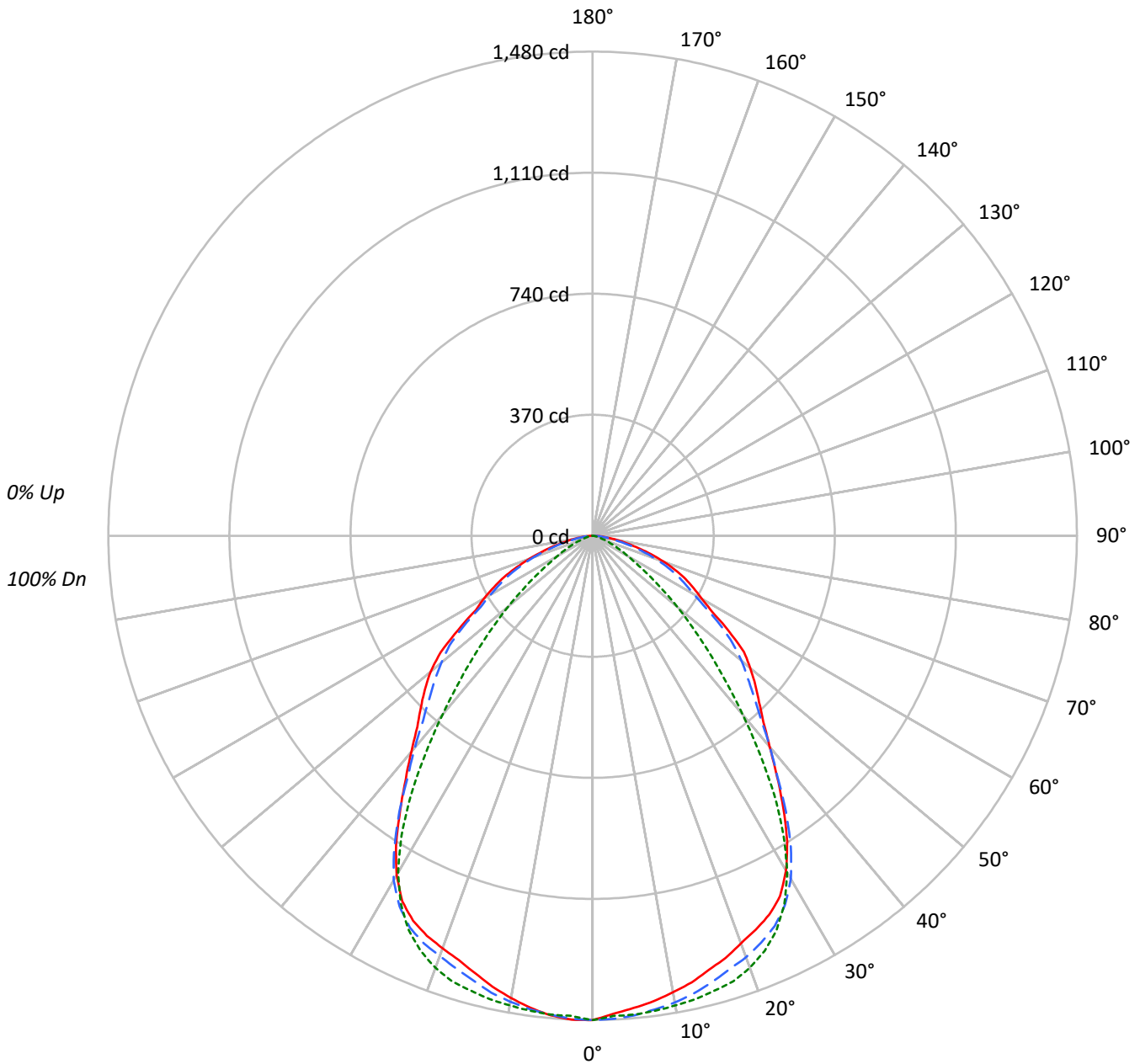
Input Watts (W): 43.02
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



TEST NUMBER: P251953

CATALOG NUMBER: LD4B40D010 EU4B30509030 4LBDW1H

Luminous Intensity Polar Plot





TEST NUMBER: P251953

CATALOG NUMBER: LD4B40D010 EU4B30509030 4LBDW1H

COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20									20									20									20									
RC	80									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	111	107	103	100	108	104	101	98	100	98	95	96	94	92	93	91	89	88																			
2	102	95	89	84	100	93	88	83	90	85	81	87	83	80	84	81	78	76																			
3	94	85	78	72	92	84	77	72	81	75	70	78	73	69	76	72	68	66																			
4	87	77	69	63	85	75	68	62	73	67	62	71	65	61	69	64	60	58																			
5	81	69	61	55	79	68	61	55	66	60	54	64	58	54	63	57	53	51																			
6	75	63	55	49	73	62	55	49	60	54	49	59	53	48	57	52	48	46																			
7	70	58	50	44	68	57	49	44	56	49	44	54	48	43	53	47	43	41																			
8	66	53	45	40	64	52	45	40	51	44	40	50	44	39	49	43	39	37																			
9	62	49	41	36	60	49	41	36	47	41	36	46	40	36	45	40	36	34																			
10	58	46	38	33	57	45	38	33	44	38	33	43	37	33	42	37	33	31																			

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	144287	144287	144287
5°	141717	143723	143948
10°	140199	144256	142000
15°	138571	145240	139721
20°	137482	145747	139131
25°	137406	143030	139610
30°	133028	133793	134817
35°	120854	115167	121937
40°	106930	90697	109539
45°	99194	69065	102336
50°	95307	51110	98082
55°	86299	35223	85143
60°	75023	23975	74575
65°	72479	17342	68813
70°	65538	11683	58414
75°	54035	7719	46316
80°	43440	5107	34516
85°	35671	2572	22923



TEST NUMBER: P251953

CATALOG NUMBER: LD4B40D010 EU4B30509030 4LBDW1H

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	139.8	4.6
10°-20°	399.6	13.3
20°-30°	603.7	20.0
30°-40°	631.8	21.0
40°-50°	511.7	17.0
50°-60°	372.2	12.4
60°-70°	229.5	7.6
70°-80°	103.7	3.4
80°-90°	21.1	0.7
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°	1143.0	37.9
0°-40°	1774.8	58.9
0°-60°	2658.7	88.2
0°-90°	3013.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3013.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	1480	1480	1480	1480	1480	
5°	1449	1471	1469	1469	1471	137
15°	1373	1412	1440	1408	1385	388
25°	1278	1316	1330	1321	1298	586
35°	1016	1030	968	1030	1025	633
45°	720	697	501	706	742	559
55°	508	476	207	481	501	453
65°	314	282	75	278	298	308
75°	144	123	20	107	123	156
85°	32	25	2	18	20	37
90°	0	0	0	0	0	



TEST NUMBER: P251953

CATALOG NUMBER: LD4B40D010 EU4B30509030 4LBDW1H

CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
0°	1480.5	1480.5	1480.5	1480.5	1480.5	1480.5	1480.5	1480.5	1480.5	1480.5	1480.5
2.5°	1462.2	1462.2	1475.9	1491.9	1478.2	1464.5	1473.6	1469.1	1485.0	1485.0	1478.2
5°	1448.6	1453.1	1464.5	1478.2	1466.8	1453.1	1464.5	1460.0	1475.9	1475.9	1471.4
7.5°	1434.9	1437.2	1450.9	1466.8	1455.4	1441.8	1450.9	1448.6	1462.2	1464.5	1460.0
10°	1416.7	1419.0	1432.6	1448.6	1437.2	1425.8	1434.9	1432.6	1450.9	1450.9	1448.6
12.5°	1398.5	1400.8	1414.4	1428.1	1416.7	1405.3	1414.4	1414.4	1432.6	1434.9	1432.6
15°	1373.4	1378.0	1389.4	1403.0	1396.2	1382.5	1391.6	1391.6	1407.6	1412.1	1412.1
17.5°	1352.9	1355.2	1366.6	1380.3	1371.1	1359.8	1368.9	1368.9	1384.8	1389.4	1389.4
20°	1325.6	1330.1	1341.5	1355.2	1348.4	1339.3	1346.1	1346.1	1364.3	1368.9	1371.1
22.5°	1302.8	1307.4	1316.5	1334.7	1323.3	1316.5	1325.6	1323.3	1343.8	1346.1	1346.1
25°	1277.8	1282.3	1293.7	1305.1	1298.3	1291.4	1298.3	1298.3	1314.2	1316.5	1316.5
27.5°	1241.3	1243.6	1255.0	1266.4	1259.5	1250.4	1259.5	1257.3	1273.2	1275.5	1273.2
30°	1182.1	1186.7	1191.2	1207.2	1200.3	1193.5	1202.6	1198.0	1214.0	1214.0	1211.7
32.5°	1106.9	1106.9	1116.0	1127.4	1118.3	1113.8	1120.6	1122.9	1134.3	1134.3	1127.4
35°	1015.8	1020.4	1027.2	1034.1	1027.2	1022.7	1029.5	1027.2	1040.9	1036.3	1029.5
37.5°	924.7	927.0	933.8	942.9	933.8	927.0	929.3	927.0	938.4	938.4	927.0
40°	840.5	845.0	849.6	858.7	849.6	845.0	847.3	840.5	854.1	849.6	842.7
42.5°	772.1	774.4	781.2	785.8	776.7	774.4	776.7	772.1	779.0	774.4	760.7
45°	719.7	719.7	722.0	728.8	719.7	717.5	717.5	712.9	719.7	710.6	697.0
47.5°	674.2	676.5	678.7	683.3	676.5	669.6	671.9	662.8	667.4	660.5	642.3
50°	628.6	633.2	635.5	640.0	633.2	628.6	630.9	621.8	621.8	610.4	594.5
52.5°	583.1	585.4	583.1	587.6	583.1	576.2	578.5	569.4	569.4	555.7	539.8
55°	507.9	510.2	512.5	517.0	512.5	505.6	510.2	503.4	503.4	494.2	476.0
57.5°	432.8	435.0	437.3	439.6	439.6	435.0	437.3	432.8	430.5	423.6	410.0
60°	384.9	384.9	384.9	387.2	384.9	382.6	382.6	378.1	378.1	369.0	355.3
62.5°	348.5	350.8	350.8	353.0	350.8	348.5	346.2	341.6	339.4	330.3	318.9
65°	314.3	314.3	312.0	316.6	314.3	312.0	312.0	307.5	302.9	293.8	282.4
67.5°	273.3	275.6	273.3	275.6	275.6	273.3	271.0	266.5	264.2	257.4	243.7
70°	230.0	230.0	230.0	232.3	230.0	230.0	232.3	225.5	223.2	214.1	202.7
72.5°	186.8	189.0	189.0	186.8	189.0	184.5	184.5	184.5	182.2	173.1	161.7
75°	143.5	145.8	145.8	148.0	145.8	143.5	143.5	141.2	138.9	132.1	123.0
77.5°	107.0	107.0	109.3	109.3	109.3	107.0	107.0	102.5	102.5	97.9	88.8
80°	77.4	77.4	75.2	77.4	77.4	75.2	75.2	72.9	72.9	68.3	61.5
82.5°	50.1	52.4	52.4	52.4	52.4	50.1	50.1	50.1	47.8	45.6	41.0
85°	31.9	31.9	31.9	31.9	34.2	31.9	34.2	31.9	31.9	27.3	25.1
87.5°	13.7	13.7	13.7	15.9	15.9	13.7	13.7	13.7	13.7	13.7	11.4
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: P251953

CATALOG NUMBER: LD4B40D010 EU4B30509030 4LBDW1H

CANDELA DISTRIBUTION (continued):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
0°	1480.5	1480.5	1480.5	1480.5	1480.5	1480.5	1480.5	1480.5	1480.5	1480.5	1480.5
2.5°	1478.2	1480.5	1473.6	1482.7	1475.9	1478.2	1480.5	1478.2	1469.1	1469.1	1494.1
5°	1469.1	1473.6	1466.8	1478.2	1473.6	1473.6	1478.2	1475.9	1466.8	1469.1	1491.9
7.5°	1460.0	1466.8	1462.2	1473.6	1466.8	1466.8	1471.4	1471.4	1462.2	1464.5	1485.0
10°	1446.3	1455.4	1453.1	1464.5	1457.7	1457.7	1464.5	1464.5	1455.4	1457.7	1478.2
12.5°	1434.9	1444.0	1441.8	1453.1	1448.6	1450.9	1453.1	1457.7	1446.3	1450.9	1469.1
15°	1416.7	1425.8	1425.8	1437.2	1432.6	1437.2	1441.8	1448.6	1439.5	1439.5	1457.7
17.5°	1396.2	1407.6	1407.6	1416.7	1416.7	1419.0	1428.1	1434.9	1425.8	1428.1	1444.0
20°	1373.4	1387.1	1387.1	1398.5	1396.2	1400.8	1407.6	1414.4	1405.3	1405.3	1423.5
22.5°	1350.6	1362.0	1364.3	1371.1	1371.1	1373.4	1380.3	1384.8	1373.4	1373.4	1391.6
25°	1318.8	1330.1	1332.4	1337.0	1332.4	1332.4	1337.0	1341.5	1330.1	1330.1	1346.1
27.5°	1275.5	1286.9	1286.9	1284.6	1280.0	1282.3	1280.0	1282.3	1270.9	1268.6	1284.6
30°	1211.7	1218.5	1218.5	1216.3	1209.4	1209.4	1202.6	1204.9	1188.9	1188.9	1202.6
32.5°	1125.2	1132.0	1127.4	1122.9	1113.8	1109.2	1104.7	1102.4	1086.4	1086.4	1102.4
35°	1022.7	1027.2	1020.4	1011.3	999.9	993.1	986.2	977.1	965.7	968.0	977.1
37.5°	917.9	917.9	908.8	890.6	881.4	870.1	858.7	858.7	840.5	838.2	845.0
40°	829.1	820.0	804.0	779.0	763.0	751.6	735.7	726.6	712.9	712.9	724.3
42.5°	749.3	731.1	710.6	676.5	660.5	646.9	626.4	617.2	601.3	599.0	605.9
45°	678.7	660.5	630.9	594.5	574.0	558.0	528.4	517.0	503.4	501.1	505.6
47.5°	621.8	601.3	564.9	517.0	496.5	476.0	446.4	430.5	419.1	412.3	419.1
50°	571.7	544.4	505.6	455.5	428.2	410.0	373.5	357.6	341.6	337.1	339.4
52.5°	517.0	489.7	448.7	396.3	371.3	343.9	309.8	287.0	273.3	266.5	273.3
55°	457.8	430.5	389.5	337.1	309.8	284.7	248.3	230.0	214.1	207.3	214.1
57.5°	394.0	369.0	332.5	280.2	255.1	232.3	198.2	179.9	164.0	159.4	164.0
60°	339.4	318.9	282.4	232.3	211.8	186.8	157.2	138.9	125.3	123.0	125.3
62.5°	302.9	280.2	246.0	198.2	177.7	157.2	129.8	111.6	100.2	97.9	100.2
65°	266.5	241.4	209.5	168.5	148.0	132.1	104.8	88.8	77.4	75.2	77.4
67.5°	225.5	202.7	175.4	138.9	123.0	107.0	84.3	68.3	59.2	56.9	59.2
70°	186.8	166.3	138.9	111.6	95.7	84.3	63.8	52.4	43.3	41.0	43.3
72.5°	148.0	129.8	107.0	84.3	75.2	63.8	50.1	38.7	31.9	29.6	31.9
75°	113.9	100.2	82.0	61.5	54.7	47.8	34.2	27.3	22.8	20.5	22.8
77.5°	79.7	70.6	56.9	45.6	38.7	34.2	25.1	18.2	15.9	13.7	15.9
80°	54.7	47.8	38.7	29.6	25.1	20.5	15.9	11.4	9.1	9.1	9.1
82.5°	36.4	29.6	22.8	18.2	15.9	13.7	9.1	6.8	6.8	4.6	4.6
85°	20.5	18.2	13.7	11.4	9.1	6.8	4.6	4.6	2.3	2.3	2.3
87.5°	9.1	6.8	4.6	4.6	2.3	2.3	2.3	2.3	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: P251953

CATALOG NUMBER: LD4B40D010 EU4B30509030 4LBDW1H

CANDELA DISTRIBUTION (continued):

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
0°	1480.5	1480.5	1480.5	1480.5	1480.5	1480.5	1480.5	1480.5	1480.5	1480.5	1480.5
2.5°	1487.3	1480.5	1489.6	1480.5	1475.9	1480.5	1475.9	1489.6	1478.2	1469.1	1478.2
5°	1485.0	1475.9	1485.0	1478.2	1471.4	1473.6	1469.1	1482.7	1469.1	1462.2	1466.8
7.5°	1480.5	1473.6	1478.2	1471.4	1464.5	1466.8	1462.2	1473.6	1460.0	1453.1	1457.7
10°	1473.6	1466.8	1469.1	1464.5	1457.7	1457.7	1453.1	1462.2	1446.3	1437.2	1441.8
12.5°	1464.5	1455.4	1460.0	1453.1	1444.0	1444.0	1439.5	1446.3	1430.4	1421.3	1423.5
15°	1453.1	1444.0	1444.0	1437.2	1428.1	1428.1	1419.0	1425.8	1407.6	1398.5	1398.5
17.5°	1439.5	1428.1	1428.1	1421.3	1409.9	1407.6	1400.8	1407.6	1387.1	1378.0	1378.0
20°	1419.0	1409.9	1407.6	1403.0	1391.6	1389.4	1380.3	1382.5	1366.6	1359.8	1357.5
22.5°	1391.6	1382.5	1384.8	1378.0	1368.9	1366.6	1357.5	1364.3	1348.4	1341.5	1343.8
25°	1343.8	1339.3	1343.8	1341.5	1334.7	1334.7	1330.1	1334.7	1321.0	1316.5	1318.8
27.5°	1289.1	1286.9	1289.1	1289.1	1284.6	1284.6	1284.6	1291.4	1277.8	1275.5	1275.5
30°	1209.4	1209.4	1211.7	1214.0	1214.0	1218.5	1216.3	1225.4	1216.3	1211.7	1216.3
32.5°	1104.7	1113.8	1120.6	1120.6	1120.6	1125.2	1129.7	1136.5	1127.4	1129.7	1129.7
35°	986.2	993.1	997.6	1009.0	1002.2	1018.1	1022.7	1031.8	1029.5	1034.1	1031.8
37.5°	854.1	863.2	872.3	888.3	886.0	904.2	913.3	931.6	927.0	936.1	940.7
40°	731.1	744.8	758.5	769.8	779.0	797.2	815.4	838.2	845.0	851.8	854.1
42.5°	612.7	626.4	649.1	665.1	678.7	708.3	733.4	760.7	767.6	781.2	785.8
45°	517.0	528.4	555.7	576.2	587.6	630.9	660.5	694.7	706.1	722.0	728.8
47.5°	428.2	448.7	476.0	501.1	517.0	562.6	601.3	637.7	653.7	671.9	681.0
50°	350.8	373.5	410.0	432.8	455.5	505.6	548.9	587.6	603.6	624.1	633.2
52.5°	287.0	312.0	346.2	371.3	396.3	448.7	494.2	530.7	551.2	564.9	578.5
55°	225.5	252.8	287.0	314.3	334.8	391.8	430.5	466.9	480.6	492.0	498.8
57.5°	175.4	195.9	230.0	252.8	277.9	328.0	366.7	394.0	405.4	419.1	423.6
60°	136.7	157.2	189.0	211.8	234.6	282.4	321.1	348.5	359.9	371.3	378.1
62.5°	109.3	129.8	159.4	179.9	200.4	243.7	277.9	305.2	318.9	330.3	337.1
65°	86.6	104.8	129.8	150.3	166.3	205.0	239.2	264.2	277.9	289.3	296.1
67.5°	68.3	84.3	107.0	120.7	136.7	168.5	198.2	220.9	232.3	246.0	252.8
70°	52.4	63.8	84.3	95.7	107.0	134.4	157.2	179.9	191.3	200.4	205.0
72.5°	38.7	47.8	63.8	72.9	79.7	102.5	120.7	136.7	145.8	154.9	159.4
75°	27.3	34.2	45.6	52.4	56.9	72.9	88.8	100.2	107.0	113.9	120.7
77.5°	18.2	22.8	29.6	34.2	38.7	50.1	59.2	68.3	75.2	82.0	84.3
80°	11.4	15.9	20.5	22.8	25.1	31.9	41.0	45.6	50.1	54.7	56.9
82.5°	6.8	9.1	11.4	13.7	15.9	20.5	25.1	29.6	31.9	36.4	38.7
85°	2.3	4.6	4.6	6.8	6.8	11.4	13.7	15.9	18.2	20.5	22.8
87.5°	0.0	0.0	2.3	2.3	2.3	2.3	4.6	4.6	4.6	4.6	4.6
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: P251953

CATALOG NUMBER: LD4B40D010 EU4B30509030 4LBDW1H

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	1480.5	1480.5	1480.5	1480.5	1480.5	1480.5	1480.5	1480.5
2.5°	1487.3	1480.5	1475.9	1473.6	1489.6	1469.1	1478.2	1480.5
5°	1478.2	1471.4	1466.8	1464.5	1478.2	1460.0	1466.8	1471.4
7.5°	1464.5	1460.0	1453.1	1450.9	1464.5	1444.0	1453.1	1455.4
10°	1448.6	1441.8	1437.2	1434.9	1446.3	1425.8	1434.9	1434.9
12.5°	1428.1	1423.5	1414.4	1414.4	1423.5	1405.3	1412.1	1412.1
15°	1400.8	1396.2	1387.1	1387.1	1396.2	1378.0	1384.8	1384.8
17.5°	1378.0	1373.4	1366.6	1364.3	1373.4	1355.2	1362.0	1359.8
20°	1359.8	1355.2	1346.1	1346.1	1352.9	1334.7	1341.5	1341.5
22.5°	1343.8	1341.5	1332.4	1332.4	1341.5	1323.3	1327.9	1323.3
25°	1318.8	1316.5	1307.4	1309.6	1314.2	1296.0	1302.8	1298.3
27.5°	1277.8	1277.8	1268.6	1266.4	1273.2	1257.3	1261.8	1259.5
30°	1214.0	1216.3	1204.9	1204.9	1207.2	1193.5	1200.3	1198.0
32.5°	1127.4	1129.7	1120.6	1118.3	1125.2	1113.8	1118.3	1118.3
35°	1031.8	1034.1	1027.2	1027.2	1034.1	1027.2	1027.2	1024.9
37.5°	936.1	940.7	936.1	938.4	942.9	936.1	940.7	938.4
40°	858.7	863.2	856.4	861.0	865.5	858.7	865.5	861.0
42.5°	788.1	794.9	790.3	794.9	799.5	794.9	799.5	792.6
45°	735.7	740.2	738.0	740.2	744.8	742.5	744.8	742.5
47.5°	685.6	694.7	690.1	694.7	701.5	697.0	701.5	694.7
50°	640.0	646.9	644.6	649.1	651.4	649.1	653.7	646.9
52.5°	580.8	587.6	585.4	585.4	589.9	585.4	589.9	585.4
55°	503.4	505.6	505.6	507.9	505.6	503.4	505.6	501.1
57.5°	428.2	432.8	425.9	432.8	430.5	428.2	428.2	423.6
60°	380.4	387.2	382.6	387.2	384.9	384.9	384.9	382.6
62.5°	341.6	346.2	341.6	343.9	343.9	343.9	341.6	339.4
65°	298.4	305.2	300.6	302.9	300.6	298.4	300.6	298.4
67.5°	255.1	257.4	257.4	255.1	255.1	255.1	255.1	250.5
70°	207.3	209.5	207.3	211.8	209.5	207.3	209.5	205.0
72.5°	161.7	164.0	161.7	164.0	161.7	161.7	161.7	161.7
75°	120.7	123.0	123.0	123.0	123.0	123.0	118.4	123.0
77.5°	86.6	86.6	86.6	88.8	86.6	86.6	86.6	86.6
80°	59.2	59.2	59.2	61.5	59.2	61.5	59.2	61.5
82.5°	38.7	38.7	38.7	38.7	38.7	38.7	38.7	38.7
85°	20.5	22.8	22.8	20.5	20.5	20.5	20.5	20.5
87.5°	4.6	2.3	2.3	2.3	2.3	2.3	2.3	2.3
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)