

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: P251955

Luminaire Tested: **LD4B40D010 EU4B30509040 4LBDW1H**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P251955
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 EU4B30509040 4LBDW1H
Description: PORTFOLIO 4 INCH DOUBLE WALLWASH RECESSED DOWNLIGHT, WITH HAZE TRIM
Light Source: (1) HIGH LUMEN LED 90CRI / 4000K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 3062.0 lumens
Efficiency: N/A
Efficacy: 71.2 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

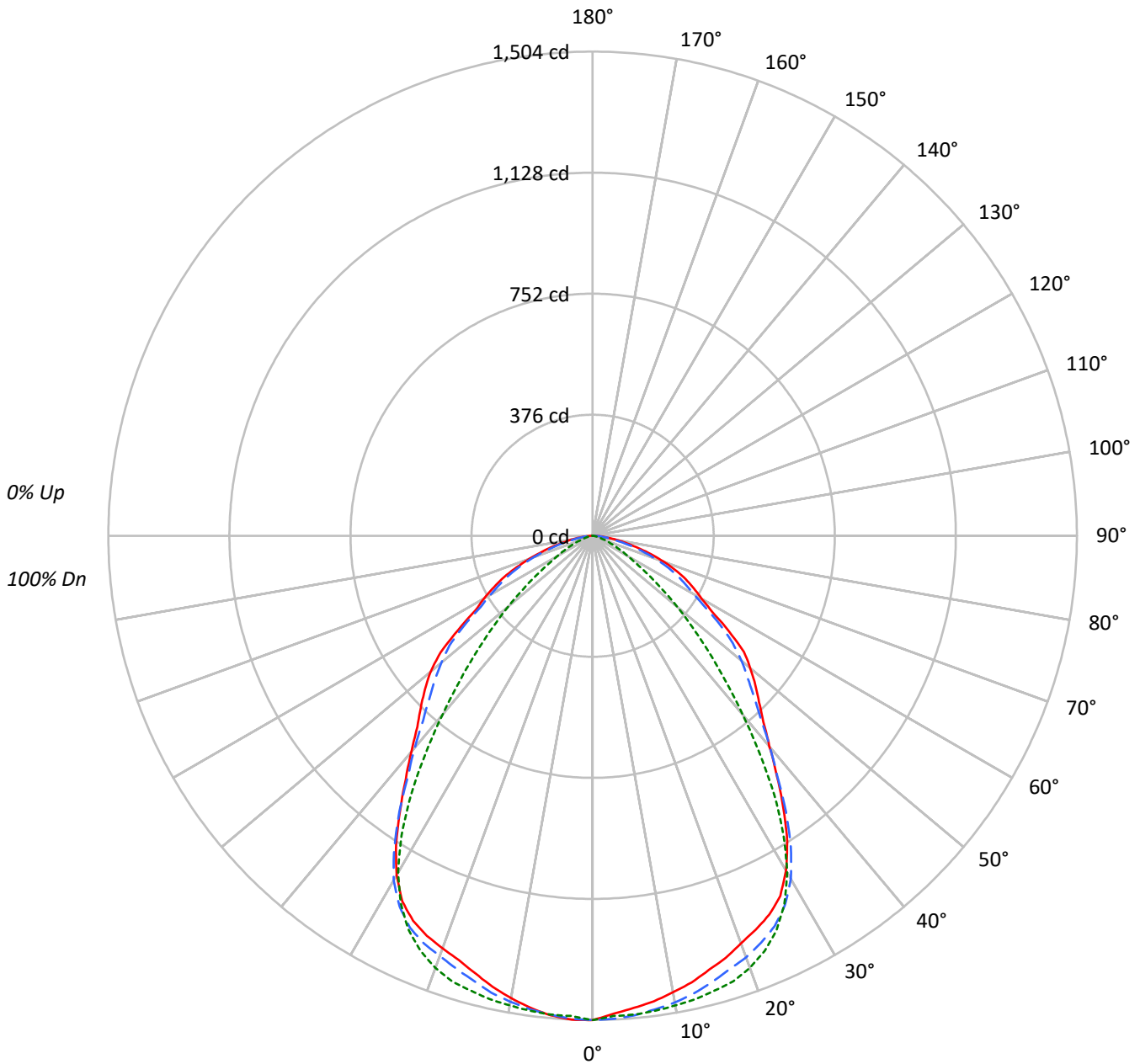
Input Watts (W): 43.02
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	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°	146626	146626	146626
5°	144016	146061	146286
10°	142475	146602	144316
15°	140831	147601	141991
20°	139711	148123	141402
25°	139632	145363	141879
30°	135188	135976	137011
35°	122829	117035	123924
40°	108661	92173	111320
45°	100806	70181	104004
50°	96869	51944	99674
55°	87709	35784	86520
60°	76251	24365	75803
65°	73655	17618	69920
70°	66621	11882	59355
75°	54901	7832	47069
80°	44169	5220	35077
85°	36230	2572	23259



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	142.0	4.6
10°-20°	406.1	13.3
20°-30°	613.5	20.0
30°-40°	642.1	21.0
40°-50°	520.0	17.0
50°-60°	378.2	12.4
60°-70°	233.3	7.6
70°-80°	105.4	3.4
80°-90°	21.4	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°	1161.6	37.9
0°-40°	1803.7	58.9
0°-60°	2701.9	88.2
0°-90°	3062.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3062.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	1504	1504	1504	1504	1504	
5°	1472	1495	1493	1493	1495	140
15°	1396	1435	1463	1430	1407	394
25°	1298	1338	1352	1342	1319	595
35°	1032	1046	984	1046	1042	643
45°	731	708	509	718	755	568
55°	516	484	211	488	509	461
65°	319	287	76	282	303	313
75°	146	125	21	109	125	158
85°	32	26	2	18	21	37
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°	1504.5	1504.5	1504.5	1504.5	1504.5	1504.5	1504.5	1504.5	1504.5	1504.5	1504.5
2.5°	1486.0	1486.0	1499.9	1516.1	1502.2	1488.3	1497.6	1493.0	1509.2	1509.2	1502.2
5°	1472.1	1476.8	1488.3	1502.2	1490.7	1476.8	1488.3	1483.7	1499.9	1499.9	1495.3
7.5°	1458.3	1460.6	1474.5	1490.7	1479.1	1465.2	1474.5	1472.1	1486.0	1488.3	1483.7
10°	1439.7	1442.1	1455.9	1472.1	1460.6	1449.0	1458.3	1455.9	1474.5	1474.5	1472.1
12.5°	1421.2	1423.5	1437.4	1451.3	1439.7	1428.2	1437.4	1437.4	1455.9	1458.3	1455.9
15°	1395.8	1400.4	1412.0	1425.8	1418.9	1405.0	1414.3	1414.3	1430.5	1435.1	1435.1
17.5°	1374.9	1377.2	1388.8	1402.7	1393.4	1381.9	1391.1	1391.1	1407.3	1412.0	1412.0
20°	1347.1	1351.8	1363.4	1377.2	1370.3	1361.0	1368.0	1368.0	1386.5	1391.1	1393.4
22.5°	1324.0	1328.6	1337.9	1356.4	1344.8	1337.9	1347.1	1344.8	1365.7	1368.0	1368.0
25°	1298.5	1303.2	1314.7	1326.3	1319.4	1312.4	1319.4	1319.4	1335.6	1337.9	1337.9
27.5°	1261.5	1263.8	1275.4	1287.0	1280.0	1270.8	1280.0	1277.7	1293.9	1296.2	1293.9
30°	1201.3	1206.0	1210.6	1226.8	1219.8	1212.9	1222.2	1217.5	1233.7	1233.7	1231.4
32.5°	1124.9	1124.9	1134.2	1145.8	1136.5	1131.9	1138.8	1141.1	1152.7	1152.7	1145.8
35°	1032.4	1037.0	1043.9	1050.9	1043.9	1039.3	1046.2	1043.9	1057.8	1053.2	1046.2
37.5°	939.8	942.1	949.0	958.3	949.0	942.1	944.4	942.1	953.7	953.7	942.1
40°	854.1	858.7	863.4	872.6	863.4	858.7	861.1	854.1	868.0	863.4	856.4
42.5°	784.7	787.0	793.9	798.6	789.3	787.0	789.3	784.7	791.6	787.0	773.1
45°	731.4	731.4	733.8	740.7	731.4	729.1	729.1	724.5	731.4	722.2	708.3
47.5°	685.1	687.5	689.8	694.4	687.5	680.5	682.8	673.6	678.2	671.3	652.7
50°	638.9	643.5	645.8	650.4	643.5	638.9	641.2	631.9	631.9	620.3	604.1
52.5°	592.6	594.9	592.6	597.2	592.6	585.6	587.9	578.7	578.7	564.8	548.6
55°	516.2	518.5	520.8	525.4	520.8	513.9	518.5	511.5	511.5	502.3	483.8
57.5°	439.8	442.1	444.4	446.7	446.7	442.1	444.4	439.8	437.5	430.5	416.6
60°	391.2	391.2	391.2	393.5	391.2	388.9	388.9	384.2	384.2	375.0	361.1
62.5°	354.1	356.5	356.5	358.8	356.5	354.1	351.8	347.2	344.9	335.6	324.1
65°	319.4	319.4	317.1	321.7	319.4	317.1	317.1	312.5	307.9	298.6	287.0
67.5°	277.8	280.1	277.8	280.1	280.1	277.8	275.4	270.8	268.5	261.6	247.7
70°	233.8	233.8	233.8	236.1	233.8	233.8	236.1	229.2	226.8	217.6	206.0
72.5°	189.8	192.1	192.1	189.8	192.1	187.5	187.5	187.5	185.2	175.9	164.3
75°	145.8	148.1	148.1	150.5	148.1	145.8	145.8	143.5	141.2	134.3	125.0
77.5°	108.8	108.8	111.1	111.1	111.1	108.8	108.8	104.2	104.2	99.5	90.3
80°	78.7	78.7	76.4	78.7	78.7	76.4	76.4	74.1	74.1	69.4	62.5
82.5°	50.9	53.2	53.2	53.2	53.2	50.9	50.9	50.9	48.6	46.3	41.7
85°	32.4	32.4	32.4	32.4	34.7	32.4	34.7	32.4	32.4	27.8	25.5
87.5°	13.9	13.9	13.9	16.2	16.2	13.9	13.9	13.9	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°	1504.5	1504.5	1504.5	1504.5	1504.5	1504.5	1504.5	1504.5	1504.5	1504.5	1504.5
2.5°	1502.2	1504.5	1497.6	1506.9	1499.9	1502.2	1504.5	1502.2	1493.0	1493.0	1518.4
5°	1493.0	1497.6	1490.7	1502.2	1497.6	1497.6	1502.2	1499.9	1490.7	1493.0	1516.1
7.5°	1483.7	1490.7	1486.0	1497.6	1490.7	1490.7	1495.3	1495.3	1486.0	1488.3	1509.2
10°	1469.8	1479.1	1476.8	1488.3	1481.4	1481.4	1488.3	1488.3	1479.1	1481.4	1502.2
12.5°	1458.3	1467.5	1465.2	1476.8	1472.1	1474.5	1476.8	1481.4	1469.8	1474.5	1493.0
15°	1439.7	1449.0	1449.0	1460.6	1455.9	1460.6	1465.2	1472.1	1462.9	1462.9	1481.4
17.5°	1418.9	1430.5	1430.5	1439.7	1439.7	1442.1	1451.3	1458.3	1449.0	1451.3	1467.5
20°	1395.8	1409.6	1409.6	1421.2	1418.9	1423.5	1430.5	1437.4	1428.2	1428.2	1446.7
22.5°	1372.6	1384.2	1386.5	1393.4	1393.4	1395.8	1402.7	1407.3	1395.8	1395.8	1414.3
25°	1340.2	1351.8	1354.1	1358.7	1354.1	1354.1	1358.7	1363.4	1351.8	1351.8	1368.0
27.5°	1296.2	1307.8	1307.8	1305.5	1300.9	1303.2	1300.9	1303.2	1291.6	1289.3	1305.5
30°	1231.4	1238.4	1238.4	1236.0	1229.1	1229.1	1222.2	1224.5	1208.3	1208.3	1222.2
32.5°	1143.5	1150.4	1145.8	1141.1	1131.9	1127.3	1122.6	1120.3	1104.1	1104.1	1120.3
35°	1039.3	1043.9	1037.0	1027.7	1016.1	1009.2	1002.3	993.0	981.4	983.7	993.0
37.5°	932.8	932.8	923.6	905.0	895.8	884.2	872.6	872.6	854.1	851.8	858.7
40°	842.5	833.3	817.1	791.6	775.4	763.8	747.6	738.4	724.5	724.5	736.1
42.5°	761.5	743.0	722.2	687.5	671.3	657.4	636.5	627.3	611.1	608.8	615.7
45°	689.8	671.3	641.2	604.1	583.3	567.1	537.0	525.4	511.5	509.2	513.9
47.5°	631.9	611.1	574.0	525.4	504.6	483.8	453.7	437.5	425.9	419.0	425.9
50°	581.0	553.2	513.9	462.9	435.2	416.6	379.6	363.4	347.2	342.6	344.9
52.5°	525.4	497.7	456.0	402.8	377.3	349.5	314.8	291.7	277.8	270.8	277.8
55°	465.3	437.5	395.8	342.6	314.8	289.3	252.3	233.8	217.6	210.6	217.6
57.5°	400.4	375.0	337.9	284.7	259.2	236.1	201.4	182.9	166.7	162.0	166.7
60°	344.9	324.1	287.0	236.1	215.3	189.8	159.7	141.2	127.3	125.0	127.3
62.5°	307.9	284.7	250.0	201.4	180.5	159.7	131.9	113.4	101.8	99.5	101.8
65°	270.8	245.4	213.0	171.3	150.5	134.3	106.5	90.3	78.7	76.4	78.7
67.5°	229.2	206.0	178.2	141.2	125.0	108.8	85.6	69.4	60.2	57.9	60.2
70°	189.8	169.0	141.2	113.4	97.2	85.6	64.8	53.2	44.0	41.7	44.0
72.5°	150.5	131.9	108.8	85.6	76.4	64.8	50.9	39.3	32.4	30.1	32.4
75°	115.7	101.8	83.3	62.5	55.6	48.6	34.7	27.8	23.1	20.8	23.1
77.5°	81.0	71.8	57.9	46.3	39.3	34.7	25.5	18.5	16.2	13.9	16.2
80°	55.6	48.6	39.3	30.1	25.5	20.8	16.2	11.6	9.3	9.3	9.3
82.5°	37.0	30.1	23.1	18.5	16.2	13.9	9.3	6.9	6.9	4.6	4.6
85°	20.8	18.5	13.9	11.6	9.3	6.9	4.6	4.6	2.3	2.3	2.3
87.5°	9.3	6.9	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



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CANDELA DISTRIBUTION (continued):

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
0°	1504.5	1504.5	1504.5	1504.5	1504.5	1504.5	1504.5	1504.5	1504.5	1504.5	1504.5
2.5°	1511.5	1504.5	1513.8	1504.5	1499.9	1504.5	1499.9	1513.8	1502.2	1493.0	1502.2
5°	1509.2	1499.9	1509.2	1502.2	1495.3	1497.6	1493.0	1506.9	1493.0	1486.0	1490.7
7.5°	1504.5	1497.6	1502.2	1495.3	1488.3	1490.7	1486.0	1497.6	1483.7	1476.8	1481.4
10°	1497.6	1490.7	1493.0	1488.3	1481.4	1481.4	1476.8	1486.0	1469.8	1460.6	1465.2
12.5°	1488.3	1479.1	1483.7	1476.8	1467.5	1467.5	1462.9	1469.8	1453.6	1444.4	1446.7
15°	1476.8	1467.5	1467.5	1460.6	1451.3	1451.3	1442.1	1449.0	1430.5	1421.2	1421.2
17.5°	1462.9	1451.3	1451.3	1444.4	1432.8	1430.5	1423.5	1430.5	1409.6	1400.4	1400.4
20°	1442.1	1432.8	1430.5	1425.8	1414.3	1412.0	1402.7	1405.0	1388.8	1381.9	1379.6
22.5°	1414.3	1405.0	1407.3	1400.4	1391.1	1388.8	1379.6	1386.5	1370.3	1363.4	1365.7
25°	1365.7	1361.0	1365.7	1363.4	1356.4	1356.4	1351.8	1356.4	1342.5	1337.9	1340.2
27.5°	1310.1	1307.8	1310.1	1310.1	1305.5	1305.5	1305.5	1312.4	1298.5	1296.2	1296.2
30°	1229.1	1229.1	1231.4	1233.7	1233.7	1238.4	1236.0	1245.3	1236.0	1231.4	1236.0
32.5°	1122.6	1131.9	1138.8	1138.8	1138.8	1143.5	1148.1	1155.0	1145.8	1148.1	1148.1
35°	1002.3	1009.2	1013.8	1025.4	1018.5	1034.7	1039.3	1048.6	1046.2	1050.9	1048.6
37.5°	868.0	877.3	886.5	902.7	900.4	918.9	928.2	946.7	942.1	951.3	956.0
40°	743.0	756.9	770.8	782.4	791.6	810.1	828.7	851.8	858.7	865.7	868.0
42.5°	622.7	636.5	659.7	675.9	689.8	719.9	745.3	773.1	780.0	793.9	798.6
45°	525.4	537.0	564.8	585.6	597.2	641.2	671.3	706.0	717.6	733.8	740.7
47.5°	435.2	456.0	483.8	509.2	525.4	571.7	611.1	648.1	664.3	682.8	692.1
50°	356.5	379.6	416.6	439.8	462.9	513.9	557.8	597.2	613.4	634.2	643.5
52.5°	291.7	317.1	351.8	377.3	402.8	456.0	502.3	539.3	560.2	574.0	587.9
55°	229.2	256.9	291.7	319.4	340.3	398.1	437.5	474.5	488.4	500.0	506.9
57.5°	178.2	199.1	233.8	256.9	282.4	333.3	372.7	400.4	412.0	425.9	430.5
60°	138.9	159.7	192.1	215.3	238.4	287.0	326.4	354.1	365.7	377.3	384.2
62.5°	111.1	131.9	162.0	182.9	203.7	247.7	282.4	310.2	324.1	335.6	342.6
65°	88.0	106.5	131.9	152.8	169.0	208.3	243.0	268.5	282.4	294.0	300.9
67.5°	69.4	85.6	108.8	122.7	138.9	171.3	201.4	224.5	236.1	250.0	256.9
70°	53.2	64.8	85.6	97.2	108.8	136.6	159.7	182.9	194.4	203.7	208.3
72.5°	39.3	48.6	64.8	74.1	81.0	104.2	122.7	138.9	148.1	157.4	162.0
75°	27.8	34.7	46.3	53.2	57.9	74.1	90.3	101.8	108.8	115.7	122.7
77.5°	18.5	23.1	30.1	34.7	39.3	50.9	60.2	69.4	76.4	83.3	85.6
80°	11.6	16.2	20.8	23.1	25.5	32.4	41.7	46.3	50.9	55.6	57.9
82.5°	6.9	9.3	11.6	13.9	16.2	20.8	25.5	30.1	32.4	37.0	39.3
85°	2.3	4.6	4.6	6.9	6.9	11.6	13.9	16.2	18.5	20.8	23.1
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: P251955

CATALOG NUMBER: LD4B40D010 EU4B30509040 4LBDW1H

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	1504.5	1504.5	1504.5	1504.5	1504.5	1504.5	1504.5	1504.5
2.5°	1511.5	1504.5	1499.9	1497.6	1513.8	1493.0	1502.2	1504.5
5°	1502.2	1495.3	1490.7	1488.3	1502.2	1483.7	1490.7	1495.3
7.5°	1488.3	1483.7	1476.8	1474.5	1488.3	1467.5	1476.8	1479.1
10°	1472.1	1465.2	1460.6	1458.3	1469.8	1449.0	1458.3	1458.3
12.5°	1451.3	1446.7	1437.4	1437.4	1446.7	1428.2	1435.1	1435.1
15°	1423.5	1418.9	1409.6	1409.6	1418.9	1400.4	1407.3	1407.3
17.5°	1400.4	1395.8	1388.8	1386.5	1395.8	1377.2	1384.2	1381.9
20°	1381.9	1377.2	1368.0	1368.0	1374.9	1356.4	1363.4	1363.4
22.5°	1365.7	1363.4	1354.1	1354.1	1363.4	1344.8	1349.5	1344.8
25°	1340.2	1337.9	1328.6	1330.9	1335.6	1317.1	1324.0	1319.4
27.5°	1298.5	1298.5	1289.3	1287.0	1293.9	1277.7	1282.3	1280.0
30°	1233.7	1236.0	1224.5	1224.5	1226.8	1212.9	1219.8	1217.5
32.5°	1145.8	1148.1	1138.8	1136.5	1143.5	1131.9	1136.5	1136.5
35°	1048.6	1050.9	1043.9	1043.9	1050.9	1043.9	1043.9	1041.6
37.5°	951.3	956.0	951.3	953.7	958.3	951.3	956.0	953.7
40°	872.6	877.3	870.3	875.0	879.6	872.6	879.6	875.0
42.5°	800.9	807.8	803.2	807.8	812.5	807.8	812.5	805.5
45°	747.6	752.3	750.0	752.3	756.9	754.6	756.9	754.6
47.5°	696.7	706.0	701.4	706.0	712.9	708.3	712.9	706.0
50°	650.4	657.4	655.1	659.7	662.0	659.7	664.3	657.4
52.5°	590.2	597.2	594.9	594.9	599.5	594.9	599.5	594.9
55°	511.5	513.9	513.9	516.2	513.9	511.5	513.9	509.2
57.5°	435.2	439.8	432.8	439.8	437.5	435.2	435.2	430.5
60°	386.6	393.5	388.9	393.5	391.2	391.2	391.2	388.9
62.5°	347.2	351.8	347.2	349.5	349.5	349.5	347.2	344.9
65°	303.2	310.2	305.5	307.9	305.5	303.2	305.5	303.2
67.5°	259.2	261.6	261.6	259.2	259.2	259.2	259.2	254.6
70°	210.6	213.0	210.6	215.3	213.0	210.6	213.0	208.3
72.5°	164.3	166.7	164.3	166.7	164.3	164.3	164.3	164.3
75°	122.7	125.0	125.0	125.0	125.0	125.0	120.4	125.0
77.5°	88.0	88.0	88.0	90.3	88.0	88.0	88.0	88.0
80°	60.2	60.2	60.2	62.5	60.2	62.5	60.2	62.5
82.5°	39.3	39.3	39.3	39.3	39.3	39.3	39.3	39.3
85°	20.8	23.1	23.1	20.8	20.8	20.8	20.8	20.8
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



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













(END OF REPORT)