

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: P135705

Luminaire Tested: **LD6A20D010TE ERM6A20830 6LM111H**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P135705
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P23372)
Test Lab: INNOVATION CENTER P2
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: io LED
Catalog Number: LD6A20D010TE ERM6A20830 6LM111H
Description: PORTFOLIO 6 INCH 50 DEGREE CUTOFF RECESSED SINGLE WALL WASH LUMINAIRE
SEMI-SPECULAR CLEAR TRIM AND SPECULAR CLEAR KICKER
Light Source: (1) HIGH LUMEN LED 3000K
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 2297.0 lumens
Efficiency: N/A
Efficacy: 70.0 lumens/watt
Spacing Criteria (0/90/45): 0.9 / 0.96 / 0.92
Luminous Opening: Circular (Dia: 0.46' x H: 0')
CIE Type: Direct

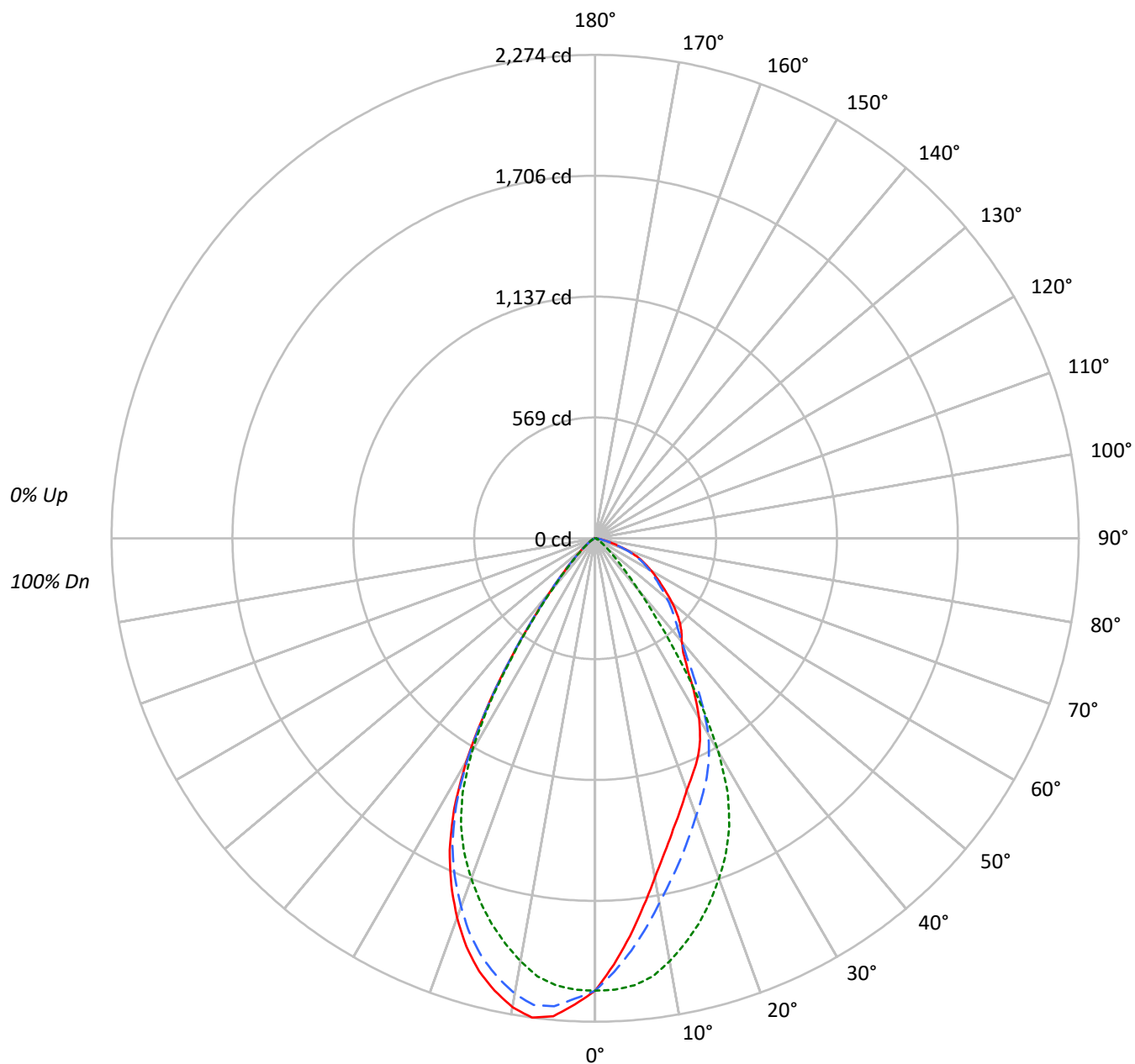
Input Watts (W): 32.8
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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
RW	70	50	30	10	70	50	30	10	50	30	10		50	30	10		50
RCR																	
0	119	119	119	119	116	116	116	116	111	111	111		106	106	106		102
1	112	109	106	104	110	107	104	102	103	101	99		99	97	96		96
2	106	100	95	91	103	98	94	90	95	91	88		92	89	86		89
3	99	92	86	81	97	90	85	81	88	83	79		85	81	78		83
4	93	85	78	73	91	83	77	73	81	76	72		79	75	71		77
5	88	78	72	67	86	77	71	66	75	70	66		74	69	65		72
6	83	73	66	61	81	72	65	61	70	65	60		69	64	60		67
7	78	68	61	56	77	67	61	56	66	60	56		64	59	55		63
8	74	63	57	52	73	63	56	52	62	56	52		60	55	51		59
9	70	59	53	48	69	59	53	48	58	52	48		57	52	48		56
10	67	56	49	45	65	55	49	45	54	49	45		54	48	45		53

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	138839	138839	138839
5°	123003	138236	147797
10°	107214	133773	148360
15°	95768	126858	142399
20°	87451	118201	131774
25°	82121	107416	116501
30°	73638	87244	91161
35°	60506	53999	55385
40°	53952	26555	28028
45°	52055	13240	14153
50°	47967	7034	7531
55°	43348	4220	4504
60°	39718	2910	2910
65°	36293	2285	1914
70°	29261	1888	1412
75°	18099	1235	630
80°	10219	939	0
85°	5539	0	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	195.2	8.5
10°-20°	506.8	22.1
20°-30°	645.0	28.1
30°-40°	462.1	20.1
40°-50°	230.5	10.0
50°-60°	139.5	6.1
60°-70°	85.3	3.7
70°-80°	29.4	1.3
80°-90°	3.1	0.1
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°	1346.9	58.6
0°-40°	1809.1	78.8
0°-60°	2179.1	94.9
0°-90°	2297.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2297.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	2128	2128	2128	2128	2128	
5°	1878	1948	2111	2210	2257	171
15°	1418	1559	1878	2044	2108	399
25°	1141	1242	1492	1589	1618	520
35°	760	819	678	695	695	485
45°	564	527	144	158	153	432
55°	381	359	37	40	40	343
65°	235	228	15	12	12	230
75°	72	64	5	2	2	83
85°	7	5	0	0	0	10
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	2128.1	2128.1	2128.1	2128.1	2128.1	2128.1	2128.1	2128.1	2128.1	2128.1	2128.1
2.5°	2006.9	2009.4	2014.3	2009.4	2011.8	2024.2	2019.3	2021.7	2029.2	2041.5	2034.1
5°	1878.2	1880.7	1893.1	1885.6	1890.6	1905.4	1905.4	1915.3	1930.2	1947.5	1947.5
7.5°	1744.6	1749.5	1761.9	1756.9	1764.4	1784.2	1786.6	1801.5	1821.3	1846.0	1858.4
10°	1618.4	1623.3	1635.7	1633.2	1643.1	1662.9	1672.8	1687.7	1712.4	1742.1	1756.9
12.5°	1512.0	1516.9	1526.8	1526.8	1539.2	1559.0	1568.9	1588.7	1613.4	1645.6	1665.4
15°	1417.9	1425.4	1435.3	1435.3	1447.6	1467.4	1479.8	1497.1	1524.3	1559.0	1581.3
17.5°	1336.3	1338.7	1348.6	1348.6	1361.0	1380.8	1393.2	1410.5	1437.7	1469.9	1494.6
20°	1259.6	1262.0	1271.9	1274.4	1284.3	1301.6	1314.0	1331.3	1356.1	1388.2	1410.5
22.5°	1200.2	1205.1	1212.5	1215.0	1220.0	1237.3	1252.1	1264.5	1286.8	1314.0	1336.3
25°	1140.8	1143.3	1150.7	1153.2	1160.6	1172.9	1182.8	1195.2	1215.0	1242.2	1259.6
27.5°	1069.0	1076.4	1078.9	1081.4	1088.8	1098.7	1108.6	1118.5	1135.8	1158.1	1172.9
30°	977.5	979.9	987.4	992.3	999.7	1009.6	1022.0	1031.9	1046.7	1064.1	1074.0
32.5°	871.1	873.5	880.9	885.9	898.3	908.2	918.1	925.5	935.4	945.3	945.3
35°	759.7	767.1	769.6	777.0	789.4	799.3	806.7	809.2	814.1	819.1	801.8
37.5°	680.5	685.5	690.4	695.4	705.3	712.7	717.6	717.6	715.2	710.2	687.9
40°	633.5	636.0	640.9	643.4	653.3	658.2	658.2	653.3	643.4	631.0	596.4
42.5°	601.3	603.8	606.3	608.7	613.7	616.2	613.7	603.8	591.4	574.1	534.5
45°	564.2	566.7	569.2	569.2	574.1	574.1	571.6	561.7	546.9	527.1	485.0
47.5°	519.7	522.1	524.6	527.1	529.6	529.6	527.1	517.2	502.3	485.0	440.5
50°	472.6	475.1	477.6	477.6	482.5	482.5	480.1	470.2	457.8	440.5	400.9
52.5°	425.6	428.1	428.1	433.1	433.1	433.1	430.6	420.7	410.8	398.4	361.3
55°	381.1	383.6	383.6	388.5	391.0	388.5	386.0	378.6	368.7	358.8	329.1
57.5°	341.5	344.0	344.0	346.4	348.9	346.4	344.0	339.0	334.1	324.2	299.4
60°	304.4	306.8	306.8	309.3	309.3	306.8	306.8	301.9	296.9	292.0	269.7
62.5°	269.7	269.7	269.7	272.2	272.2	269.7	269.7	264.8	262.3	259.8	242.5
65°	235.1	235.1	235.1	235.1	235.1	230.1	230.1	227.7	225.2	227.7	212.8
67.5°	195.5	195.5	193.0	193.0	193.0	188.1	188.1	188.1	185.6	188.1	175.7
70°	153.4	153.4	150.9	150.9	148.5	143.5	143.5	143.5	141.1	143.5	136.1
72.5°	108.9	111.4	106.4	106.4	103.9	99.0	101.5	99.0	101.5	101.5	96.5
75°	71.8	74.2	69.3	69.3	66.8	64.3	64.3	64.3	66.8	64.3	61.9
77.5°	44.5	47.0	44.5	44.5	42.1	39.6	39.6	39.6	39.6	39.6	37.1
80°	27.2	27.2	27.2	24.7	24.7	22.3	22.3	22.3	22.3	22.3	19.8
82.5°	14.8	14.8	14.8	14.8	14.8	12.4	12.4	12.4	12.4	12.4	9.9
85°	7.4	7.4	7.4	7.4	7.4	4.9	4.9	4.9	4.9	4.9	4.9
87.5°	2.5	2.5	2.5	2.5	2.5	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



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°	95°	100°	105°
0°	2128.1	2128.1	2128.1	2128.1	2128.1	2128.1	2128.1	2128.1	2128.1	2128.1	2128.1
2.5°	2056.4	2066.3	2058.8	2088.5	2083.6	2105.9	2103.4	2125.7	2123.2	2125.7	2130.6
5°	1977.2	1997.0	1999.5	2036.6	2039.0	2073.7	2081.1	2110.8	2115.8	2125.7	2138.0
7.5°	1890.6	1920.3	1930.2	1972.2	1987.1	2024.2	2039.0	2078.6	2088.5	2105.9	2120.7
10°	1796.5	1831.2	1846.0	1895.5	1915.3	1957.4	1977.2	2019.3	2034.1	2053.9	2071.2
12.5°	1707.5	1744.6	1764.4	1816.3	1843.6	1885.6	1907.9	1952.4	1967.3	1992.0	2009.4
15°	1623.3	1662.9	1685.2	1737.2	1764.4	1811.4	1833.7	1878.2	1895.5	1920.3	1937.6
17.5°	1536.7	1576.3	1601.1	1650.5	1685.2	1724.8	1749.5	1794.1	1811.4	1833.7	1851.0
20°	1452.6	1492.2	1514.4	1563.9	1596.1	1635.7	1658.0	1702.5	1714.9	1737.2	1752.0
22.5°	1373.4	1410.5	1430.3	1482.3	1509.5	1544.1	1566.4	1606.0	1620.8	1638.2	1648.1
25°	1294.2	1326.4	1341.2	1385.8	1408.0	1440.2	1457.5	1492.2	1507.0	1521.9	1534.2
27.5°	1205.1	1222.4	1227.4	1262.0	1279.4	1309.1	1316.5	1348.6	1361.0	1370.9	1380.8
30°	1093.8	1096.2	1081.4	1098.7	1106.1	1128.4	1128.4	1158.1	1168.0	1175.4	1185.3
32.5°	952.7	937.9	903.2	898.3	893.3	905.7	900.7	925.5	935.4	940.3	947.8
35°	796.8	764.6	707.7	685.5	670.6	668.1	660.7	678.0	685.5	690.4	695.4
37.5°	660.7	613.7	541.9	502.3	477.6	467.7	457.8	467.7	472.6	477.6	482.5
40°	561.7	502.3	418.2	368.7	334.1	319.2	306.8	311.8	316.7	321.7	324.2
42.5°	490.0	423.2	331.6	272.2	237.6	220.2	207.9	210.3	212.8	215.3	220.2
45°	435.5	363.8	269.7	205.4	170.7	153.4	143.5	143.5	146.0	148.5	150.9
47.5°	391.0	314.3	220.2	158.4	126.2	108.9	99.0	99.0	101.5	101.5	103.9
50°	348.9	272.2	180.6	123.7	94.0	79.2	71.8	69.3	71.8	71.8	74.2
52.5°	314.3	240.0	150.9	99.0	71.8	59.4	52.0	52.0	52.0	52.0	52.0
55°	282.1	210.3	126.2	79.2	56.9	47.0	39.6	37.1	37.1	37.1	37.1
57.5°	257.4	188.1	108.9	66.8	47.0	37.1	32.2	29.7	29.7	29.7	29.7
60°	232.6	165.8	94.0	54.4	37.1	32.2	27.2	22.3	22.3	22.3	22.3
62.5°	207.9	143.5	79.2	47.0	32.2	24.7	22.3	17.3	17.3	17.3	17.3
65°	180.6	123.7	66.8	37.1	24.7	19.8	17.3	14.8	14.8	12.4	12.4
67.5°	148.5	99.0	54.4	32.2	22.3	17.3	14.8	12.4	9.9	9.9	9.9
70°	113.8	74.2	42.1	24.7	17.3	14.8	9.9	9.9	7.4	7.4	7.4
72.5°	81.7	52.0	29.7	19.8	12.4	9.9	9.9	7.4	7.4	7.4	4.9
75°	52.0	34.6	19.8	12.4	9.9	7.4	7.4	4.9	4.9	4.9	4.9
77.5°	32.2	22.3	14.8	9.9	7.4	4.9	4.9	4.9	2.5	2.5	2.5
80°	17.3	12.4	7.4	4.9	4.9	2.5	2.5	2.5	2.5	2.5	2.5
82.5°	9.9	7.4	4.9	2.5	2.5	2.5	2.5	2.5	0.0	0.0	0.0
85°	4.9	2.5	2.5	2.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
87.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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):

	110°	115°	120°	125°	130°	135°	140°	145°	150°	155°	160°
0°	2128.1	2128.1	2128.1	2128.1	2128.1	2128.1	2128.1	2128.1	2128.1	2128.1	2128.1
2.5°	2145.5	2157.8	2150.4	2155.4	2177.6	2167.7	2185.0	2185.0	2204.8	2204.8	2190.0
5°	2160.3	2175.2	2177.6	2185.0	2214.7	2209.8	2229.6	2234.5	2256.8	2261.8	2249.4
7.5°	2150.4	2167.7	2175.2	2187.5	2217.2	2214.7	2237.0	2246.9	2266.7	2274.1	2264.2
10°	2103.4	2123.2	2133.1	2145.5	2177.6	2175.2	2199.9	2212.3	2229.6	2237.0	2229.6
12.5°	2041.5	2063.8	2073.7	2086.1	2118.2	2115.8	2140.5	2152.9	2167.7	2177.6	2170.2
15°	1972.2	1987.1	2004.4	2016.8	2046.5	2044.0	2068.7	2081.1	2093.5	2105.9	2098.4
17.5°	1883.2	1898.0	1915.3	1925.2	1954.9	1954.9	1974.7	1984.6	2001.9	2011.8	2001.9
20°	1781.7	1799.0	1811.4	1818.8	1846.0	1843.6	1863.4	1873.3	1888.1	1895.5	1888.1
22.5°	1675.3	1690.1	1700.0	1705.0	1727.3	1724.8	1739.6	1749.5	1761.9	1769.3	1761.9
25°	1554.0	1563.9	1571.4	1573.8	1593.6	1588.7	1608.5	1608.5	1618.4	1625.8	1618.4
27.5°	1398.1	1405.6	1410.5	1408.0	1422.9	1415.5	1432.8	1420.4	1440.2	1445.2	1437.7
30°	1197.7	1202.6	1207.6	1197.7	1207.6	1197.7	1212.5	1195.2	1212.5	1220.0	1212.5
32.5°	960.1	960.1	965.1	952.7	957.7	947.8	955.2	950.2	955.2	962.6	955.2
35°	705.3	705.3	710.2	702.8	705.3	695.4	700.3	695.4	697.8	702.8	700.3
37.5°	490.0	487.5	494.9	490.0	492.4	487.5	490.0	485.0	487.5	490.0	487.5
40°	331.6	331.6	336.5	334.1	336.5	334.1	336.5	334.1	334.1	334.1	331.6
42.5°	222.7	225.2	227.7	227.7	230.1	227.7	230.1	227.7	227.7	227.7	225.2
45°	153.4	153.4	155.9	155.9	158.4	158.4	158.4	155.9	155.9	155.9	155.9
47.5°	106.4	108.9	108.9	108.9	108.9	108.9	108.9	108.9	108.9	108.9	106.4
50°	74.2	76.7	76.7	76.7	76.7	76.7	76.7	74.2	74.2	74.2	74.2
52.5°	54.4	54.4	54.4	54.4	54.4	54.4	54.4	54.4	54.4	52.0	52.0
55°	39.6	39.6	39.6	39.6	39.6	39.6	39.6	39.6	39.6	39.6	39.6
57.5°	29.7	29.7	29.7	29.7	29.7	29.7	29.7	29.7	29.7	29.7	29.7
60°	22.3	22.3	22.3	22.3	22.3	22.3	22.3	22.3	22.3	22.3	22.3
62.5°	17.3	17.3	17.3	17.3	17.3	17.3	17.3	17.3	17.3	17.3	17.3
65°	12.4	12.4	12.4	12.4	12.4	12.4	12.4	12.4	12.4	12.4	12.4
67.5°	9.9	9.9	9.9	9.9	9.9	9.9	9.9	9.9	9.9	9.9	9.9
70°	7.4	7.4	7.4	7.4	7.4	7.4	7.4	7.4	7.4	7.4	7.4
72.5°	4.9	4.9	4.9	4.9	4.9	4.9	4.9	4.9	4.9	4.9	4.9
75°	4.9	4.9	4.9	4.9	4.9	2.5	2.5	2.5	2.5	2.5	2.5
77.5°	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
80°	0.0	2.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
82.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
85°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
87.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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: P135705

CATALOG NUMBER: LD6A20D010TE ERM6A20830 6LM111H

CANDELA DISTRIBUTION (continued):

	165°	170°	175°	180°
0°	2128.1	2128.1	2128.1	2128.1
2.5°	2182.6	2194.9	2194.9	2194.9
5°	2242.0	2259.3	2259.3	2256.8
7.5°	2259.3	2279.1	2274.1	2274.1
10°	2224.6	2244.4	2239.5	2239.5
12.5°	2167.7	2185.0	2182.6	2180.1
15°	2096.0	2113.3	2110.8	2108.3
17.5°	1999.5	2019.3	2016.8	2014.3
20°	1883.2	1900.5	1900.5	1898.0
22.5°	1756.9	1769.3	1771.8	1766.8
25°	1613.4	1623.3	1623.3	1618.4
27.5°	1432.8	1440.2	1440.2	1437.7
30°	1210.1	1212.5	1215.0	1210.1
32.5°	950.2	950.2	955.2	950.2
35°	692.9	692.9	697.8	695.4
37.5°	482.5	482.5	485.0	482.5
40°	329.1	329.1	331.6	329.1
42.5°	225.2	222.7	225.2	225.2
45°	153.4	153.4	155.9	153.4
47.5°	106.4	106.4	106.4	106.4
50°	74.2	74.2	74.2	74.2
52.5°	52.0	52.0	52.0	52.0
55°	37.1	39.6	39.6	39.6
57.5°	27.2	29.7	29.7	29.7
60°	22.3	22.3	22.3	22.3
62.5°	17.3	17.3	17.3	17.3
65°	12.4	12.4	12.4	12.4
67.5°	9.9	9.9	9.9	9.9
70°	7.4	7.4	7.4	7.4
72.5°	4.9	4.9	4.9	4.9
75°	2.5	2.5	2.5	2.5
77.5°	2.5	2.5	2.5	2.5
80°	0.0	0.0	0.0	0.0
82.5°	0.0	0.0	0.0	0.0
85°	0.0	0.0	0.0	0.0
87.5°	0.0	0.0	0.0	0.0
90°	0.0	0.0	0.0	0.0



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— 0°-180° - - 45°-225° - - - 90°-270°













(END OF REPORT)