

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: P315529

Luminaire Tested: **LDA2B20FL9727D010 PIN1MB**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P315529
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-1808-908-15)
Test Lab: INNOVATION CENTER(G2)
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: io LED
Catalog Number: LDA2B20FL9727D010 PIN1MB
Description: PORTFOLIO 2IN ADJ 2000 LUMEN LED LUMINAIRE WITH FLOOD OPTIC AND 2in Adj PinHole, Black oculus black finish
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1114.6 lumens
Efficiency: N/A
Efficacy: 54.1 lumens/watt
Spacing Criteria (0/90/45): 2.92 / 0.6 / 1.34
Luminous Opening: Circular (Dia: 0.17' x H: 0')
CIE Type: Direct

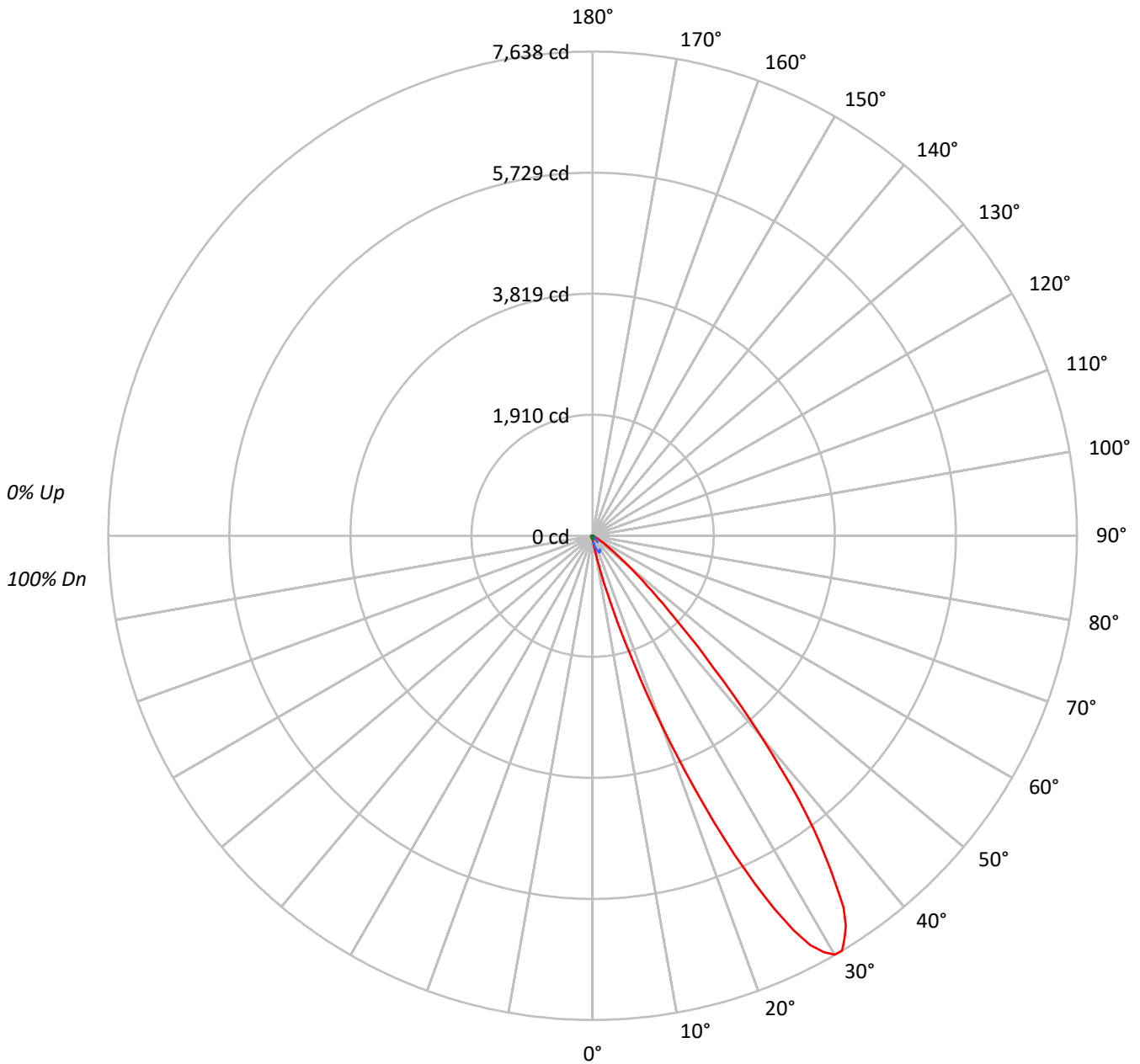
Input Watts (W): 20.6
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



TEST NUMBER: P315529

CATALOG NUMBER: LDA2B20FL9727D010 PIN1MB

Luminous Intensity Polar Plot





TEST NUMBER: P315529

CATALOG NUMBER: LDA2B20FL9727D010 PIN1MB

COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|----|---|--|--|--|--|--|--|----|--|--|--|--|--|--|--|--|---|
| RF | 20 | | | | | | | | | 20 | | | | | | | | | 20 | | | | | | | | | 20 | | | | | | | | | |
| RC | 80 | | | | | | | | | 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 | | | | | | | | | | | | | | | | | | | |
| 1 | 112 | 108 | 105 | 102 | 109 | 106 | 103 | 101 | 102 | 100 | 97 | 98 | 96 | 95 | 95 | 93 | 92 | 90 | | | | | | | | | | | | | | | | | | | |
| 2 | 104 | 98 | 93 | 89 | 102 | 96 | 92 | 88 | 93 | 89 | 86 | 90 | 87 | 84 | 87 | 84 | 82 | 80 | | | | | | | | | | | | | | | | | | | |
| 3 | 97 | 89 | 82 | 77 | 95 | 87 | 82 | 77 | 85 | 80 | 75 | 82 | 78 | 74 | 80 | 76 | 73 | 71 | | | | | | | | | | | | | | | | | | | |
| 4 | 90 | 81 | 74 | 68 | 88 | 79 | 73 | 68 | 77 | 71 | 67 | 75 | 70 | 66 | 73 | 69 | 65 | 63 | | | | | | | | | | | | | | | | | | | |
| 5 | 84 | 73 | 66 | 60 | 82 | 72 | 65 | 60 | 70 | 64 | 59 | 68 | 63 | 59 | 67 | 62 | 58 | 56 | | | | | | | | | | | | | | | | | | | |
| 6 | 78 | 67 | 59 | 53 | 76 | 66 | 58 | 53 | 64 | 58 | 53 | 62 | 57 | 52 | 61 | 56 | 52 | 50 | | | | | | | | | | | | | | | | | | | |
| 7 | 72 | 61 | 53 | 48 | 71 | 60 | 53 | 47 | 58 | 52 | 47 | 57 | 51 | 47 | 56 | 51 | 47 | 45 | | | | | | | | | | | | | | | | | | | |
| 8 | 67 | 55 | 48 | 43 | 66 | 55 | 47 | 42 | 53 | 47 | 42 | 52 | 46 | 42 | 51 | 46 | 42 | 40 | | | | | | | | | | | | | | | | | | | |
| 9 | 63 | 51 | 43 | 38 | 61 | 50 | 43 | 38 | 49 | 42 | 38 | 48 | 42 | 38 | 47 | 41 | 37 | 36 | | | | | | | | | | | | | | | | | | | |
| 10 | 59 | 46 | 39 | 34 | 57 | 46 | 39 | 34 | 45 | 38 | 34 | 44 | 38 | 34 | 43 | 38 | 34 | 32 | | | | | | | | | | | | | | | | | | | |

AVERAGE LUMINANCE (cd/sqm):

| | 0° | 90° | 180° |
|-----|---------|-------|-------|
| 0° | 23435 | 23435 | 23435 |
| 5° | 52298 | 24168 | 18869 |
| 10° | 139972 | 15079 | 5360 |
| 15° | 551014 | 19460 | 12616 |
| 20° | 1666953 | 11918 | 9818 |
| 25° | 3298794 | 10180 | 8710 |
| 30° | 4346697 | 6096 | 10653 |
| 35° | 4010847 | 8854 | 12889 |
| 40° | 2671599 | 7728 | 17647 |
| 45° | 1260150 | 2791 | 7466 |
| 50° | 555618 | 10285 | 23103 |
| 55° | 225961 | 0 | 23568 |
| 60° | 93640 | 6611 | 21116 |
| 65° | 31987 | 7822 | 15643 |
| 70° | 26975 | 15435 | 39524 |
| 75° | 15250 | 22874 | 52230 |
| 80° | 0 | 11365 | 22729 |
| 85° | 15284 | 15284 | 75853 |



TEST NUMBER: P315529

CATALOG NUMBER: LDA2B20FL9727D010 PIN1MB

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 6.5 | 0.6 |
| 10°-20° | 68.2 | 6.1 |
| 20°-30° | 350.6 | 31.5 |
| 30°-40° | 448.9 | 40.3 |
| 40°-50° | 172.6 | 15.5 |
| 50°-60° | 35.1 | 3.1 |
| 60°-70° | 11.9 | 1.1 |
| 70°-80° | 13.8 | 1.2 |
| 80°-90° | 7.1 | 0.6 |
| 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° | 425.2 | 38.1 |
| 0°-40° | 874.1 | 78.4 |
| 0°-60° | 1081.8 | 97.1 |
| 0°-90° | 1114.6 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 1114.6 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 45° | 90° | 135° | 180° | Flux |
|-----|------|-----|-----|------|------|------|
| 0° | 48 | 48 | 48 | 48 | 48 | |
| 5° | 106 | 87 | 49 | 35 | 38 | 16 |
| 15° | 1079 | 210 | 38 | 23 | 25 | 414 |
| 25° | 6060 | 274 | 19 | 15 | 16 | 2766 |
| 35° | 6659 | 142 | 15 | 12 | 21 | 3980 |
| 45° | 1806 | 35 | 4 | 3 | 11 | 1552 |
| 55° | 263 | 7 | 0 | 5 | 27 | 272 |
| 65° | 27 | 9 | 7 | 9 | 13 | 38 |
| 75° | 8 | 15 | 12 | 20 | 27 | 11 |
| 85° | 3 | 9 | 3 | 11 | 13 | 1 |
| 90° | 0 | 0 | 0 | 0 | 0 | |



TEST NUMBER: P315529

CATALOG NUMBER: LDA2B20FL9727D010 PIN1MB

CANDELA DISTRIBUTION (FULL):

| | 0° | 2.5° | 5° | 7.5° | 10° | 12.5° | 15° | 17.5° | 22.5° | 45° | 67.5° |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|-------|-------|
| 0° | 47.5 | 47.5 | 47.5 | 47.5 | 47.5 | 47.5 | 47.5 | 47.5 | 47.5 | 47.5 | 47.5 |
| 2.5° | 70.2 | 60.8 | 63.5 | 54.1 | 59.5 | 60.8 | 50.1 | 66.2 | 59.5 | 62.2 | 54.1 |
| 5° | 105.6 | 113.6 | 104.3 | 100.3 | 97.6 | 100.3 | 97.6 | 101.6 | 98.9 | 86.9 | 62.2 |
| 7.5° | 176.5 | 161.1 | 161.1 | 155.7 | 159.8 | 158.4 | 151.7 | 155.7 | 146.4 | 105.6 | 71.5 |
| 10° | 279.4 | 264.0 | 262.7 | 258.7 | 257.3 | 245.3 | 238.6 | 233.3 | 213.9 | 125.0 | 64.8 |
| 12.5° | 547.4 | 534.1 | 524.7 | 501.3 | 485.3 | 475.9 | 440.5 | 421.8 | 366.3 | 185.8 | 82.9 |
| 15° | 1078.8 | 1010.0 | 1027.4 | 951.8 | 896.3 | 859.6 | 786.1 | 721.2 | 588.2 | 209.9 | 80.2 |
| 17.5° | 1909.0 | 1842.2 | 1797.4 | 1715.2 | 1602.2 | 1504.6 | 1359.6 | 1215.8 | 945.1 | 238.6 | 74.9 |
| 20° | 3175.0 | 3069.4 | 2975.8 | 2834.7 | 2617.5 | 2429.7 | 2174.4 | 1899.6 | 1407.0 | 272.7 | 67.5 |
| 21° | 3731.1 | 3649.5 | 3541.3 | 3355.4 | 3102.1 | 2850.8 | 2544.7 | 2213.8 | 1603.5 | 275.4 | 60.8 |
| 22° | 4311.3 | 4258.5 | 4116.1 | 3902.9 | 3607.4 | 3308.0 | 2932.3 | 2568.7 | 1812.7 | 279.4 | 58.2 |
| 23° | 4915.5 | 4860.0 | 4699.0 | 4455.0 | 4122.8 | 3760.5 | 3322.7 | 2891.6 | 2009.3 | 284.7 | 56.8 |
| 24° | 5507.1 | 5445.6 | 5265.8 | 4993.1 | 4616.1 | 4199.7 | 3705.0 | 3205.1 | 2192.4 | 282.1 | 59.5 |
| 25° | 6059.9 | 5974.3 | 5784.5 | 5482.3 | 5068.6 | 4601.4 | 4055.9 | 3475.8 | 2353.5 | 274.1 | 50.1 |
| 26° | 6553.1 | 6455.6 | 6251.0 | 5921.5 | 5469.0 | 4963.0 | 4348.7 | 3727.1 | 2472.5 | 267.4 | 47.5 |
| 27° | 6981.6 | 6858.6 | 6640.0 | 6294.5 | 5809.2 | 5250.4 | 4598.7 | 3923.6 | 2577.4 | 257.3 | 38.1 |
| 28° | 7315.1 | 7174.1 | 6952.2 | 6587.2 | 6074.6 | 5474.3 | 4782.5 | 4046.6 | 2639.6 | 258.7 | 43.4 |
| 29° | 7507.6 | 7399.4 | 7158.1 | 6775.7 | 6236.3 | 5603.3 | 4879.4 | 4114.8 | 2651.6 | 238.6 | 40.8 |
| 30° | 7630.0 | 7509.0 | 7261.0 | 6861.3 | 6298.5 | 5632.7 | 4891.5 | 4102.1 | 2616.2 | 223.9 | 38.1 |
| 31° | 7638.0 | 7511.7 | 7259.7 | 6845.9 | 6274.4 | 5583.9 | 4824.6 | 4026.5 | 2539.3 | 208.5 | 31.4 |
| 32° | 7494.3 | 7396.7 | 7148.7 | 6721.6 | 6144.1 | 5449.6 | 4680.9 | 3898.9 | 2418.3 | 177.8 | 21.4 |
| 33° | 7331.8 | 7213.5 | 6966.9 | 6535.8 | 5963.6 | 5265.8 | 4473.7 | 3727.1 | 2292.7 | 175.1 | 27.4 |
| 34° | 7079.2 | 6936.8 | 6694.2 | 6269.7 | 5712.9 | 5003.8 | 4227.1 | 3497.8 | 2132.2 | 159.8 | 26.1 |
| 35° | 6659.4 | 6583.2 | 6337.9 | 5918.8 | 5378.1 | 4689.6 | 3930.3 | 3245.8 | 1961.8 | 142.4 | 18.7 |
| 36° | 6239.0 | 6145.4 | 5913.5 | 5508.4 | 4995.7 | 4315.3 | 3595.4 | 2958.4 | 1769.3 | 121.0 | 14.7 |
| 37° | 5794.5 | 5672.2 | 5461.0 | 5064.6 | 4529.2 | 3942.3 | 3273.9 | 2684.4 | 1612.2 | 127.7 | 20.1 |
| 38° | 5276.5 | 5235.7 | 4957.6 | 4588.7 | 4094.0 | 3539.9 | 2928.3 | 2395.6 | 1438.4 | 119.0 | 32.8 |
| 39° | 4707.0 | 4679.6 | 4402.2 | 4066.0 | 3622.1 | 3112.8 | 2574.7 | 2096.2 | 1264.6 | 86.9 | 10.7 |
| 40° | 4148.2 | 4070.0 | 3873.5 | 3568.0 | 3181.7 | 2723.8 | 2258.6 | 1840.8 | 1114.2 | 85.6 | 21.4 |
| 42.5° | 2811.4 | 2836.1 | 2623.5 | 2405.0 | 2157.0 | 1846.2 | 1536.0 | 1262.0 | 779.4 | 63.5 | 13.4 |
| 45° | 1806.1 | 1811.4 | 1716.5 | 1546.7 | 1384.3 | 1190.4 | 985.9 | 821.5 | 502.6 | 35.4 | 4.0 |
| 47.5° | 1149.7 | 1147.0 | 1086.2 | 988.6 | 882.3 | 768.7 | 641.0 | 536.7 | 325.5 | 27.4 | 12.0 |
| 50° | 723.9 | 721.2 | 683.1 | 621.0 | 561.5 | 486.6 | 406.4 | 345.6 | 205.9 | 32.8 | 13.4 |
| 51° | 588.2 | 592.2 | 560.1 | 497.3 | 451.2 | 379.7 | 324.2 | 275.4 | 161.1 | 22.7 | 12.0 |
| 52° | 485.3 | 482.6 | 462.5 | 409.7 | 371.6 | 310.1 | 264.0 | 225.3 | 134.4 | 20.1 | 5.3 |
| 53° | 390.4 | 391.7 | 371.6 | 330.9 | 294.1 | 248.0 | 211.2 | 175.1 | 96.3 | 14.7 | 4.0 |
| 54° | 308.8 | 306.1 | 299.5 | 260.0 | 237.3 | 196.5 | 165.1 | 134.4 | 82.9 | 2.7 | 0.0 |
| 55° | 262.7 | 258.7 | 249.3 | 215.2 | 192.5 | 162.4 | 131.7 | 115.0 | 71.5 | 6.7 | 0.0 |
| 57.5° | 151.7 | 151.7 | 146.4 | 127.7 | 112.3 | 100.3 | 80.2 | 74.9 | 36.8 | 6.7 | 0.0 |
| 60° | 94.9 | 82.9 | 92.2 | 78.9 | 62.2 | 55.5 | 46.1 | 42.1 | 31.4 | 12.0 | 2.7 |
| 61° | 78.9 | 63.5 | 62.2 | 58.2 | 54.1 | 36.8 | 31.4 | 34.1 | 20.1 | 4.0 | 2.7 |
| 62° | 56.8 | 50.1 | 54.1 | 46.1 | 40.8 | 28.7 | 26.1 | 24.7 | 12.0 | 5.3 | 6.7 |
| 63° | 51.5 | 46.1 | 44.8 | 34.1 | 30.1 | 30.1 | 22.7 | 21.4 | 14.7 | 10.7 | 5.3 |



TEST NUMBER: P315529

CATALOG NUMBER: LDA2B20FL9727D010 PIN1MB

CANDELA DISTRIBUTION (continued):

| | 0° | 2.5° | 5° | 7.5° | 10° | 12.5° | 15° | 17.5° | 22.5° | 45° | 67.5° |
|-------|------|------|------|------|------|-------|------|-------|-------|------|-------|
| 66° | 27.4 | 22.7 | 20.1 | 22.7 | 13.4 | 17.4 | 6.7 | 18.7 | 4.0 | 6.7 | 4.0 |
| 67.5° | 21.4 | 13.4 | 12.0 | 14.7 | 9.4 | 6.7 | 9.4 | 12.0 | 4.0 | 6.7 | 9.4 |
| 70° | 18.7 | 9.4 | 13.4 | 12.0 | 9.4 | 12.0 | 13.4 | 13.4 | 4.0 | 13.4 | 12.0 |
| 72.5° | 18.7 | 12.0 | 6.7 | 5.3 | 5.3 | 5.3 | 5.3 | 5.3 | 8.0 | 18.7 | 14.7 |
| 75° | 8.0 | 8.0 | 4.0 | 9.4 | 5.3 | 8.0 | 5.3 | 13.4 | 5.3 | 14.7 | 12.0 |
| 77.5° | 5.3 | 6.7 | 0.0 | 6.7 | 0.0 | 0.0 | 4.0 | 9.4 | 4.0 | 10.7 | 13.4 |
| 80° | 0.0 | 6.7 | 4.0 | 0.0 | 2.7 | 4.0 | 0.0 | 1.3 | 2.7 | 12.0 | 5.3 |
| 82.5° | 2.7 | 4.0 | 5.3 | 2.7 | 2.7 | 0.0 | 0.0 | 0.0 | 0.0 | 8.0 | 6.7 |
| 85° | 2.7 | 5.3 | 0.0 | 1.3 | 5.3 | 2.7 | 1.3 | 6.7 | 2.7 | 9.4 | 10.7 |
| 87.5° | 0.0 | 2.7 | 2.7 | 0.0 | 4.0 | 0.0 | 4.0 | 2.7 | 0.0 | 8.0 | 4.0 |
| 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: P315529

CATALOG NUMBER: LDA2B20FL9727D010 PIN1MB

CANDELA DISTRIBUTION (continued):

| | 90° | 112.5° | 135° | 157.5° | 180° |
|-------|------|--------|------|--------|------|
| 0° | 47.5 | 47.5 | 47.5 | 47.5 | 47.5 |
| 2.5° | 40.8 | 36.8 | 31.4 | 39.4 | 32.8 |
| 5° | 48.8 | 44.8 | 35.4 | 42.1 | 38.1 |
| 7.5° | 50.1 | 42.1 | 36.8 | 34.1 | 38.1 |
| 10° | 30.1 | 20.1 | 14.7 | 20.1 | 10.7 |
| 12.5° | 50.1 | 35.4 | 32.8 | 36.8 | 40.8 |
| 15° | 38.1 | 22.7 | 22.7 | 17.4 | 24.7 |
| 17.5° | 21.4 | 17.4 | 16.0 | 21.4 | 24.7 |
| 20° | 22.7 | 14.7 | 12.0 | 20.1 | 18.7 |
| 21° | 20.1 | 5.3 | 16.0 | 16.0 | 18.7 |
| 22° | 28.7 | 13.4 | 16.0 | 26.1 | 27.4 |
| 23° | 18.7 | 14.7 | 12.0 | 16.0 | 21.4 |
| 24° | 27.4 | 16.0 | 14.7 | 20.1 | 30.1 |
| 25° | 18.7 | 14.7 | 14.7 | 18.7 | 16.0 |
| 26° | 10.7 | 14.7 | 10.7 | 16.0 | 13.4 |
| 27° | 8.0 | 13.4 | 8.0 | 12.0 | 16.0 |
| 28° | 17.4 | 21.4 | 20.1 | 21.4 | 18.7 |
| 29° | 18.7 | 22.7 | 18.7 | 28.7 | 21.4 |
| 30° | 10.7 | 20.1 | 9.4 | 21.4 | 18.7 |
| 31° | 10.7 | 14.7 | 6.7 | 21.4 | 18.7 |
| 32° | 1.3 | 8.0 | 4.0 | 8.0 | 8.0 |
| 33° | 8.0 | 9.4 | 10.7 | 17.4 | 13.4 |
| 34° | 13.4 | 16.0 | 10.7 | 18.7 | 16.0 |
| 35° | 14.7 | 8.0 | 12.0 | 20.1 | 21.4 |
| 36° | 4.0 | 4.0 | 6.7 | 16.0 | 5.3 |
| 37° | 8.0 | 22.7 | 16.0 | 27.4 | 16.0 |
| 38° | 13.4 | 27.4 | 26.1 | 34.1 | 27.4 |
| 39° | 2.7 | 8.0 | 9.4 | 18.7 | 18.7 |
| 40° | 12.0 | 20.1 | 14.7 | 27.4 | 27.4 |
| 42.5° | 9.4 | 14.7 | 10.7 | 22.7 | 18.7 |
| 45° | 4.0 | 4.0 | 2.7 | 14.7 | 10.7 |
| 47.5° | 6.7 | 6.7 | 12.0 | 18.7 | 32.8 |
| 50° | 13.4 | 13.4 | 17.4 | 31.4 | 30.1 |
| 51° | 8.0 | 6.7 | 9.4 | 21.4 | 27.4 |
| 52° | 6.7 | 9.4 | 9.4 | 21.4 | 21.4 |
| 53° | 2.7 | 0.0 | 0.0 | 16.0 | 13.4 |
| 54° | 2.7 | 1.3 | 4.0 | 12.0 | 18.7 |
| 55° | 0.0 | 6.7 | 5.3 | 24.7 | 27.4 |
| 57.5° | 1.3 | 10.7 | 5.3 | 17.4 | 21.4 |
| 60° | 6.7 | 8.0 | 14.7 | 17.4 | 21.4 |
| 61° | 0.0 | 6.7 | 6.7 | 16.0 | 18.7 |
| 62° | 0.0 | 5.3 | 12.0 | 14.7 | 18.7 |
| 63° | 6.7 | 8.0 | 10.7 | 17.4 | 21.4 |



TEST NUMBER: P315529

CATALOG NUMBER: LDA2B20FL9727D010 PIN1MB

CANDELA DISTRIBUTION (continued):

| | 90° | 112.5° | 135° | 157.5° | 180° |
|-------|------|--------|------|--------|------|
| 66° | 4.0 | 10.7 | 13.4 | 17.4 | 16.0 |
| 67.5° | 8.0 | 9.4 | 8.0 | 22.7 | 27.4 |
| 70° | 10.7 | 17.4 | 18.7 | 16.0 | 27.4 |
| 72.5° | 6.7 | 9.4 | 13.4 | 24.7 | 27.4 |
| 75° | 12.0 | 13.4 | 20.1 | 22.7 | 27.4 |
| 77.5° | 9.4 | 13.4 | 13.4 | 14.7 | 27.4 |
| 80° | 4.0 | 12.0 | 13.4 | 14.7 | 8.0 |
| 82.5° | 5.3 | 8.0 | 5.3 | 14.7 | 10.7 |
| 85° | 2.7 | 12.0 | 10.7 | 13.4 | 13.4 |
| 87.5° | 4.0 | 6.7 | 6.7 | 12.0 | 8.0 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |



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— 0°-180° - - 45°-225° - - - - 90°-270°







| | | | | | | | | | | | |
|-----|------|------|------|------|------|------|------|------|-----|-----|-----|
| 64° | 30.1 | 31.4 | 30.1 | 21.4 | 16.0 | 14.7 | 10.7 | 18.7 | 5.3 | 5.3 | 0.0 |
| 65° | 27.4 | 30.1 | 22.7 | 26.1 | 17.4 | 16.0 | 9.4 | 18.7 | 2.7 | 9.4 | 6.7 |





| | | | | | |
|-----|-----|-----|-----|------|------|
| 64° | 4.0 | 6.7 | 6.7 | 12.0 | 18.7 |
| 65° | 6.7 | 9.4 | 9.4 | 17.4 | 13.4 |



(END OF REPORT)