

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: P251624

Luminaire Tested: **LD4B30D010 EU4B30508040 4LBSW1H**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-41-14  
Report Number: P251624  
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 EU4B30508040 4LBSW1H  
Description: PORTFOLIO 4 INCH SINGLE WALLWASH RECESSED DOWNLIGHT, WITH HAZE TRIM  
Light Source: (1) HIGH LUMEN LED 80CRI / 4000K CCT  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 2682.0 lumens  
Efficiency: N/A  
Efficacy: 95.8 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

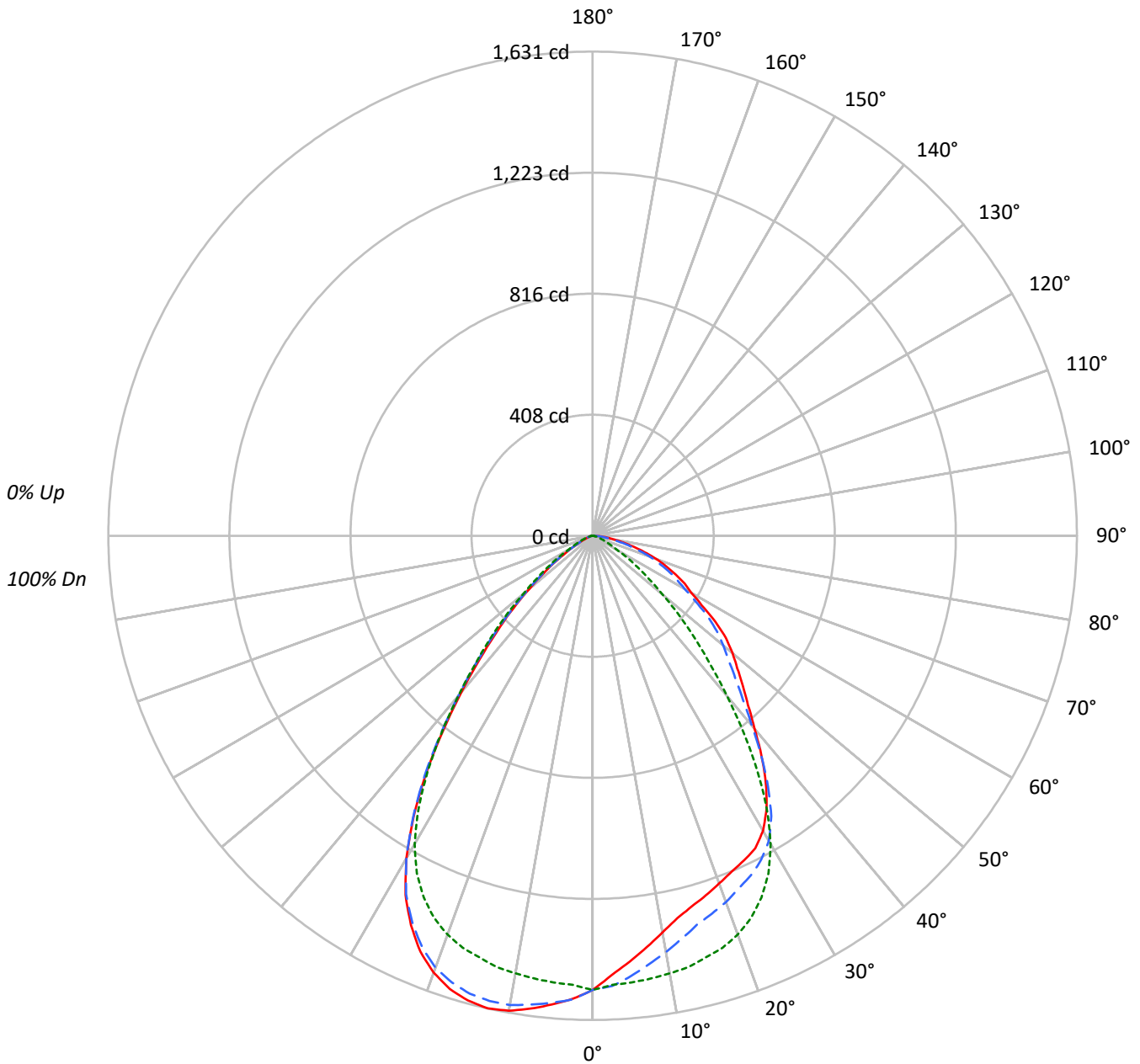
Input Watts (W): 28  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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### Luminous Intensity Polar Plot





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**COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:**

RF	20				20				20				20				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	100	100
1	111	108	104	101	109	106	103	100	101	99	97	98	96	94	94	93	91	89	89	89	89
2	104	97	92	87	101	95	90	86	92	88	84	89	85	82	86	83	81	79	79	79	79
3	96	88	81	76	94	86	80	75	83	78	74	81	76	73	78	75	72	70	70	70	70
4	90	80	72	67	88	78	72	66	76	70	66	74	69	65	72	68	64	62	62	62	62
5	83	73	65	60	82	72	65	59	70	63	59	68	62	58	66	61	58	56	56	56	56
6	78	67	59	53	76	66	59	53	64	58	53	62	57	52	61	56	52	50	50	50	50
7	73	61	54	48	71	61	53	48	59	53	48	58	52	48	56	51	47	46	46	46	46
8	68	57	49	44	67	56	49	44	55	48	44	54	48	43	52	47	43	42	42	42	42
9	64	52	45	40	63	52	45	40	51	44	40	50	44	40	49	44	40	38	38	38	38
10	61	49	42	37	59	48	42	37	47	41	37	47	41	37	46	40	37	35	35	35	35

**AVERAGE LUMINANCE (cd/sqm):**

	0°	90°	180°
0°	149111	149111	149111
5°	140807	147753	155090
10°	134241	148096	160783
15°	130307	148408	163522
20°	129236	148257	162362
25°	129760	144600	155622
30°	129134	134907	141119
35°	121044	115179	116357
40°	107859	89297	87300
45°	98642	66584	62504
50°	93275	46638	42150
55°	85772	31485	26472
60°	74945	18439	14599
65°	70934	11830	8186
70°	64598	8434	5044
75°	53470	5949	3728
80°	42037	3311	2189
85°	37460	2236	0



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	144.6	5.4
10°-20°	414.7	15.5
20°-30°	614.8	22.9
30°-40°	615.6	23.0
40°-50°	430.3	16.0
50°-60°	256.0	9.5
60°-70°	133.6	5.0
70°-80°	59.4	2.2
80°-90°	13.0	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°	1174.1	43.8
0°-40°	1789.7	66.7
0°-60°	2476.0	92.3
0°-90°	2682.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2682.0	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	1530	1530	1530	1530	1530	
5°	1439	1489	1510	1579	1585	135
15°	1292	1356	1471	1597	1621	366
25°	1207	1262	1345	1437	1447	556
35°	1017	1029	968	986	978	631
45°	716	680	483	467	454	556
55°	505	473	185	162	156	448
65°	308	282	51	38	36	304
75°	142	124	16	10	10	154
85°	34	26	2	2	0	38
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°	1530.0	1530.0	1530.0	1530.0	1530.0	1530.0	1530.0	1530.0	1530.0	1530.0	1530.0
2.5°	1480.8	1498.5	1480.8	1486.7	1510.3	1488.6	1500.5	1500.5	1494.6	1508.4	1518.2
5°	1439.3	1457.1	1439.3	1447.2	1472.9	1451.2	1465.0	1461.0	1463.0	1474.8	1488.6
7.5°	1397.9	1411.7	1396.0	1405.8	1429.5	1411.7	1423.6	1423.6	1425.5	1443.3	1455.1
10°	1356.5	1368.4	1356.5	1364.4	1390.1	1374.3	1382.2	1384.1	1390.1	1405.8	1423.6
12.5°	1319.1	1328.9	1317.1	1328.9	1350.6	1334.8	1344.7	1346.7	1352.6	1370.3	1390.1
15°	1291.5	1301.3	1289.5	1299.4	1319.1	1307.2	1315.1	1319.1	1323.0	1338.8	1356.5
17.5°	1269.8	1277.7	1267.8	1279.6	1295.4	1281.6	1293.4	1293.4	1299.4	1315.1	1334.8
20°	1246.1	1254.0	1246.1	1256.0	1273.7	1261.9	1271.8	1271.8	1277.7	1295.4	1313.2
22.5°	1224.4	1228.4	1224.4	1232.3	1250.1	1240.2	1246.1	1248.1	1254.0	1269.8	1285.6
25°	1206.7	1214.6	1210.6	1218.5	1230.3	1220.5	1226.4	1228.4	1234.3	1248.1	1261.9
27.5°	1187.0	1190.9	1187.0	1196.8	1206.7	1198.8	1204.7	1202.7	1206.7	1218.5	1230.3
30°	1147.5	1151.5	1151.5	1157.4	1165.3	1161.3	1167.3	1161.3	1165.3	1175.1	1187.0
32.5°	1090.4	1092.3	1094.3	1100.2	1106.1	1100.2	1104.2	1104.2	1104.2	1112.0	1119.9
35°	1017.4	1021.3	1019.4	1023.3	1029.2	1027.3	1027.3	1025.3	1021.3	1025.3	1029.2
37.5°	934.6	928.7	928.7	934.6	938.5	930.6	934.6	930.6	930.6	932.6	932.6
40°	847.8	841.9	847.8	849.8	851.8	847.8	845.9	841.9	836.0	838.0	834.0
42.5°	774.9	770.9	772.9	772.9	774.9	770.9	772.9	765.0	759.1	755.2	749.2
45°	715.7	709.8	715.7	711.8	711.8	709.8	707.8	703.9	696.0	690.1	680.2
47.5°	660.5	660.5	662.5	662.5	662.5	658.6	658.6	650.7	642.8	634.9	621.1
50°	615.2	611.2	619.1	619.1	613.2	611.2	613.2	603.3	597.4	587.6	573.8
52.5°	565.9	565.9	567.9	567.9	565.9	561.9	563.9	556.0	550.1	540.2	526.4
55°	504.8	500.8	506.7	506.7	504.8	502.8	504.8	498.8	492.9	485.0	473.2
57.5°	435.7	433.8	437.7	439.7	435.7	435.7	437.7	431.8	429.8	421.9	410.1
60°	384.5	382.5	386.5	388.4	384.5	384.5	384.5	376.6	372.7	364.8	356.9
62.5°	349.0	347.0	351.0	349.0	347.0	345.0	347.0	339.1	335.2	327.3	319.4
65°	307.6	309.6	311.5	311.5	309.6	307.6	307.6	303.6	299.7	291.8	282.0
67.5°	268.2	268.2	270.1	272.1	270.1	270.1	270.1	264.2	260.3	254.4	242.5
70°	226.7	224.8	230.7	230.7	226.7	228.7	226.7	224.8	220.8	212.9	203.1
72.5°	183.4	183.4	185.3	185.3	183.4	183.4	183.4	181.4	175.5	171.5	161.7
75°	142.0	142.0	143.9	145.9	142.0	142.0	143.9	140.0	136.0	130.1	124.2
77.5°	106.5	104.5	106.5	106.5	104.5	104.5	104.5	102.5	100.6	94.6	88.7
80°	74.9	73.0	74.9	74.9	74.9	73.0	73.0	71.0	71.0	67.0	61.1
82.5°	51.3	49.3	51.3	51.3	51.3	49.3	49.3	49.3	47.3	45.3	41.4
85°	33.5	31.5	31.5	33.5	31.5	31.5	31.5	31.5	29.6	27.6	25.6
87.5°	15.8	15.8	15.8	15.8	15.8	15.8	15.8	13.8	13.8	13.8	11.8
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°	1530.0	1530.0	1530.0	1530.0	1530.0	1530.0	1530.0	1530.0	1530.0	1530.0	1530.0
2.5°	1510.3	1506.4	1518.2	1514.3	1516.2	1506.4	1522.2	1514.3	1524.1	1514.3	1534.0
5°	1484.7	1480.8	1498.5	1496.5	1498.5	1490.6	1508.4	1506.4	1518.2	1510.3	1532.0
7.5°	1457.1	1453.2	1472.9	1474.8	1478.8	1470.9	1494.6	1494.6	1506.4	1504.4	1528.1
10°	1425.5	1427.5	1447.2	1451.2	1459.1	1455.1	1476.8	1482.7	1498.5	1496.5	1526.1
12.5°	1396.0	1396.0	1421.6	1429.5	1435.4	1433.4	1459.1	1467.0	1484.7	1488.6	1516.2
15°	1366.4	1368.4	1392.0	1403.9	1411.7	1409.8	1437.4	1447.2	1468.9	1470.9	1504.4
17.5°	1342.7	1340.8	1366.4	1376.3	1388.1	1386.1	1415.7	1427.5	1449.2	1455.1	1486.7
20°	1323.0	1321.0	1344.7	1356.5	1364.4	1362.5	1392.0	1405.8	1425.5	1429.5	1461.0
22.5°	1299.4	1295.4	1319.1	1328.9	1336.8	1334.8	1360.5	1370.3	1390.1	1394.0	1423.6
25°	1271.8	1267.8	1289.5	1295.4	1301.3	1297.4	1319.1	1325.0	1340.8	1344.7	1374.3
27.5°	1240.2	1230.3	1248.1	1248.1	1252.0	1246.1	1261.9	1267.8	1281.6	1281.6	1309.2
30°	1190.9	1177.1	1187.0	1185.0	1187.0	1179.1	1188.9	1190.9	1200.8	1198.8	1218.5
32.5°	1121.9	1102.2	1108.1	1102.2	1096.3	1084.4	1096.3	1092.3	1100.2	1092.3	1110.1
35°	1027.3	1007.5	1005.6	997.7	991.8	981.9	981.9	972.1	974.0	968.1	979.9
37.5°	924.7	899.1	895.2	879.4	869.5	857.7	857.7	849.8	839.9	836.0	845.9
40°	824.2	796.6	786.7	761.1	751.2	739.4	731.5	721.6	717.7	701.9	709.8
42.5°	737.4	707.8	686.2	658.6	648.7	630.9	619.1	607.3	601.4	583.6	591.5
45°	664.5	629.0	605.3	569.8	556.0	536.3	518.6	504.8	491.0	483.1	479.1
47.5°	603.3	565.9	534.3	494.9	473.2	455.5	431.8	418.0	400.3	390.4	384.5
50°	552.1	510.7	475.2	429.8	408.1	388.4	360.8	339.1	323.4	307.6	303.6
52.5°	506.7	463.4	423.9	372.7	347.0	323.4	293.8	270.1	256.3	238.6	236.6
55°	453.5	416.0	372.7	319.4	293.8	270.1	238.6	214.9	197.2	185.3	181.4
57.5°	396.3	360.8	319.4	266.2	240.5	214.9	185.3	163.7	147.9	138.0	136.0
60°	343.1	309.6	270.1	216.9	191.3	169.6	138.0	116.3	102.5	94.6	90.7
62.5°	303.6	272.1	234.6	185.3	161.7	140.0	110.4	90.7	78.9	71.0	67.0
65°	266.2	234.6	201.1	155.8	136.0	116.3	88.7	71.0	59.2	51.3	47.3
67.5°	226.7	199.1	167.6	130.1	110.4	94.6	71.0	55.2	45.3	39.4	35.5
70°	187.3	161.7	136.0	104.5	90.7	74.9	55.2	43.4	33.5	29.6	25.6
72.5°	147.9	128.2	106.5	80.8	69.0	59.2	43.4	31.5	25.6	21.7	17.7
75°	110.4	96.6	78.9	61.1	51.3	43.4	31.5	23.7	19.7	15.8	13.8
77.5°	78.9	67.0	55.2	41.4	37.5	31.5	21.7	17.7	13.8	9.9	7.9
80°	53.2	47.3	37.5	29.6	23.7	21.7	15.8	11.8	7.9	5.9	5.9
82.5°	35.5	29.6	23.7	17.7	15.8	13.8	9.9	7.9	5.9	3.9	3.9
85°	21.7	17.7	13.8	9.9	9.9	7.9	5.9	3.9	2.0	2.0	2.0
87.5°	9.9	7.9	5.9	3.9	3.9	2.0	2.0	2.0	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



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**CANDELA DISTRIBUTION (continued):**

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
0°	1530.0	1530.0	1530.0	1530.0	1530.0	1530.0	1530.0	1530.0	1530.0	1530.0	1530.0
2.5°	1549.8	1537.9	1530.0	1539.9	1543.8	1537.9	1543.8	1553.7	1563.6	1565.5	1537.9
5°	1551.7	1539.9	1536.0	1547.8	1549.8	1547.8	1553.7	1567.5	1579.3	1583.3	1555.7
7.5°	1551.7	1543.8	1541.9	1555.7	1557.7	1555.7	1565.5	1581.3	1593.1	1601.0	1573.4
10°	1547.8	1543.8	1545.8	1557.7	1561.6	1561.6	1575.4	1593.1	1605.0	1612.9	1585.3
12.5°	1541.9	1541.9	1541.9	1555.7	1559.6	1561.6	1573.4	1597.1	1605.0	1616.8	1589.2
15°	1532.0	1532.0	1532.0	1545.8	1551.7	1551.7	1565.5	1587.2	1597.1	1608.9	1581.3
17.5°	1514.3	1514.3	1516.2	1528.1	1534.0	1534.0	1547.8	1571.5	1577.4	1591.2	1563.6
20°	1488.6	1488.6	1490.6	1502.4	1508.4	1504.4	1522.2	1541.9	1547.8	1559.6	1532.0
22.5°	1451.2	1451.2	1451.2	1463.0	1467.0	1465.0	1482.7	1500.5	1500.5	1516.2	1486.7
25°	1396.0	1399.9	1396.0	1407.8	1411.7	1409.8	1425.5	1441.3	1437.4	1455.1	1425.5
27.5°	1328.9	1327.0	1327.0	1336.8	1336.8	1334.8	1346.7	1364.4	1360.5	1372.3	1344.7
30°	1236.3	1242.2	1232.3	1246.1	1240.2	1236.3	1244.1	1259.9	1254.0	1263.9	1242.2
32.5°	1129.8	1121.9	1121.9	1121.9	1125.8	1116.0	1123.9	1131.8	1125.8	1135.7	1112.0
35°	989.8	991.8	985.9	987.8	989.8	978.0	985.9	993.7	985.9	991.8	970.1
37.5°	849.8	851.8	838.0	845.9	838.0	834.0	841.9	845.9	838.0	843.9	820.2
40°	709.8	705.9	703.9	703.9	705.9	696.0	701.9	707.8	701.9	705.9	684.2
42.5°	587.6	585.6	581.7	583.6	577.7	575.7	577.7	583.6	577.7	581.7	565.9
45°	481.1	477.2	471.2	473.2	473.2	463.4	469.3	473.2	467.3	469.3	455.5
47.5°	382.5	376.6	376.6	374.6	374.6	370.7	376.6	374.6	368.7	372.7	358.9
50°	297.7	293.8	293.8	293.8	293.8	287.9	289.8	293.8	287.9	287.9	280.0
52.5°	232.7	226.7	222.8	222.8	222.8	220.8	220.8	222.8	216.9	216.9	214.9
55°	175.5	173.5	167.6	167.6	167.6	161.7	163.7	163.7	161.7	161.7	155.8
57.5°	130.1	124.2	120.3	120.3	116.3	116.3	114.4	116.3	112.4	112.4	108.4
60°	86.8	82.8	80.8	78.9	78.9	76.9	78.9	76.9	76.9	74.9	73.0
62.5°	63.1	59.2	55.2	55.2	55.2	53.2	53.2	53.2	53.2	53.2	51.3
65°	45.3	41.4	41.4	39.4	39.4	37.5	37.5	37.5	37.5	37.5	35.5
67.5°	31.5	29.6	27.6	27.6	27.6	27.6	27.6	27.6	25.6	25.6	25.6
70°	23.7	21.7	19.7	19.7	19.7	19.7	19.7	17.7	19.7	19.7	17.7
72.5°	15.8	15.8	13.8	13.8	13.8	13.8	13.8	13.8	13.8	13.8	13.8
75°	11.8	11.8	9.9	9.9	9.9	9.9	9.9	9.9	9.9	9.9	9.9
77.5°	7.9	7.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9
80°	5.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9
82.5°	3.9	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
85°	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	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: P251624

CATALOG NUMBER: LD4B30D010 EU4B30508040 4LBSW1H

**CANDELA DISTRIBUTION (continued):**

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	1530.0	1530.0	1530.0	1530.0	1530.0	1530.0	1530.0	1530.0
2.5°	1567.5	1565.5	1561.6	1567.5	1551.7	1545.8	1543.8	1561.6
5°	1589.2	1585.3	1585.3	1591.2	1573.4	1569.5	1565.5	1585.3
7.5°	1608.9	1605.0	1605.0	1610.9	1595.1	1591.2	1587.2	1606.9
10°	1620.7	1620.7	1620.7	1624.7	1610.9	1606.9	1605.0	1624.7
12.5°	1626.7	1626.7	1624.7	1632.6	1614.8	1614.8	1610.9	1630.6
15°	1618.8	1618.8	1618.8	1624.7	1608.9	1605.0	1605.0	1620.7
17.5°	1599.1	1599.1	1597.1	1603.0	1585.3	1585.3	1583.3	1601.0
20°	1569.5	1569.5	1565.5	1573.4	1555.7	1549.8	1547.8	1565.5
22.5°	1522.2	1520.2	1518.2	1522.2	1506.4	1502.4	1500.5	1516.2
25°	1461.0	1459.1	1455.1	1459.1	1441.3	1435.4	1435.4	1447.2
27.5°	1374.3	1374.3	1368.4	1374.3	1354.6	1352.6	1350.6	1364.4
30°	1267.8	1259.9	1256.0	1263.9	1244.1	1244.1	1240.2	1254.0
32.5°	1135.7	1127.8	1125.8	1129.8	1112.0	1106.1	1114.0	1121.9
35°	983.9	985.9	978.0	978.0	962.2	964.2	966.1	978.0
37.5°	838.0	834.0	832.1	834.0	822.2	818.3	814.3	826.1
40°	701.9	692.1	690.1	690.1	680.2	678.3	680.2	686.2
42.5°	573.8	571.8	563.9	567.9	558.0	561.9	560.0	560.0
45°	463.4	465.3	457.4	463.4	455.5	449.5	449.5	453.5
47.5°	366.7	366.7	364.8	364.8	358.9	360.8	356.9	362.8
50°	283.9	283.9	280.0	282.0	278.0	278.0	276.0	278.0
52.5°	216.9	214.9	214.9	212.9	209.0	211.0	212.9	209.0
55°	157.7	159.7	155.8	157.7	153.8	155.8	153.8	155.8
57.5°	108.4	110.4	106.5	110.4	106.5	108.4	106.5	106.5
60°	74.9	74.9	73.0	74.9	73.0	73.0	71.0	74.9
62.5°	51.3	51.3	51.3	51.3	51.3	49.3	51.3	51.3
65°	37.5	35.5	35.5	35.5	35.5	35.5	35.5	35.5
67.5°	25.6	25.6	25.6	25.6	25.6	25.6	25.6	25.6
70°	17.7	17.7	17.7	17.7	17.7	17.7	17.7	17.7
72.5°	13.8	13.8	13.8	13.8	13.8	13.8	13.8	13.8
75°	9.9	9.9	9.9	9.9	9.9	9.9	9.9	9.9
77.5°	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9
80°	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9
82.5°	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
85°	2.0	2.0	2.0	0.0	2.0	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)