

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: P251800

Luminaire Tested: **LD4B40D010 EU4B30509050 4LBLWW1H**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P251800
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G1-1712-453-12)
Test Lab: INNOVATION CENTER(G1)
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: io LED
Catalog Number: LD4B40D010 EU4B30509050 4LBLWW1H
Description: PORTFOLIO 4 INCH LENS WALLWASH RECESSED DOWNLIGHT, WITH HAZE TRIM
Light Source: (1) HIGH LUMEN LED 90CRI / 5000K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 2724.0 lumens
Efficiency: N/A
Efficacy: 63.3 lumens/watt
Spacing Criteria (0/90/45): 1.12 / 1.03 / 1.12
Luminous Opening: Circular (Dia: 0.38' x H: 0')
CIE Type: Direct

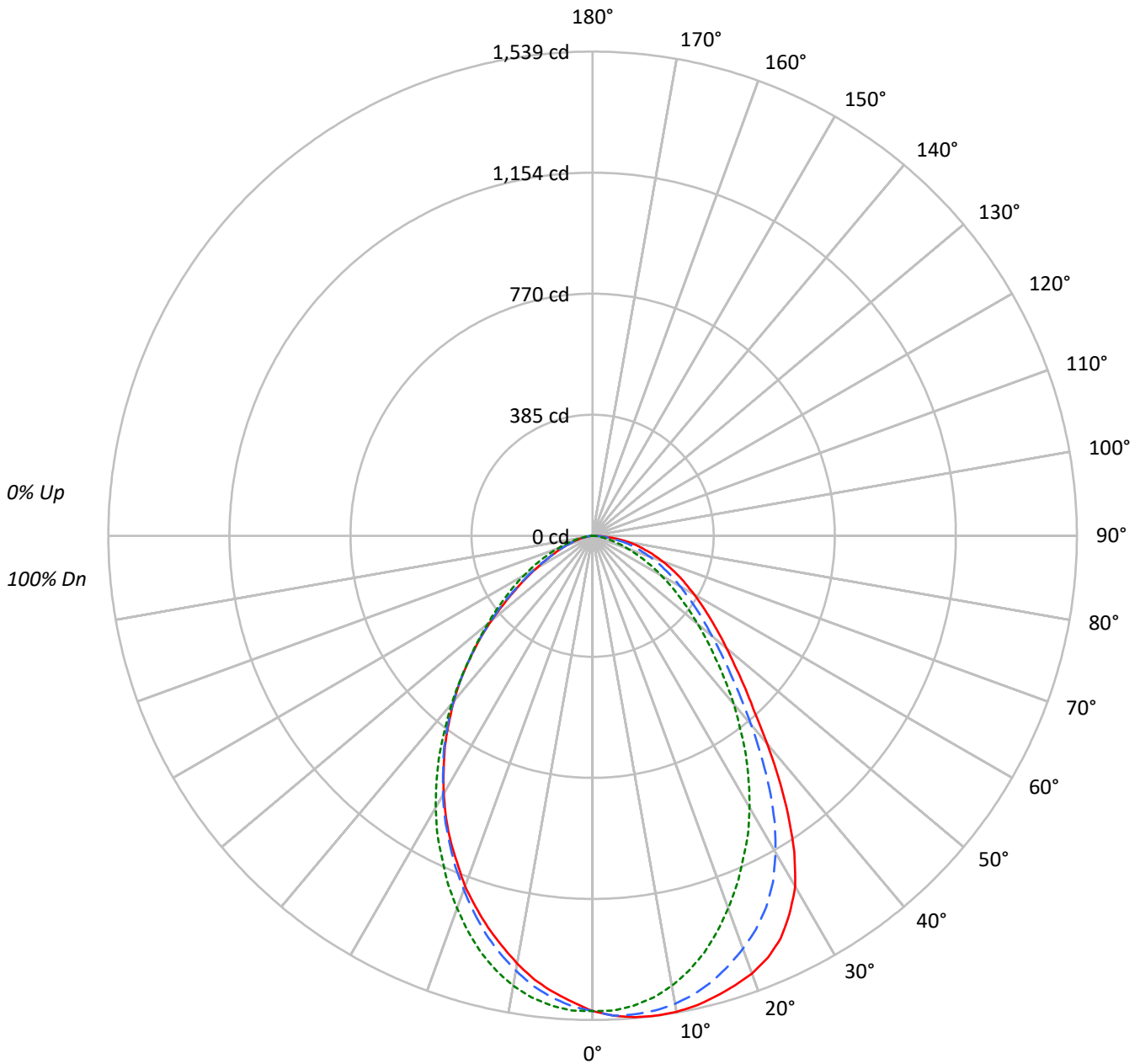
Input Watts (W): 43.02
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Luminous Intensity Polar Plot





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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20				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				100
1	111	107	103	100	108	104	101	98	100	98	95	96	94	92	93	91	90	88				88
2	102	95	89	85	100	93	88	84	90	85	82	87	83	80	84	81	78	76				76
3	94	85	78	73	92	84	77	72	81	75	71	78	74	70	76	72	69	67				67
4	88	77	69	63	85	76	69	63	73	67	62	71	66	61	69	64	61	59				59
5	81	70	62	56	79	69	61	56	67	60	55	65	59	55	63	58	54	52				52
6	76	64	56	50	74	63	55	50	61	54	49	60	54	49	58	53	49	47				47
7	71	59	51	45	69	58	50	45	56	50	45	55	49	44	54	48	44	42				42
8	66	54	46	41	65	53	46	41	52	45	41	51	45	40	50	44	40	38				38
9	62	50	42	37	61	49	42	37	48	42	37	47	41	37	46	41	37	35				35
10	59	46	39	34	57	46	39	34	45	39	34	44	38	34	43	38	34	32				32

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	147230	147230	147230
5°	150297	146657	142333
10°	152035	143752	136626
15°	152898	138359	129914
20°	153547	130647	122931
25°	151955	121717	114964
30°	144900	112209	106447
35°	128861	100926	97333
40°	109704	88712	87224
45°	94494	76246	75915
50°	84224	65893	63786
55°	77395	56870	50940
60°	72489	48924	39860
65°	69666	41278	31086
70°	66877	33111	25161
75°	64766	26245	19242
80°	65216	18240	11730
85°	54568	12971	5144



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	141.4	5.2
10°-20°	388.8	14.3
20°-30°	543.7	20.0
30°-40°	558.9	20.5
40°-50°	453.6	16.7
50°-60°	319.4	11.7
60°-70°	196.6	7.2
70°-80°	98.2	3.6
80°-90°	23.3	0.9
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°	1073.9	39.4
0°-40°	1632.8	59.9
0°-60°	2405.8	88.3
0°-90°	2724.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2724.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	1511	1511	1511	1511	1511	
5°	1536	1527	1499	1474	1455	147
15°	1515	1467	1371	1311	1288	428
25°	1413	1304	1132	1076	1069	646
35°	1083	978	848	823	818	673
45°	686	618	553	553	551	533
55°	456	400	335	307	300	409
65°	302	253	179	137	135	299
75°	172	135	70	51	51	184
85°	49	32	12	7	5	57
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°	1510.7	1510.7	1510.7	1510.7	1510.7	1510.7	1510.7	1510.7	1510.7	1510.7	1510.7
2.5°	1527.0	1529.3	1522.3	1529.3	1520.0	1524.7	1527.0	1522.3	1517.7	1527.0	1527.0
5°	1536.3	1536.3	1529.3	1538.6	1527.0	1529.3	1534.0	1527.0	1520.0	1529.3	1527.0
7.5°	1538.6	1538.6	1529.3	1538.6	1527.0	1529.3	1531.6	1524.7	1517.7	1524.7	1522.3
10°	1536.3	1534.0	1527.0	1536.3	1524.7	1524.7	1527.0	1520.0	1508.4	1515.4	1510.7
12.5°	1529.3	1529.3	1520.0	1529.3	1513.0	1513.0	1515.4	1506.1	1496.8	1496.8	1492.1
15°	1515.4	1515.4	1506.1	1513.0	1499.1	1499.1	1496.8	1487.5	1475.8	1475.8	1466.6
17.5°	1499.1	1499.1	1489.8	1496.8	1480.5	1480.5	1478.2	1464.2	1448.0	1445.6	1434.0
20°	1480.5	1480.5	1468.9	1473.5	1454.9	1454.9	1452.6	1436.3	1417.7	1413.1	1396.8
22.5°	1452.6	1452.6	1441.0	1443.3	1424.7	1422.4	1420.1	1401.5	1382.9	1375.9	1355.0
25°	1413.1	1410.8	1401.5	1401.5	1382.9	1378.2	1373.6	1355.0	1336.4	1322.5	1303.9
27.5°	1355.0	1357.3	1345.7	1348.0	1324.8	1320.1	1317.8	1294.6	1273.6	1259.7	1241.1
30°	1287.6	1280.6	1269.0	1269.0	1250.4	1248.1	1243.4	1222.5	1199.3	1183.0	1162.1
32.5°	1192.3	1190.0	1178.4	1178.4	1157.4	1157.4	1148.1	1127.2	1106.3	1097.0	1076.1
35°	1083.1	1080.7	1071.4	1071.4	1052.8	1055.2	1045.9	1029.6	1008.7	994.7	978.5
37.5°	971.5	969.2	959.9	962.2	945.9	945.9	939.0	922.7	906.4	899.5	878.5
40°	862.3	859.9	848.3	855.3	841.4	836.7	834.4	822.8	804.2	794.9	783.2
42.5°	762.3	764.7	753.0	757.7	746.1	741.4	739.1	729.8	715.8	706.5	694.9
45°	685.6	681.0	676.3	676.3	664.7	662.4	660.1	648.4	639.1	629.9	618.2
47.5°	613.6	608.9	604.3	606.6	597.3	595.0	590.3	581.0	569.4	564.8	553.2
50°	555.5	553.2	546.2	546.2	536.9	534.6	529.9	522.9	511.3	504.3	495.0
52.5°	502.0	502.0	495.0	492.7	485.8	483.4	481.1	471.8	462.5	453.2	443.9
55°	455.5	453.2	448.6	448.6	439.3	436.9	434.6	425.3	416.0	409.1	399.8
57.5°	411.4	411.4	406.7	406.7	399.8	395.1	395.1	385.8	374.2	369.5	357.9
60°	371.9	371.9	367.2	367.2	360.2	360.2	355.6	346.3	339.3	330.0	320.7
62.5°	334.7	337.0	332.4	330.0	323.1	320.7	320.7	313.8	302.1	295.2	285.9
65°	302.1	299.8	297.5	295.2	288.2	285.9	285.9	276.6	269.6	260.3	253.3
67.5°	267.3	267.3	262.6	262.6	258.0	255.7	251.0	244.0	237.1	230.1	223.1
70°	234.7	234.7	232.4	232.4	225.4	223.1	220.8	213.8	206.9	199.9	190.6
72.5°	204.5	202.2	199.9	199.9	195.2	192.9	190.6	183.6	176.6	169.7	162.7
75°	172.0	172.0	169.7	169.7	165.0	162.7	162.7	158.0	148.7	144.1	134.8
77.5°	144.1	144.1	141.8	141.8	137.1	137.1	134.8	127.8	123.2	116.2	111.6
80°	116.2	113.9	113.9	111.6	106.9	106.9	104.6	102.3	95.3	90.6	83.7
82.5°	81.3	81.3	81.3	79.0	76.7	76.7	74.4	69.7	65.1	62.8	55.8
85°	48.8	48.8	46.5	44.2	46.5	44.2	41.8	39.5	37.2	34.9	32.5
87.5°	20.9	20.9	18.6	18.6	18.6	18.6	18.6	16.3	13.9	13.9	11.6
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°	1510.7	1510.7	1510.7	1510.7	1510.7	1510.7	1510.7	1510.7	1510.7	1510.7	1510.7
2.5°	1513.0	1520.0	1517.7	1515.4	1510.7	1510.7	1510.7	1508.4	1510.7	1510.7	1506.1
5°	1513.0	1517.7	1515.4	1510.7	1506.1	1506.1	1503.7	1499.1	1499.1	1499.1	1489.8
7.5°	1506.1	1510.7	1503.7	1499.1	1494.4	1489.8	1489.8	1482.8	1482.8	1480.5	1471.2
10°	1492.1	1494.4	1485.1	1480.5	1473.5	1471.2	1466.6	1457.3	1454.9	1452.6	1443.3
12.5°	1471.2	1473.5	1461.9	1452.6	1443.3	1441.0	1436.3	1424.7	1420.1	1415.4	1403.8
15°	1441.0	1441.0	1427.0	1415.4	1406.1	1403.8	1392.2	1380.6	1375.9	1371.3	1355.0
17.5°	1406.1	1403.8	1385.2	1373.6	1362.0	1357.3	1345.7	1331.8	1322.5	1317.8	1303.9
20°	1368.9	1362.0	1341.0	1329.4	1315.5	1308.5	1296.9	1278.3	1269.0	1259.7	1245.8
22.5°	1324.8	1315.5	1292.2	1276.0	1262.0	1255.1	1238.8	1222.5	1208.6	1199.3	1183.0
25°	1271.3	1259.7	1234.1	1213.2	1201.6	1194.6	1178.4	1159.8	1145.8	1131.9	1117.9
27.5°	1208.6	1194.6	1169.1	1148.1	1136.5	1124.9	1113.3	1092.4	1080.7	1069.1	1052.8
30°	1131.9	1115.6	1092.4	1073.8	1059.8	1050.5	1036.6	1018.0	1004.0	997.1	980.8
32.5°	1048.2	1029.6	1008.7	990.1	983.1	971.5	959.9	941.3	929.7	922.7	911.1
35°	955.2	941.3	918.0	904.1	892.5	887.8	878.5	859.9	855.3	848.3	834.4
37.5°	857.6	846.0	829.7	818.1	808.8	804.2	794.9	783.2	776.3	769.3	762.3
40°	767.0	757.7	743.7	734.4	722.8	715.8	715.8	701.9	697.3	697.3	690.3
42.5°	678.7	674.0	662.4	648.4	646.1	639.1	636.8	629.9	625.2	622.9	620.6
45°	604.3	597.3	585.7	578.7	571.7	571.7	564.8	557.8	555.5	553.2	550.8
47.5°	539.2	529.9	520.6	513.6	509.0	506.7	499.7	495.0	492.7	492.7	490.4
50°	481.1	474.1	464.8	457.9	453.2	448.6	443.9	439.3	436.9	434.6	434.6
52.5°	432.3	423.0	413.7	406.7	399.8	397.4	392.8	388.1	385.8	383.5	381.2
55°	388.1	381.2	369.5	362.6	355.6	355.6	348.6	341.7	337.0	334.7	332.4
57.5°	346.3	339.3	327.7	320.7	316.1	311.4	306.8	302.1	297.5	292.8	288.2
60°	309.1	302.1	290.5	281.2	278.9	274.3	269.6	260.3	255.7	251.0	246.4
62.5°	274.3	265.0	255.7	246.4	244.0	239.4	232.4	225.4	218.5	213.8	206.9
65°	241.7	234.7	223.1	216.1	209.2	206.9	199.9	190.6	183.6	179.0	172.0
67.5°	211.5	202.2	190.6	183.6	179.0	174.3	167.3	160.4	153.4	146.4	139.5
70°	181.3	174.3	162.7	155.7	151.1	146.4	139.5	130.2	123.2	116.2	111.6
72.5°	153.4	144.1	134.8	127.8	123.2	118.5	111.6	104.6	97.6	93.0	86.0
75°	127.8	118.5	111.6	102.3	99.9	95.3	88.3	81.3	74.4	69.7	65.1
77.5°	102.3	95.3	86.0	81.3	76.7	72.0	67.4	60.4	55.8	48.8	44.2
80°	76.7	69.7	62.8	58.1	53.5	51.1	46.5	41.8	37.2	32.5	30.2
82.5°	51.1	46.5	39.5	37.2	34.9	32.5	27.9	25.6	23.2	20.9	18.6
85°	27.9	25.6	23.2	18.6	18.6	16.3	13.9	13.9	11.6	11.6	9.3
87.5°	11.6	9.3	9.3	7.0	7.0	7.0	4.6	4.6	4.6	2.3	2.3
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°	1510.7	1510.7	1510.7	1510.7	1510.7	1510.7	1510.7	1510.7	1510.7	1510.7	1510.7
2.5°	1508.4	1499.1	1499.1	1499.1	1492.1	1494.4	1496.8	1499.1	1496.8	1489.8	1496.8
5°	1492.1	1482.8	1482.8	1478.2	1473.5	1473.5	1473.5	1475.8	1473.5	1466.6	1468.9
7.5°	1471.2	1459.6	1457.3	1452.6	1448.0	1445.6	1445.6	1445.6	1443.3	1434.0	1438.7
10°	1438.7	1427.0	1422.4	1420.1	1413.1	1410.8	1408.4	1406.1	1403.8	1394.5	1399.2
12.5°	1399.2	1389.9	1380.6	1378.2	1371.3	1366.6	1364.3	1364.3	1359.6	1350.3	1355.0
15°	1352.7	1338.7	1331.8	1327.1	1320.1	1315.5	1310.8	1313.2	1310.8	1301.5	1303.9
17.5°	1296.9	1282.9	1276.0	1273.6	1264.3	1259.7	1257.4	1257.4	1255.1	1245.8	1248.1
20°	1236.5	1222.5	1217.9	1213.2	1208.6	1203.9	1201.6	1199.3	1196.9	1187.7	1194.6
22.5°	1176.0	1159.8	1152.8	1152.8	1143.5	1141.2	1138.8	1141.2	1138.8	1129.5	1134.2
25°	1113.3	1097.0	1092.4	1085.4	1080.7	1078.4	1078.4	1078.4	1076.1	1071.4	1076.1
27.5°	1043.6	1031.9	1025.0	1022.6	1018.0	1015.7	1013.3	1015.7	1015.7	1008.7	1013.3
30°	973.8	964.5	959.9	957.6	950.6	948.3	950.6	950.6	950.6	943.6	950.6
32.5°	904.1	897.1	894.8	887.8	883.2	883.2	883.2	885.5	883.2	878.5	885.5
35°	834.4	825.1	822.8	820.4	820.4	815.8	820.4	818.1	822.8	815.8	820.4
37.5°	760.0	755.4	753.0	753.0	748.4	750.7	750.7	750.7	755.4	748.4	753.0
40°	690.3	685.6	685.6	685.6	683.3	683.3	683.3	685.6	688.0	683.3	688.0
42.5°	620.6	618.2	618.2	615.9	613.6	615.9	618.2	618.2	620.6	615.9	618.2
45°	553.2	550.8	553.2	550.8	550.8	548.5	550.8	553.2	553.2	550.8	550.8
47.5°	490.4	490.4	488.1	488.1	488.1	488.1	488.1	488.1	488.1	483.4	488.1
50°	434.6	430.0	432.3	430.0	430.0	427.6	427.6	425.3	423.0	420.7	420.7
52.5°	381.2	376.5	376.5	374.2	371.9	371.9	369.5	367.2	364.9	360.2	360.2
55°	330.0	325.4	323.1	320.7	318.4	316.1	313.8	311.4	306.8	304.5	304.5
57.5°	283.5	278.9	274.3	274.3	269.6	267.3	262.6	258.0	255.7	251.0	251.0
60°	241.7	237.1	230.1	227.8	225.4	220.8	213.8	211.5	209.2	204.5	206.9
62.5°	202.2	195.2	188.3	185.9	183.6	179.0	174.3	169.7	167.3	169.7	169.7
65°	165.0	158.0	153.4	148.7	146.4	141.8	139.5	137.1	137.1	137.1	139.5
67.5°	132.5	125.5	120.9	118.5	113.9	111.6	111.6	111.6	111.6	111.6	111.6
70°	104.6	99.9	95.3	90.6	90.6	88.3	88.3	88.3	88.3	88.3	88.3
72.5°	79.0	74.4	72.0	72.0	69.7	69.7	69.7	69.7	67.4	67.4	69.7
75°	58.1	55.8	53.5	53.5	53.5	51.1	51.1	51.1	51.1	51.1	51.1
77.5°	41.8	39.5	39.5	37.2	37.2	37.2	37.2	37.2	37.2	34.9	34.9
80°	27.9	25.6	25.6	25.6	25.6	23.2	23.2	23.2	23.2	23.2	23.2
82.5°	16.3	16.3	16.3	13.9	13.9	13.9	13.9	13.9	13.9	13.9	13.9
85°	9.3	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
87.5°	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	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: P251800

CATALOG NUMBER: LD4B40D010 EU4B30509050 4LBLWW1H

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	1510.7	1510.7	1510.7	1510.7	1510.7	1510.7	1510.7	1510.7
2.5°	1482.8	1492.1	1494.4	1487.5	1489.8	1485.1	1487.5	1482.8
5°	1457.3	1464.2	1466.6	1461.9	1461.9	1457.3	1459.6	1454.9
7.5°	1424.7	1431.7	1434.0	1429.4	1429.4	1424.7	1424.7	1422.4
10°	1387.5	1389.9	1394.5	1387.5	1389.9	1385.2	1385.2	1380.6
12.5°	1341.0	1345.7	1350.3	1343.4	1343.4	1341.0	1341.0	1334.1
15°	1292.2	1296.9	1299.2	1294.6	1294.6	1292.2	1289.9	1287.6
17.5°	1241.1	1243.4	1248.1	1241.1	1245.8	1241.1	1241.1	1236.5
20°	1183.0	1190.0	1192.3	1185.3	1187.7	1185.3	1185.3	1185.3
22.5°	1127.2	1131.9	1134.2	1129.5	1131.9	1127.2	1129.5	1124.9
25°	1069.1	1071.4	1073.8	1069.1	1073.8	1071.4	1069.1	1069.1
27.5°	1008.7	1011.0	1013.3	1008.7	1013.3	1011.0	1013.3	1008.7
30°	943.6	948.3	952.9	948.3	950.6	948.3	948.3	945.9
32.5°	878.5	883.2	887.8	883.2	887.8	883.2	885.5	880.9
35°	818.1	820.4	822.8	818.1	820.4	820.4	820.4	818.1
37.5°	750.7	755.4	755.4	753.0	757.7	755.4	755.4	750.7
40°	685.6	688.0	690.3	685.6	688.0	685.6	688.0	685.6
42.5°	618.2	622.9	625.2	620.6	620.6	620.6	618.2	620.6
45°	548.5	553.2	557.8	550.8	553.2	553.2	553.2	550.8
47.5°	485.8	485.8	488.1	485.8	488.1	483.4	488.1	485.8
50°	420.7	420.7	425.3	420.7	420.7	420.7	420.7	420.7
52.5°	357.9	360.2	360.2	355.6	357.9	355.6	357.9	355.6
55°	299.8	299.8	302.1	299.8	299.8	299.8	299.8	299.8
57.5°	248.7	251.0	251.0	248.7	251.0	248.7	248.7	248.7
60°	206.9	206.9	206.9	204.5	206.9	204.5	206.9	204.5
62.5°	167.3	169.7	169.7	167.3	169.7	167.3	167.3	167.3
65°	137.1	137.1	137.1	137.1	137.1	137.1	137.1	134.8
67.5°	109.2	109.2	111.6	109.2	111.6	111.6	111.6	111.6
70°	88.3	88.3	88.3	88.3	88.3	88.3	88.3	88.3
72.5°	67.4	67.4	69.7	67.4	67.4	67.4	67.4	67.4
75°	51.1	51.1	51.1	51.1	51.1	48.8	48.8	51.1
77.5°	34.9	34.9	34.9	34.9	34.9	34.9	34.9	37.2
80°	23.2	23.2	23.2	23.2	20.9	20.9	23.2	20.9
82.5°	11.6	11.6	11.6	11.6	11.6	11.6	11.6	11.6
85°	7.0	7.0	4.6	4.6	4.6	4.6	4.6	4.6
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



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— 0°-180° - - 45°-225° - - - - 90°-270°













(END OF REPORT)