

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: P251813

Luminaire Tested: **LD4B50D010TE EU4B30509050 4LBLWW1H**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P251813
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 EU4B30509050 4LBLWW1H
Description: PORTFOLIO 4 INCH LENS WALLWASH RECESSED DOWNLIGHT, WITH HAZE TRIM
Light Source: (1) HIGH LUMEN LED 90CRI / 5000K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 3465.0 lumens
Efficiency: N/A
Efficacy: 59.0 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

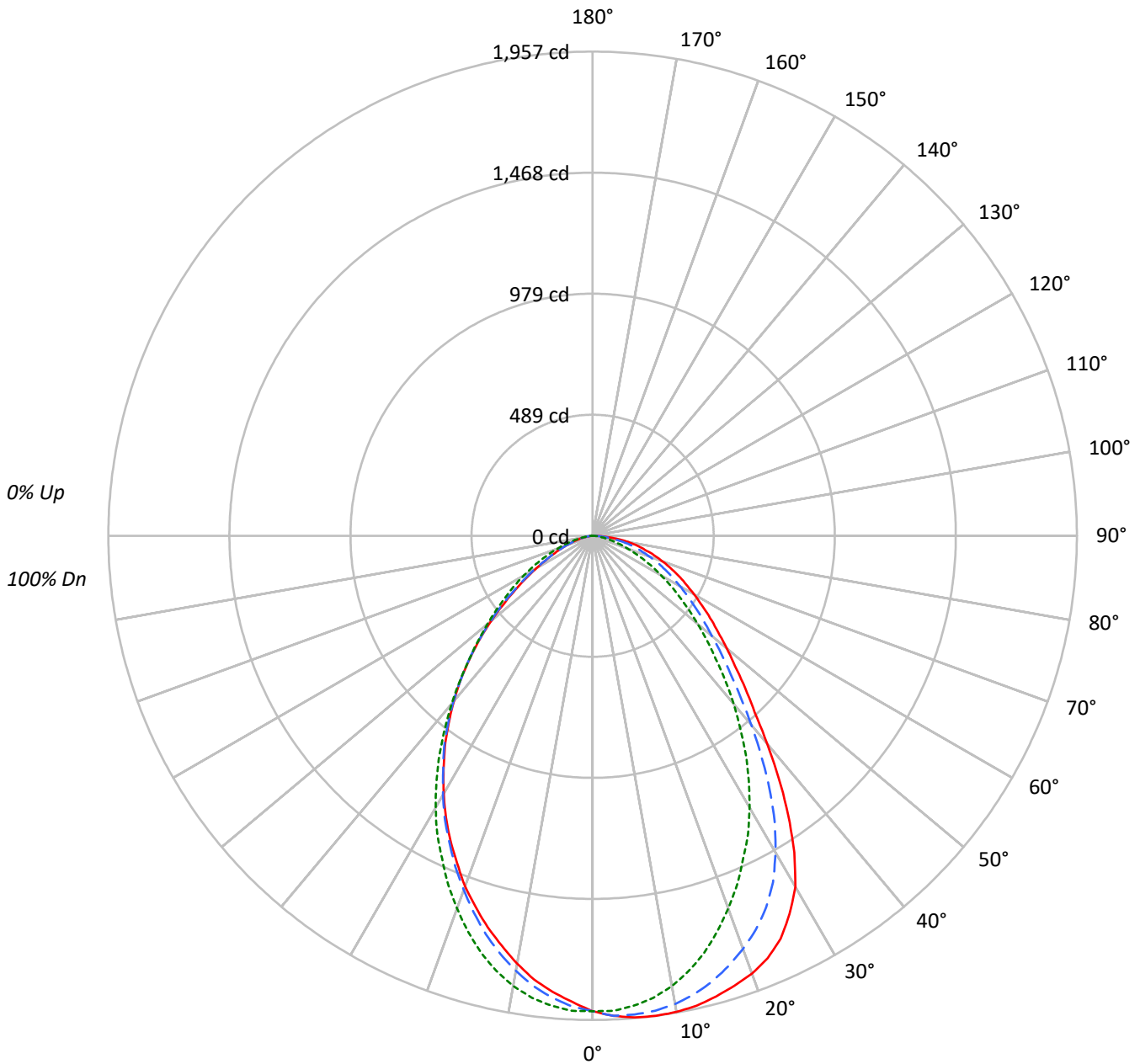
Input Watts (W): 58.77
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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°	187285	187285	187285
5°	191180	186553	181055
10°	193391	182861	173786
15°	194487	175993	165258
20°	195312	166189	156378
25°	193291	154826	146234
30°	184321	142728	135413
35°	163911	128385	123817
40°	139538	112834	110951
45°	120199	96975	96575
50°	107133	83814	81131
55°	98465	72332	64805
60°	92195	62237	50717
65°	88622	52486	39549
70°	85086	42115	32000
75°	82389	33400	24476
80°	82951	23235	14929
85°	69441	16549	6597



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	179.9	5.2
10°-20°	494.6	14.3
20°-30°	691.6	20.0
30°-40°	710.9	20.5
40°-50°	577.0	16.7
50°-60°	406.3	11.7
60°-70°	250.1	7.2
70°-80°	124.9	3.6
80°-90°	29.7	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°	1366.1	39.4
0°-40°	2077.0	59.9
0°-60°	3060.3	88.3
0°-90°	3465.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3465.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	1922	1922	1922	1922	1922	
5°	1954	1942	1907	1874	1851	186
15°	1928	1866	1744	1667	1638	545
25°	1798	1658	1440	1369	1360	822
35°	1378	1245	1079	1047	1041	857
45°	872	786	704	704	701	678
55°	580	508	426	390	381	521
65°	384	322	228	174	172	380
75°	219	172	89	65	65	234
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°	1921.7	1921.7	1921.7	1921.7	1921.7	1921.7	1921.7	1921.7	1921.7	1921.7	1921.7
2.5°	1942.4	1945.3	1936.4	1945.3	1933.5	1939.4	1942.4	1936.4	1930.5	1942.4	1942.4
5°	1954.2	1954.2	1945.3	1957.1	1942.4	1945.3	1951.2	1942.4	1933.5	1945.3	1942.4
7.5°	1957.1	1957.1	1945.3	1957.1	1942.4	1945.3	1948.3	1939.4	1930.5	1939.4	1936.4
10°	1954.2	1951.2	1942.4	1954.2	1939.4	1939.4	1942.4	1933.5	1918.7	1927.6	1921.7
12.5°	1945.3	1945.3	1933.5	1945.3	1924.6	1924.6	1927.6	1915.8	1903.9	1903.9	1898.0
15°	1927.6	1927.6	1915.8	1924.6	1906.9	1906.9	1903.9	1892.1	1877.3	1877.3	1865.5
17.5°	1906.9	1906.9	1895.1	1903.9	1883.2	1883.2	1880.3	1862.5	1841.8	1838.9	1824.1
20°	1883.2	1883.2	1868.4	1874.4	1850.7	1850.7	1847.8	1827.1	1803.4	1797.5	1776.8
22.5°	1847.8	1847.8	1833.0	1835.9	1812.3	1809.3	1806.4	1782.7	1759.1	1750.2	1723.6
25°	1797.5	1794.5	1782.7	1782.7	1759.1	1753.1	1747.2	1723.6	1699.9	1682.2	1658.5
27.5°	1723.6	1726.5	1711.8	1714.7	1685.2	1679.2	1676.3	1646.7	1620.1	1602.4	1578.7
30°	1637.9	1629.0	1614.2	1614.2	1590.5	1587.6	1581.7	1555.1	1525.5	1504.8	1478.2
32.5°	1516.6	1513.7	1498.9	1498.9	1472.3	1472.3	1460.5	1433.9	1407.3	1395.4	1368.8
35°	1377.7	1374.7	1362.9	1362.9	1339.3	1342.2	1330.4	1309.7	1283.1	1265.3	1244.6
37.5°	1235.8	1232.8	1221.0	1224.0	1203.3	1203.3	1194.4	1173.7	1153.0	1144.1	1117.5
40°	1096.8	1093.9	1079.1	1088.0	1070.2	1064.3	1061.4	1046.6	1022.9	1011.1	996.3
42.5°	969.7	972.7	957.9	963.8	949.0	943.1	940.1	928.3	910.6	898.7	884.0
45°	872.1	866.2	860.3	860.3	845.5	842.6	839.6	824.8	813.0	801.2	786.4
47.5°	780.5	774.6	768.7	771.6	759.8	756.8	750.9	739.1	724.3	718.4	703.6
50°	706.6	703.6	694.8	694.8	682.9	680.0	674.1	665.2	650.4	641.5	629.7
52.5°	638.6	638.6	629.7	626.8	617.9	614.9	612.0	600.2	588.3	576.5	564.7
55°	579.5	576.5	570.6	570.6	558.8	555.8	552.8	541.0	529.2	520.3	508.5
57.5°	523.3	523.3	517.4	517.4	508.5	502.6	502.6	490.8	476.0	470.1	455.3
60°	473.0	473.0	467.1	467.1	458.2	458.2	452.3	440.5	431.6	419.8	408.0
62.5°	425.7	428.7	422.8	419.8	410.9	408.0	408.0	399.1	384.3	375.5	363.6
65°	384.3	381.4	378.4	375.5	366.6	363.6	363.6	351.8	342.9	331.1	322.2
67.5°	340.0	340.0	334.1	334.1	328.2	325.2	319.3	310.4	301.6	292.7	283.8
70°	298.6	298.6	295.6	295.6	286.8	283.8	280.9	272.0	263.1	254.3	242.4
72.5°	260.2	257.2	254.3	254.3	248.3	245.4	242.4	233.6	224.7	215.8	206.9
75°	218.8	218.8	215.8	215.8	209.9	206.9	206.9	201.0	189.2	183.3	171.5
77.5°	183.3	183.3	180.3	180.3	174.4	174.4	171.5	162.6	156.7	147.8	141.9
80°	147.8	144.9	144.9	141.9	136.0	136.0	133.0	130.1	121.2	115.3	106.4
82.5°	103.5	103.5	103.5	100.5	97.6	97.6	94.6	88.7	82.8	79.8	71.0
85°	62.1	62.1	59.1	56.2	59.1	56.2	53.2	50.3	47.3	44.3	41.4
87.5°	26.6	26.6	23.7	23.7	23.7	23.7	23.7	20.7	17.7	17.7	14.8
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°	1921.7	1921.7	1921.7	1921.7	1921.7	1921.7	1921.7	1921.7	1921.7	1921.7	1921.7
2.5°	1924.6	1933.5	1930.5	1927.6	1921.7	1921.7	1921.7	1918.7	1921.7	1921.7	1915.8
5°	1924.6	1930.5	1927.6	1921.7	1915.8	1915.8	1912.8	1906.9	1906.9	1906.9	1895.1
7.5°	1915.8	1921.7	1912.8	1906.9	1901.0	1895.1	1895.1	1886.2	1886.2	1883.2	1871.4
10°	1898.0	1901.0	1889.1	1883.2	1874.4	1871.4	1865.5	1853.7	1850.7	1847.8	1835.9
12.5°	1871.4	1874.4	1859.6	1847.8	1835.9	1833.0	1827.1	1812.3	1806.4	1800.5	1785.7
15°	1833.0	1833.0	1815.2	1800.5	1788.6	1785.7	1770.9	1756.1	1750.2	1744.3	1723.6
17.5°	1788.6	1785.7	1762.0	1747.2	1732.5	1726.5	1711.8	1694.0	1682.2	1676.3	1658.5
20°	1741.3	1732.5	1705.8	1691.1	1673.3	1664.5	1649.7	1626.0	1614.2	1602.4	1584.6
22.5°	1685.2	1673.3	1643.8	1623.1	1605.3	1596.5	1575.8	1555.1	1537.3	1525.5	1504.8
25°	1617.2	1602.4	1569.9	1543.2	1528.5	1519.6	1498.9	1475.2	1457.5	1439.8	1422.0
27.5°	1537.3	1519.6	1487.1	1460.5	1445.7	1430.9	1416.1	1389.5	1374.7	1359.9	1339.3
30°	1439.8	1419.1	1389.5	1365.9	1348.1	1336.3	1318.6	1294.9	1277.2	1268.3	1247.6
32.5°	1333.3	1309.7	1283.1	1259.4	1250.6	1235.8	1221.0	1197.3	1182.6	1173.7	1158.9
35°	1215.1	1197.3	1167.8	1150.0	1135.3	1129.3	1117.5	1093.9	1088.0	1079.1	1061.4
37.5°	1090.9	1076.1	1055.4	1040.7	1028.8	1022.9	1011.1	996.3	987.4	978.6	969.7
40°	975.6	963.8	946.1	934.2	919.4	910.6	910.6	892.8	886.9	886.9	878.1
42.5°	863.3	857.4	842.6	824.8	821.9	813.0	810.1	801.2	795.3	792.3	789.4
45°	768.7	759.8	745.0	736.1	727.3	727.3	718.4	709.5	706.6	703.6	700.7
47.5°	685.9	674.1	662.2	653.4	647.5	644.5	635.6	629.7	626.8	626.8	623.8
50°	612.0	603.1	591.3	582.4	576.5	570.6	564.7	558.8	555.8	552.8	552.8
52.5°	549.9	538.1	526.2	517.4	508.5	505.5	499.6	493.7	490.8	487.8	484.9
55°	493.7	484.9	470.1	461.2	452.3	452.3	443.5	434.6	428.7	425.7	422.8
57.5°	440.5	431.6	416.9	408.0	402.1	396.2	390.2	384.3	378.4	372.5	366.6
60°	393.2	384.3	369.6	357.7	354.8	348.9	342.9	331.1	325.2	319.3	313.4
62.5°	348.9	337.0	325.2	313.4	310.4	304.5	295.6	286.8	277.9	272.0	263.1
65°	307.5	298.6	283.8	274.9	266.1	263.1	254.3	242.4	233.6	227.6	218.8
67.5°	269.0	257.2	242.4	233.6	227.6	221.7	212.9	204.0	195.1	186.3	177.4
70°	230.6	221.7	206.9	198.1	192.2	186.3	177.4	165.6	156.7	147.8	141.9
72.5°	195.1	183.3	171.5	162.6	156.7	150.8	141.9	133.0	124.2	118.3	109.4
75°	162.6	150.8	141.9	130.1	127.1	121.2	112.3	103.5	94.6	88.7	82.8
77.5°	130.1	121.2	109.4	103.5	97.6	91.6	85.7	76.9	71.0	62.1	56.2
80°	97.6	88.7	79.8	73.9	68.0	65.0	59.1	53.2	47.3	41.4	38.4
82.5°	65.0	59.1	50.3	47.3	44.3	41.4	35.5	32.5	29.6	26.6	23.7
85°	35.5	32.5	29.6	23.7	23.7	20.7	17.7	17.7	14.8	14.8	11.8
87.5°	14.8	11.8	11.8	8.9	8.9	8.9	5.9	5.9	5.9	3.0	3.0
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°	1921.7	1921.7	1921.7	1921.7	1921.7	1921.7	1921.7	1921.7	1921.7	1921.7	1921.7
2.5°	1918.7	1906.9	1906.9	1906.9	1898.0	1901.0	1903.9	1906.9	1903.9	1895.1	1903.9
5°	1898.0	1886.2	1886.2	1880.3	1874.4	1874.4	1874.4	1877.3	1874.4	1865.5	1868.4
7.5°	1871.4	1856.6	1853.7	1847.8	1841.8	1838.9	1838.9	1838.9	1835.9	1824.1	1830.0
10°	1830.0	1815.2	1809.3	1806.4	1797.5	1794.5	1791.6	1788.6	1785.7	1773.8	1779.8
12.5°	1779.8	1767.9	1756.1	1753.1	1744.3	1738.4	1735.4	1735.4	1729.5	1717.7	1723.6
15°	1720.6	1702.9	1694.0	1688.1	1679.2	1673.3	1667.4	1670.4	1667.4	1655.6	1658.5
17.5°	1649.7	1631.9	1623.1	1620.1	1608.3	1602.4	1599.4	1599.4	1596.5	1584.6	1587.6
20°	1572.8	1555.1	1549.2	1543.2	1537.3	1531.4	1528.5	1525.5	1522.6	1510.7	1519.6
22.5°	1495.9	1475.2	1466.4	1466.4	1454.6	1451.6	1448.6	1451.6	1448.6	1436.8	1442.7
25°	1416.1	1395.4	1389.5	1380.6	1374.7	1371.8	1371.8	1371.8	1368.8	1362.9	1368.8
27.5°	1327.4	1312.6	1303.8	1300.8	1294.9	1292.0	1289.0	1292.0	1292.0	1283.1	1289.0
30°	1238.7	1226.9	1221.0	1218.0	1209.2	1206.2	1209.2	1209.2	1209.2	1200.3	1209.2
32.5°	1150.0	1141.2	1138.2	1129.3	1123.4	1123.4	1123.4	1126.4	1123.4	1117.5	1126.4
35°	1061.4	1049.5	1046.6	1043.6	1043.6	1037.7	1043.6	1040.7	1046.6	1037.7	1043.6
37.5°	966.7	960.8	957.9	957.9	952.0	954.9	954.9	954.9	960.8	952.0	957.9
40°	878.1	872.1	872.1	872.1	869.2	869.2	869.2	872.1	875.1	869.2	875.1
42.5°	789.4	786.4	786.4	783.4	780.5	783.4	786.4	786.4	789.4	783.4	786.4
45°	703.6	700.7	703.6	700.7	700.7	697.7	700.7	703.6	703.6	700.7	700.7
47.5°	623.8	623.8	620.8	620.8	620.8	620.8	620.8	620.8	620.8	614.9	620.8
50°	552.8	546.9	549.9	546.9	546.9	544.0	544.0	541.0	538.1	535.1	535.1
52.5°	484.9	478.9	478.9	476.0	473.0	473.0	470.1	467.1	464.2	458.2	458.2
55°	419.8	413.9	410.9	408.0	405.0	402.1	399.1	396.2	390.2	387.3	387.3
57.5°	360.7	354.8	348.9	348.9	342.9	340.0	334.1	328.2	325.2	319.3	319.3
60°	307.5	301.6	292.7	289.7	286.8	280.9	272.0	269.0	266.1	260.2	263.1
62.5°	257.2	248.3	239.5	236.5	233.6	227.6	221.7	215.8	212.9	215.8	215.8
65°	209.9	201.0	195.1	189.2	186.3	180.3	177.4	174.4	174.4	174.4	177.4
67.5°	168.5	159.6	153.7	150.8	144.9	141.9	141.9	141.9	141.9	141.9	141.9
70°	133.0	127.1	121.2	115.3	115.3	112.3	112.3	112.3	112.3	112.3	112.3
72.5°	100.5	94.6	91.6	91.6	88.7	88.7	88.7	88.7	85.7	85.7	88.7
75°	73.9	71.0	68.0	68.0	68.0	65.0	65.0	65.0	65.0	65.0	65.0
77.5°	53.2	50.3	50.3	47.3	47.3	47.3	47.3	47.3	47.3	44.3	44.3
80°	35.5	32.5	32.5	32.5	32.5	29.6	29.6	29.6	29.6	29.6	29.6
82.5°	20.7	20.7	20.7	17.7	17.7	17.7	17.7	17.7	17.7	17.7	17.7
85°	11.8	8.9	8.9	8.9	8.9	8.9	8.9	8.9	8.9	8.9	8.9
87.5°	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	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: P251813

CATALOG NUMBER: LD4B50D010TE EU4B30509050 4LBLWW1H

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	1921.7	1921.7	1921.7	1921.7	1921.7	1921.7	1921.7	1921.7
2.5°	1886.2	1898.0	1901.0	1892.1	1895.1	1889.1	1892.1	1886.2
5°	1853.7	1862.5	1865.5	1859.6	1859.6	1853.7	1856.6	1850.7
7.5°	1812.3	1821.1	1824.1	1818.2	1818.2	1812.3	1812.3	1809.3
10°	1765.0	1767.9	1773.8	1765.0	1767.9	1762.0	1762.0	1756.1
12.5°	1705.8	1711.8	1717.7	1708.8	1708.8	1705.8	1705.8	1697.0
15°	1643.8	1649.7	1652.6	1646.7	1646.7	1643.8	1640.8	1637.9
17.5°	1578.7	1581.7	1587.6	1578.7	1584.6	1578.7	1578.7	1572.8
20°	1504.8	1513.7	1516.6	1507.8	1510.7	1507.8	1507.8	1507.8
22.5°	1433.9	1439.8	1442.7	1436.8	1439.8	1433.9	1436.8	1430.9
25°	1359.9	1362.9	1365.9	1359.9	1365.9	1362.9	1359.9	1359.9
27.5°	1283.1	1286.0	1289.0	1283.1	1289.0	1286.0	1289.0	1283.1
30°	1200.3	1206.2	1212.1	1206.2	1209.2	1206.2	1206.2	1203.3
32.5°	1117.5	1123.4	1129.3	1123.4	1129.3	1123.4	1126.4	1120.5
35°	1040.7	1043.6	1046.6	1040.7	1043.6	1043.6	1043.6	1040.7
37.5°	954.9	960.8	960.8	957.9	963.8	960.8	960.8	954.9
40°	872.1	875.1	878.1	872.1	875.1	872.1	875.1	872.1
42.5°	786.4	792.3	795.3	789.4	789.4	789.4	786.4	789.4
45°	697.7	703.6	709.5	700.7	703.6	703.6	703.6	700.7
47.5°	617.9	617.9	620.8	617.9	620.8	614.9	620.8	617.9
50°	535.1	535.1	541.0	535.1	535.1	535.1	535.1	535.1
52.5°	455.3	458.2	458.2	452.3	455.3	452.3	455.3	452.3
55°	381.4	381.4	384.3	381.4	381.4	381.4	381.4	381.4
57.5°	316.3	319.3	319.3	316.3	319.3	316.3	316.3	316.3
60°	263.1	263.1	263.1	260.2	263.1	260.2	263.1	260.2
62.5°	212.9	215.8	215.8	212.9	215.8	212.9	212.9	212.9
65°	174.4	174.4	174.4	174.4	174.4	174.4	174.4	171.5
67.5°	139.0	139.0	141.9	139.0	141.9	141.9	141.9	141.9
70°	112.3	112.3	112.3	112.3	112.3	112.3	112.3	112.3
72.5°	85.7	85.7	88.7	85.7	85.7	85.7	85.7	85.7
75°	65.0	65.0	65.0	65.0	65.0	62.1	62.1	65.0
77.5°	44.3	44.3	44.3	44.3	44.3	44.3	44.3	47.3
80°	29.6	29.6	29.6	29.6	26.6	26.6	29.6	26.6
82.5°	14.8	14.8	14.8	14.8	14.8	14.8	14.8	14.8
85°	8.9	8.9	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)