

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: P219524

Luminaire Tested: **LDSQ4B30D010 EU4B30509035 4LBSQLWWLI**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P219524
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 EU4B30509035 4LBSQLWWLI
Description: PORTFOLIO 4 INCH SQUARE SINGLE WALLWASH RECESSED DOWNLIGHT, WITH SPECULAR CLEAR TRIM
Light Source: (1) HIGH LUMEN LED 90CRI / 3500K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1972.8 lumens
Efficiency: N/A
Efficacy: 70.5 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

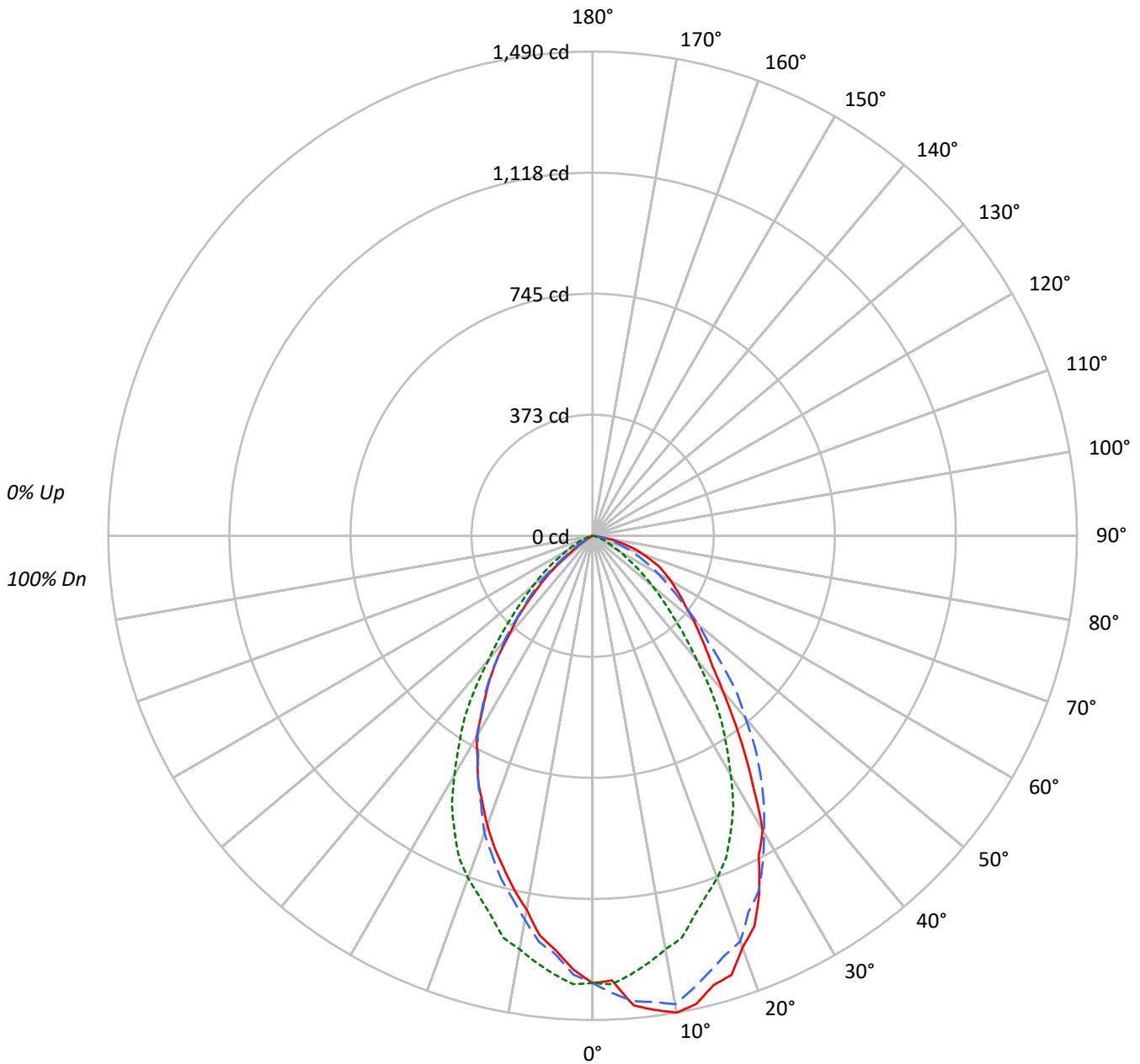
Input Watts (W): 28
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	112	108	105	102	109	106	103	101	102	100	98	98	96	95	95	93	92	90								
2	104	98	93	89	102	96	92	88	93	89	86	90	87	84	87	84	82	80								
3	97	89	83	78	95	88	82	77	85	80	76	82	78	75	80	77	74	72								
4	91	81	74	69	89	80	74	69	78	72	68	76	71	67	74	70	66	64								
5	85	75	67	62	83	74	67	62	72	66	61	70	65	60	68	64	60	58								
6	80	69	61	56	78	68	61	56	66	60	55	65	59	55	63	58	54	53								
7	75	63	56	51	73	63	56	51	61	55	50	60	54	50	59	54	50	48								
8	70	59	52	47	69	58	51	46	57	51	46	56	50	46	55	50	46	44								
9	66	55	48	43	65	54	47	43	53	47	43	52	46	42	51	46	42	41								
10	62	51	44	40	61	51	44	40	50	44	39	49	43	39	48	43	39	38								

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	133330	133330	133330
5°	141055	131748	124688
10°	146581	127104	114926
15°	143659	121314	106090
20°	138990	115515	97649
25°	129647	107425	89082
30°	117030	95072	79746
35°	96408	81377	66156
40°	78672	62814	50926
45°	67597	47704	36621
50°	61189	36306	23134
55°	56293	26196	8360
60°	54037	17903	1279
65°	52195	12103	390
70°	46735	8412	482
75°	38291	4342	0
80°	23933	1841	0
85°	0	0	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	128.9	6.5
10°-20°	347.4	17.6
20°-30°	463.9	23.5
30°-40°	440.4	22.3
40°-50°	304.4	15.4
50°-60°	168.2	8.5
60°-70°	83.5	4.2
70°-80°	32.9	1.7
80°-90°	3.1	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°	940.2	47.7
0°-40°	1380.6	70.0
0°-60°	1853.2	93.9
0°-90°	1972.8	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1972.8	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	1376	1376	1376	1376	1376	
5°	1450	1437	1355	1294	1282	139
15°	1432	1390	1210	1091	1058	405
25°	1213	1208	1005	833	833	553
35°	815	901	688	566	559	511
45°	493	566	348	286	267	385
55°	333	314	155	79	50	300
65°	228	165	53	2	2	221
75°	102	63	12	0	0	109
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°	1376.3	1376.3	1376.3	1376.3	1376.3	1376.3	1376.3	1376.3	1376.3	1376.3	1376.3
2.5°	1369.7	1407.6	1410.9	1407.6	1412.6	1410.9	1419.2	1410.9	1420.8	1406.0	1409.3
5°	1450.5	1435.7	1467.0	1450.5	1450.5	1448.9	1443.9	1442.3	1448.9	1427.4	1437.3
7.5°	1472.0	1493.4	1521.5	1486.8	1488.5	1488.5	1478.6	1475.3	1475.3	1435.7	1447.2
10°	1490.1	1476.9	1491.8	1478.6	1490.1	1488.5	1495.1	1473.6	1488.5	1465.4	1463.7
12.5°	1475.3	1470.3	1490.1	1468.7	1462.1	1463.7	1455.5	1450.5	1455.5	1429.1	1427.4
15°	1432.4	1437.3	1467.0	1443.9	1440.6	1437.3	1427.4	1410.9	1424.1	1387.8	1389.5
17.5°	1417.5	1409.3	1414.2	1394.4	1399.4	1396.1	1394.4	1379.6	1376.3	1353.2	1353.2
20°	1348.2	1366.4	1366.4	1353.2	1353.2	1351.5	1330.1	1343.3	1328.4	1321.8	1328.4
22.5°	1300.4	1302.0	1302.0	1290.5	1292.1	1285.5	1274.0	1265.7	1274.0	1265.7	1252.5
25°	1212.9	1216.2	1236.0	1214.6	1211.3	1217.9	1208.0	1203.0	1201.4	1181.6	1208.0
27.5°	1107.3	1140.3	1138.6	1130.4	1140.3	1127.1	1122.1	1123.8	1128.7	1127.1	1133.7
30°	1046.2	1051.2	1056.1	1049.5	1051.2	1046.2	1046.2	1047.9	1061.1	1056.1	1054.5
32.5°	922.5	939.0	952.2	952.2	953.8	958.8	957.1	991.8	1000.0	983.5	980.2
35°	815.2	826.8	838.3	840.0	861.4	863.1	864.7	874.6	897.7	902.7	901.0
37.5°	712.9	724.4	727.7	742.6	754.1	765.7	778.9	792.1	811.9	828.4	820.2
40°	622.1	627.1	635.3	641.9	665.0	665.0	671.6	698.0	719.5	732.7	731.0
42.5°	546.2	547.9	554.5	566.0	587.5	582.5	587.5	605.6	637.0	638.6	656.8
45°	493.4	491.8	496.7	498.4	511.6	518.2	521.5	534.7	561.1	564.4	566.0
47.5°	445.6	443.9	452.2	455.5	460.4	467.0	467.0	468.7	478.6	486.8	480.2
50°	406.0	406.0	406.0	409.3	417.5	415.9	417.5	424.1	429.1	425.8	424.1
52.5°	363.0	369.6	374.6	376.2	377.9	377.9	379.5	376.2	374.6	369.6	359.7
55°	333.3	339.9	339.9	339.9	339.9	346.5	338.3	339.9	339.9	326.7	313.5
57.5°	303.6	310.2	315.2	308.6	315.2	308.6	305.3	303.6	300.3	287.1	267.3
60°	278.9	282.2	280.5	278.9	282.2	277.2	273.9	267.3	264.0	245.9	232.7
62.5°	250.8	252.5	254.1	250.8	247.5	245.9	239.3	229.4	222.8	207.9	196.4
65°	227.7	222.8	221.1	219.5	216.2	211.2	206.3	194.7	189.8	176.6	165.0
67.5°	193.1	191.4	194.7	189.8	181.5	181.5	176.6	166.7	155.1	146.9	135.3
70°	165.0	163.4	160.1	155.1	153.5	146.9	146.9	135.3	132.0	117.2	107.3
72.5°	135.3	135.3	130.4	125.4	120.5	117.2	115.5	107.3	102.3	94.1	85.8
75°	102.3	102.3	100.7	95.7	92.4	89.1	87.5	80.9	75.9	67.7	62.7
77.5°	72.6	72.6	66.0	62.7	64.4	61.1	57.8	56.1	54.5	49.5	42.9
80°	42.9	41.3	36.3	38.0	36.3	36.3	34.7	33.0	29.7	26.4	23.1
82.5°	11.6	13.2	13.2	13.2	14.9	11.6	11.6	11.6	13.2	13.2	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°	1376.3	1376.3	1376.3	1376.3	1376.3	1376.3	1376.3	1376.3	1376.3	1376.3	1376.3
2.5°	1392.8	1391.1	1392.8	1381.2	1407.6	1387.8	1384.5	1381.2	1392.8	1381.2	1364.7
5°	1422.5	1406.0	1401.0	1396.1	1410.9	1387.8	1382.9	1384.5	1376.3	1354.8	1356.5
7.5°	1432.4	1417.5	1402.7	1371.3	1384.5	1379.6	1366.4	1356.5	1343.3	1325.1	1321.8
10°	1435.7	1419.2	1397.7	1387.8	1368.0	1361.4	1356.5	1340.0	1323.5	1292.1	1283.9
12.5°	1425.8	1406.0	1379.6	1371.3	1356.5	1335.0	1323.5	1307.0	1292.1	1267.4	1249.2
15°	1382.9	1366.4	1358.1	1330.1	1323.5	1310.3	1287.2	1264.1	1242.6	1209.6	1199.7
17.5°	1333.4	1326.8	1318.5	1297.1	1295.4	1282.2	1260.8	1241.0	1212.9	1161.7	1145.2
20°	1282.2	1282.2	1255.8	1247.6	1264.1	1237.7	1221.2	1203.0	1145.2	1120.5	1090.8
22.5°	1244.3	1226.1	1211.3	1198.1	1199.7	1183.2	1160.1	1123.8	1102.3	1072.6	1038.0
25°	1170.0	1176.6	1143.6	1138.6	1143.6	1105.6	1094.1	1064.4	1033.0	1005.0	978.6
27.5°	1123.8	1105.6	1084.2	1066.0	1066.0	1051.2	1018.2	1011.6	963.7	937.3	904.3
30°	1054.5	1041.3	1023.1	996.7	993.4	981.9	955.5	939.0	889.5	849.9	831.7
32.5°	967.0	962.1	947.2	917.5	907.6	894.4	861.4	833.4	810.3	765.7	744.2
35°	904.3	886.2	854.8	830.1	821.8	798.7	772.3	752.5	727.7	688.1	660.1
37.5°	810.3	792.1	762.4	732.7	732.7	709.6	673.3	653.5	618.8	595.7	572.6
40°	727.7	704.6	674.9	640.3	635.3	602.3	587.5	554.5	533.0	496.7	493.4
42.5°	635.3	613.9	587.5	561.1	541.3	524.8	486.8	462.1	439.0	420.8	415.9
45°	551.2	523.1	500.0	467.0	447.2	427.4	402.7	386.1	368.0	348.2	336.6
47.5°	478.6	455.5	422.5	392.8	372.9	363.0	335.0	316.8	302.0	288.8	280.5
50°	404.3	376.2	358.1	325.1	321.8	298.7	275.6	260.7	252.5	240.9	229.4
52.5°	348.2	321.8	297.0	272.3	259.1	250.8	229.4	214.5	203.0	194.7	188.1
55°	293.7	270.6	250.8	226.1	217.8	206.3	181.5	178.2	166.7	155.1	146.9
57.5°	252.5	231.0	207.9	191.4	176.6	168.3	148.5	135.3	128.7	118.8	110.6
60°	214.5	191.4	173.3	153.5	146.9	135.3	120.5	108.9	100.7	92.4	84.2
62.5°	179.9	160.1	140.3	123.8	113.9	107.3	95.7	85.8	77.6	71.0	64.4
65°	148.5	130.4	113.9	97.4	92.4	84.2	75.9	67.7	61.1	52.8	46.2
67.5°	122.1	105.6	89.1	77.6	72.6	69.3	59.4	51.2	46.2	41.3	34.7
70°	95.7	84.2	71.0	61.1	56.1	51.2	44.6	39.6	33.0	29.7	24.8
72.5°	74.3	64.4	52.8	44.6	41.3	38.0	31.4	26.4	23.1	19.8	16.5
75°	52.8	44.6	38.0	29.7	28.1	26.4	21.5	18.2	14.9	11.6	9.9
77.5°	36.3	29.7	23.1	19.8	18.2	14.9	13.2	9.9	8.3	6.6	5.0
80°	19.8	14.9	11.6	9.9	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°	1376.3	1376.3	1376.3	1376.3	1376.3	1376.3	1376.3	1376.3	1376.3	1376.3	1376.3
2.5°	1374.6	1356.5	1361.4	1361.4	1358.1	1358.1	1354.8	1349.9	1351.5	1341.6	1320.2
5°	1359.8	1336.7	1333.4	1336.7	1323.5	1320.2	1313.6	1323.5	1293.8	1305.3	1292.1
7.5°	1316.9	1295.4	1290.5	1302.0	1285.5	1275.6	1274.0	1287.2	1260.8	1247.6	1232.7
10°	1269.0	1260.8	1245.9	1237.7	1232.7	1234.4	1221.2	1204.7	1199.7	1196.4	1183.2
12.5°	1226.1	1208.0	1194.8	1184.9	1181.6	1181.6	1160.1	1156.8	1141.9	1138.6	1118.8
15°	1175.0	1153.5	1145.2	1132.0	1120.5	1127.1	1102.3	1095.7	1090.8	1069.3	1072.6
17.5°	1130.4	1107.3	1087.5	1079.2	1069.3	1059.4	1036.3	1041.3	1029.7	1029.7	1000.0
20°	1072.6	1047.9	1033.0	1016.5	1016.5	1003.3	986.8	988.5	973.6	958.8	932.4
22.5°	1011.6	985.2	967.0	960.4	943.9	940.6	920.8	915.9	896.1	897.7	874.6
25°	947.2	920.8	896.1	897.7	882.9	876.3	864.7	841.6	833.4	823.5	816.9
27.5°	871.3	853.2	831.7	830.1	802.0	803.7	788.8	782.2	762.4	767.3	752.5
30°	802.0	775.6	755.8	750.8	739.3	736.0	712.9	703.0	706.3	693.1	684.8
32.5°	731.0	691.4	683.2	673.3	666.7	658.4	641.9	648.5	633.7	637.0	623.8
35°	637.0	620.5	599.0	599.0	592.4	585.8	574.3	580.9	566.0	559.4	546.2
37.5°	557.8	542.9	521.5	528.1	516.5	506.6	496.7	498.4	485.2	483.5	470.3
40°	472.0	463.7	448.9	448.9	440.6	440.6	435.7	430.7	422.5	412.6	397.7
42.5°	391.1	384.5	377.9	379.5	368.0	377.9	364.7	372.9	346.5	344.9	335.0
45°	331.7	316.8	318.5	311.9	305.3	308.6	297.0	300.3	285.5	282.2	272.3
47.5°	269.0	264.0	254.1	250.8	250.8	245.9	240.9	239.3	232.7	224.4	211.2
50°	221.1	203.0	199.7	194.7	191.4	191.4	184.8	174.9	176.6	168.3	155.1
52.5°	173.3	158.4	151.8	150.2	143.6	140.3	132.0	125.4	120.5	117.2	108.9
55°	133.7	120.5	112.2	112.2	102.3	102.3	90.8	85.8	79.2	72.6	67.7
57.5°	100.7	94.1	85.8	79.2	75.9	67.7	61.1	52.8	47.9	38.0	31.4
60°	75.9	69.3	61.1	56.1	52.8	44.6	36.3	29.7	18.2	14.9	13.2
62.5°	56.1	49.5	41.3	38.0	34.7	28.1	19.8	9.9	5.0	5.0	5.0
65°	41.3	33.0	26.4	23.1	19.8	14.9	6.6	3.3	1.7	1.7	1.7
67.5°	28.1	21.5	14.9	13.2	9.9	5.0	1.7	1.7	1.7	1.7	1.7
70°	18.2	13.2	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: P219524

CATALOG NUMBER: LDSQ4B30D010 EU4B30509035 4LBSQLWWLI

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	1376.3	1376.3	1376.3	1376.3	1376.3	1376.3	1376.3	1376.3
2.5°	1343.3	1331.7	1338.3	1323.5	1330.1	1341.6	1333.4	1336.7
5°	1297.1	1290.5	1282.2	1260.8	1277.3	1290.5	1283.9	1282.2
7.5°	1247.6	1224.5	1236.0	1229.4	1226.1	1239.3	1224.5	1241.0
10°	1196.4	1179.9	1178.3	1166.7	1166.7	1176.6	1178.3	1168.3
12.5°	1120.5	1112.2	1112.2	1110.6	1108.9	1118.8	1120.5	1115.5
15°	1066.0	1062.7	1054.5	1052.8	1042.9	1057.8	1059.4	1057.8
17.5°	1000.0	1001.7	993.4	993.4	1000.0	1005.0	991.8	1005.0
20°	955.5	947.2	943.9	929.1	937.3	945.6	945.6	947.2
22.5°	891.1	877.9	882.9	874.6	869.7	881.2	881.2	886.2
25°	818.5	818.5	821.8	816.9	820.2	826.8	821.8	833.4
27.5°	749.2	755.8	755.8	749.2	752.5	772.3	780.5	767.3
30°	684.8	686.5	691.4	688.1	698.0	704.6	703.0	712.9
32.5°	612.2	620.5	623.8	618.8	622.1	637.0	628.7	627.1
35°	556.1	541.3	539.6	541.3	547.9	551.2	547.9	559.4
37.5°	475.3	470.3	463.7	465.4	470.3	476.9	480.2	488.5
40°	397.7	391.1	391.1	389.4	384.5	402.7	402.7	402.7
42.5°	330.0	328.4	320.1	320.1	326.7	331.7	328.4	339.9
45°	270.6	264.0	259.1	259.1	264.0	264.0	269.0	267.3
47.5°	212.9	206.3	207.9	203.0	207.9	214.5	206.3	207.9
50°	160.1	160.1	156.8	160.1	158.4	160.1	156.8	153.5
52.5°	108.9	123.8	125.4	118.8	104.0	90.8	82.5	89.1
55°	62.7	56.1	56.1	54.5	51.2	49.5	44.6	49.5
57.5°	31.4	28.1	28.1	28.1	26.4	24.8	21.5	21.5
60°	13.2	11.6	11.6	9.9	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)