

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: P251810

Luminaire Tested: **LD4B50D010TE EU4B30509030 4LBLWW1H**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-41-14  
Report Number: P251810  
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 EU4B30509030 4LBLWW1H  
Description: PORTFOLIO 4 INCH LENS WALLWASH RECESSED DOWNLIGHT, WITH HAZE TRIM  
Light Source: (1) HIGH LUMEN LED 90CRI / 3000K CCT  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

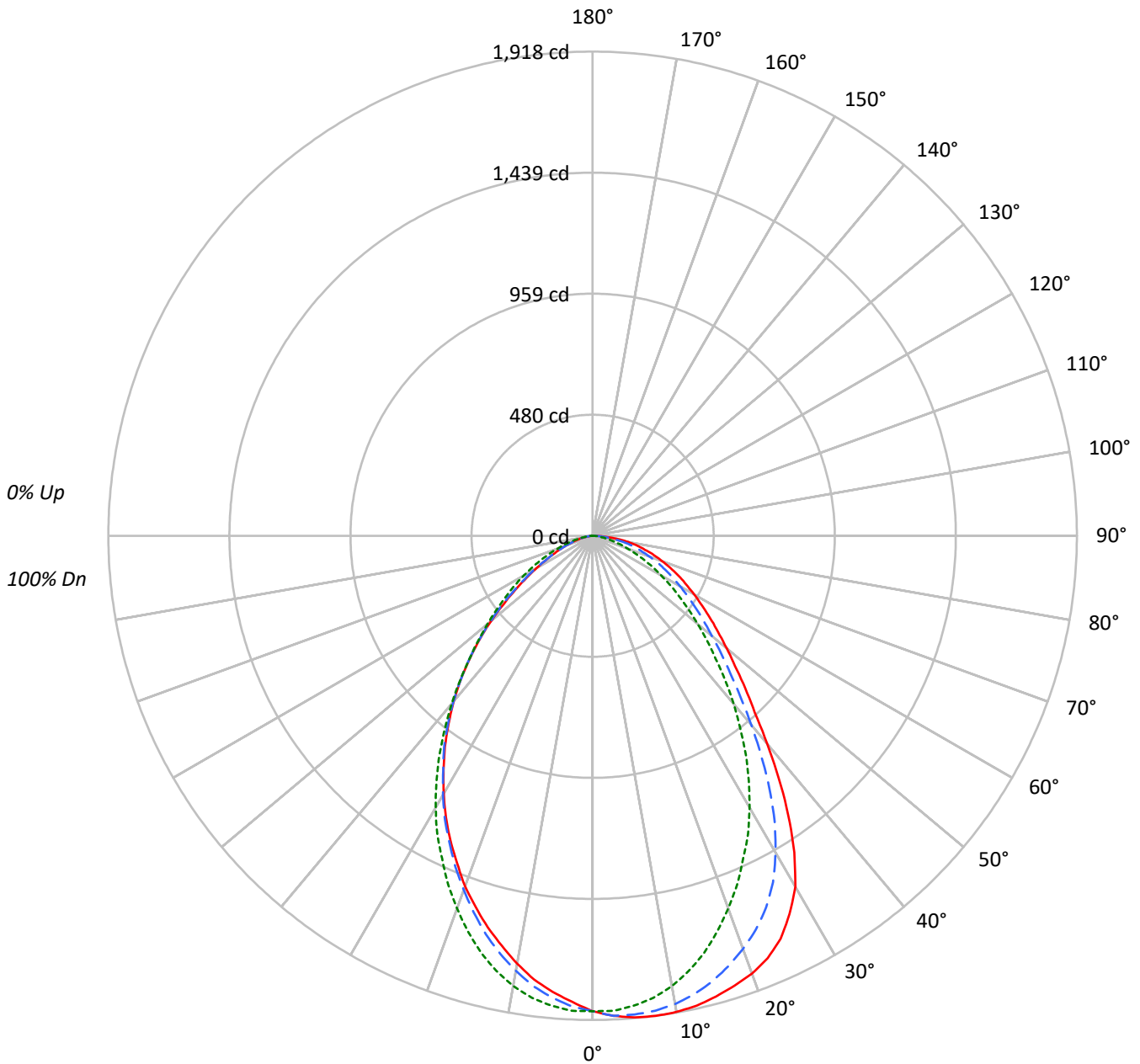
Lumens per Lamp: N/A  
Luminaire Lumens: 3396.0 lumens  
Efficiency: N/A  
Efficacy: 57.8 lumens/watt  
Spacing Criteria (0/90/45): 1.12 / 1.03 / 1.12  
Luminous Opening: Circular (Dia: 0.38' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 58.77  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage 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°	183553	183553	183553
5°	187374	182835	177454
10°	189541	179219	170323
15°	190613	172482	161958
20°	191423	162881	153256
25°	189441	151740	143331
30°	180641	139881	132712
35°	160651	125827	121342
40°	136764	110595	108750
45°	117814	95045	94645
50°	104995	82147	79524
55°	96494	70888	63513
60°	90363	60989	49704
65°	86869	51448	38765
70°	83404	41289	31373
75°	80732	32722	23986
80°	81323	22786	14648
85°	67987	16214	6486



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	176.3	5.2
10°-20°	484.7	14.3
20°-30°	677.8	20.0
30°-40°	696.7	20.5
40°-50°	565.5	16.7
50°-60°	398.2	11.7
60°-70°	245.1	7.2
70°-80°	122.4	3.6
80°-90°	29.1	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°	1338.9	39.4
0°-40°	2035.6	59.9
0°-60°	2999.3	88.3
0°-90°	3396.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3396.0	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	1883	1883	1883	1883	1883	
5°	1915	1904	1869	1837	1814	183
15°	1889	1828	1710	1634	1605	534
25°	1762	1626	1411	1342	1333	805
35°	1350	1220	1058	1026	1020	840
45°	855	771	690	690	687	665
55°	568	498	417	382	374	510
65°	377	316	223	171	168	372
75°	214	168	87	64	64	229
85°	61	41	14	9	6	71
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°	1883.4	1883.4	1883.4	1883.4	1883.4	1883.4	1883.4	1883.4	1883.4	1883.4	1883.4
2.5°	1903.7	1906.6	1897.9	1906.6	1895.0	1900.8	1903.7	1897.9	1892.1	1903.7	1903.7
5°	1915.3	1915.3	1906.6	1918.2	1903.7	1906.6	1912.4	1903.7	1895.0	1906.6	1903.7
7.5°	1918.2	1918.2	1906.6	1918.2	1903.7	1906.6	1909.5	1900.8	1892.1	1900.8	1897.9
10°	1915.3	1912.4	1903.7	1915.3	1900.8	1900.8	1903.7	1895.0	1880.5	1889.2	1883.4
12.5°	1906.6	1906.6	1895.0	1906.6	1886.3	1886.3	1889.2	1877.6	1866.0	1866.0	1860.2
15°	1889.2	1889.2	1877.6	1886.3	1868.9	1868.9	1866.0	1854.4	1839.9	1839.9	1828.3
17.5°	1868.9	1868.9	1857.3	1866.0	1845.7	1845.7	1842.8	1825.4	1805.2	1802.3	1787.8
20°	1845.7	1845.7	1831.2	1837.0	1813.9	1813.9	1811.0	1790.7	1767.5	1761.7	1741.4
22.5°	1811.0	1811.0	1796.5	1799.4	1776.2	1773.3	1770.4	1747.2	1724.0	1715.3	1689.3
25°	1761.7	1758.8	1747.2	1747.2	1724.0	1718.2	1712.4	1689.3	1666.1	1648.7	1625.5
27.5°	1689.3	1692.2	1677.7	1680.6	1651.6	1645.8	1642.9	1613.9	1587.8	1570.5	1547.3
30°	1605.2	1596.5	1582.1	1582.1	1558.9	1556.0	1550.2	1524.1	1495.1	1474.8	1448.8
32.5°	1486.4	1483.5	1469.1	1469.1	1443.0	1443.0	1431.4	1405.3	1379.2	1367.6	1341.6
35°	1350.3	1347.4	1335.8	1335.8	1312.6	1315.5	1303.9	1283.6	1257.5	1240.1	1219.9
37.5°	1211.2	1208.3	1196.7	1199.6	1179.3	1179.3	1170.6	1150.3	1130.0	1121.3	1095.3
40°	1075.0	1072.1	1057.6	1066.3	1048.9	1043.1	1040.2	1025.7	1002.5	991.0	976.5
42.5°	950.4	953.3	938.8	944.6	930.1	924.3	921.4	909.8	892.4	880.9	866.4
45°	854.8	849.0	843.2	843.2	828.7	825.8	822.9	808.4	796.8	785.2	770.7
47.5°	764.9	759.2	753.4	756.3	744.7	741.8	736.0	724.4	709.9	704.1	689.6
50°	692.5	689.6	680.9	680.9	669.3	666.4	660.6	651.9	637.5	628.8	617.2
52.5°	625.9	625.9	617.2	614.3	605.6	602.7	599.8	588.2	576.6	565.0	553.4
55°	567.9	565.0	559.2	559.2	547.6	544.7	541.8	530.2	518.7	510.0	498.4
57.5°	512.9	512.9	507.1	507.1	498.4	492.6	492.6	481.0	466.5	460.7	446.2
60°	463.6	463.6	457.8	457.8	449.1	449.1	443.3	431.7	423.0	411.5	399.9
62.5°	417.2	420.1	414.3	411.5	402.8	399.9	399.9	391.2	376.7	368.0	356.4
65°	376.7	373.8	370.9	368.0	359.3	356.4	356.4	344.8	336.1	324.5	315.8
67.5°	333.2	333.2	327.4	327.4	321.6	318.7	312.9	304.2	295.5	286.9	278.2
70°	292.7	292.7	289.8	289.8	281.1	278.2	275.3	266.6	257.9	249.2	237.6
72.5°	255.0	252.1	249.2	249.2	243.4	240.5	237.6	228.9	220.2	211.5	202.8
75°	214.4	214.4	211.5	211.5	205.7	202.8	202.8	197.0	185.4	179.6	168.1
77.5°	179.6	179.6	176.7	176.7	171.0	171.0	168.1	159.4	153.6	144.9	139.1
80°	144.9	142.0	142.0	139.1	133.3	133.3	130.4	127.5	118.8	113.0	104.3
82.5°	101.4	101.4	101.4	98.5	95.6	95.6	92.7	86.9	81.1	78.2	69.5
85°	60.8	60.8	58.0	55.1	58.0	55.1	52.2	49.3	46.4	43.5	40.6
87.5°	26.1	26.1	23.2	23.2	23.2	23.2	23.2	20.3	17.4	17.4	14.5
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°	1883.4	1883.4	1883.4	1883.4	1883.4	1883.4	1883.4	1883.4	1883.4	1883.4	1883.4
2.5°	1886.3	1895.0	1892.1	1889.2	1883.4	1883.4	1883.4	1880.5	1883.4	1883.4	1877.6
5°	1886.3	1892.1	1889.2	1883.4	1877.6	1877.6	1874.7	1868.9	1868.9	1868.9	1857.3
7.5°	1877.6	1883.4	1874.7	1868.9	1863.1	1857.3	1857.3	1848.6	1848.6	1845.7	1834.1
10°	1860.2	1863.1	1851.5	1845.7	1837.0	1834.1	1828.3	1816.8	1813.9	1811.0	1799.4
12.5°	1834.1	1837.0	1822.6	1811.0	1799.4	1796.5	1790.7	1776.2	1770.4	1764.6	1750.1
15°	1796.5	1796.5	1779.1	1764.6	1753.0	1750.1	1735.6	1721.1	1715.3	1709.5	1689.3
17.5°	1753.0	1750.1	1726.9	1712.4	1698.0	1692.2	1677.7	1660.3	1648.7	1642.9	1625.5
20°	1706.6	1698.0	1671.9	1657.4	1640.0	1631.3	1616.8	1593.6	1582.1	1570.5	1553.1
22.5°	1651.6	1640.0	1611.0	1590.7	1573.4	1564.7	1544.4	1524.1	1506.7	1495.1	1474.8
25°	1585.0	1570.5	1538.6	1512.5	1498.0	1489.3	1469.1	1445.9	1428.5	1411.1	1393.7
27.5°	1506.7	1489.3	1457.5	1431.4	1416.9	1402.4	1387.9	1361.8	1347.4	1332.9	1312.6
30°	1411.1	1390.8	1361.8	1338.7	1321.3	1309.7	1292.3	1269.1	1251.7	1243.0	1222.8
32.5°	1306.8	1283.6	1257.5	1234.4	1225.7	1211.2	1196.7	1173.5	1159.0	1150.3	1135.8
35°	1190.9	1173.5	1144.5	1127.1	1112.7	1106.9	1095.3	1072.1	1066.3	1057.6	1040.2
37.5°	1069.2	1054.7	1034.4	1019.9	1008.3	1002.5	991.0	976.5	967.8	959.1	950.4
40°	956.2	944.6	927.2	915.6	901.1	892.4	892.4	875.1	869.3	869.3	860.6
42.5°	846.1	840.3	825.8	808.4	805.5	796.8	793.9	785.2	779.4	776.5	773.6
45°	753.4	744.7	730.2	721.5	712.8	712.8	704.1	695.4	692.5	689.6	686.7
47.5°	672.2	660.6	649.0	640.4	634.6	631.7	623.0	617.2	614.3	614.3	611.4
50°	599.8	591.1	579.5	570.8	565.0	559.2	553.4	547.6	544.7	541.8	541.8
52.5°	538.9	527.4	515.8	507.1	498.4	495.5	489.7	483.9	481.0	478.1	475.2
55°	483.9	475.2	460.7	452.0	443.3	443.3	434.6	425.9	420.1	417.2	414.3
57.5°	431.7	423.0	408.6	399.9	394.1	388.3	382.5	376.7	370.9	365.1	359.3
60°	385.4	376.7	362.2	350.6	347.7	341.9	336.1	324.5	318.7	312.9	307.1
62.5°	341.9	330.3	318.7	307.1	304.2	298.4	289.8	281.1	272.4	266.6	257.9
65°	301.3	292.7	278.2	269.5	260.8	257.9	249.2	237.6	228.9	223.1	214.4
67.5°	263.7	252.1	237.6	228.9	223.1	217.3	208.6	199.9	191.2	182.5	173.9
70°	226.0	217.3	202.8	194.1	188.3	182.5	173.9	162.3	153.6	144.9	139.1
72.5°	191.2	179.6	168.1	159.4	153.6	147.8	139.1	130.4	121.7	115.9	107.2
75°	159.4	147.8	139.1	127.5	124.6	118.8	110.1	101.4	92.7	86.9	81.1
77.5°	127.5	118.8	107.2	101.4	95.6	89.8	84.0	75.3	69.5	60.8	55.1
80°	95.6	86.9	78.2	72.4	66.6	63.7	58.0	52.2	46.4	40.6	37.7
82.5°	63.7	58.0	49.3	46.4	43.5	40.6	34.8	31.9	29.0	26.1	23.2
85°	34.8	31.9	29.0	23.2	23.2	20.3	17.4	17.4	14.5	14.5	11.6
87.5°	14.5	11.6	11.6	8.7	8.7	8.7	5.8	5.8	5.8	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°	1883.4	1883.4	1883.4	1883.4	1883.4	1883.4	1883.4	1883.4	1883.4	1883.4	1883.4
2.5°	1880.5	1868.9	1868.9	1868.9	1860.2	1863.1	1866.0	1868.9	1866.0	1857.3	1866.0
5°	1860.2	1848.6	1848.6	1842.8	1837.0	1837.0	1837.0	1839.9	1837.0	1828.3	1831.2
7.5°	1834.1	1819.7	1816.8	1811.0	1805.2	1802.3	1802.3	1802.3	1799.4	1787.8	1793.6
10°	1793.6	1779.1	1773.3	1770.4	1761.7	1758.8	1755.9	1753.0	1750.1	1738.5	1744.3
12.5°	1744.3	1732.7	1721.1	1718.2	1709.5	1703.8	1700.9	1700.9	1695.1	1683.5	1689.3
15°	1686.4	1669.0	1660.3	1654.5	1645.8	1640.0	1634.2	1637.1	1634.2	1622.6	1625.5
17.5°	1616.8	1599.4	1590.7	1587.8	1576.3	1570.5	1567.6	1567.6	1564.7	1553.1	1556.0
20°	1541.5	1524.1	1518.3	1512.5	1506.7	1500.9	1498.0	1495.1	1492.2	1480.6	1489.3
22.5°	1466.2	1445.9	1437.2	1437.2	1425.6	1422.7	1419.8	1422.7	1419.8	1408.2	1414.0
25°	1387.9	1367.6	1361.8	1353.1	1347.4	1344.5	1344.5	1344.5	1341.6	1335.8	1341.6
27.5°	1301.0	1286.5	1277.8	1274.9	1269.1	1266.2	1263.3	1266.2	1266.2	1257.5	1263.3
30°	1214.1	1202.5	1196.7	1193.8	1185.1	1182.2	1185.1	1185.1	1185.1	1176.4	1185.1
32.5°	1127.1	1118.4	1115.6	1106.9	1101.1	1101.1	1101.1	1104.0	1101.1	1095.3	1104.0
35°	1040.2	1028.6	1025.7	1022.8	1022.8	1017.0	1022.8	1019.9	1025.7	1017.0	1022.8
37.5°	947.5	941.7	938.8	938.8	933.0	935.9	935.9	935.9	941.7	933.0	938.8
40°	860.6	854.8	854.8	854.8	851.9	851.9	851.9	854.8	857.7	851.9	857.7
42.5°	773.6	770.7	770.7	767.8	764.9	767.8	770.7	770.7	773.6	767.8	770.7
45°	689.6	686.7	689.6	686.7	686.7	683.8	686.7	689.6	689.6	686.7	686.7
47.5°	611.4	611.4	608.5	608.5	608.5	608.5	608.5	608.5	608.5	602.7	608.5
50°	541.8	536.0	538.9	536.0	536.0	533.1	533.1	530.2	527.4	524.5	524.5
52.5°	475.2	469.4	469.4	466.5	463.6	463.6	460.7	457.8	454.9	449.1	449.1
55°	411.5	405.7	402.8	399.9	397.0	394.1	391.2	388.3	382.5	379.6	379.6
57.5°	353.5	347.7	341.9	341.9	336.1	333.2	327.4	321.6	318.7	312.9	312.9
60°	301.3	295.5	286.9	284.0	281.1	275.3	266.6	263.7	260.8	255.0	257.9
62.5°	252.1	243.4	234.7	231.8	228.9	223.1	217.3	211.5	208.6	211.5	211.5
65°	205.7	197.0	191.2	185.4	182.5	176.7	173.9	171.0	171.0	171.0	173.9
67.5°	165.2	156.5	150.7	147.8	142.0	139.1	139.1	139.1	139.1	139.1	139.1
70°	130.4	124.6	118.8	113.0	113.0	110.1	110.1	110.1	110.1	110.1	110.1
72.5°	98.5	92.7	89.8	89.8	86.9	86.9	86.9	86.9	84.0	84.0	86.9
75°	72.4	69.5	66.6	66.6	66.6	63.7	63.7	63.7	63.7	63.7	63.7
77.5°	52.2	49.3	49.3	46.4	46.4	46.4	46.4	46.4	46.4	43.5	43.5
80°	34.8	31.9	31.9	31.9	31.9	29.0	29.0	29.0	29.0	29.0	29.0
82.5°	20.3	20.3	20.3	17.4	17.4	17.4	17.4	17.4	17.4	17.4	17.4
85°	11.6	8.7	8.7	8.7	8.7	8.7	8.7	8.7	8.7	8.7	8.7
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: P251810

CATALOG NUMBER: LD4B50D010TE EU4B30509030 4LBLWW1H

**CANDELA DISTRIBUTION (continued):**

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	1883.4	1883.4	1883.4	1883.4	1883.4	1883.4	1883.4	1883.4
2.5°	1848.6	1860.2	1863.1	1854.4	1857.3	1851.5	1854.4	1848.6
5°	1816.8	1825.4	1828.3	1822.6	1822.6	1816.8	1819.7	1813.9
7.5°	1776.2	1784.9	1787.8	1782.0	1782.0	1776.2	1776.2	1773.3
10°	1729.8	1732.7	1738.5	1729.8	1732.7	1726.9	1726.9	1721.1
12.5°	1671.9	1677.7	1683.5	1674.8	1674.8	1671.9	1671.9	1663.2
15°	1611.0	1616.8	1619.7	1613.9	1613.9	1611.0	1608.1	1605.2
17.5°	1547.3	1550.2	1556.0	1547.3	1553.1	1547.3	1547.3	1541.5
20°	1474.8	1483.5	1486.4	1477.7	1480.6	1477.7	1477.7	1477.7
22.5°	1405.3	1411.1	1414.0	1408.2	1411.1	1405.3	1408.2	1402.4
25°	1332.9	1335.8	1338.7	1332.9	1338.7	1335.8	1332.9	1332.9
27.5°	1257.5	1260.4	1263.3	1257.5	1263.3	1260.4	1263.3	1257.5
30°	1176.4	1182.2	1188.0	1182.2	1185.1	1182.2	1182.2	1179.3
32.5°	1095.3	1101.1	1106.9	1101.1	1106.9	1101.1	1104.0	1098.2
35°	1019.9	1022.8	1025.7	1019.9	1022.8	1022.8	1022.8	1019.9
37.5°	935.9	941.7	941.7	938.8	944.6	941.7	941.7	935.9
40°	854.8	857.7	860.6	854.8	857.7	854.8	857.7	854.8
42.5°	770.7	776.5	779.4	773.6	773.6	773.6	770.7	773.6
45°	683.8	689.6	695.4	686.7	689.6	689.6	689.6	686.7
47.5°	605.6	605.6	608.5	605.6	608.5	602.7	608.5	605.6
50°	524.5	524.5	530.2	524.5	524.5	524.5	524.5	524.5
52.5°	446.2	449.1	449.1	443.3	446.2	443.3	446.2	443.3
55°	373.8	373.8	376.7	373.8	373.8	373.8	373.8	373.8
57.5°	310.0	312.9	312.9	310.0	312.9	310.0	310.0	310.0
60°	257.9	257.9	257.9	255.0	257.9	255.0	257.9	255.0
62.5°	208.6	211.5	211.5	208.6	211.5	208.6	208.6	208.6
65°	171.0	171.0	171.0	171.0	171.0	171.0	171.0	168.1
67.5°	136.2	136.2	139.1	136.2	139.1	139.1	139.1	139.1
70°	110.1	110.1	110.1	110.1	110.1	110.1	110.1	110.1
72.5°	84.0	84.0	86.9	84.0	84.0	84.0	84.0	84.0
75°	63.7	63.7	63.7	63.7	63.7	60.8	60.8	63.7
77.5°	43.5	43.5	43.5	43.5	43.5	43.5	43.5	46.4
80°	29.0	29.0	29.0	29.0	26.1	26.1	29.0	26.1
82.5°	14.5	14.5	14.5	14.5	14.5	14.5	14.5	14.5
85°	8.7	8.7	5.8	5.8	5.8	5.8	5.8	5.8
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)