

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: P135706

Luminaire Tested: **LD6A20D010TE ERM6A20835 6LM111H**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P135706
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 ERM6A20835 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 3500K
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 2356.0 lumens
Efficiency: N/A
Efficacy: 71.8 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

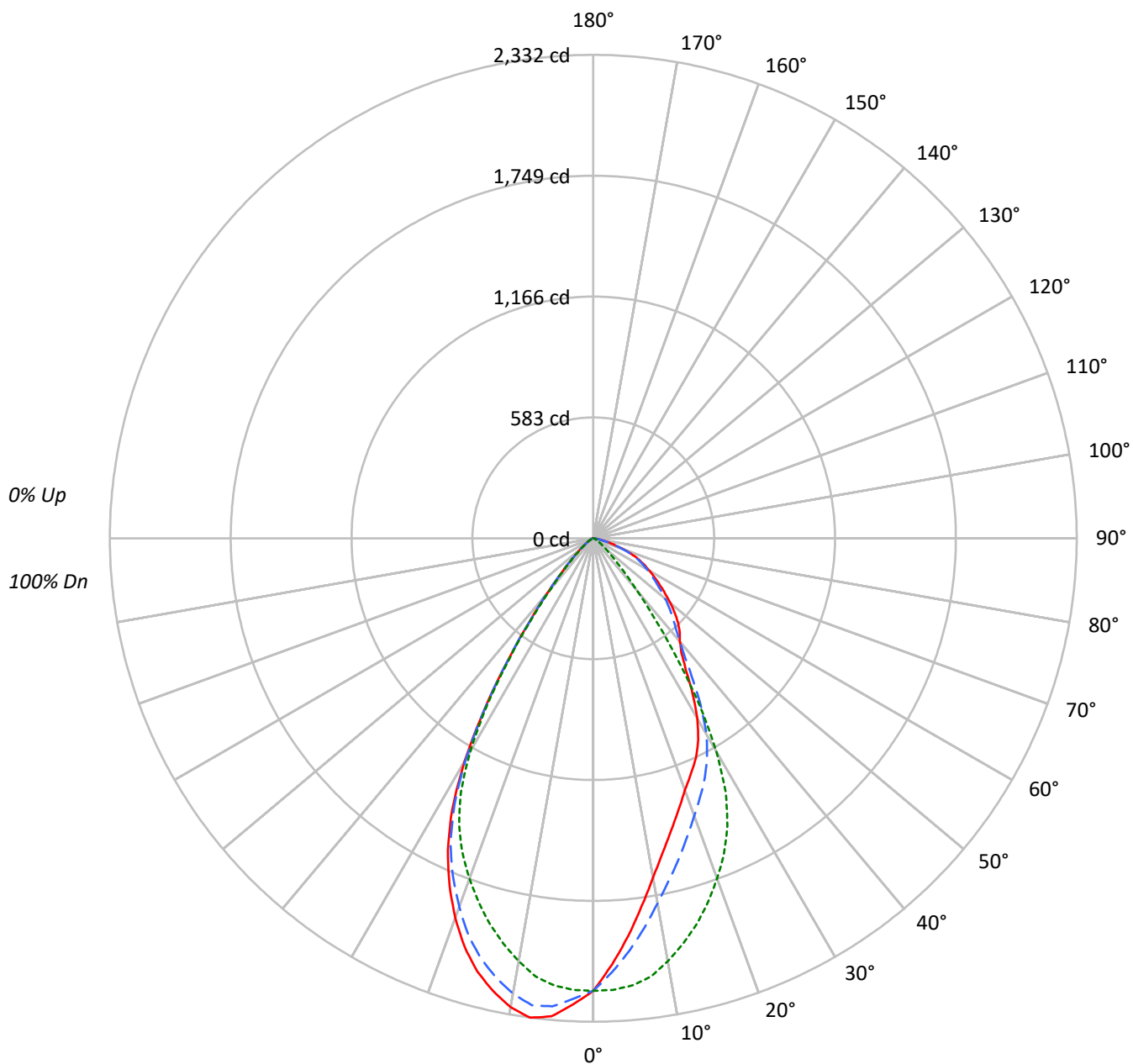
Input Watts (W): 32.8
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



TEST NUMBER: P135706

CATALOG NUMBER: LD6A20D010TE ERM6A20835 6LM111H

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°	142407	142407	142407
5°	126160	141785	151596
10°	109964	137204	152170
15°	98233	130113	146060
20°	89694	121235	135162
25°	84230	110173	119488
30°	75529	89481	93496
35°	62059	55385	56802
40°	55341	27236	28752
45°	53393	13581	14522
50°	49205	7216	7724
55°	44462	4334	4618
60°	40736	2975	2975
65°	37219	2346	1961
70°	30024	1946	1450
75°	18552	1286	630
80°	10482	939	0
85°	5689	0	0



TEST NUMBER: P135706

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	200.2	8.5
10°-20°	519.8	22.1
20°-30°	661.5	28.1
30°-40°	474.0	20.1
40°-50°	236.4	10.0
50°-60°	143.1	6.1
60°-70°	87.5	3.7
70°-80°	30.2	1.3
80°-90°	3.2	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°	1381.5	58.6
0°-40°	1855.5	78.8
0°-60°	2235.1	94.9
0°-90°	2356.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2356.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	2183	2183	2183	2183	2183	
5°	1926	1998	2165	2267	2315	176
15°	1454	1599	1926	2096	2162	409
25°	1170	1274	1530	1630	1660	534
35°	779	840	695	713	713	498
45°	579	541	147	162	157	443
55°	391	368	38	41	41	352
65°	241	234	15	13	13	236
75°	74	66	5	2	2	85
85°	8	5	0	0	0	11
90°	0	0	0	0	0	



TEST NUMBER: P135706

CATALOG NUMBER: LD6A20D010TE ERM6A20835 6LM111H

CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	2182.8	2182.8	2182.8	2182.8	2182.8	2182.8	2182.8	2182.8	2182.8	2182.8	2182.8
2.5°	2058.4	2061.0	2066.0	2061.0	2063.5	2076.2	2071.1	2073.7	2081.3	2094.0	2086.3
5°	1926.4	1929.0	1941.7	1934.1	1939.1	1954.4	1954.4	1964.5	1979.7	1997.5	1997.5
7.5°	1789.4	1794.5	1807.2	1802.1	1809.7	1830.0	1832.5	1847.8	1868.1	1893.4	1906.1
10°	1659.9	1665.0	1677.7	1675.2	1685.3	1705.6	1715.8	1731.0	1756.4	1786.8	1802.1
12.5°	1550.8	1555.9	1566.0	1566.0	1578.7	1599.0	1609.2	1629.5	1654.9	1687.9	1708.2
15°	1454.4	1462.0	1472.1	1472.1	1484.8	1505.1	1517.8	1535.6	1563.5	1599.0	1621.9
17.5°	1370.6	1373.1	1383.3	1383.3	1396.0	1416.3	1429.0	1446.7	1474.7	1507.7	1533.0
20°	1291.9	1294.4	1304.6	1307.1	1317.3	1335.1	1347.8	1365.5	1390.9	1423.9	1446.7
22.5°	1231.0	1236.1	1243.7	1246.2	1251.3	1269.1	1284.3	1297.0	1319.8	1347.8	1370.6
25°	1170.1	1172.6	1180.2	1182.8	1190.4	1203.1	1213.2	1225.9	1246.2	1274.1	1291.9
27.5°	1096.5	1104.1	1106.6	1109.2	1116.8	1126.9	1137.1	1147.2	1165.0	1187.8	1203.1
30°	1002.6	1005.1	1012.7	1017.8	1025.4	1035.6	1048.3	1058.4	1073.6	1091.4	1101.6
32.5°	893.4	896.0	903.6	908.7	921.3	931.5	941.6	949.3	959.4	969.6	969.6
35°	779.2	786.8	789.4	797.0	809.7	819.8	827.4	830.0	835.0	840.1	822.4
37.5°	698.0	703.1	708.1	713.2	723.4	731.0	736.1	736.1	733.5	728.4	705.6
40°	649.8	652.3	657.4	659.9	670.1	675.1	675.1	670.1	659.9	647.2	611.7
42.5°	616.8	619.3	621.8	624.4	629.5	632.0	629.5	619.3	606.6	588.8	548.2
45°	578.7	581.2	583.8	583.8	588.8	588.8	586.3	576.2	560.9	540.6	497.5
47.5°	533.0	535.5	538.1	540.6	543.2	543.2	540.6	530.5	515.2	497.5	451.8
50°	484.8	487.3	489.9	489.9	494.9	494.9	492.4	482.2	469.6	451.8	411.2
52.5°	436.6	439.1	439.1	444.2	444.2	444.2	441.6	431.5	421.3	408.6	370.6
55°	390.9	393.4	393.4	398.5	401.0	398.5	395.9	388.3	378.2	368.0	337.6
57.5°	350.3	352.8	352.8	355.3	357.9	355.3	352.8	347.7	342.6	332.5	307.1
60°	312.2	314.7	314.7	317.3	317.3	314.7	314.7	309.7	304.6	299.5	276.7
62.5°	276.7	276.7	276.7	279.2	279.2	276.7	276.7	271.6	269.0	266.5	248.7
65°	241.1	241.1	241.1	241.1	241.1	236.0	236.0	233.5	231.0	233.5	218.3
67.5°	200.5	200.5	198.0	198.0	198.0	192.9	192.9	192.9	190.4	192.9	180.2
70°	157.4	157.4	154.8	154.8	152.3	147.2	147.2	147.2	144.7	147.2	139.6
72.5°	111.7	114.2	109.1	109.1	106.6	101.5	104.1	101.5	104.1	104.1	99.0
75°	73.6	76.1	71.1	71.1	68.5	66.0	66.0	66.0	68.5	66.0	63.5
77.5°	45.7	48.2	45.7	45.7	43.1	40.6	40.6	40.6	40.6	40.6	38.1
80°	27.9	27.9	27.9	25.4	25.4	22.8	22.8	22.8	22.8	22.8	20.3
82.5°	15.2	15.2	15.2	15.2	15.2	12.7	12.7	12.7	12.7	12.7	10.2
85°	7.6	7.6	7.6	7.6	7.6	5.1	5.1	5.1	5.1	5.1	5.1
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



TEST NUMBER: P135706

CATALOG NUMBER: LD6A20D010TE ERM6A20835 6LM111H

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°	95°	100°	105°
0°	2182.8	2182.8	2182.8	2182.8	2182.8	2182.8	2182.8	2182.8	2182.8	2182.8	2182.8
2.5°	2109.2	2119.3	2111.7	2142.2	2137.1	2160.0	2157.4	2180.3	2177.7	2180.3	2185.3
5°	2028.0	2048.3	2050.8	2088.9	2091.4	2127.0	2134.6	2165.0	2170.1	2180.3	2192.9
7.5°	1939.1	1969.6	1979.7	2022.9	2038.1	2076.2	2091.4	2132.0	2142.2	2160.0	2175.2
10°	1842.7	1878.2	1893.4	1944.2	1964.5	2007.7	2028.0	2071.1	2086.3	2106.7	2124.4
12.5°	1751.3	1789.4	1809.7	1863.0	1890.9	1934.1	1956.9	2002.6	2017.8	2043.2	2061.0
15°	1665.0	1705.6	1728.5	1781.8	1809.7	1857.9	1880.8	1926.4	1944.2	1969.6	1987.4
17.5°	1576.2	1616.8	1642.2	1692.9	1728.5	1769.1	1794.5	1840.1	1857.9	1880.8	1898.5
20°	1489.9	1530.5	1553.3	1604.1	1637.1	1677.7	1700.6	1746.2	1758.9	1781.8	1797.0
22.5°	1408.7	1446.7	1467.0	1520.3	1548.3	1583.8	1606.6	1647.3	1662.5	1680.2	1690.4
25°	1327.4	1360.4	1375.7	1421.4	1444.2	1477.2	1495.0	1530.5	1545.7	1561.0	1573.6
27.5°	1236.1	1253.8	1258.9	1294.4	1312.2	1342.7	1350.3	1383.3	1396.0	1406.1	1416.3
30°	1121.9	1124.4	1109.2	1126.9	1134.5	1157.4	1157.4	1187.8	1198.0	1205.6	1215.8
32.5°	977.2	962.0	926.4	921.3	916.3	929.0	923.9	949.3	959.4	964.5	972.1
35°	817.3	784.3	725.9	703.1	687.8	685.3	677.7	695.4	703.1	708.1	713.2
37.5°	677.7	629.5	555.9	515.2	489.9	479.7	469.6	479.7	484.8	489.9	494.9
40°	576.2	515.2	428.9	378.2	342.6	327.4	314.7	319.8	324.9	330.0	332.5
42.5°	502.6	434.0	340.1	279.2	243.7	225.9	213.2	215.7	218.3	220.8	225.9
45°	446.7	373.1	276.7	210.7	175.1	157.4	147.2	147.2	149.8	152.3	154.8
47.5°	401.0	322.3	225.9	162.4	129.4	111.7	101.5	101.5	104.1	104.1	106.6
50°	357.9	279.2	185.3	126.9	96.4	81.2	73.6	71.1	73.6	73.6	76.1
52.5°	322.3	246.2	154.8	101.5	73.6	60.9	53.3	53.3	53.3	53.3	53.3
55°	289.3	215.7	129.4	81.2	58.4	48.2	40.6	38.1	38.1	38.1	38.1
57.5°	264.0	192.9	111.7	68.5	48.2	38.1	33.0	30.5	30.5	30.5	30.5
60°	238.6	170.1	96.4	55.8	38.1	33.0	27.9	22.8	22.8	22.8	22.8
62.5°	213.2	147.2	81.2	48.2	33.0	25.4	22.8	17.8	17.8	17.8	17.8
65°	185.3	126.9	68.5	38.1	25.4	20.3	17.8	15.2	15.2	12.7	12.7
67.5°	152.3	101.5	55.8	33.0	22.8	17.8	15.2	12.7	10.2	10.2	10.2
70°	116.8	76.1	43.1	25.4	17.8	15.2	10.2	10.2	7.6	7.6	7.6
72.5°	83.8	53.3	30.5	20.3	12.7	10.2	10.2	7.6	7.6	7.6	5.1
75°	53.3	35.5	20.3	12.7	10.2	7.6	7.6	5.1	5.1	5.1	5.1
77.5°	33.0	22.8	15.2	10.2	7.6	5.1	5.1	5.1	2.5	2.5	2.5
80°	17.8	12.7	7.6	5.1	5.1	2.5	2.5	2.5	2.5	2.5	2.5
82.5°	10.2	7.6	5.1	2.5	2.5	2.5	2.5	2.5	0.0	0.0	0.0
85°	5.1	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



TEST NUMBER: P135706

CATALOG NUMBER: LD6A20D010TE ERM6A20835 6LM111H

CANDELA DISTRIBUTION (continued):

	110°	115°	120°	125°	130°	135°	140°	145°	150°	155°	160°
0°	2182.8	2182.8	2182.8	2182.8	2182.8	2182.8	2182.8	2182.8	2182.8	2182.8	2182.8
2.5°	2200.6	2213.3	2205.6	2210.7	2233.6	2223.4	2241.2	2241.2	2261.5	2261.5	2246.3
5°	2215.8	2231.0	2233.6	2241.2	2271.6	2266.6	2286.9	2291.9	2314.8	2319.9	2307.2
7.5°	2205.6	2223.4	2231.0	2243.7	2274.2	2271.6	2294.5	2304.6	2324.9	2332.5	2322.4
10°	2157.4	2177.7	2187.9	2200.6	2233.6	2231.0	2256.4	2269.1	2286.9	2294.5	2286.9
12.5°	2094.0	2116.8	2127.0	2139.6	2172.6	2170.1	2195.5	2208.2	2223.4	2233.6	2225.9
15°	2022.9	2038.1	2055.9	2068.6	2099.0	2096.5	2121.9	2134.6	2147.3	2160.0	2152.3
17.5°	1931.5	1946.8	1964.5	1974.7	2005.1	2005.1	2025.4	2035.6	2053.4	2063.5	2053.4
20°	1827.5	1845.2	1857.9	1865.5	1893.4	1890.9	1911.2	1921.4	1936.6	1944.2	1936.6
22.5°	1718.3	1733.5	1743.7	1748.8	1771.6	1769.1	1784.3	1794.5	1807.2	1814.8	1807.2
25°	1593.9	1604.1	1611.7	1614.3	1634.6	1629.5	1649.8	1649.8	1659.9	1667.6	1659.9
27.5°	1434.0	1441.7	1446.7	1444.2	1459.4	1451.8	1469.6	1456.9	1477.2	1482.3	1474.7
30°	1228.5	1233.5	1238.6	1228.5	1238.6	1228.5	1243.7	1225.9	1243.7	1251.3	1243.7
32.5°	984.8	984.8	989.9	977.2	982.3	972.1	979.7	974.6	979.7	987.3	979.7
35°	723.4	723.4	728.4	720.8	723.4	713.2	718.3	713.2	715.8	720.8	718.3
37.5°	502.6	500.0	507.6	502.6	505.1	500.0	502.6	497.5	500.0	502.6	500.0
40°	340.1	340.1	345.2	342.6	345.2	342.6	345.2	342.6	342.6	342.6	340.1
42.5°	228.4	231.0	233.5	233.5	236.0	233.5	236.0	233.5	233.5	233.5	231.0
45°	157.4	157.4	159.9	159.9	162.4	162.4	162.4	159.9	159.9	159.9	159.9
47.5°	109.1	111.7	111.7	111.7	111.7	111.7	111.7	111.7	111.7	111.7	109.1
50°	76.1	78.7	78.7	78.7	78.7	78.7	78.7	76.1	76.1	76.1	76.1
52.5°	55.8	55.8	55.8	55.8	55.8	55.8	55.8	55.8	55.8	53.3	53.3
55°	40.6	40.6	40.6	40.6	40.6	40.6	40.6	40.6	40.6	40.6	40.6
57.5°	30.5	30.5	30.5	30.5	30.5	30.5	30.5	30.5	30.5	30.5	30.5
60°	22.8	22.8	22.8	22.8	22.8	22.8	22.8	22.8	22.8	22.8	22.8
62.5°	17.8	17.8	17.8	17.8	17.8	17.8	17.8	17.8	17.8	17.8	17.8
65°	12.7	12.7	12.7	12.7	12.7	12.7	12.7	12.7	12.7	12.7	12.7
67.5°	10.2	10.2	10.2	10.2	10.2	10.2	10.2	10.2	10.2	10.2	10.2
70°	7.6	7.6	7.6	7.6	7.6	7.6	7.6	7.6	7.6	7.6	7.6
72.5°	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1
75°	5.1	5.1	5.1	5.1	5.1	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: P135706

CATALOG NUMBER: LD6A20D010TE ERM6A20835 6LM111H

CANDELA DISTRIBUTION (continued):

	165°	170°	175°	180°
0°	2182.8	2182.8	2182.8	2182.8
2.5°	2238.6	2258.9	2251.3	2251.3
5°	2299.6	2322.4	2317.3	2314.8
7.5°	2317.3	2337.6	2332.5	2332.5
10°	2281.8	2302.1	2297.0	2297.0
12.5°	2223.4	2241.2	2238.6	2236.1
15°	2149.8	2167.6	2165.0	2162.5
17.5°	2050.8	2071.1	2068.6	2066.0
20°	1931.5	1949.3	1949.3	1946.8
22.5°	1802.1	1814.8	1817.3	1812.2
25°	1654.9	1665.0	1665.0	1659.9
27.5°	1469.6	1477.2	1477.2	1474.7
30°	1241.1	1243.7	1246.2	1241.1
32.5°	974.6	974.6	979.7	974.6
35°	710.7	710.7	715.8	713.2
37.5°	494.9	494.9	497.5	494.9
40°	337.6	337.6	340.1	337.6
42.5°	231.0	228.4	231.0	231.0
45°	157.4	157.4	159.9	157.4
47.5°	109.1	109.1	109.1	109.1
50°	76.1	76.1	76.1	76.1
52.5°	53.3	53.3	53.3	53.3
55°	38.1	40.6	40.6	40.6
57.5°	27.9	30.5	30.5	30.5
60°	22.8	22.8	22.8	22.8
62.5°	17.8	17.8	17.8	17.8
65°	12.7	12.7	12.7	12.7
67.5°	10.2	10.2	10.2	10.2
70°	7.6	7.6	7.6	7.6
72.5°	5.1	5.1	5.1	5.1
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)