

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: P219534

Luminaire Tested: **LDSQ4B40D010 EU4B30509024 4LBSQLWWLI**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P219534
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: LDSQ4B40D010 EU4B30509024 4LBSQLWWLI
Description: PORTFOLIO 4 INCH SQUARE SINGLE WALLWASH RECESSED DOWNLIGHT, WITH SPECULAR CLEAR TRIM
Light Source: (1) HIGH LUMEN LED 90CRI / 2400K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 2305.0 lumens
Efficiency: N/A
Efficacy: 53.6 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

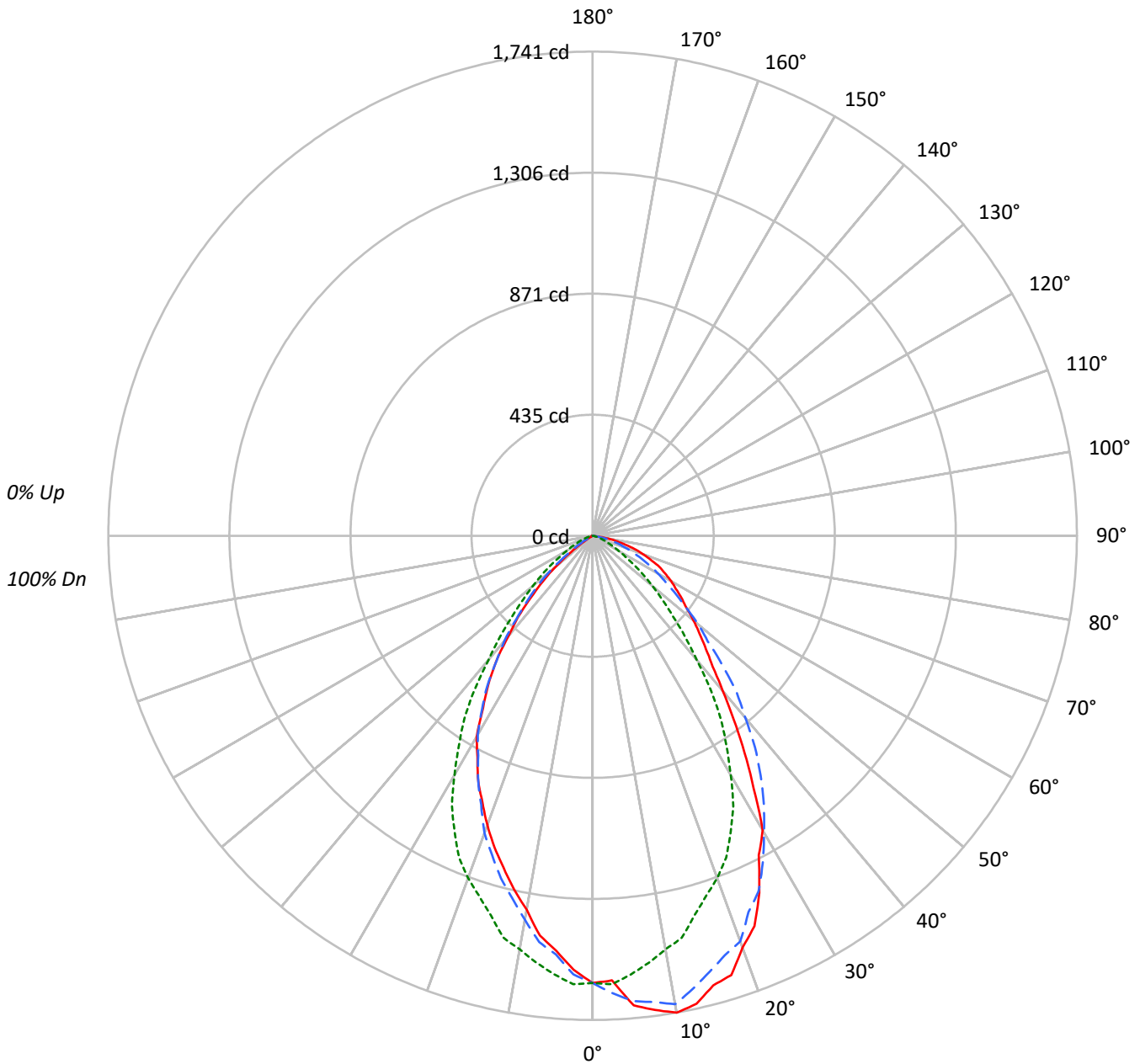
Input Watts (W): 43.02
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



TEST NUMBER: P219534

CATALOG NUMBER: LDSQ4B40D010 EU4B30509024 4LBSQLWWLI

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°	155785	155785	155785
5°	164812	153940	145693
10°	171272	148509	134285
15°	167850	141744	123952
20°	162402	134969	114103
25°	151485	125510	104079
30°	136740	111079	93181
35°	112646	95084	77297
40°	91925	73398	59500
45°	78982	55733	42800
50°	71482	42425	27023
55°	65785	30604	9762
60°	63143	20925	1492
65°	60997	14143	436
70°	54610	9829	538
75°	44729	5053	0
80°	27950	2176	0
85°	0	0	0



TEST NUMBER: P219534

CATALOG NUMBER: LDSQ4B40D010 EU4B30509024 4LBSQLWWLI

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	150.7	6.5
10°-20°	405.9	17.6
20°-30°	542.0	23.5
30°-40°	514.5	22.3
40°-50°	355.7	15.4
50°-60°	196.5	8.5
60°-70°	97.6	4.2
70°-80°	38.4	1.7
80°-90°	3.7	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°	1098.6	47.7
0°-40°	1613.1	70.0
0°-60°	2165.3	93.9
0°-90°	2305.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2305.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	1608	1608	1608	1608	1608	
5°	1695	1679	1583	1512	1498	162
15°	1674	1624	1413	1274	1236	473
25°	1417	1411	1174	974	974	646
35°	952	1053	804	661	654	597
45°	576	661	407	334	312	450
55°	390	366	181	93	58	351
65°	266	193	62	2	2	258
75°	120	73	14	0	0	127
85°	0	2	0	0	0	11
90°	0	0	0	0	0	



TEST NUMBER: P219534

CATALOG NUMBER: LDSQ4B40D010 EU4B30509024 4LBSQLWWLI

CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
0°	1608.1	1608.1	1608.1	1608.1	1608.1	1608.1	1608.1	1608.1	1608.1	1608.1	1608.1
2.5°	1600.4	1644.7	1648.6	1644.7	1650.5	1648.6	1658.2	1648.6	1660.1	1642.8	1646.6
5°	1694.8	1677.5	1714.1	1694.8	1694.8	1692.9	1687.1	1685.2	1692.9	1667.8	1679.4
7.5°	1719.9	1745.0	1777.7	1737.3	1739.2	1739.2	1727.6	1723.8	1723.8	1677.5	1691.0
10°	1741.1	1725.7	1743.0	1727.6	1741.1	1739.2	1746.9	1721.8	1739.2	1712.2	1710.3
12.5°	1723.8	1718.0	1741.1	1716.0	1708.3	1710.3	1700.6	1694.8	1700.6	1669.8	1667.8
15°	1673.6	1679.4	1714.1	1687.1	1683.3	1679.4	1667.8	1648.6	1664.0	1621.6	1623.5
17.5°	1656.3	1646.6	1652.4	1629.3	1635.1	1631.2	1629.3	1611.9	1608.1	1581.1	1581.1
20°	1575.3	1596.5	1596.5	1581.1	1581.1	1579.1	1554.1	1569.5	1552.2	1544.4	1552.2
22.5°	1519.4	1521.3	1521.3	1507.8	1509.7	1502.0	1488.5	1478.9	1488.5	1478.9	1463.5
25°	1417.2	1421.0	1444.2	1419.1	1415.3	1423.0	1411.4	1405.6	1403.7	1380.5	1411.4
27.5°	1293.8	1332.3	1330.4	1320.8	1332.3	1316.9	1311.1	1313.1	1318.8	1316.9	1324.6
30°	1222.4	1228.2	1234.0	1226.3	1228.2	1222.4	1222.4	1224.4	1239.8	1234.0	1232.1
32.5°	1077.8	1097.1	1112.5	1112.5	1114.5	1120.3	1118.3	1158.8	1168.5	1149.2	1145.3
35°	952.5	966.0	979.5	981.4	1006.5	1008.4	1010.3	1021.9	1048.9	1054.7	1052.8
37.5°	833.0	846.5	850.3	867.7	881.2	894.7	910.1	925.5	948.6	967.9	958.3
40°	726.9	732.7	742.3	750.0	777.0	777.0	784.8	815.6	840.7	856.1	854.2
42.5°	638.2	640.1	647.9	661.4	686.4	680.6	686.4	707.6	744.3	746.2	767.4
45°	576.5	574.6	580.4	582.3	597.7	605.4	609.3	624.7	655.6	659.4	661.4
47.5°	520.6	518.7	528.3	532.2	538.0	545.7	545.7	547.6	559.2	568.8	561.1
50°	474.3	474.3	474.3	478.2	487.8	485.9	487.8	495.5	501.3	497.5	495.5
52.5°	424.2	431.9	437.7	439.6	441.5	441.5	443.5	439.6	437.7	431.9	420.3
55°	389.5	397.2	397.2	397.2	397.2	404.9	395.3	397.2	397.2	381.8	366.3
57.5°	354.8	362.5	368.3	360.6	368.3	360.6	356.7	354.8	350.9	335.5	312.4
60°	325.9	329.7	327.8	325.9	329.7	323.9	320.1	312.4	308.5	287.3	271.9
62.5°	293.1	295.0	296.9	293.1	289.2	287.3	279.6	268.0	260.3	242.9	229.4
65°	266.1	260.3	258.4	256.4	252.6	246.8	241.0	227.5	221.7	206.3	192.8
67.5°	225.6	223.7	227.5	221.7	212.1	212.1	206.3	194.7	181.2	171.6	158.1
70°	192.8	190.9	187.0	181.2	179.3	171.6	171.6	158.1	154.3	136.9	125.3
72.5°	158.1	158.1	152.3	146.5	140.8	136.9	135.0	125.3	119.5	109.9	100.3
75°	119.5	119.5	117.6	111.8	108.0	104.1	102.2	94.5	88.7	79.1	73.3
77.5°	84.8	84.8	77.1	73.3	75.2	71.3	67.5	65.6	63.6	57.8	50.1
80°	50.1	48.2	42.4	44.3	42.4	42.4	40.5	38.6	34.7	30.9	27.0
82.5°	13.5	15.4	15.4	15.4	17.4	13.5	13.5	13.5	15.4	15.4	9.6
85°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.9	1.9	1.9
87.5°	1.9	3.9	7.7	7.7	7.7	7.7	7.7	5.8	5.8	5.8	3.9
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: P219534

CATALOG NUMBER: LDSQ4B40D010 EU4B30509024 4LBSQLWWLI

CANDELA DISTRIBUTION (continued):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
0°	1608.1	1608.1	1608.1	1608.1	1608.1	1608.1	1608.1	1608.1	1608.1	1608.1	1608.1
2.5°	1627.4	1625.4	1627.4	1613.9	1644.7	1621.6	1617.7	1613.9	1627.4	1613.9	1594.6
5°	1662.1	1642.8	1637.0	1631.2	1648.6	1621.6	1615.8	1617.7	1608.1	1583.0	1584.9
7.5°	1673.6	1656.3	1638.9	1602.3	1617.7	1611.9	1596.5	1584.9	1569.5	1548.3	1544.4
10°	1677.5	1658.2	1633.1	1621.6	1598.4	1590.7	1584.9	1565.7	1546.4	1509.7	1500.1
12.5°	1665.9	1642.8	1611.9	1602.3	1584.9	1559.9	1546.4	1527.1	1509.7	1480.8	1459.6
15°	1615.8	1596.5	1586.9	1554.1	1546.4	1530.9	1504.0	1477.0	1451.9	1413.3	1401.8
17.5°	1557.9	1550.2	1540.6	1515.5	1513.6	1498.2	1473.1	1450.0	1417.2	1357.4	1338.1
20°	1498.2	1498.2	1467.3	1457.7	1477.0	1446.1	1426.8	1405.6	1338.1	1309.2	1274.5
22.5°	1453.8	1432.6	1415.3	1399.8	1401.8	1382.5	1355.5	1313.1	1288.0	1253.3	1212.8
25°	1367.1	1374.8	1336.2	1330.4	1336.2	1291.9	1278.4	1243.7	1207.0	1174.2	1143.4
27.5°	1313.1	1291.9	1266.8	1245.6	1245.6	1228.2	1189.7	1182.0	1126.0	1095.2	1056.6
30°	1232.1	1216.7	1195.4	1164.6	1160.7	1147.2	1116.4	1097.1	1039.3	993.0	971.8
32.5°	1129.9	1124.1	1106.8	1072.0	1060.5	1045.1	1006.5	973.7	946.7	894.7	869.6
35°	1056.6	1035.4	998.8	969.9	960.2	933.2	902.4	879.2	850.3	804.0	771.3
37.5°	946.7	925.5	890.8	856.1	856.1	829.1	786.7	763.5	723.1	696.1	669.1
40°	850.3	823.3	788.6	748.1	742.3	703.8	686.4	647.9	622.8	580.4	576.5
42.5°	742.3	717.3	686.4	655.6	632.4	613.1	568.8	539.9	512.9	491.7	485.9
45°	644.0	611.2	584.2	545.7	522.5	499.4	470.5	451.2	430.0	406.8	393.3
47.5°	559.2	532.2	493.6	458.9	435.8	424.2	391.4	370.2	352.8	337.4	327.8
50°	472.4	439.6	418.4	379.8	376.0	349.0	322.0	304.6	295.0	281.5	268.0
52.5°	406.8	376.0	347.1	318.1	302.7	293.1	268.0	250.7	237.2	227.5	219.8
55°	343.2	316.2	293.1	264.2	254.5	241.0	212.1	208.2	194.7	181.2	171.6
57.5°	295.0	269.9	242.9	223.7	206.3	196.7	173.5	158.1	150.4	138.8	129.2
60°	250.7	223.7	202.5	179.3	171.6	158.1	140.8	127.3	117.6	108.0	98.3
62.5°	210.2	187.0	163.9	144.6	133.0	125.3	111.8	100.3	90.6	82.9	75.2
65°	173.5	152.3	133.0	113.8	108.0	98.3	88.7	79.1	71.3	61.7	54.0
67.5°	142.7	123.4	104.1	90.6	84.8	81.0	69.4	59.8	54.0	48.2	40.5
70°	111.8	98.3	82.9	71.3	65.6	59.8	52.1	46.3	38.6	34.7	28.9
72.5°	86.8	75.2	61.7	52.1	48.2	44.3	36.6	30.9	27.0	23.1	19.3
75°	61.7	52.1	44.3	34.7	32.8	30.9	25.1	21.2	17.4	13.5	11.6
77.5°	42.4	34.7	27.0	23.1	21.2	17.4	15.4	11.6	9.6	7.7	5.8
80°	23.1	17.4	13.5	11.6	9.6	7.7	7.7	5.8	3.9	3.9	1.9
82.5°	7.7	5.8	3.9	1.9	1.9	1.9	1.9	1.9	1.9	0.0	1.9
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°	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	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: P219534

CATALOG NUMBER: LDSQ4B40D010 EU4B30509024 4LBSQLWWLI

CANDELA DISTRIBUTION (continued):

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
0°	1608.1	1608.1	1608.1	1608.1	1608.1	1608.1	1608.1	1608.1	1608.1	1608.1	1608.1
2.5°	1606.1	1584.9	1590.7	1590.7	1586.9	1586.9	1583.0	1577.2	1579.1	1567.6	1542.5
5°	1588.8	1561.8	1557.9	1561.8	1546.4	1542.5	1534.8	1546.4	1511.7	1525.2	1509.7
7.5°	1538.7	1513.6	1507.8	1521.3	1502.0	1490.5	1488.5	1504.0	1473.1	1457.7	1440.3
10°	1482.7	1473.1	1455.7	1446.1	1440.3	1442.2	1426.8	1407.5	1401.8	1397.9	1382.5
12.5°	1432.6	1411.4	1396.0	1384.4	1380.5	1380.5	1355.5	1351.6	1334.3	1330.4	1307.3
15°	1372.8	1347.8	1338.1	1322.7	1309.2	1316.9	1288.0	1280.3	1274.5	1249.4	1253.3
17.5°	1320.8	1293.8	1270.6	1261.0	1249.4	1237.9	1210.9	1216.7	1203.2	1203.2	1168.5
20°	1253.3	1224.4	1207.0	1187.7	1187.7	1172.3	1153.0	1155.0	1137.6	1120.3	1089.4
22.5°	1182.0	1151.1	1129.9	1122.2	1102.9	1099.0	1075.9	1070.1	1047.0	1048.9	1021.9
25°	1106.8	1075.9	1047.0	1048.9	1031.6	1023.8	1010.3	983.4	973.7	962.1	954.4
27.5°	1018.1	996.8	971.8	969.9	937.1	939.0	921.7	913.9	890.8	896.6	879.2
30°	937.1	906.2	883.1	877.3	863.8	860.0	833.0	821.4	825.2	809.8	800.2
32.5°	854.2	807.9	798.3	786.7	779.0	769.3	750.0	757.8	740.4	744.3	728.8
35°	744.3	725.0	699.9	699.9	692.2	684.5	671.0	678.7	661.4	653.6	638.2
37.5°	651.7	634.4	609.3	617.0	603.5	591.9	580.4	582.3	566.9	564.9	549.5
40°	551.4	541.8	524.5	524.5	514.8	514.8	509.0	503.2	493.6	482.0	464.7
42.5°	457.0	449.3	441.5	443.5	430.0	441.5	426.1	435.8	404.9	403.0	391.4
45°	387.6	370.2	372.1	364.4	356.7	360.6	347.1	350.9	333.6	329.7	318.1
47.5°	314.3	308.5	296.9	293.1	293.1	287.3	281.5	279.6	271.9	262.2	246.8
50°	258.4	237.2	233.3	227.5	223.7	223.7	216.0	204.4	206.3	196.7	181.2
52.5°	202.5	185.1	177.4	175.5	167.7	163.9	154.3	146.5	140.8	136.9	127.3
55°	156.2	140.8	131.1	131.1	119.5	119.5	106.0	100.3	92.6	84.8	79.1
57.5°	117.6	109.9	100.3	92.6	88.7	79.1	71.3	61.7	55.9	44.3	36.6
60°	88.7	81.0	71.3	65.6	61.7	52.1	42.4	34.7	21.2	17.4	15.4
62.5°	65.6	57.8	48.2	44.3	40.5	32.8	23.1	11.6	5.8	5.8	5.8
65°	48.2	38.6	30.9	27.0	23.1	17.4	7.7	3.9	1.9	1.9	1.9
67.5°	32.8	25.1	17.4	15.4	11.6	5.8	1.9	1.9	1.9	1.9	1.9
70°	21.2	15.4	7.7	5.8	3.9	1.9	1.9	1.9	1.9	1.9	1.9
72.5°	13.5	7.7	3.9	1.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0
75°	7.7	3.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
77.5°	3.9	1.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
80°	1.9	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	1.9	1.9	1.9
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: P219534

CATALOG NUMBER: LDSQ4B40D010 EU4B30509024 4LBSQLWWLI

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	1608.1	1608.1	1608.1	1608.1	1608.1	1608.1	1608.1	1608.1
2.5°	1569.5	1556.0	1563.7	1546.4	1554.1	1567.6	1557.9	1561.8
5°	1515.5	1507.8	1498.2	1473.1	1492.4	1507.8	1500.1	1498.2
7.5°	1457.7	1430.7	1444.2	1436.5	1432.6	1448.0	1430.7	1450.0
10°	1397.9	1378.6	1376.7	1363.2	1363.2	1374.8	1376.7	1365.1
12.5°	1309.2	1299.6	1299.6	1297.6	1295.7	1307.3	1309.2	1303.4
15°	1245.6	1241.7	1232.1	1230.2	1218.6	1235.9	1237.9	1235.9
17.5°	1168.5	1170.4	1160.7	1160.7	1168.5	1174.2	1158.8	1174.2
20°	1116.4	1106.8	1102.9	1085.5	1095.2	1104.8	1104.8	1106.8
22.5°	1041.2	1025.8	1031.6	1021.9	1016.1	1029.6	1029.6	1035.4
25°	956.4	956.4	960.2	954.4	958.3	966.0	960.2	973.7
27.5°	875.4	883.1	883.1	875.4	879.2	902.4	912.0	896.6
30°	800.2	802.1	807.9	804.0	815.6	823.3	821.4	833.0
32.5°	715.3	725.0	728.8	723.1	726.9	744.3	734.6	732.7
35°	649.8	632.4	630.5	632.4	640.1	644.0	640.1	653.6
37.5°	555.3	549.5	541.8	543.7	549.5	557.2	561.1	570.7
40°	464.7	457.0	457.0	455.0	449.3	470.5	470.5	470.5
42.5°	385.6	383.7	374.1	374.1	381.8	387.6	383.7	397.2
45°	316.2	308.5	302.7	302.7	308.5	308.5	314.3	312.4
47.5°	248.7	241.0	242.9	237.2	242.9	250.7	241.0	242.9
50°	187.0	187.0	183.2	187.0	185.1	187.0	183.2	179.3
52.5°	127.3	144.6	146.5	138.8	121.5	106.0	96.4	104.1
55°	73.3	65.6	65.6	63.6	59.8	57.8	52.1	57.8
57.5°	36.6	32.8	32.8	32.8	30.9	28.9	25.1	25.1
60°	15.4	13.5	13.5	11.6	9.6	7.7	5.8	7.7
62.5°	5.8	3.9	3.9	3.9	3.9	3.9	3.9	3.9
65°	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9
67.5°	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9
70°	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9
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)