

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: P251812

Luminaire Tested: **LD4B50D010TE EU4B30509040 4LBLWW1H**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-41-14  
Report Number: P251812  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G1-1712-453-12)  
Test Lab: INNOVATION CENTER(G1)  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: io LED  
Catalog Number: LD4B50D010TE EU4B30509040 4LBLWW1H  
Description: PORTFOLIO 4 INCH LENS WALLWASH RECESSED DOWNLIGHT, WITH HAZE TRIM  
Light Source: (1) HIGH LUMEN LED 90CRI / 4000K CCT  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

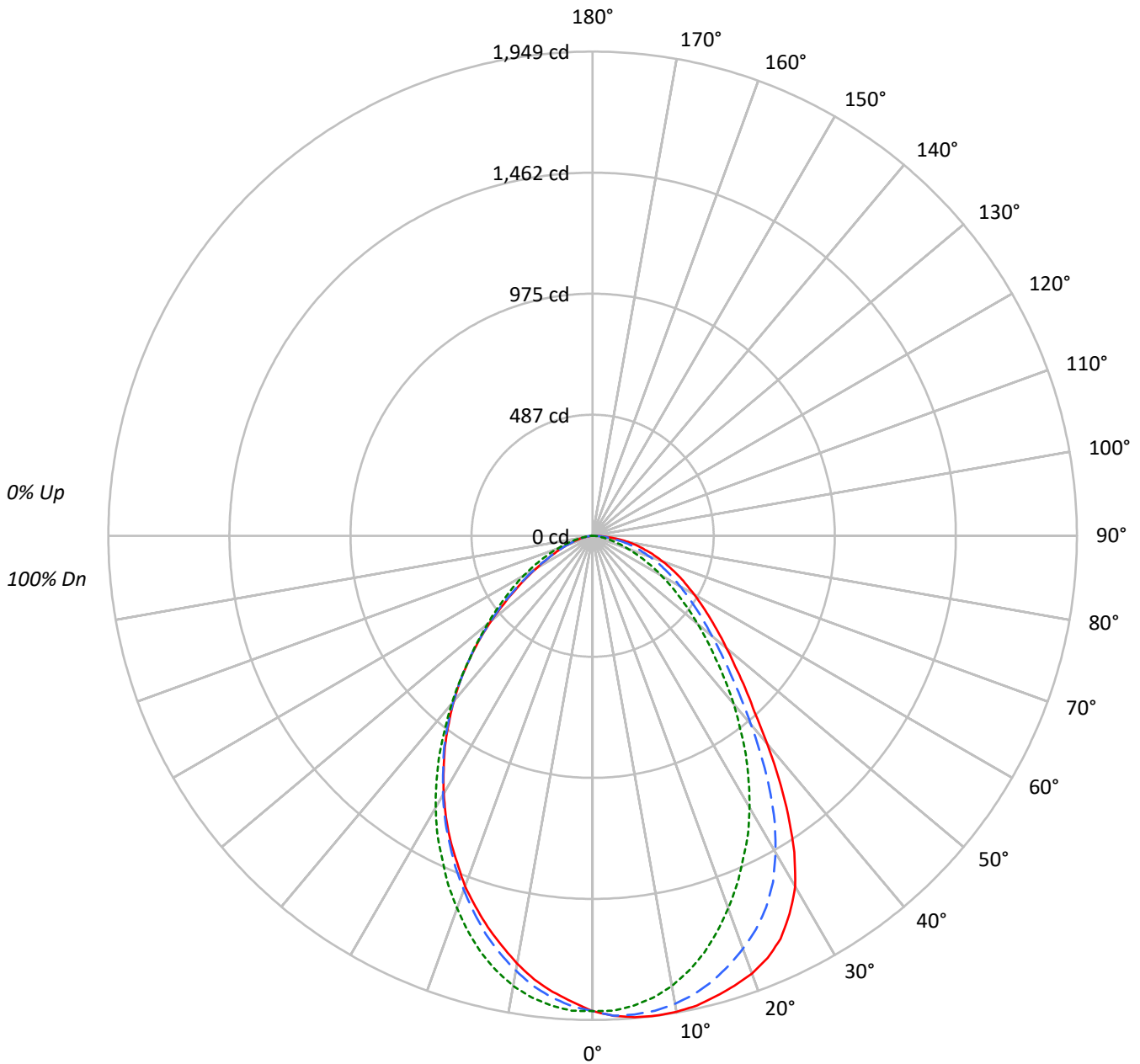
Lumens per Lamp: N/A  
Luminaire Lumens: 3450.0 lumens  
Efficiency: N/A  
Efficacy: 58.7 lumens/watt  
Spacing Criteria (0/90/45): 1.12 / 1.03 / 1.12  
Luminous Opening: Circular (Dia: 0.38' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 58.77  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage 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
1	111	107	103	100	108	104	101	98	100	98	95	96	94	92	93	91	90	88			88
2	102	95	89	85	100	93	88	84	90	85	82	87	83	80	84	81	78	76			76
3	94	85	78	73	92	84	77	72	81	75	71	78	74	70	76	72	69	67			67
4	88	77	69	63	85	76	69	63	73	67	62	71	66	61	69	64	61	59			59
5	81	70	62	56	79	69	61	56	67	60	55	65	59	55	63	58	54	52			52
6	76	64	56	50	74	63	55	50	61	54	49	60	54	49	58	53	49	47			47
7	71	59	51	45	69	58	50	45	56	50	45	55	49	44	54	48	44	42			42
8	66	54	46	41	65	53	46	41	52	45	41	51	45	40	50	44	40	38			38
9	62	50	42	37	61	49	42	37	48	42	37	47	41	37	46	41	37	35			35
10	59	46	39	34	57	46	39	34	45	39	34	44	38	34	43	38	34	32			32

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

	0°	90°	180°
0°	186467	186467	186467
5°	190349	185741	180272
10°	192549	182069	173034
15°	193640	175226	164541
20°	194472	165463	155694
25°	192452	154149	145611
30°	183522	142109	134817
35°	163197	127826	123281
40°	138940	112350	110480
45°	119689	96561	96148
50°	106663	83466	80782
55°	98023	72026	64516
60°	91806	61964	50483
65°	88253	52278	39364
70°	84715	41944	31886
75°	82012	33249	24400
80°	82614	23123	14873
85°	69105	16438	6597



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	179.1	5.2
10°-20°	492.4	14.3
20°-30°	688.6	20.0
30°-40°	707.8	20.5
40°-50°	574.5	16.7
50°-60°	404.5	11.7
60°-70°	249.0	7.2
70°-80°	124.4	3.6
80°-90°	29.5	0.9
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°	1360.2	39.4
0°-40°	2068.0	59.9
0°-60°	3047.0	88.3
0°-90°	3450.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3450.0	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	1913	1913	1913	1913	1913	
5°	1946	1934	1899	1866	1843	186
15°	1919	1857	1737	1660	1631	542
25°	1790	1651	1434	1363	1354	818
35°	1372	1239	1074	1042	1036	853
45°	868	783	701	701	698	675
55°	577	506	424	389	380	519
65°	383	321	227	174	171	378
75°	218	171	88	65	65	233
85°	62	41	15	9	6	72
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°	1913.3	1913.3	1913.3	1913.3	1913.3	1913.3	1913.3	1913.3	1913.3	1913.3	1913.3
2.5°	1934.0	1936.9	1928.1	1936.9	1925.1	1931.0	1934.0	1928.1	1922.2	1934.0	1934.0
5°	1945.7	1945.7	1936.9	1948.7	1934.0	1936.9	1942.8	1934.0	1925.1	1936.9	1934.0
7.5°	1948.7	1948.7	1936.9	1948.7	1934.0	1936.9	1939.8	1931.0	1922.2	1931.0	1928.1
10°	1945.7	1942.8	1934.0	1945.7	1931.0	1931.0	1934.0	1925.1	1910.4	1919.2	1913.3
12.5°	1936.9	1936.9	1925.1	1936.9	1916.3	1916.3	1919.2	1907.5	1895.7	1895.7	1889.8
15°	1919.2	1919.2	1907.5	1916.3	1898.6	1898.6	1895.7	1883.9	1869.2	1869.2	1857.4
17.5°	1898.6	1898.6	1886.9	1895.7	1875.1	1875.1	1872.1	1854.5	1833.9	1830.9	1816.2
20°	1875.1	1875.1	1860.4	1866.2	1842.7	1842.7	1839.8	1819.2	1795.6	1789.7	1769.1
22.5°	1839.8	1839.8	1825.0	1828.0	1804.4	1801.5	1798.5	1775.0	1751.4	1742.6	1716.1
25°	1789.7	1786.8	1775.0	1775.0	1751.4	1745.6	1739.7	1716.1	1692.6	1674.9	1651.4
27.5°	1716.1	1719.1	1704.4	1707.3	1677.9	1672.0	1669.0	1639.6	1613.1	1595.4	1571.9
30°	1630.8	1621.9	1607.2	1607.2	1583.7	1580.7	1574.8	1548.3	1518.9	1498.3	1471.8
32.5°	1510.1	1507.1	1492.4	1492.4	1465.9	1465.9	1454.1	1427.7	1401.2	1389.4	1362.9
35°	1371.7	1368.8	1357.0	1357.0	1333.5	1336.4	1324.6	1304.0	1277.5	1259.9	1239.3
37.5°	1230.4	1227.5	1215.7	1218.7	1198.0	1198.0	1189.2	1168.6	1148.0	1139.2	1112.7
40°	1092.1	1089.1	1074.4	1083.2	1065.6	1059.7	1056.8	1042.0	1018.5	1006.7	992.0
42.5°	965.5	968.4	953.7	959.6	944.9	939.0	936.1	924.3	906.6	894.9	880.1
45°	868.4	862.5	856.6	856.6	841.9	838.9	836.0	821.3	809.5	797.7	783.0
47.5°	777.1	771.2	765.3	768.3	756.5	753.6	747.7	735.9	721.2	715.3	700.6
50°	703.5	700.6	691.7	691.7	680.0	677.0	671.1	662.3	647.6	638.8	627.0
52.5°	635.8	635.8	627.0	624.0	615.2	612.3	609.3	597.6	585.8	574.0	562.2
55°	576.9	574.0	568.1	568.1	556.3	553.4	550.5	538.7	526.9	518.1	506.3
57.5°	521.0	521.0	515.1	515.1	506.3	500.4	500.4	488.6	473.9	468.0	453.3
60°	471.0	471.0	465.1	465.1	456.3	456.3	450.4	438.6	429.8	418.0	406.2
62.5°	423.9	426.8	420.9	418.0	409.2	406.2	406.2	397.4	382.7	373.8	362.1
65°	382.7	379.7	376.8	373.8	365.0	362.1	362.1	350.3	341.5	329.7	320.9
67.5°	338.5	338.5	332.6	332.6	326.7	323.8	317.9	309.1	300.2	291.4	282.6
70°	297.3	297.3	294.4	294.4	285.5	282.6	279.6	270.8	262.0	253.2	241.4
72.5°	259.0	256.1	253.2	253.2	247.3	244.3	241.4	232.5	223.7	214.9	206.1
75°	217.8	217.8	214.9	214.9	209.0	206.1	206.1	200.2	188.4	182.5	170.7
77.5°	182.5	182.5	179.6	179.6	173.7	173.7	170.7	161.9	156.0	147.2	141.3
80°	147.2	144.2	144.2	141.3	135.4	135.4	132.5	129.5	120.7	114.8	106.0
82.5°	103.0	103.0	103.0	100.1	97.1	97.1	94.2	88.3	82.4	79.5	70.6
85°	61.8	61.8	58.9	55.9	58.9	55.9	53.0	50.0	47.1	44.2	41.2
87.5°	26.5	26.5	23.5	23.5	23.5	23.5	23.5	20.6	17.7	17.7	14.7
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°	1913.3	1913.3	1913.3	1913.3	1913.3	1913.3	1913.3	1913.3	1913.3	1913.3	1913.3
2.5°	1916.3	1925.1	1922.2	1919.2	1913.3	1913.3	1913.3	1910.4	1913.3	1913.3	1907.5
5°	1916.3	1922.2	1919.2	1913.3	1907.5	1907.5	1904.5	1898.6	1898.6	1898.6	1886.9
7.5°	1907.5	1913.3	1904.5	1898.6	1892.7	1886.9	1886.9	1878.0	1878.0	1875.1	1863.3
10°	1889.8	1892.7	1881.0	1875.1	1866.2	1863.3	1857.4	1845.6	1842.7	1839.8	1828.0
12.5°	1863.3	1866.2	1851.5	1839.8	1828.0	1825.0	1819.2	1804.4	1798.5	1792.7	1777.9
15°	1825.0	1825.0	1807.4	1792.7	1780.9	1777.9	1763.2	1748.5	1742.6	1736.7	1716.1
17.5°	1780.9	1777.9	1754.4	1739.7	1725.0	1719.1	1704.4	1686.7	1674.9	1669.0	1651.4
20°	1733.8	1725.0	1698.5	1683.7	1666.1	1657.3	1642.5	1619.0	1607.2	1595.4	1577.8
22.5°	1677.9	1666.1	1636.6	1616.0	1598.4	1589.5	1568.9	1548.3	1530.7	1518.9	1498.3
25°	1610.2	1595.4	1563.1	1536.6	1521.8	1513.0	1492.4	1468.9	1451.2	1433.5	1415.9
27.5°	1530.7	1513.0	1480.6	1454.1	1439.4	1424.7	1410.0	1383.5	1368.8	1354.1	1333.5
30°	1433.5	1412.9	1383.5	1359.9	1342.3	1330.5	1312.8	1289.3	1271.6	1262.8	1242.2
32.5°	1327.6	1304.0	1277.5	1254.0	1245.1	1230.4	1215.7	1192.2	1177.4	1168.6	1153.9
35°	1209.8	1192.2	1162.7	1145.1	1130.3	1124.5	1112.7	1089.1	1083.2	1074.4	1056.8
37.5°	1086.2	1071.5	1050.9	1036.2	1024.4	1018.5	1006.7	992.0	983.2	974.3	965.5
40°	971.4	959.6	942.0	930.2	915.5	906.6	906.6	889.0	883.1	883.1	874.3
42.5°	859.5	853.6	838.9	821.3	818.3	809.5	806.5	797.7	791.8	788.9	785.9
45°	765.3	756.5	741.8	733.0	724.1	724.1	715.3	706.5	703.5	700.6	697.6
47.5°	682.9	671.1	659.4	650.5	644.7	641.7	632.9	627.0	624.0	624.0	621.1
50°	609.3	600.5	588.7	579.9	574.0	568.1	562.2	556.3	553.4	550.5	550.5
52.5°	547.5	535.7	524.0	515.1	506.3	503.4	497.5	491.6	488.6	485.7	482.8
55°	491.6	482.8	468.0	459.2	450.4	450.4	441.5	432.7	426.8	423.9	420.9
57.5°	438.6	429.8	415.0	406.2	400.3	394.4	388.6	382.7	376.8	370.9	365.0
60°	391.5	382.7	368.0	356.2	353.2	347.3	341.5	329.7	323.8	317.9	312.0
62.5°	347.3	335.6	323.8	312.0	309.1	303.2	294.4	285.5	276.7	270.8	262.0
65°	306.1	297.3	282.6	273.8	264.9	262.0	253.2	241.4	232.5	226.7	217.8
67.5°	267.9	256.1	241.4	232.5	226.7	220.8	211.9	203.1	194.3	185.4	176.6
70°	229.6	220.8	206.1	197.2	191.3	185.4	176.6	164.8	156.0	147.2	141.3
72.5°	194.3	182.5	170.7	161.9	156.0	150.1	141.3	132.5	123.6	117.7	108.9
75°	161.9	150.1	141.3	129.5	126.6	120.7	111.9	103.0	94.2	88.3	82.4
77.5°	129.5	120.7	108.9	103.0	97.1	91.3	85.4	76.5	70.6	61.8	55.9
80°	97.1	88.3	79.5	73.6	67.7	64.8	58.9	53.0	47.1	41.2	38.3
82.5°	64.8	58.9	50.0	47.1	44.2	41.2	35.3	32.4	29.4	26.5	23.5
85°	35.3	32.4	29.4	23.5	23.5	20.6	17.7	17.7	14.7	14.7	11.8
87.5°	14.7	11.8	11.8	8.8	8.8	8.8	5.9	5.9	5.9	2.9	2.9
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°	1913.3	1913.3	1913.3	1913.3	1913.3	1913.3	1913.3	1913.3	1913.3	1913.3	1913.3
2.5°	1910.4	1898.6	1898.6	1898.6	1889.8	1892.7	1895.7	1898.6	1895.7	1886.9	1895.7
5°	1889.8	1878.0	1878.0	1872.1	1866.2	1866.2	1866.2	1869.2	1866.2	1857.4	1860.4
7.5°	1863.3	1848.6	1845.6	1839.8	1833.9	1830.9	1830.9	1830.9	1828.0	1816.2	1822.1
10°	1822.1	1807.4	1801.5	1798.5	1789.7	1786.8	1783.8	1780.9	1777.9	1766.2	1772.1
12.5°	1772.1	1760.3	1748.5	1745.6	1736.7	1730.8	1727.9	1727.9	1722.0	1710.2	1716.1
15°	1713.2	1695.5	1686.7	1680.8	1672.0	1666.1	1660.2	1663.1	1660.2	1648.4	1651.4
17.5°	1642.5	1624.9	1616.0	1613.1	1601.3	1595.4	1592.5	1592.5	1589.5	1577.8	1580.7
20°	1566.0	1548.3	1542.5	1536.6	1530.7	1524.8	1521.8	1518.9	1516.0	1504.2	1513.0
22.5°	1489.5	1468.9	1460.0	1460.0	1448.3	1445.3	1442.4	1445.3	1442.4	1430.6	1436.5
25°	1410.0	1389.4	1383.5	1374.7	1368.8	1365.8	1365.8	1365.8	1362.9	1357.0	1362.9
27.5°	1321.7	1307.0	1298.1	1295.2	1289.3	1286.4	1283.4	1286.4	1286.4	1277.5	1283.4
30°	1233.4	1221.6	1215.7	1212.8	1203.9	1201.0	1203.9	1203.9	1203.9	1195.1	1203.9
32.5°	1145.1	1136.2	1133.3	1124.5	1118.6	1118.6	1118.6	1121.5	1118.6	1112.7	1121.5
35°	1056.8	1045.0	1042.0	1039.1	1039.1	1033.2	1039.1	1036.2	1042.0	1033.2	1039.1
37.5°	962.6	956.7	953.7	953.7	947.8	950.8	950.8	950.8	956.7	947.8	953.7
40°	874.3	868.4	868.4	868.4	865.4	865.4	865.4	868.4	871.3	865.4	871.3
42.5°	785.9	783.0	783.0	780.1	777.1	780.1	783.0	783.0	785.9	780.1	783.0
45°	700.6	697.6	700.6	697.6	697.6	694.7	697.6	700.6	700.6	697.6	697.6
47.5°	621.1	621.1	618.2	618.2	618.2	618.2	618.2	618.2	618.2	612.3	618.2
50°	550.5	544.6	547.5	544.6	544.6	541.6	541.6	538.7	535.7	532.8	532.8
52.5°	482.8	476.9	476.9	473.9	471.0	471.0	468.0	465.1	462.1	456.3	456.3
55°	418.0	412.1	409.2	406.2	403.3	400.3	397.4	394.4	388.6	385.6	385.6
57.5°	359.1	353.2	347.3	347.3	341.5	338.5	332.6	326.7	323.8	317.9	317.9
60°	306.1	300.2	291.4	288.5	285.5	279.6	270.8	267.9	264.9	259.0	262.0
62.5°	256.1	247.3	238.4	235.5	232.5	226.7	220.8	214.9	211.9	214.9	214.9
65°	209.0	200.2	194.3	188.4	185.4	179.6	176.6	173.7	173.7	173.7	176.6
67.5°	167.8	159.0	153.1	150.1	144.2	141.3	141.3	141.3	141.3	141.3	141.3
70°	132.5	126.6	120.7	114.8	114.8	111.9	111.9	111.9	111.9	111.9	111.9
72.5°	100.1	94.2	91.3	91.3	88.3	88.3	88.3	88.3	85.4	85.4	88.3
75°	73.6	70.6	67.7	67.7	67.7	64.8	64.8	64.8	64.8	64.8	64.8
77.5°	53.0	50.0	50.0	47.1	47.1	47.1	47.1	47.1	47.1	44.2	44.2
80°	35.3	32.4	32.4	32.4	32.4	29.4	29.4	29.4	29.4	29.4	29.4
82.5°	20.6	20.6	20.6	17.7	17.7	17.7	17.7	17.7	17.7	17.7	17.7
85°	11.8	8.8	8.8	8.8	8.8	8.8	8.8	8.8	8.8	8.8	8.8
87.5°	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	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: P251812

CATALOG NUMBER: LD4B50D010TE EU4B30509040 4LBLWW1H

**CANDELA DISTRIBUTION (continued):**

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	1913.3	1913.3	1913.3	1913.3	1913.3	1913.3	1913.3	1913.3
2.5°	1878.0	1889.8	1892.7	1883.9	1886.9	1881.0	1883.9	1878.0
5°	1845.6	1854.5	1857.4	1851.5	1851.5	1845.6	1848.6	1842.7
7.5°	1804.4	1813.3	1816.2	1810.3	1810.3	1804.4	1804.4	1801.5
10°	1757.3	1760.3	1766.2	1757.3	1760.3	1754.4	1754.4	1748.5
12.5°	1698.5	1704.4	1710.2	1701.4	1701.4	1698.5	1698.5	1689.6
15°	1636.6	1642.5	1645.5	1639.6	1639.6	1636.6	1633.7	1630.8
17.5°	1571.9	1574.8	1580.7	1571.9	1577.8	1571.9	1571.9	1566.0
20°	1498.3	1507.1	1510.1	1501.2	1504.2	1501.2	1501.2	1501.2
22.5°	1427.7	1433.5	1436.5	1430.6	1433.5	1427.7	1430.6	1424.7
25°	1354.1	1357.0	1359.9	1354.1	1359.9	1357.0	1354.1	1354.1
27.5°	1277.5	1280.5	1283.4	1277.5	1283.4	1280.5	1283.4	1277.5
30°	1195.1	1201.0	1206.9	1201.0	1203.9	1201.0	1201.0	1198.0
32.5°	1112.7	1118.6	1124.5	1118.6	1124.5	1118.6	1121.5	1115.6
35°	1036.2	1039.1	1042.0	1036.2	1039.1	1039.1	1039.1	1036.2
37.5°	950.8	956.7	956.7	953.7	959.6	956.7	956.7	950.8
40°	868.4	871.3	874.3	868.4	871.3	868.4	871.3	868.4
42.5°	783.0	788.9	791.8	785.9	785.9	785.9	783.0	785.9
45°	694.7	700.6	706.5	697.6	700.6	700.6	700.6	697.6
47.5°	615.2	615.2	618.2	615.2	618.2	612.3	618.2	615.2
50°	532.8	532.8	538.7	532.8	532.8	532.8	532.8	532.8
52.5°	453.3	456.3	456.3	450.4	453.3	450.4	453.3	450.4
55°	379.7	379.7	382.7	379.7	379.7	379.7	379.7	379.7
57.5°	315.0	317.9	317.9	315.0	317.9	315.0	315.0	315.0
60°	262.0	262.0	262.0	259.0	262.0	259.0	262.0	259.0
62.5°	211.9	214.9	214.9	211.9	214.9	211.9	211.9	211.9
65°	173.7	173.7	173.7	173.7	173.7	173.7	173.7	170.7
67.5°	138.3	138.3	141.3	138.3	141.3	141.3	141.3	141.3
70°	111.9	111.9	111.9	111.9	111.9	111.9	111.9	111.9
72.5°	85.4	85.4	88.3	85.4	85.4	85.4	85.4	85.4
75°	64.8	64.8	64.8	64.8	64.8	61.8	61.8	64.8
77.5°	44.2	44.2	44.2	44.2	44.2	44.2	44.2	47.1
80°	29.4	29.4	29.4	29.4	26.5	26.5	29.4	26.5
82.5°	14.7	14.7	14.7	14.7	14.7	14.7	14.7	14.7
85°	8.8	8.8	5.9	5.9	5.9	5.9	5.9	5.9
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)