

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: P251946

Luminaire Tested: **LD4B40D010 EU4B30508027 4LBDW1H**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P251946
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 EU4B30508027 4LBDW1H
Description: PORTFOLIO 4 INCH DOUBLE 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: 3375.0 lumens
Efficiency: N/A
Efficacy: 78.5 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

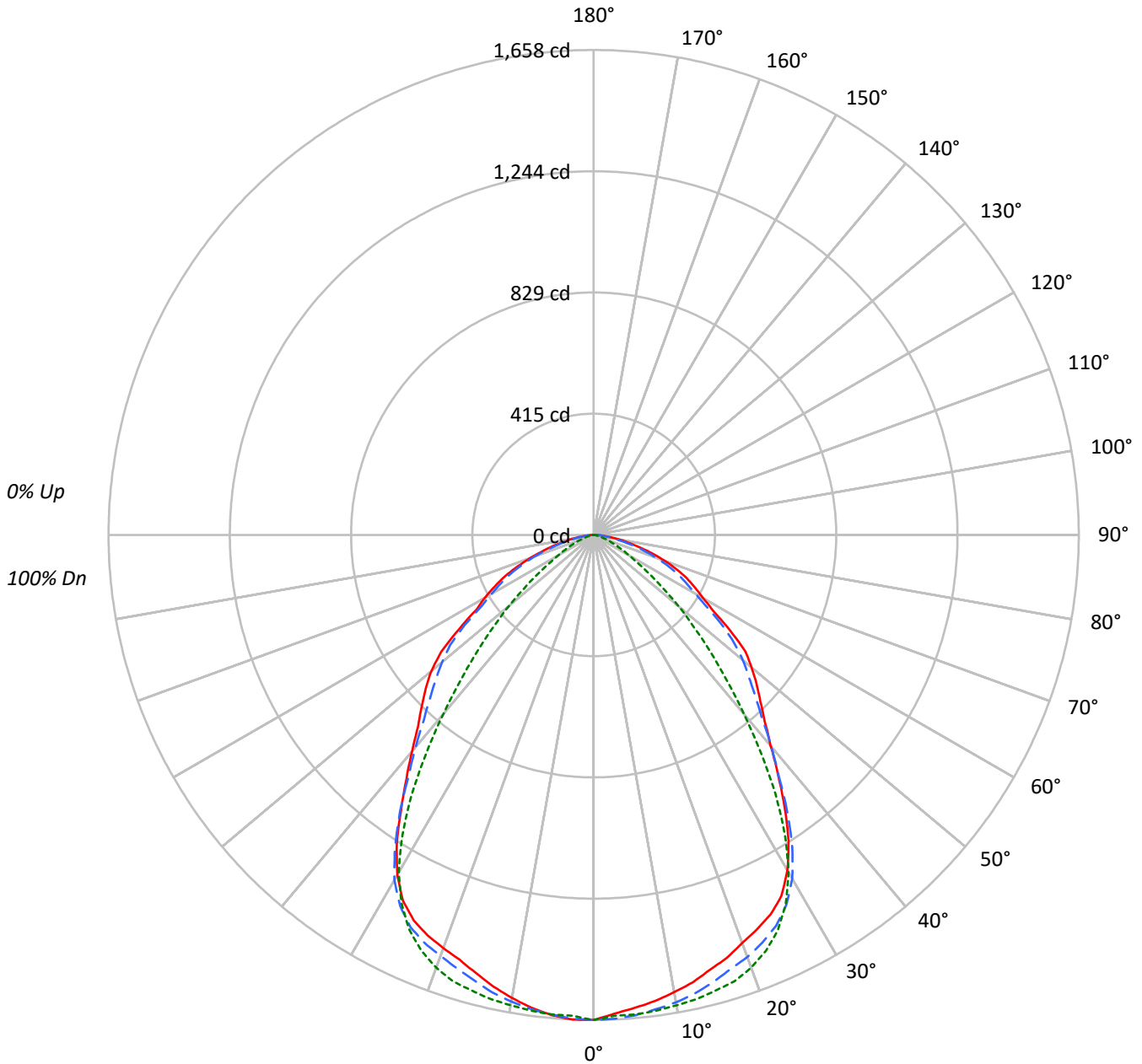
Input Watts (W): 43.02
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Luminous Intensity Polar Plot





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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20				20				20				20				20				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				100
1	111	107	103	100	108	104	101	98	100	98	95	96	94	92	93	91	89	88				88
2	102	95	89	84	100	93	88	83	90	85	81	87	83	80	84	81	78	76				76
3	94	85	78	72	92	84	77	72	81	75	70	78	73	69	76	72	68	66				66
4	87	77	69	63	85	75	68	62	73	67	62	71	65	61	69	64	60	58				58
5	81	69	61	55	79	68	61	55	66	60	54	64	58	54	63	57	53	51				51
6	75	63	55	49	73	62	55	49	60	54	49	59	53	48	57	52	48	46				46
7	70	58	50	44	68	57	49	44	56	49	44	54	48	43	53	47	43	41				41
8	66	53	45	40	64	52	45	40	51	44	40	50	44	39	49	43	39	37				37
9	62	49	41	36	60	49	41	36	47	41	36	46	40	36	45	40	36	34				34
10	58	46	38	33	57	45	38	33	44	38	33	43	37	33	42	37	33	31				31

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	161615	161615	161615
5°	158740	160990	161234
10°	157042	161584	159061
15°	155218	162685	156510
20°	154003	163265	155849
25°	153912	160224	156375
30°	149007	149874	151022
35°	135381	129004	136594
40°	119767	101600	122693
45°	111116	77362	114630
50°	106769	57251	109862
55°	96663	39454	95372
60°	84048	26859	83541
65°	81196	19417	77068
70°	73431	13079	65424
75°	60511	8661	51888
80°	48659	5725	38669
85°	39920	2907	25719



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	156.5	4.6
10°-20°	447.6	13.3
20°-30°	676.2	20.0
30°-40°	707.7	21.0
40°-50°	573.2	17.0
50°-60°	416.9	12.4
60°-70°	257.1	7.6
70°-80°	116.2	3.4
80°-90°	23.6	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°	1280.4	37.9
0°-40°	1988.0	58.9
0°-60°	2978.1	88.2
0°-90°	3375.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3375.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	1658	1658	1658	1658	1658	
5°	1623	1648	1646	1646	1648	154
15°	1538	1582	1612	1577	1551	435
25°	1431	1475	1490	1480	1454	656
35°	1138	1153	1084	1153	1148	709
45°	806	781	561	791	832	627
55°	569	533	232	538	561	508
65°	352	316	84	311	334	345
75°	161	138	23	120	138	174
85°	36	28	3	20	23	41
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°	1658.3	1658.3	1658.3	1658.3	1658.3	1658.3	1658.3	1658.3	1658.3	1658.3	1658.3
2.5°	1637.9	1637.9	1653.2	1671.1	1655.8	1640.5	1650.7	1645.6	1663.4	1663.4	1655.8
5°	1622.6	1627.7	1640.5	1655.8	1643.0	1627.7	1640.5	1635.4	1653.2	1653.2	1648.1
7.5°	1607.3	1609.9	1625.2	1643.0	1630.3	1615.0	1625.2	1622.6	1637.9	1640.5	1635.4
10°	1586.9	1589.5	1604.8	1622.6	1609.9	1597.1	1607.3	1604.8	1625.2	1625.2	1622.6
12.5°	1566.5	1569.0	1584.4	1599.7	1586.9	1574.2	1584.4	1584.4	1604.8	1607.3	1604.8
15°	1538.4	1543.5	1556.3	1571.6	1563.9	1548.6	1558.8	1558.8	1576.7	1581.8	1581.8
17.5°	1515.5	1518.0	1530.8	1546.1	1535.9	1523.1	1533.3	1533.3	1551.2	1556.3	1556.3
20°	1484.9	1490.0	1502.7	1518.0	1510.4	1500.2	1507.8	1507.8	1528.2	1533.3	1535.9
22.5°	1459.3	1464.4	1474.6	1495.1	1482.3	1474.6	1484.9	1482.3	1505.3	1507.8	1507.8
25°	1431.3	1436.4	1449.1	1461.9	1454.2	1446.6	1454.2	1454.2	1472.1	1474.6	1474.6
27.5°	1390.5	1393.0	1405.8	1418.5	1410.9	1400.7	1410.9	1408.3	1426.2	1428.7	1426.2
30°	1324.1	1329.2	1334.3	1352.2	1344.5	1336.9	1347.1	1342.0	1359.8	1359.8	1357.3
32.5°	1239.9	1239.9	1250.1	1262.9	1252.7	1247.6	1255.2	1257.8	1270.5	1270.5	1262.9
35°	1137.9	1143.0	1150.6	1158.3	1150.6	1145.5	1153.2	1150.6	1165.9	1160.8	1153.2
37.5°	1035.8	1038.4	1046.0	1056.2	1046.0	1038.4	1040.9	1038.4	1051.1	1051.1	1038.4
40°	941.4	946.5	951.6	961.8	951.6	946.5	949.1	941.4	956.7	951.6	944.0
42.5°	864.9	867.4	875.1	880.2	870.0	867.4	870.0	864.9	872.5	867.4	852.1
45°	806.2	806.2	808.8	816.4	806.2	803.7	803.7	798.6	806.2	796.0	780.7
47.5°	755.2	757.7	760.3	765.4	757.7	750.1	752.6	742.4	747.5	739.9	719.5
50°	704.2	709.3	711.8	716.9	709.3	704.2	706.7	696.5	696.5	683.7	665.9
52.5°	653.1	655.7	653.1	658.2	653.1	645.5	648.0	637.8	637.8	622.5	604.7
55°	568.9	571.5	574.0	579.1	574.0	566.4	571.5	563.8	563.8	553.6	533.2
57.5°	484.7	487.3	489.8	492.4	492.4	487.3	489.8	484.7	482.2	474.5	459.2
60°	431.2	431.2	431.2	433.7	431.2	428.6	428.6	423.5	423.5	413.3	398.0
62.5°	390.3	392.9	392.9	395.5	392.9	390.3	387.8	382.7	380.1	369.9	357.2
65°	352.1	352.1	349.5	354.6	352.1	349.5	349.5	344.4	339.3	329.1	316.4
67.5°	306.2	308.7	306.2	308.7	308.7	306.2	303.6	298.5	296.0	288.3	273.0
70°	257.7	257.7	257.7	260.2	257.7	257.7	260.2	252.6	250.0	239.8	227.1
72.5°	209.2	211.8	211.8	209.2	211.8	206.7	206.7	206.7	204.1	193.9	181.1
75°	160.7	163.3	163.3	165.8	163.3	160.7	160.7	158.2	155.6	148.0	137.8
77.5°	119.9	119.9	122.5	122.5	122.5	119.9	119.9	114.8	114.8	109.7	99.5
80°	86.7	86.7	84.2	86.7	86.7	84.2	84.2	81.6	81.6	76.5	68.9
82.5°	56.1	58.7	58.7	58.7	58.7	56.1	56.1	56.1	53.6	51.0	45.9
85°	35.7	35.7	35.7	35.7	38.3	35.7	38.3	35.7	35.7	30.6	28.1
87.5°	15.3	15.3	15.3	17.9	17.9	15.3	15.3	15.3	15.3	15.3	12.8
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°	1658.3	1658.3	1658.3	1658.3	1658.3	1658.3	1658.3	1658.3	1658.3	1658.3	1658.3
2.5°	1655.8	1658.3	1650.7	1660.9	1653.2	1655.8	1658.3	1655.8	1645.6	1645.6	1673.7
5°	1645.6	1650.7	1643.0	1655.8	1650.7	1650.7	1655.8	1653.2	1643.0	1645.6	1671.1
7.5°	1635.4	1643.0	1637.9	1650.7	1643.0	1643.0	1648.1	1648.1	1637.9	1640.5	1663.4
10°	1620.1	1630.3	1627.7	1640.5	1632.8	1632.8	1640.5	1640.5	1630.3	1632.8	1655.8
12.5°	1607.3	1617.5	1615.0	1627.7	1622.6	1625.2	1627.7	1632.8	1620.1	1625.2	1645.6
15°	1586.9	1597.1	1597.1	1609.9	1604.8	1609.9	1615.0	1622.6	1612.4	1612.4	1632.8
17.5°	1563.9	1576.7	1576.7	1586.9	1586.9	1589.5	1599.7	1607.3	1597.1	1599.7	1617.5
20°	1538.4	1553.7	1553.7	1566.5	1563.9	1569.0	1576.7	1584.4	1574.2	1574.2	1594.6
22.5°	1512.9	1525.7	1528.2	1535.9	1535.9	1538.4	1546.1	1551.2	1538.4	1538.4	1558.8
25°	1477.2	1490.0	1492.5	1497.6	1492.5	1492.5	1497.6	1502.7	1490.0	1490.0	1507.8
27.5°	1428.7	1441.5	1441.5	1438.9	1433.8	1436.4	1433.8	1436.4	1423.6	1421.1	1438.9
30°	1357.3	1364.9	1364.9	1362.4	1354.7	1354.7	1347.1	1349.6	1331.8	1331.8	1347.1
32.5°	1260.3	1268.0	1262.9	1257.8	1247.6	1242.5	1237.4	1234.8	1217.0	1217.0	1234.8
35°	1145.5	1150.6	1143.0	1132.8	1120.0	1112.4	1104.7	1094.5	1081.8	1084.3	1094.5
37.5°	1028.2	1028.2	1018.0	997.6	987.4	974.6	961.8	961.8	941.4	938.9	946.5
40°	928.7	918.5	900.6	872.5	854.7	841.9	824.1	813.9	798.6	798.6	811.3
42.5°	839.4	819.0	796.0	757.7	739.9	724.6	701.6	691.4	673.5	671.0	678.6
45°	760.3	739.9	706.7	665.9	642.9	625.1	591.9	579.1	563.8	561.3	566.4
47.5°	696.5	673.5	632.7	579.1	556.2	533.2	500.1	482.2	469.4	461.8	469.4
50°	640.4	609.8	566.4	510.3	479.6	459.2	418.4	400.6	382.7	377.6	380.1
52.5°	579.1	548.5	502.6	443.9	415.9	385.2	347.0	321.5	306.2	298.5	306.2
55°	512.8	482.2	436.3	377.6	347.0	318.9	278.1	257.7	239.8	232.2	239.8
57.5°	441.4	413.3	372.5	313.8	285.7	260.2	222.0	201.6	183.7	178.6	183.7
60°	380.1	357.2	316.4	260.2	237.3	209.2	176.0	155.6	140.3	137.8	140.3
62.5°	339.3	313.8	275.5	222.0	199.0	176.0	145.4	125.0	112.3	109.7	112.3
65°	298.5	270.4	234.7	188.8	165.8	148.0	117.4	99.5	86.7	84.2	86.7
67.5°	252.6	227.1	196.4	155.6	137.8	119.9	94.4	76.5	66.3	63.8	66.3
70°	209.2	186.2	155.6	125.0	107.2	94.4	71.4	58.7	48.5	45.9	48.5
72.5°	165.8	145.4	119.9	94.4	84.2	71.4	56.1	43.4	35.7	33.2	35.7
75°	127.6	112.3	91.8	68.9	61.2	53.6	38.3	30.6	25.5	23.0	25.5
77.5°	89.3	79.1	63.8	51.0	43.4	38.3	28.1	20.4	17.9	15.3	17.9
80°	61.2	53.6	43.4	33.2	28.1	23.0	17.9	12.8	10.2	10.2	10.2
82.5°	40.8	33.2	25.5	20.4	17.9	15.3	10.2	7.7	7.7	5.1	5.1
85°	23.0	20.4	15.3	12.8	10.2	7.7	5.1	5.1	2.6	2.6	2.6
87.5°	10.2	7.7	5.1	5.1	2.6	2.6	2.6	2.6	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°	1658.3	1658.3	1658.3	1658.3	1658.3	1658.3	1658.3	1658.3	1658.3	1658.3	1658.3
2.5°	1666.0	1658.3	1668.5	1658.3	1653.2	1658.3	1653.2	1668.5	1655.8	1645.6	1655.8
5°	1663.4	1653.2	1663.4	1655.8	1648.1	1650.7	1645.6	1660.9	1645.6	1637.9	1643.0
7.5°	1658.3	1650.7	1655.8	1648.1	1640.5	1643.0	1637.9	1650.7	1635.4	1627.7	1632.8
10°	1650.7	1643.0	1645.6	1640.5	1632.8	1632.8	1627.7	1637.9	1620.1	1609.9	1615.0
12.5°	1640.5	1630.3	1635.4	1627.7	1617.5	1617.5	1612.4	1620.1	1602.2	1592.0	1594.6
15°	1627.7	1617.5	1617.5	1609.9	1599.7	1599.7	1589.5	1597.1	1576.7	1566.5	1566.5
17.5°	1612.4	1599.7	1599.7	1592.0	1579.3	1576.7	1569.0	1576.7	1553.7	1543.5	1543.5
20°	1589.5	1579.3	1576.7	1571.6	1558.8	1556.3	1546.1	1548.6	1530.8	1523.1	1520.6
22.5°	1558.8	1548.6	1551.2	1543.5	1533.3	1530.8	1520.6	1528.2	1510.4	1502.7	1505.3
25°	1505.3	1500.2	1505.3	1502.7	1495.1	1495.1	1490.0	1495.1	1479.8	1474.6	1477.2
27.5°	1444.0	1441.5	1444.0	1444.0	1438.9	1438.9	1438.9	1446.6	1431.3	1428.7	1428.7
30°	1354.7	1354.7	1357.3	1359.8	1359.8	1364.9	1362.4	1372.6	1362.4	1357.3	1362.4
32.5°	1237.4	1247.6	1255.2	1255.2	1255.2	1260.3	1265.4	1273.1	1262.9	1265.4	1265.4
35°	1104.7	1112.4	1117.5	1130.2	1122.6	1140.4	1145.5	1155.7	1153.2	1158.3	1155.7
37.5°	956.7	966.9	977.1	995.0	992.5	1012.9	1023.1	1043.5	1038.4	1048.6	1053.7
40°	819.0	834.3	849.6	862.3	872.5	893.0	913.4	938.9	946.5	954.2	956.7
42.5°	686.3	701.6	727.1	745.0	760.3	793.5	821.5	852.1	859.8	875.1	880.2
45°	579.1	591.9	622.5	645.5	658.2	706.7	739.9	778.1	790.9	808.8	816.4
47.5°	479.6	502.6	533.2	561.3	579.1	630.2	673.5	714.4	732.2	752.6	762.8
50°	392.9	418.4	459.2	484.7	510.3	566.4	614.9	658.2	676.1	699.1	709.3
52.5°	321.5	349.5	387.8	415.9	443.9	502.6	553.6	594.5	617.4	632.7	648.0
55°	252.6	283.2	321.5	352.1	375.0	438.8	482.2	523.0	538.3	551.1	558.7
57.5°	196.4	219.4	257.7	283.2	311.3	367.4	410.8	441.4	454.1	469.4	474.5
60°	153.1	176.0	211.8	237.3	262.8	316.4	359.7	390.3	403.1	415.9	423.5
62.5°	122.5	145.4	178.6	201.6	224.5	273.0	311.3	341.9	357.2	369.9	377.6
65°	96.9	117.4	145.4	168.4	186.2	229.6	267.9	296.0	311.3	324.0	331.7
67.5°	76.5	94.4	119.9	135.2	153.1	188.8	222.0	247.5	260.2	275.5	283.2
70°	58.7	71.4	94.4	107.2	119.9	150.5	176.0	201.6	214.3	224.5	229.6
72.5°	43.4	53.6	71.4	81.6	89.3	114.8	135.2	153.1	163.3	173.5	178.6
75°	30.6	38.3	51.0	58.7	63.8	81.6	99.5	112.3	119.9	127.6	135.2
77.5°	20.4	25.5	33.2	38.3	43.4	56.1	66.3	76.5	84.2	91.8	94.4
80°	12.8	17.9	23.0	25.5	28.1	35.7	45.9	51.0	56.1	61.2	63.8
82.5°	7.7	10.2	12.8	15.3	17.9	23.0	28.1	33.2	35.7	40.8	43.4
85°	2.6	5.1	5.1	7.7	7.7	12.8	15.3	17.9	20.4	23.0	25.5
87.5°	0.0	0.0	2.6	2.6	2.6	2.6	5.1	5.1	5.1	5.1	5.1
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: P251946

CATALOG NUMBER: LD4B40D010 EU4B30508027 4LBDW1H

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	1658.3	1658.3	1658.3	1658.3	1658.3	1658.3	1658.3	1658.3
2.5°	1666.0	1658.3	1653.2	1650.7	1668.5	1645.6	1655.8	1658.3
5°	1655.8	1648.1	1643.0	1640.5	1655.8	1635.4	1643.0	1648.1
7.5°	1640.5	1635.4	1627.7	1625.2	1640.5	1617.5	1627.7	1630.3
10°	1622.6	1615.0	1609.9	1607.3	1620.1	1597.1	1607.3	1607.3
12.5°	1599.7	1594.6	1584.4	1584.4	1594.6	1574.2	1581.8	1581.8
15°	1569.0	1563.9	1553.7	1553.7	1563.9	1543.5	1551.2	1551.2
17.5°	1543.5	1538.4	1530.8	1528.2	1538.4	1518.0	1525.7	1523.1
20°	1523.1	1518.0	1507.8	1507.8	1515.5	1495.1	1502.7	1502.7
22.5°	1505.3	1502.7	1492.5	1492.5	1502.7	1482.3	1487.4	1482.3
25°	1477.2	1474.6	1464.4	1467.0	1472.1	1451.7	1459.3	1454.2
27.5°	1431.3	1431.3	1421.1	1418.5	1426.2	1408.3	1413.4	1410.9
30°	1359.8	1362.4	1349.6	1349.6	1352.2	1336.9	1344.5	1342.0
32.5°	1262.9	1265.4	1255.2	1252.7	1260.3	1247.6	1252.7	1252.7
35°	1155.7	1158.3	1150.6	1150.6	1158.3	1150.6	1150.6	1148.1
37.5°	1048.6	1053.7	1048.6	1051.1	1056.2	1048.6	1053.7	1051.1
40°	961.8	966.9	959.3	964.4	969.5	961.8	969.5	964.4
42.5°	882.7	890.4	885.3	890.4	895.5	890.4	895.5	887.9
45°	824.1	829.2	826.6	829.2	834.3	831.7	834.3	831.7
47.5°	767.9	778.1	773.0	778.1	785.8	780.7	785.8	778.1
50°	716.9	724.6	722.0	727.1	729.7	727.1	732.2	724.6
52.5°	650.6	658.2	655.7	655.7	660.8	655.7	660.8	655.7
55°	563.8	566.4	566.4	568.9	566.4	563.8	566.4	561.3
57.5°	479.6	484.7	477.1	484.7	482.2	479.6	479.6	474.5
60°	426.1	433.7	428.6	433.7	431.2	431.2	431.2	428.6
62.5°	382.7	387.8	382.7	385.2	385.2	385.2	382.7	380.1
65°	334.2	341.9	336.8	339.3	336.8	334.2	336.8	334.2
67.5°	285.7	288.3	288.3	285.7	285.7	285.7	285.7	280.6
70°	232.2	234.7	232.2	237.3	234.7	232.2	234.7	229.6
72.5°	181.1	183.7	181.1	183.7	181.1	181.1	181.1	181.1
75°	135.2	137.8	137.8	137.8	137.8	137.8	132.7	137.8
77.5°	96.9	96.9	96.9	99.5	96.9	96.9	96.9	96.9
80°	66.3	66.3	66.3	68.9	66.3	68.9	66.3	68.9
82.5°	43.4	43.4	43.4	43.4	43.4	43.4	43.4	43.4
85°	23.0	25.5	25.5	23.0	23.0	23.0	23.0	23.0
87.5°	5.1	2.6	2.6	2.6	2.6	2.6	2.6	2.6
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)