

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: P219526

Luminaire Tested: **LDSQ4B30D010 EU4B30509050 4LBSQLWWLI**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P219526
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 EU4B30509050 4LBSQLWWLI
Description: PORTFOLIO 4 INCH SQUARE SINGLE WALLWASH RECESSED DOWNLIGHT, WITH SPECULAR CLEAR TRIM
Light Source: (1) HIGH LUMEN LED 90CRI / 5000K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1984.7 lumens
Efficiency: N/A
Efficacy: 70.9 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

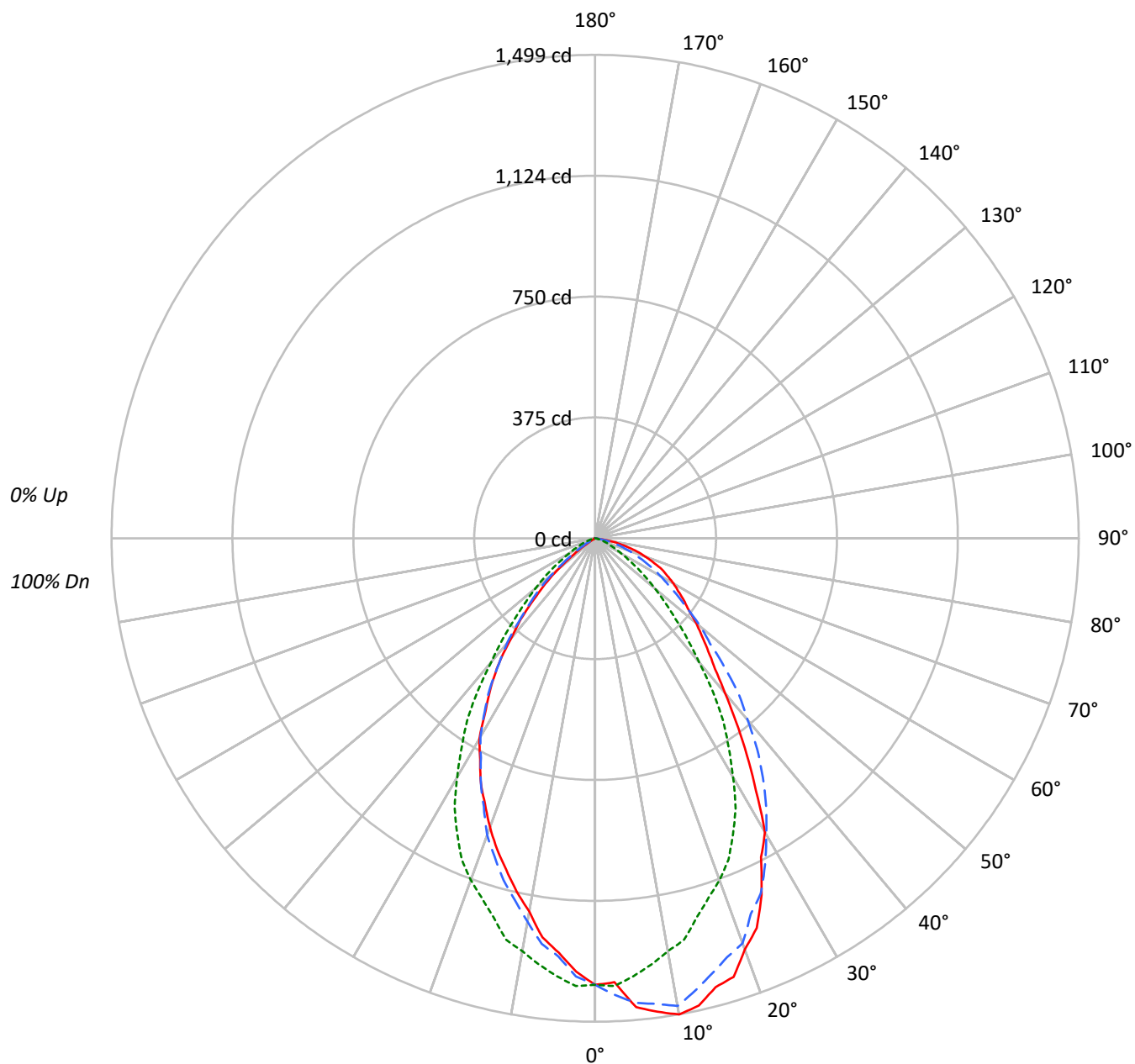
Input Watts (W): 28
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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
RW	70	50	30	10	70	50	30	10	50	30	10		50	30	10		50
RCR																	
0	119	119	119	119	116	116	116	116	111	111	111		106	106	106		102
1	112	108	105	102	109	106	103	101	102	100	98		98	96	95		95
2	104	98	93	89	102	96	92	88	93	89	86		90	87	84		87
3	97	89	83	78	95	88	82	77	85	80	76		82	78	75		80
4	91	81	74	69	89	80	74	69	78	72	68		76	71	67		74
5	85	75	67	62	83	74	67	62	72	66	61		70	65	60		68
6	80	69	61	56	78	68	61	56	66	60	55		65	59	55		63
7	75	63	56	51	73	63	56	51	61	55	50		60	54	50		59
8	70	59	52	47	69	58	51	46	57	51	46		56	50	46		55
9	66	55	48	43	65	54	47	43	53	47	43		52	46	42		51
10	62	51	44	40	61	51	44	40	50	44	39		49	43	39		48

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	134134	134134	134134
5°	141910	132546	125447
10°	147476	127871	115624
15°	144532	122046	106732
20°	139835	116216	98247
25°	130427	108077	89617
30°	117746	95642	80228
35°	96988	81874	66558
40°	79152	63193	51230
45°	68008	47992	36854
50°	61551	36532	23270
55°	56648	26365	8411
60°	54366	18019	1279
65°	52516	12172	390
70°	47019	8469	482
75°	38515	4342	0
80°	24101	1841	0
85°	0	0	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	129.7	6.5
10°-20°	349.5	17.6
20°-30°	466.7	23.5
30°-40°	443.0	22.3
40°-50°	306.2	15.4
50°-60°	169.2	8.5
60°-70°	84.0	4.2
70°-80°	33.1	1.7
80°-90°	3.2	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°	945.9	47.7
0°-40°	1389.0	70.0
0°-60°	1864.4	93.9
0°-90°	1984.7	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1984.7	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	1385	1385	1385	1385	1385	
5°	1459	1446	1363	1302	1290	140
15°	1441	1398	1217	1097	1064	408
25°	1220	1215	1011	838	838	556
35°	820	906	692	569	563	514
45°	496	569	350	287	269	387
55°	335	315	156	80	50	302
65°	229	166	53	2	2	222
75°	103	63	12	0	0	110
85°	0	2	0	0	0	9
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°	1384.6	1384.6	1384.6	1384.6	1384.6	1384.6	1384.6	1384.6	1384.6	1384.6	1384.6
2.5°	1378.0	1416.2	1419.5	1416.2	1421.1	1419.5	1427.8	1419.5	1429.4	1414.5	1417.8
5°	1459.3	1444.4	1475.9	1459.3	1459.3	1457.7	1452.7	1451.0	1457.7	1436.1	1446.0
7.5°	1480.9	1502.5	1530.7	1495.8	1497.5	1497.5	1487.5	1484.2	1484.2	1444.4	1456.0
10°	1499.2	1485.9	1500.8	1487.5	1499.2	1497.5	1504.1	1482.6	1497.5	1474.3	1472.6
12.5°	1484.2	1479.2	1499.2	1477.6	1470.9	1472.6	1464.3	1459.3	1464.3	1437.7	1436.1
15°	1441.1	1446.0	1475.9	1452.7	1449.4	1446.0	1436.1	1419.5	1432.8	1396.2	1397.9
17.5°	1426.1	1417.8	1422.8	1402.9	1407.9	1404.5	1402.9	1387.9	1384.6	1361.4	1361.4
20°	1356.4	1374.6	1374.6	1361.4	1361.4	1359.7	1338.1	1351.4	1336.5	1329.8	1336.5
22.5°	1308.2	1309.9	1309.9	1298.3	1299.9	1293.3	1281.7	1273.4	1281.7	1273.4	1260.1
25°	1220.2	1223.6	1243.5	1221.9	1218.6	1225.2	1215.3	1210.3	1208.6	1188.7	1215.3
27.5°	1114.0	1147.2	1145.5	1137.2	1147.2	1133.9	1128.9	1130.6	1135.6	1133.9	1140.6
30°	1052.6	1057.5	1062.5	1055.9	1057.5	1052.6	1052.6	1054.2	1067.5	1062.5	1060.9
32.5°	928.1	944.7	957.9	957.9	959.6	964.6	962.9	997.8	1006.1	989.5	986.2
35°	820.1	831.8	843.4	845.0	866.6	868.3	869.9	879.9	903.1	908.1	906.5
37.5°	717.2	728.8	732.1	747.1	758.7	770.3	783.6	796.9	816.8	833.4	825.1
40°	625.9	630.9	639.2	645.8	669.1	669.1	675.7	702.3	723.8	737.1	735.5
42.5°	549.5	551.2	557.8	569.4	591.0	586.1	591.0	609.3	640.8	642.5	660.8
45°	496.4	494.7	499.7	501.4	514.7	521.3	524.6	537.9	564.5	567.8	569.4
47.5°	448.3	446.6	454.9	458.2	463.2	469.8	469.8	471.5	481.5	489.8	483.1
50°	408.4	408.4	408.4	411.7	420.0	418.4	420.0	426.7	431.7	428.3	426.7
52.5°	365.2	371.9	376.9	378.5	380.2	380.2	381.8	378.5	376.9	371.9	361.9
55°	335.4	342.0	342.0	342.0	342.0	348.6	340.3	342.0	342.0	328.7	315.4
57.5°	305.5	312.1	317.1	310.5	317.1	310.5	307.1	305.5	302.2	288.9	269.0
60°	280.6	283.9	282.2	280.6	283.9	278.9	275.6	269.0	265.6	247.4	234.1
62.5°	252.4	254.0	255.7	252.4	249.0	247.4	240.7	230.8	224.1	209.2	197.6
65°	229.1	224.1	222.5	220.8	217.5	212.5	207.5	195.9	190.9	177.6	166.0
67.5°	194.2	192.6	195.9	190.9	182.6	182.6	177.6	167.7	156.1	147.8	136.1
70°	166.0	164.4	161.0	156.1	154.4	147.8	147.8	136.1	132.8	117.9	107.9
72.5°	136.1	136.1	131.2	126.2	121.2	117.9	116.2	107.9	102.9	94.6	86.3
75°	102.9	102.9	101.3	96.3	93.0	89.7	88.0	81.3	76.4	68.1	63.1
77.5°	73.0	73.0	66.4	63.1	64.7	61.4	58.1	56.4	54.8	49.8	43.2
80°	43.2	41.5	36.5	38.2	36.5	36.5	34.9	33.2	29.9	26.6	23.2
82.5°	11.6	13.3	13.3	13.3	14.9	11.6	11.6	11.6	13.3	13.3	8.3
85°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.7	1.7	1.7
87.5°	1.7	3.3	6.6	6.6	6.6	6.6	6.6	5.0	5.0	5.0	3.3
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):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
0°	1384.6	1384.6	1384.6	1384.6	1384.6	1384.6	1384.6	1384.6	1384.6	1384.6	1384.6
2.5°	1401.2	1399.6	1401.2	1389.6	1416.2	1396.2	1392.9	1389.6	1401.2	1389.6	1373.0
5°	1431.1	1414.5	1409.5	1404.5	1419.5	1396.2	1391.2	1392.9	1384.6	1363.0	1364.7
7.5°	1441.1	1426.1	1411.2	1379.6	1392.9	1387.9	1374.6	1364.7	1351.4	1333.1	1329.8
10°	1444.4	1427.8	1406.2	1396.2	1376.3	1369.7	1364.7	1348.1	1331.5	1299.9	1291.6
12.5°	1434.4	1414.5	1387.9	1379.6	1364.7	1343.1	1331.5	1314.9	1299.9	1275.0	1256.8
15°	1391.2	1374.6	1366.3	1338.1	1331.5	1318.2	1295.0	1271.7	1250.1	1216.9	1207.0
17.5°	1341.4	1334.8	1326.5	1304.9	1303.3	1290.0	1268.4	1248.5	1220.2	1168.8	1152.2
20°	1290.0	1290.0	1263.4	1255.1	1271.7	1245.2	1228.5	1210.3	1152.2	1127.3	1097.4
22.5°	1251.8	1233.5	1218.6	1205.3	1207.0	1190.4	1167.1	1130.6	1109.0	1079.1	1044.3
25°	1177.1	1183.7	1150.5	1145.5	1150.5	1112.3	1100.7	1070.8	1039.3	1011.1	984.5
27.5°	1130.6	1112.3	1090.8	1072.5	1072.5	1057.5	1024.3	1017.7	969.6	943.0	909.8
30°	1060.9	1047.6	1029.3	1002.8	999.4	987.8	961.3	944.7	894.8	855.0	836.7
32.5°	972.9	967.9	953.0	923.1	913.1	899.8	866.6	838.4	815.2	770.3	748.8
35°	909.8	891.5	860.0	835.1	826.8	803.5	777.0	757.1	732.1	692.3	664.1
37.5°	815.2	796.9	767.0	737.1	737.1	713.9	677.4	657.4	622.6	599.3	576.1
40°	732.1	708.9	679.0	644.2	639.2	606.0	591.0	557.8	536.2	499.7	496.4
42.5°	639.2	617.6	591.0	564.5	544.5	527.9	489.8	464.9	441.6	423.4	418.4
45°	554.5	526.3	503.0	469.8	449.9	430.0	405.1	388.5	370.2	350.3	338.7
47.5°	481.5	458.2	425.0	395.1	375.2	365.2	337.0	318.8	303.8	290.5	282.2
50°	406.7	378.5	360.3	327.1	323.7	300.5	277.3	262.3	254.0	242.4	230.8
52.5°	350.3	323.7	298.8	273.9	260.7	252.4	230.8	215.8	204.2	195.9	189.3
55°	295.5	272.3	252.4	227.4	219.1	207.5	182.6	179.3	167.7	156.1	147.8
57.5°	254.0	232.4	209.2	192.6	177.6	169.3	149.4	136.1	129.5	119.5	111.2
60°	215.8	192.6	174.3	154.4	147.8	136.1	121.2	109.6	101.3	93.0	84.7
62.5°	181.0	161.0	141.1	124.5	114.6	107.9	96.3	86.3	78.0	71.4	64.7
65°	149.4	131.2	114.6	98.0	93.0	84.7	76.4	68.1	61.4	53.1	46.5
67.5°	122.9	106.3	89.7	78.0	73.0	69.7	59.8	51.5	46.5	41.5	34.9
70°	96.3	84.7	71.4	61.4	56.4	51.5	44.8	39.8	33.2	29.9	24.9
72.5°	74.7	64.7	53.1	44.8	41.5	38.2	31.5	26.6	23.2	19.9	16.6
75°	53.1	44.8	38.2	29.9	28.2	26.6	21.6	18.3	14.9	11.6	10.0
77.5°	36.5	29.9	23.2	19.9	18.3	14.9	13.3	10.0	8.3	6.6	5.0
80°	19.9	14.9	11.6	10.0	8.3	6.6	6.6	5.0	3.3	3.3	1.7
82.5°	6.6	5.0	3.3	1.7	1.7	1.7	1.7	1.7	1.7	0.0	1.7
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°	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	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°	1384.6	1384.6	1384.6	1384.6	1384.6	1384.6	1384.6	1384.6	1384.6	1384.6	1384.6
2.5°	1382.9	1364.7	1369.7	1369.7	1366.3	1366.3	1363.0	1358.0	1359.7	1349.7	1328.2
5°	1368.0	1344.8	1341.4	1344.8	1331.5	1328.2	1321.5	1331.5	1301.6	1313.2	1299.9
7.5°	1324.8	1303.3	1298.3	1309.9	1293.3	1283.3	1281.7	1295.0	1268.4	1255.1	1240.2
10°	1276.7	1268.4	1253.5	1245.2	1240.2	1241.8	1228.5	1211.9	1207.0	1203.6	1190.4
12.5°	1233.5	1215.3	1202.0	1192.0	1188.7	1188.7	1167.1	1163.8	1148.9	1145.5	1125.6
15°	1182.1	1160.5	1152.2	1138.9	1127.3	1133.9	1109.0	1102.4	1097.4	1075.8	1079.1
17.5°	1137.2	1114.0	1094.1	1085.8	1075.8	1065.8	1042.6	1047.6	1036.0	1036.0	1006.1
20°	1079.1	1054.2	1039.3	1022.7	1022.7	1009.4	992.8	994.5	979.5	964.6	938.0
22.5°	1017.7	991.1	972.9	966.2	949.6	946.3	926.4	921.4	901.5	903.1	879.9
25°	953.0	926.4	901.5	903.1	888.2	881.6	869.9	846.7	838.4	828.4	821.8
27.5°	876.6	858.3	836.7	835.1	806.9	808.5	793.6	786.9	767.0	772.0	757.1
30°	806.9	780.3	760.4	755.4	743.8	740.5	717.2	707.2	710.6	697.3	689.0
32.5°	735.5	695.6	687.3	677.4	670.7	662.4	645.8	652.5	637.5	640.8	627.6
35°	640.8	624.2	602.7	602.7	596.0	589.4	577.8	584.4	569.4	562.8	549.5
37.5°	561.1	546.2	524.6	531.3	519.6	509.7	499.7	501.4	488.1	486.4	473.2
40°	474.8	466.5	451.6	451.6	443.3	443.3	438.3	433.3	425.0	415.1	400.1
42.5°	393.5	386.8	380.2	381.8	370.2	380.2	366.9	375.2	348.6	347.0	337.0
45°	333.7	318.8	320.4	313.8	307.1	310.5	298.8	302.2	287.2	283.9	273.9
47.5°	270.6	265.6	255.7	252.4	252.4	247.4	242.4	240.7	234.1	225.8	212.5
50°	222.5	204.2	200.9	195.9	192.6	192.6	185.9	176.0	177.6	169.3	156.1
52.5°	174.3	159.4	152.7	151.1	144.4	141.1	132.8	126.2	121.2	117.9	109.6
55°	134.5	121.2	112.9	112.9	102.9	102.9	91.3	86.3	79.7	73.0	68.1
57.5°	101.3	94.6	86.3	79.7	76.4	68.1	61.4	53.1	48.1	38.2	31.5
60°	76.4	69.7	61.4	56.4	53.1	44.8	36.5	29.9	18.3	14.9	13.3
62.5°	56.4	49.8	41.5	38.2	34.9	28.2	19.9	10.0	5.0	5.0	5.0
65°	41.5	33.2	26.6	23.2	19.9	14.9	6.6	3.3	1.7	1.7	1.7
67.5°	28.2	21.6	14.9	13.3	10.0	5.0	1.7	1.7	1.7	1.7	1.7
70°	18.3	13.3	6.6	5.0	3.3	1.7	1.7	1.7	1.7	1.7	1.7
72.5°	11.6	6.6	3.3	1.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0
75°	6.6	3.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
77.5°	3.3	1.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
80°	1.7	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	1.7	1.7	1.7
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: P219526

CATALOG NUMBER: LDSQ4B30D010 EU4B30509050 4LBSQLWWLI

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	1384.6	1384.6	1384.6	1384.6	1384.6	1384.6	1384.6	1384.6
2.5°	1351.4	1339.8	1346.4	1331.5	1338.1	1349.7	1341.4	1344.8
5°	1304.9	1298.3	1290.0	1268.4	1285.0	1298.3	1291.6	1290.0
7.5°	1255.1	1231.9	1243.5	1236.9	1233.5	1246.8	1231.9	1248.5
10°	1203.6	1187.0	1185.4	1173.8	1173.8	1183.7	1185.4	1175.4
12.5°	1127.3	1119.0	1119.0	1117.3	1115.7	1125.6	1127.3	1122.3
15°	1072.5	1069.2	1060.9	1059.2	1049.2	1064.2	1065.8	1064.2
17.5°	1006.1	1007.7	999.4	999.4	1006.1	1011.1	997.8	1011.1
20°	961.3	953.0	949.6	934.7	943.0	951.3	951.3	953.0
22.5°	896.5	883.2	888.2	879.9	874.9	886.5	886.5	891.5
25°	823.5	823.5	826.8	821.8	825.1	831.8	826.8	838.4
27.5°	753.7	760.4	760.4	753.7	757.1	777.0	785.3	772.0
30°	689.0	690.6	695.6	692.3	702.3	708.9	707.2	717.2
32.5°	615.9	624.2	627.6	622.6	625.9	640.8	632.5	630.9
35°	559.5	544.5	542.9	544.5	551.2	554.5	551.2	562.8
37.5°	478.1	473.2	466.5	468.2	473.2	479.8	483.1	491.4
40°	400.1	393.5	393.5	391.8	386.8	405.1	405.1	405.1
42.5°	332.0	330.4	322.1	322.1	328.7	333.7	330.4	342.0
45°	272.3	265.6	260.7	260.7	265.6	265.6	270.6	269.0
47.5°	214.2	207.5	209.2	204.2	209.2	215.8	207.5	209.2
50°	161.0	161.0	157.7	161.0	159.4	161.0	157.7	154.4
52.5°	109.6	124.5	126.2	119.5	104.6	91.3	83.0	89.7
55°	63.1	56.4	56.4	54.8	51.5	49.8	44.8	49.8
57.5°	31.5	28.2	28.2	28.2	26.6	24.9	21.6	21.6
60°	13.3	11.6	11.6	10.0	8.3	6.6	5.0	6.6
62.5°	5.0	3.3	3.3	3.3	3.3	3.3	3.3	3.3
65°	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7
67.5°	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7
70°	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7
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



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— 0°-180° - - 45°-225° - - - 90°-270°













(END OF REPORT)