

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: P251621

Luminaire Tested: **LD4B30D010 EU4B30508027 4LBSW1H**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P251621
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G1-1712-453-13)
Test Lab: INNOVATION CENTER(G1)
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: io LED
Catalog Number: LD4B30D010 EU4B30508027 4LBSW1H
Description: PORTFOLIO 4 INCH SINGLE WALLWASH RECESSED DOWNLIGHT, WITH HAZE TRIM
Light Source: (1) HIGH LUMEN LED 80CRI / 2700K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 2477.0 lumens
Efficiency: N/A
Efficacy: 88.5 lumens/watt
Spacing Criteria (0/90/45): 1.17 / 1.17 / 1.15
Luminous Opening: Circular (Dia: 0.38' x H: 0')
CIE Type: Direct

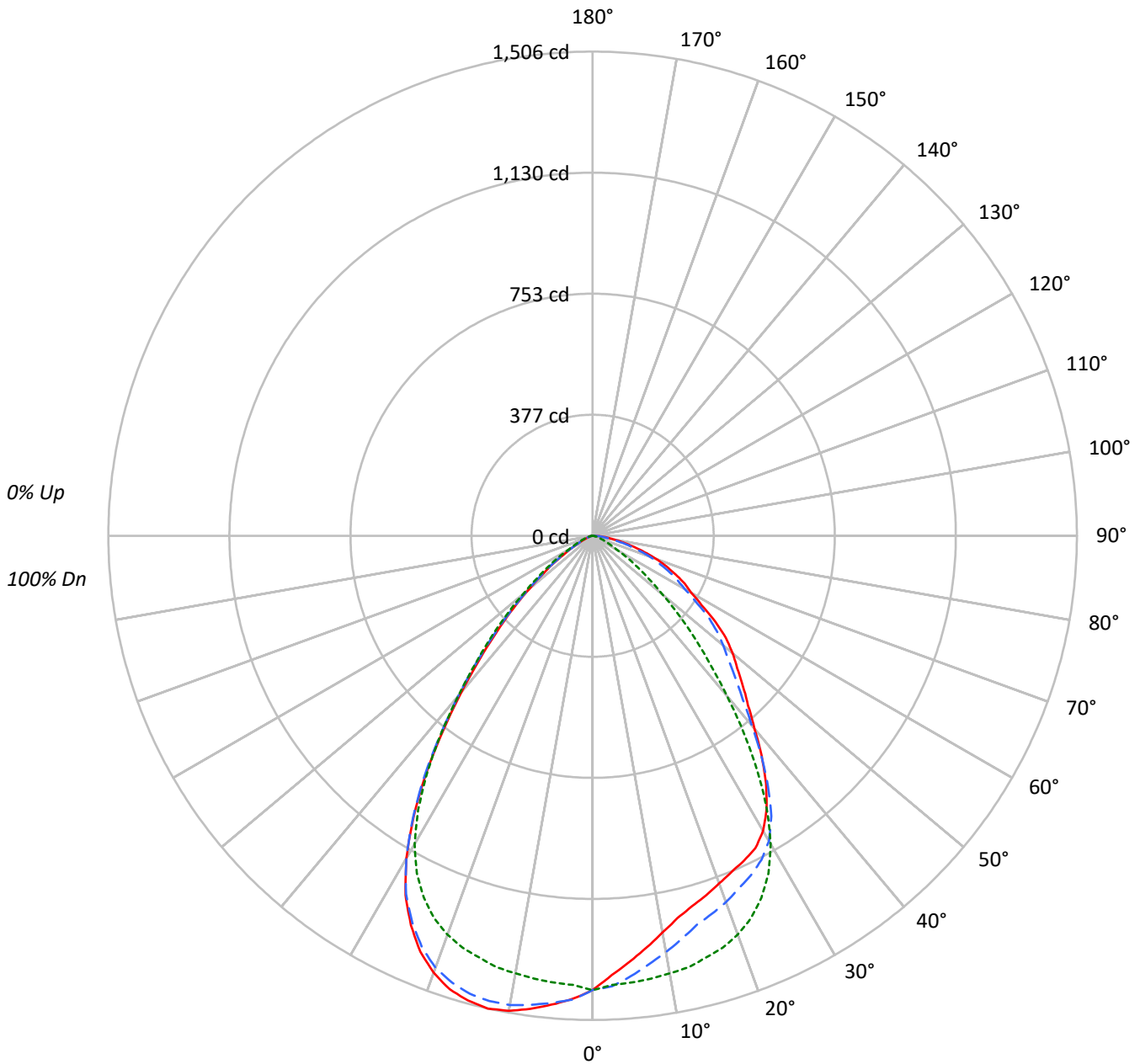
Input Watts (W): 28
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Luminous Intensity Polar Plot





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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	108	104	101	109	106	103	100	101	99	97	98	96	94	94	93	91	89																			
2	104	97	92	87	101	95	90	86	92	88	84	89	85	82	86	83	81	79																			
3	96	88	81	76	94	86	80	75	83	78	74	81	76	73	78	75	72	70																			
4	90	80	72	67	88	78	72	66	76	70	66	74	69	65	72	68	64	62																			
5	83	73	65	60	82	72	65	59	70	63	59	68	62	58	66	61	58	56																			
6	78	67	59	53	76	66	59	53	64	58	53	62	57	52	61	56	52	50																			
7	73	61	54	48	71	61	53	48	59	53	48	58	52	48	56	51	47	46																			
8	68	57	49	44	67	56	49	44	55	48	44	54	48	43	52	47	43	42																			
9	64	52	45	40	63	52	45	40	51	44	40	50	44	40	49	44	40	38																			
10	61	49	42	37	59	48	42	37	47	41	37	47	41	37	46	40	37	35																			

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	137718	137718	137718
5°	130046	136464	143233
10°	123979	136775	148492
15°	120349	137067	151031
20°	119363	136922	149958
25°	119846	133545	143729
30°	119264	124599	130338
35°	111788	106375	107458
40°	99615	82478	80621
45°	91103	61484	57722
50°	86149	43075	38935
55°	79213	29089	24450
60°	69215	17036	13488
65°	65515	10908	7564
70°	59668	7779	4673
75°	49366	5498	3427
80°	38838	3087	2020
85°	34664	2013	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	133.5	5.4
10°-20°	383.0	15.5
20°-30°	567.8	22.9
30°-40°	568.6	23.0
40°-50°	397.4	16.0
50°-60°	236.5	9.5
60°-70°	123.4	5.0
70°-80°	54.9	2.2
80°-90°	11.9	0.5
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°	1084.3	43.8
0°-40°	1652.9	66.7
0°-60°	2286.8	92.3
0°-90°	2477.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2477.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	1413	1413	1413	1413	1413	
5°	1329	1375	1395	1459	1464	125
15°	1193	1253	1358	1475	1497	338
25°	1114	1165	1242	1328	1337	513
35°	940	951	894	910	903	583
45°	661	628	446	432	419	513
55°	466	437	171	149	144	414
65°	284	260	47	35	33	281
75°	131	115	15	9	9	142
85°	31	24	2	2	0	35
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°	1413.1	1413.1	1413.1	1413.1	1413.1	1413.1	1413.1	1413.1	1413.1	1413.1	1413.1
2.5°	1367.6	1384.0	1367.6	1373.0	1394.9	1374.9	1385.8	1385.8	1380.3	1393.1	1402.2
5°	1329.3	1345.7	1329.3	1336.6	1360.3	1340.3	1353.0	1349.4	1351.2	1362.1	1374.9
7.5°	1291.1	1303.8	1289.3	1298.4	1320.2	1303.8	1314.8	1314.8	1316.6	1333.0	1343.9
10°	1252.8	1263.8	1252.8	1260.1	1283.8	1269.2	1276.5	1278.3	1283.8	1298.4	1314.8
12.5°	1218.2	1227.4	1216.4	1227.4	1247.4	1232.8	1241.9	1243.7	1249.2	1265.6	1283.8
15°	1192.8	1201.9	1190.9	1200.0	1218.2	1207.3	1214.6	1218.2	1221.9	1236.5	1252.8
17.5°	1172.7	1180.0	1170.9	1181.8	1196.4	1183.7	1194.6	1194.6	1200.0	1214.6	1232.8
20°	1150.9	1158.2	1150.9	1160.0	1176.4	1165.4	1174.5	1174.5	1180.0	1196.4	1212.8
22.5°	1130.8	1134.5	1130.8	1138.1	1154.5	1145.4	1150.9	1152.7	1158.2	1172.7	1187.3
25°	1114.5	1121.7	1118.1	1125.4	1136.3	1127.2	1132.7	1134.5	1139.9	1152.7	1165.4
27.5°	1096.2	1099.9	1096.2	1105.3	1114.5	1107.2	1112.6	1110.8	1114.5	1125.4	1136.3
30°	1059.8	1063.5	1063.5	1068.9	1076.2	1072.6	1078.0	1072.6	1076.2	1085.3	1096.2
32.5°	1007.0	1008.8	1010.7	1016.1	1021.6	1016.1	1019.8	1019.8	1019.8	1027.0	1034.3
35°	939.6	943.3	941.5	945.1	950.6	948.7	948.7	946.9	943.3	946.9	950.6
37.5°	863.2	857.7	857.7	863.2	866.8	859.5	863.2	859.5	859.5	861.3	861.3
40°	783.0	777.6	783.0	784.9	786.7	783.0	781.2	777.6	772.1	773.9	770.3
42.5°	715.7	712.0	713.8	713.8	715.7	712.0	713.8	706.5	701.1	697.4	692.0
45°	661.0	655.6	661.0	657.4	657.4	655.6	653.7	650.1	642.8	637.4	628.2
47.5°	610.0	610.0	611.9	611.9	611.9	608.2	608.2	600.9	593.6	586.4	573.6
50°	568.2	564.5	571.8	571.8	566.3	564.5	566.3	557.2	551.8	542.7	529.9
52.5°	522.6	522.6	524.4	524.4	522.6	519.0	520.8	513.5	508.1	499.0	486.2
55°	466.2	462.5	468.0	468.0	466.2	464.4	466.2	460.7	455.3	448.0	437.0
57.5°	402.4	400.6	404.3	406.1	402.4	402.4	404.3	398.8	397.0	389.7	378.8
60°	355.1	353.3	356.9	358.7	355.1	355.1	355.1	347.8	344.2	336.9	329.6
62.5°	322.3	320.5	324.1	322.3	320.5	318.7	320.5	313.2	309.6	302.3	295.0
65°	284.1	285.9	287.7	287.7	285.9	284.1	284.1	280.4	276.8	269.5	260.4
67.5°	247.7	247.7	249.5	251.3	249.5	249.5	249.5	244.0	240.4	234.9	224.0
70°	209.4	207.6	213.1	213.1	209.4	211.2	209.4	207.6	204.0	196.7	187.6
72.5°	169.4	169.4	171.2	171.2	169.4	169.4	169.4	167.5	162.1	158.4	149.3
75°	131.1	131.1	132.9	134.8	131.1	131.1	132.9	129.3	125.6	120.2	114.7
77.5°	98.3	96.5	98.3	98.3	96.5	96.5	96.5	94.7	92.9	87.4	81.9
80°	69.2	67.4	69.2	69.2	69.2	67.4	67.4	65.6	65.6	61.9	56.5
82.5°	47.3	45.5	47.3	47.3	47.3	45.5	45.5	45.5	43.7	41.9	38.2
85°	31.0	29.1	29.1	31.0	29.1	29.1	29.1	29.1	27.3	25.5	23.7
87.5°	14.6	14.6	14.6	14.6	14.6	14.6	14.6	12.7	12.7	12.7	10.9
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°	1413.1	1413.1	1413.1	1413.1	1413.1	1413.1	1413.1	1413.1	1413.1	1413.1	1413.1
2.5°	1394.9	1391.2	1402.2	1398.5	1400.3	1391.2	1405.8	1398.5	1407.6	1398.5	1416.7
5°	1371.2	1367.6	1384.0	1382.1	1384.0	1376.7	1393.1	1391.2	1402.2	1394.9	1414.9
7.5°	1345.7	1342.1	1360.3	1362.1	1365.8	1358.5	1380.3	1380.3	1391.2	1389.4	1411.3
10°	1316.6	1318.4	1336.6	1340.3	1347.5	1343.9	1363.9	1369.4	1384.0	1382.1	1409.5
12.5°	1289.3	1289.3	1312.9	1320.2	1325.7	1323.9	1347.5	1354.8	1371.2	1374.9	1400.3
15°	1262.0	1263.8	1285.6	1296.6	1303.8	1302.0	1327.5	1336.6	1356.6	1358.5	1389.4
17.5°	1240.1	1238.3	1262.0	1271.1	1282.0	1280.2	1307.5	1318.4	1338.4	1343.9	1373.0
20°	1221.9	1220.1	1241.9	1252.8	1260.1	1258.3	1285.6	1298.4	1316.6	1320.2	1349.4
22.5°	1200.0	1196.4	1218.2	1227.4	1234.6	1232.8	1256.5	1265.6	1283.8	1287.4	1314.8
25°	1174.5	1170.9	1190.9	1196.4	1201.9	1198.2	1218.2	1223.7	1238.3	1241.9	1269.2
27.5°	1145.4	1136.3	1152.7	1152.7	1156.3	1150.9	1165.4	1170.9	1183.7	1183.7	1209.1
30°	1099.9	1087.1	1096.2	1094.4	1096.2	1089.0	1098.1	1099.9	1109.0	1107.2	1125.4
32.5°	1036.1	1017.9	1023.4	1017.9	1012.5	1001.6	1012.5	1008.8	1016.1	1008.8	1025.2
35°	948.7	930.5	928.7	921.4	916.0	906.9	906.9	897.8	899.6	894.1	905.0
37.5°	854.0	830.4	826.7	812.2	803.1	792.1	792.1	784.9	775.7	772.1	781.2
40°	761.2	735.7	726.6	702.9	693.8	682.9	675.6	666.5	662.8	648.3	655.6
42.5°	681.1	653.7	633.7	608.2	599.1	582.7	571.8	560.9	555.4	539.0	546.3
45°	613.7	580.9	559.0	526.3	513.5	495.3	478.9	466.2	453.4	446.1	442.5
47.5°	557.2	522.6	493.5	457.1	437.0	420.7	398.8	386.1	369.7	360.6	355.1
50°	509.9	471.6	438.9	397.0	376.9	358.7	333.2	313.2	298.6	284.1	280.4
52.5°	468.0	427.9	391.5	344.2	320.5	298.6	271.3	249.5	236.7	220.3	218.5
55°	418.8	384.2	344.2	295.0	271.3	249.5	220.3	198.5	182.1	171.2	167.5
57.5°	366.0	333.2	295.0	245.8	222.2	198.5	171.2	151.1	136.6	127.5	125.6
60°	316.9	285.9	249.5	200.3	176.6	156.6	127.5	107.4	94.7	87.4	83.8
62.5°	280.4	251.3	216.7	171.2	149.3	129.3	102.0	83.8	72.8	65.6	61.9
65°	245.8	216.7	185.7	143.9	125.6	107.4	81.9	65.6	54.6	47.3	43.7
67.5°	209.4	183.9	154.8	120.2	102.0	87.4	65.6	51.0	41.9	36.4	32.8
70°	173.0	149.3	125.6	96.5	83.8	69.2	51.0	40.1	31.0	27.3	23.7
72.5°	136.6	118.4	98.3	74.7	63.7	54.6	40.1	29.1	23.7	20.0	16.4
75°	102.0	89.2	72.8	56.5	47.3	40.1	29.1	21.9	18.2	14.6	12.7
77.5°	72.8	61.9	51.0	38.2	34.6	29.1	20.0	16.4	12.7	9.1	7.3
80°	49.2	43.7	34.6	27.3	21.9	20.0	14.6	10.9	7.3	5.5	5.5
82.5°	32.8	27.3	21.9	16.4	14.6	12.7	9.1	7.3	5.5	3.6	3.6
85°	20.0	16.4	12.7	9.1	9.1	7.3	5.5	3.6	1.8	1.8	1.8
87.5°	9.1	7.3	5.5	3.6	3.6	1.8	1.8	1.8	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°	1413.1	1413.1	1413.1	1413.1	1413.1	1413.1	1413.1	1413.1	1413.1	1413.1	1413.1
2.5°	1431.3	1420.4	1413.1	1422.2	1425.8	1420.4	1425.8	1434.9	1444.1	1445.9	1420.4
5°	1433.1	1422.2	1418.6	1429.5	1431.3	1429.5	1434.9	1447.7	1458.6	1462.3	1436.8
7.5°	1433.1	1425.8	1424.0	1436.8	1438.6	1436.8	1445.9	1460.4	1471.4	1478.7	1453.2
10°	1429.5	1425.8	1427.7	1438.6	1442.2	1442.2	1455.0	1471.4	1482.3	1489.6	1464.1
12.5°	1424.0	1424.0	1424.0	1436.8	1440.4	1442.2	1453.2	1475.0	1482.3	1493.2	1467.7
15°	1414.9	1414.9	1414.9	1427.7	1433.1	1433.1	1445.9	1465.9	1475.0	1485.9	1460.4
17.5°	1398.5	1398.5	1400.3	1411.3	1416.7	1416.7	1429.5	1451.3	1456.8	1469.5	1444.1
20°	1374.9	1374.9	1376.7	1387.6	1393.1	1389.4	1405.8	1424.0	1429.5	1440.4	1414.9
22.5°	1340.3	1340.3	1340.3	1351.2	1354.8	1353.0	1369.4	1385.8	1385.8	1400.3	1373.0
25°	1289.3	1292.9	1289.3	1300.2	1303.8	1302.0	1316.6	1331.2	1327.5	1343.9	1316.6
27.5°	1227.4	1225.5	1225.5	1234.6	1234.6	1232.8	1243.7	1260.1	1256.5	1267.4	1241.9
30°	1141.8	1147.2	1138.1	1150.9	1145.4	1141.8	1149.1	1163.6	1158.2	1167.3	1147.2
32.5°	1043.4	1036.1	1036.1	1036.1	1039.8	1030.7	1038.0	1045.3	1039.8	1048.9	1027.0
35°	914.1	916.0	910.5	912.3	914.1	903.2	910.5	917.8	910.5	916.0	895.9
37.5°	784.9	786.7	773.9	781.2	773.9	770.3	777.6	781.2	773.9	779.4	757.5
40°	655.6	651.9	650.1	650.1	651.9	642.8	648.3	653.7	648.3	651.9	631.9
42.5°	542.7	540.8	537.2	539.0	533.6	531.7	533.6	539.0	533.6	537.2	522.6
45°	444.3	440.7	435.2	437.0	437.0	427.9	433.4	437.0	431.6	433.4	420.7
47.5°	353.3	347.8	347.8	346.0	346.0	342.3	347.8	346.0	340.5	344.2	331.4
50°	275.0	271.3	271.3	271.3	271.3	265.9	267.7	271.3	265.9	265.9	258.6
52.5°	214.9	209.4	205.8	205.8	205.8	204.0	204.0	205.8	200.3	200.3	198.5
55°	162.1	160.2	154.8	154.8	154.8	149.3	151.1	151.1	149.3	149.3	143.9
57.5°	120.2	114.7	111.1	111.1	107.4	107.4	105.6	107.4	103.8	103.8	100.2
60°	80.1	76.5	74.7	72.8	72.8	71.0	72.8	71.0	71.0	69.2	67.4
62.5°	58.3	54.6	51.0	51.0	51.0	49.2	49.2	49.2	49.2	49.2	47.3
65°	41.9	38.2	38.2	36.4	36.4	34.6	34.6	34.6	34.6	34.6	32.8
67.5°	29.1	27.3	25.5	25.5	25.5	25.5	25.5	25.5	23.7	23.7	23.7
70°	21.9	20.0	18.2	18.2	18.2	18.2	18.2	16.4	18.2	18.2	16.4
72.5°	14.6	14.6	12.7	12.7	12.7	12.7	12.7	12.7	12.7	12.7	12.7
75°	10.9	10.9	9.1	9.1	9.1	9.1	9.1	9.1	9.1	9.1	9.1
77.5°	7.3	7.3	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
80°	5.5	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
82.5°	3.6	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
85°	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	0.0
87.5°	0.0	0.0	0.0	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	0.0	0.0	0.0



TEST NUMBER: P251621

CATALOG NUMBER: LD4B30D010 EU4B30508027 4LBSW1H

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	1413.1	1413.1	1413.1	1413.1	1413.1	1413.1	1413.1	1413.1
2.5°	1447.7	1445.9	1442.2	1447.7	1433.1	1427.7	1425.8	1442.2
5°	1467.7	1464.1	1464.1	1469.5	1453.2	1449.5	1445.9	1464.1
7.5°	1485.9	1482.3	1482.3	1487.8	1473.2	1469.5	1465.9	1484.1
10°	1496.9	1496.9	1496.9	1500.5	1487.8	1484.1	1482.3	1500.5
12.5°	1502.3	1502.3	1500.5	1507.8	1491.4	1491.4	1487.8	1506.0
15°	1495.0	1495.0	1495.0	1500.5	1485.9	1482.3	1482.3	1496.9
17.5°	1476.8	1476.8	1475.0	1480.5	1464.1	1464.1	1462.3	1478.7
20°	1449.5	1449.5	1445.9	1453.2	1436.8	1431.3	1429.5	1445.9
22.5°	1405.8	1404.0	1402.2	1405.8	1391.2	1387.6	1385.8	1400.3
25°	1349.4	1347.5	1343.9	1347.5	1331.2	1325.7	1325.7	1336.6
27.5°	1269.2	1269.2	1263.8	1269.2	1251.0	1249.2	1247.4	1260.1
30°	1170.9	1163.6	1160.0	1167.3	1149.1	1149.1	1145.4	1158.2
32.5°	1048.9	1041.6	1039.8	1043.4	1027.0	1021.6	1028.9	1036.1
35°	908.7	910.5	903.2	903.2	888.6	890.5	892.3	903.2
37.5°	773.9	770.3	768.5	770.3	759.4	755.7	752.1	763.0
40°	648.3	639.2	637.4	637.4	628.2	626.4	628.2	633.7
42.5°	529.9	528.1	520.8	524.4	515.3	519.0	517.2	517.2
45°	427.9	429.8	422.5	427.9	420.7	415.2	415.2	418.8
47.5°	338.7	338.7	336.9	336.9	331.4	333.2	329.6	335.1
50°	262.2	262.2	258.6	260.4	256.8	256.8	254.9	256.8
52.5°	200.3	198.5	198.5	196.7	193.0	194.8	196.7	193.0
55°	145.7	147.5	143.9	145.7	142.0	143.9	142.0	143.9
57.5°	100.2	102.0	98.3	102.0	98.3	100.2	98.3	98.3
60°	69.2	69.2	67.4	69.2	67.4	67.4	65.6	69.2
62.5°	47.3	47.3	47.3	47.3	47.3	45.5	47.3	47.3
65°	34.6	32.8	32.8	32.8	32.8	32.8	32.8	32.8
67.5°	23.7	23.7	23.7	23.7	23.7	23.7	23.7	23.7
70°	16.4	16.4	16.4	16.4	16.4	16.4	16.4	16.4
72.5°	12.7	12.7	12.7	12.7	12.7	12.7	12.7	12.7
75°	9.1	9.1	9.1	9.1	9.1	9.1	9.1	9.1
77.5°	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
80°	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
82.5°	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
85°	1.8	1.8	1.8	0.0	1.8	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



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













(END OF REPORT)