

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: P170924

Luminaire Tested: **LDA4A13940D010TE LAR15SP 4LA1 30° Tilt**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P170924
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P25648)
Test Lab: INNOVATION CENTER-P2
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: io LED
Catalog Number: LDA4A13940D010TE LAR15SP 4LA1 30° Tilt
Description: PORTFOLIO 4" Adjustable Reflector, Self-flanged Trim Ring, 15° Spot Optic, at 30° tilt
Light Source: (1) HIGH LUMEN LED 90CRI / 4000K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1144.4 lumens
Efficiency: N/A
Efficacy: 51.4 lumens/watt
Spacing Criteria (0/90/45): 2.52 / 1.04 / 1.28
Luminous Opening: Circular (Dia: 0.33' x H: 0')
CIE Type: Direct

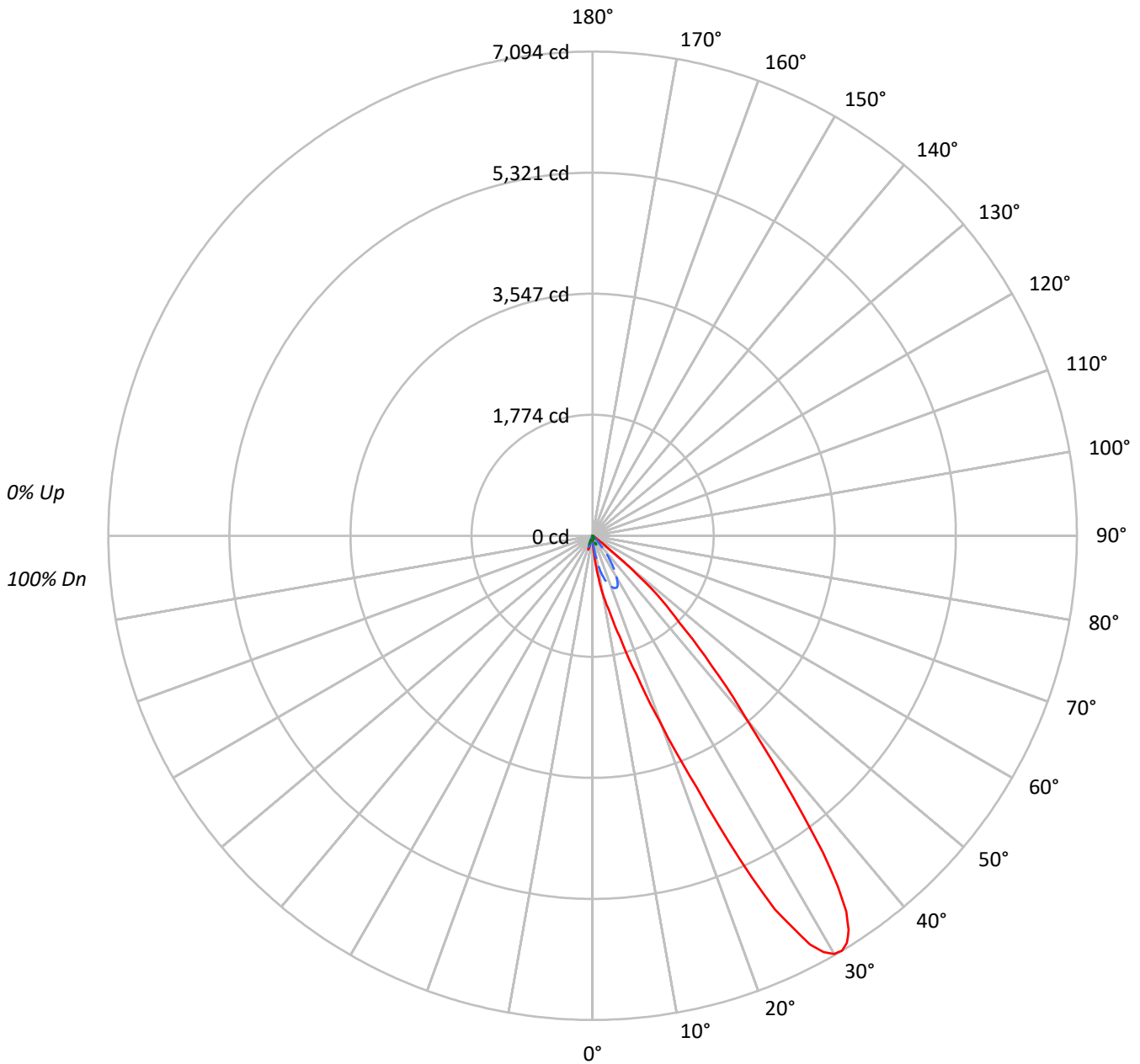
Input Watts (W): 22.27
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



TEST NUMBER: P170924

CATALOG NUMBER: LDA4A13940D010TE LAR15SP 4LA1 30° Tilt

Luminous Intensity Polar Plot





TEST NUMBER: P170924

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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 | 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 | 112 | 109 | 106 | 104 | 110 | 107 | 104 | 102 | 103 | 101 | 99 | 99 | 98 | 96 | 96 | 94 | 93 | 91 | | | | | 91 | | | |
| 2 | 106 | 100 | 95 | 91 | 103 | 98 | 94 | 90 | 95 | 91 | 88 | 92 | 89 | 86 | 89 | 86 | 84 | 82 | | | | | 82 | | | |
| 3 | 99 | 91 | 85 | 80 | 97 | 90 | 84 | 80 | 87 | 82 | 78 | 84 | 80 | 77 | 82 | 79 | 76 | 74 | | | | | 74 | | | |
| 4 | 92 | 83 | 77 | 71 | 90 | 82 | 76 | 71 | 80 | 74 | 70 | 78 | 73 | 69 | 76 | 72 | 68 | 67 | | | | | 67 | | | |
| 5 | 86 | 76 | 69 | 64 | 84 | 75 | 68 | 63 | 73 | 67 | 63 | 71 | 66 | 62 | 70 | 65 | 62 | 60 | | | | | 60 | | | |
| 6 | 80 | 69 | 62 | 57 | 79 | 69 | 62 | 57 | 67 | 61 | 56 | 65 | 60 | 56 | 64 | 59 | 56 | 54 | | | | | 54 | | | |
| 7 | 75 | 64 | 56 | 51 | 73 | 63 | 56 | 51 | 62 | 55 | 51 | 60 | 55 | 50 | 59 | 54 | 50 | 49 | | | | | 49 | | | |
| 8 | 70 | 58 | 51 | 46 | 69 | 58 | 51 | 46 | 57 | 50 | 46 | 55 | 50 | 46 | 54 | 49 | 45 | 44 | | | | | 44 | | | |
| 9 | 65 | 54 | 47 | 42 | 64 | 53 | 46 | 42 | 52 | 46 | 41 | 51 | 45 | 41 | 50 | 45 | 41 | 40 | | | | | 40 | | | |
| 10 | 61 | 49 | 42 | 38 | 60 | 49 | 42 | 38 | 48 | 42 | 38 | 47 | 41 | 37 | 46 | 41 | 37 | 36 | | | | | 36 | | | |

AVERAGE LUMINANCE (cd/sqm):

| | 0° | 90° | 180° |
|-----|---------|-------|-------|
| 0° | 8239 | 8239 | 8239 |
| 5° | 36935 | 7739 | 5015 |
| 10° | 109329 | 7114 | 6400 |
| 15° | 195185 | 8441 | 18044 |
| 20° | 386631 | 16591 | 19387 |
| 25° | 752357 | 10833 | 5512 |
| 30° | 1007787 | 4045 | 1923 |
| 35° | 942990 | 1717 | 753 |
| 40° | 565087 | 805 | 225 |
| 45° | 313586 | 488 | 0 |
| 50° | 115039 | 403 | 0 |
| 55° | 17569 | 301 | 0 |
| 60° | 3848 | 345 | 0 |
| 65° | 1255 | 409 | 0 |
| 70° | 252 | 505 | 0 |
| 75° | 0 | 1001 | 0 |
| 80° | 0 | 1492 | 0 |
| 85° | 0 | 2972 | 0 |



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ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 14.7 | 1.3 |
| 10°-20° | 123.6 | 10.8 |
| 20°-30° | 369.0 | 32.2 |
| 30°-40° | 437.0 | 38.2 |
| 40°-50° | 181.3 | 15.8 |
| 50°-60° | 14.1 | 1.2 |
| 60°-70° | 1.9 | 0.2 |
| 70°-80° | 1.5 | 0.1 |
| 80°-90° | 1.3 | 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° | 507.3 | 44.3 |
| 0°-40° | 944.3 | 82.5 |
| 0°-60° | 1139.7 | 99.6 |
| 0°-90° | 1144.4 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 1144.4 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 45° | 90° | 135° | 180° | Flux |
|-----|------|-----|-----|------|------|------|
| 0° | 67 | 67 | 67 | 67 | 67 | |
| 5° | 298 | 151 | 62 | 43 | 40 | 47 |
| 15° | 1528 | 646 | 66 | 99 | 141 | 505 |
| 25° | 5528 | 839 | 80 | 46 | 40 | 2525 |
| 35° | 6262 | 467 | 11 | 6 | 5 | 3629 |
| 45° | 1798 | 41 | 3 | 2 | 0 | 1466 |
| 55° | 82 | 6 | 1 | 1 | 0 | 120 |
| 65° | 4 | 1 | 1 | 1 | 0 | 5 |
| 75° | 0 | 1 | 2 | 1 | 0 | 0 |
| 85° | 0 | 1 | 2 | 1 | 0 | 0 |
| 90° | 0 | 0 | 0 | 0 | 0 | |



TEST NUMBER: P170924

CATALOG NUMBER: LDA4A13940D010TE LAR15SP 4LA1 30° Tilt

CANDELA DISTRIBUTION (FULL):

| | 0° | 2.5° | 5° | 7.5° | 10° | 12.5° | 15° | 17.5° | 20° | 22.5° | 25° |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0° | 66.8 | 66.8 | 66.8 | 66.8 | 66.8 | 66.8 | 66.8 | 66.8 | 66.8 | 66.8 | 66.8 |
| 2.5° | 115.8 | 110.1 | 112.9 | 108.0 | 110.8 | 105.8 | 102.3 | 105.8 | 105.8 | 103.0 | 98.7 |
| 5° | 298.3 | 296.9 | 302.6 | 289.1 | 292.6 | 277.7 | 264.9 | 268.5 | 265.6 | 256.4 | 240.1 |
| 7.5° | 568.2 | 562.5 | 568.9 | 549.8 | 550.5 | 525.6 | 506.4 | 510.7 | 497.9 | 482.3 | 453.9 |
| 10° | 872.9 | 865.1 | 872.2 | 849.5 | 845.2 | 810.4 | 783.4 | 787.7 | 758.6 | 733.0 | 689.7 |
| 12.5° | 1137.2 | 1136.4 | 1113.7 | 1118.0 | 1109.5 | 1056.2 | 1039.1 | 1040.6 | 1000.8 | 972.4 | 920.5 |
| 15° | 1528.5 | 1543.4 | 1547.7 | 1518.6 | 1466.0 | 1369.4 | 1326.8 | 1310.5 | 1245.8 | 1198.2 | 1123.7 |
| 17.5° | 2130.1 | 2150.7 | 2080.4 | 2097.5 | 2010.8 | 1859.5 | 1775.0 | 1724.6 | 1603.1 | 1513.6 | 1378.7 |
| 20° | 2945.5 | 2927.8 | 2826.2 | 2813.4 | 2665.7 | 2471.1 | 2293.5 | 2198.3 | 2011.5 | 1880.8 | 1684.1 |
| 22.5° | 3998.2 | 3984.7 | 3810.7 | 3733.2 | 3424.3 | 3150.1 | 2920.0 | 2681.3 | 2403.6 | 2228.9 | 1961.8 |
| 25° | 5528.1 | 5466.3 | 5131.1 | 4910.9 | 4367.5 | 3901.6 | 3518.0 | 3147.3 | 2721.8 | 2532.2 | 2192.6 |
| 26° | 6091.4 | 6076.5 | 5727.0 | 5437.2 | 4782.3 | 4204.2 | 3687.1 | 3315.6 | 2846.8 | 2625.2 | 2258.0 |
| 27° | 6429.5 | 6548.1 | 6222.8 | 5894.6 | 5178.7 | 4486.1 | 3886.7 | 3451.3 | 2944.1 | 2690.5 | 2299.9 |
| 28° | 6780.3 | 6857.0 | 6565.8 | 6153.9 | 5496.2 | 4710.6 | 4037.9 | 3542.9 | 3003.8 | 2722.5 | 2314.1 |
| 29° | 6973.5 | 7047.4 | 6776.8 | 6390.4 | 5704.3 | 4856.2 | 4127.4 | 3583.4 | 3025.8 | 2721.8 | 2301.3 |
| 30° | 7075.8 | 7144.7 | 6880.5 | 6505.5 | 5790.2 | 4901.6 | 4146.6 | 3567.0 | 3004.5 | 2689.1 | 2265.1 |
| 31° | 7094.3 | 7151.8 | 6891.1 | 6501.9 | 5757.5 | 4845.5 | 4092.6 | 3499.6 | 2947.7 | 2628.7 | 2210.4 |
| 32° | 7031.8 | 7076.5 | 6811.6 | 6396.8 | 5610.5 | 4703.5 | 3980.4 | 3395.1 | 2861.0 | 2553.5 | 2140.1 |
| 33° | 6885.5 | 6965.7 | 6642.5 | 6184.4 | 5354.8 | 4493.2 | 3821.3 | 3258.8 | 2753.0 | 2455.4 | 2054.1 |
| 34° | 6643.3 | 6694.4 | 6359.9 | 5852.0 | 5013.9 | 4237.5 | 3626.0 | 3100.4 | 2629.5 | 2339.7 | 1956.8 |
| 35° | 6262.5 | 6308.0 | 5937.9 | 5403.1 | 4625.3 | 3949.2 | 3403.0 | 2925.6 | 2491.0 | 2209.7 | 1848.9 |
| 36° | 5735.5 | 5778.8 | 5391.7 | 4904.5 | 4233.3 | 3648.7 | 3167.9 | 2735.3 | 2341.1 | 2070.5 | 1734.5 |
| 37° | 5119.7 | 5157.3 | 4812.9 | 4415.1 | 3848.3 | 3344.7 | 2929.9 | 2542.1 | 2182.7 | 1928.4 | 1625.8 |
| 38° | 4524.5 | 4558.6 | 4280.2 | 3956.3 | 3476.8 | 3047.8 | 2692.7 | 2341.8 | 2019.3 | 1785.6 | 1511.5 |
| 39° | 3987.5 | 4017.3 | 3792.9 | 3525.8 | 3123.1 | 2763.0 | 2456.2 | 2142.9 | 1855.3 | 1642.9 | 1393.6 |
| 40° | 3509.5 | 3535.1 | 3350.4 | 3130.9 | 2802.1 | 2496.6 | 2226.0 | 1950.4 | 1694.7 | 1504.4 | 1283.5 |
| 42.5° | 2576.2 | 2581.9 | 2471.8 | 2342.5 | 2086.8 | 1911.4 | 1718.9 | 1520.0 | 1333.2 | 1202.5 | 1061.9 |
| 45° | 1797.7 | 1868.0 | 1796.3 | 1710.4 | 1527.1 | 1417.0 | 1294.1 | 1174.1 | 1066.1 | 940.4 | 801.2 |
| 47.5° | 1292.7 | 1295.6 | 1252.9 | 1199.0 | 1054.1 | 978.8 | 877.9 | 732.3 | 625.0 | 446.8 | 331.7 |
| 50° | 599.5 | 566.1 | 568.2 | 531.3 | 473.8 | 376.4 | 314.7 | 224.4 | 179.0 | 127.9 | 103.0 |
| 51° | 356.6 | 331.7 | 335.3 | 309.0 | 270.6 | 211.0 | 179.0 | 143.5 | 124.3 | 96.6 | 79.6 |
| 52° | 208.1 | 199.6 | 198.9 | 186.8 | 159.1 | 146.3 | 129.3 | 108.0 | 94.5 | 74.6 | 61.8 |
| 53° | 151.3 | 145.6 | 145.6 | 137.8 | 118.6 | 110.1 | 98.0 | 83.1 | 72.4 | 56.8 | 46.9 |
| 54° | 112.9 | 108.7 | 108.7 | 103.7 | 95.9 | 82.4 | 73.9 | 61.8 | 54.0 | 44.0 | 34.8 |
| 55° | 81.7 | 78.8 | 78.8 | 75.3 | 69.6 | 59.7 | 53.3 | 44.7 | 39.8 | 32.0 | 25.6 |
| 57.5° | 34.1 | 32.7 | 32.7 | 31.3 | 29.8 | 25.6 | 24.1 | 20.6 | 17.8 | 15.6 | 12.8 |
| 60° | 15.6 | 14.9 | 15.6 | 14.9 | 13.5 | 14.2 | 12.1 | 10.7 | 9.9 | 8.5 | 7.1 |
| 61° | 12.1 | 11.4 | 11.4 | 11.4 | 9.9 | 9.9 | 9.2 | 8.5 | 7.8 | 6.4 | 5.7 |
| 62° | 9.2 | 8.5 | 8.5 | 8.5 | 7.8 | 7.8 | 7.1 | 6.4 | 6.4 | 5.0 | 4.3 |
| 63° | 7.1 | 6.4 | 6.4 | 6.4 | 5.7 | 5.7 | 5.7 | 5.0 | 5.0 | 4.3 | 3.6 |
| 64° | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 4.3 | 4.3 | 4.3 | 3.6 | 2.8 | 2.8 |
| 65° | 4.3 | 3.6 | 4.3 | 3.6 | 3.6 | 3.6 | 3.6 | 3.6 | 2.8 | 2.1 | 2.1 |
| 66° | 2.8 | 2.8 | 2.8 | 2.8 | 2.8 | 2.8 | 2.8 | 2.8 | 2.8 | 2.1 | 1.4 |



TEST NUMBER: P170924

CATALOG NUMBER: LDA4A13940D010TE LAR15SP 4LA1 30° Tilt

CANDELA DISTRIBUTION (continued):

| | 0° | 2.5° | 5° | 7.5° | 10° | 12.5° | 15° | 17.5° | 20° | 22.5° | 25° |
|-------|-----|------|-----|------|-----|-------|-----|-------|-----|-------|-----|
| 72.5° | 0.0 | 0.0 | 0.0 | 0.0 | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 |
| 75° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 |
| 77.5° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 |
| 80° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 |
| 82.5° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 |
| 85° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 |
| 87.5° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 |
| 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: P170924

CATALOG NUMBER: LDA4A13940D010TE LAR15SP 4LA1 30° Tilt

CANDELA DISTRIBUTION (continued):

| | 27.5° | 30° | 32.5° | 35° | 37.5° | 40° | 42.5° | 45° | 67.5° | 90° | 112.5° |
|-------|--------|--------|--------|--------|--------|--------|-------|-------|-------|-------|--------|
| 0° | 66.8 | 66.8 | 66.8 | 66.8 | 66.8 | 66.8 | 66.8 | 66.8 | 66.8 | 66.8 | 66.8 |
| 2.5° | 96.6 | 99.4 | 97.3 | 91.6 | 94.5 | 93.0 | 90.2 | 88.1 | 75.3 | 65.3 | 55.4 |
| 5° | 228.0 | 230.1 | 218.1 | 196.7 | 189.6 | 178.3 | 161.9 | 150.6 | 85.2 | 62.5 | 49.0 |
| 7.5° | 431.1 | 416.9 | 405.6 | 365.8 | 348.7 | 322.5 | 291.2 | 269.2 | 97.3 | 59.0 | 45.5 |
| 10° | 652.7 | 630.0 | 606.6 | 548.3 | 517.8 | 477.3 | 432.6 | 407.0 | 110.1 | 56.8 | 45.5 |
| 12.5° | 872.2 | 841.7 | 799.1 | 735.1 | 691.8 | 637.1 | 576.0 | 530.6 | 119.3 | 58.2 | 52.6 |
| 15° | 1062.6 | 1025.6 | 978.8 | 906.3 | 855.9 | 787.7 | 708.1 | 645.6 | 123.6 | 66.1 | 73.2 |
| 17.5° | 1270.0 | 1203.2 | 1125.8 | 1033.5 | 978.1 | 899.2 | 809.7 | 733.7 | 123.6 | 83.8 | 117.2 |
| 20° | 1508.6 | 1386.5 | 1262.2 | 1132.9 | 1054.8 | 972.4 | 876.5 | 794.8 | 128.6 | 126.4 | 161.2 |
| 22.5° | 1731.0 | 1562.6 | 1387.2 | 1218.8 | 1110.2 | 1020.7 | 923.4 | 829.6 | 149.2 | 139.2 | 107.3 |
| 25° | 1903.6 | 1689.8 | 1483.1 | 1278.5 | 1155.6 | 1056.2 | 951.8 | 838.8 | 136.4 | 79.6 | 58.2 |
| 26° | 1948.3 | 1717.5 | 1502.2 | 1285.6 | 1157.8 | 1055.5 | 948.9 | 828.9 | 114.4 | 63.2 | 46.9 |
| 27° | 1971.7 | 1726.7 | 1503.7 | 1279.2 | 1149.2 | 1043.4 | 933.3 | 808.3 | 91.6 | 51.1 | 38.4 |
| 28° | 1971.7 | 1716.0 | 1488.7 | 1261.5 | 1127.2 | 1020.7 | 906.3 | 775.6 | 74.6 | 41.9 | 30.5 |
| 29° | 1951.9 | 1688.3 | 1458.9 | 1234.5 | 1097.4 | 988.7 | 869.4 | 737.3 | 63.2 | 34.8 | 24.9 |
| 30° | 1913.5 | 1647.9 | 1419.1 | 1199.7 | 1059.0 | 952.5 | 828.9 | 697.5 | 54.7 | 28.4 | 19.9 |
| 31° | 1859.5 | 1602.4 | 1370.1 | 1162.0 | 1023.5 | 919.1 | 792.0 | 657.0 | 47.6 | 22.7 | 16.3 |
| 32° | 1794.9 | 1545.6 | 1319.7 | 1123.0 | 994.4 | 887.9 | 753.6 | 614.4 | 41.2 | 19.2 | 14.2 |
| 33° | 1720.3 | 1481.6 | 1267.1 | 1084.6 | 966.0 | 852.3 | 711.7 | 568.2 | 35.5 | 15.6 | 12.1 |
| 34° | 1637.9 | 1411.3 | 1213.2 | 1043.4 | 931.2 | 807.6 | 662.7 | 519.2 | 30.5 | 13.5 | 9.9 |
| 35° | 1548.4 | 1332.5 | 1157.8 | 1001.5 | 892.1 | 757.9 | 610.1 | 467.4 | 26.3 | 11.4 | 8.5 |
| 36° | 1451.8 | 1258.6 | 1103.8 | 959.6 | 843.8 | 703.9 | 552.6 | 414.1 | 22.7 | 9.2 | 7.8 |
| 37° | 1355.2 | 1189.0 | 1050.5 | 914.8 | 787.7 | 642.8 | 492.2 | 358.7 | 19.9 | 7.8 | 6.4 |
| 38° | 1263.6 | 1121.5 | 997.9 | 863.0 | 722.4 | 575.3 | 429.7 | 303.3 | 17.0 | 7.1 | 5.7 |
| 39° | 1177.6 | 1056.2 | 944.0 | 801.2 | 654.9 | 510.0 | 369.3 | 245.8 | 14.9 | 6.4 | 5.0 |
| 40° | 1100.2 | 994.4 | 885.0 | 732.3 | 585.3 | 443.2 | 308.3 | 183.3 | 12.8 | 5.0 | 4.3 |
| 42.5° | 936.9 | 824.6 | 680.4 | 510.7 | 395.6 | 257.1 | 143.5 | 68.2 | 9.2 | 3.6 | 3.6 |
| 45° | 618.7 | 475.9 | 323.2 | 192.5 | 130.0 | 78.1 | 58.2 | 41.2 | 7.1 | 2.8 | 2.8 |
| 47.5° | 206.7 | 131.4 | 95.9 | 68.9 | 59.0 | 46.9 | 37.6 | 25.6 | 5.0 | 2.1 | 2.1 |
| 50° | 78.8 | 63.9 | 52.6 | 39.8 | 35.5 | 28.4 | 22.7 | 14.9 | 3.6 | 2.1 | 2.1 |
| 51° | 61.8 | 50.4 | 41.2 | 31.3 | 28.4 | 22.7 | 18.5 | 12.8 | 2.8 | 2.1 | 2.1 |
| 52° | 47.6 | 39.1 | 32.0 | 24.1 | 22.7 | 18.5 | 15.6 | 10.7 | 2.8 | 1.4 | 2.1 |
| 53° | 36.2 | 29.8 | 24.1 | 18.5 | 17.8 | 14.9 | 12.8 | 8.5 | 2.1 | 1.4 | 2.1 |
| 54° | 27.0 | 22.7 | 19.2 | 14.9 | 14.9 | 12.8 | 10.7 | 7.1 | 2.1 | 1.4 | 2.1 |
| 55° | 20.6 | 17.0 | 14.9 | 11.4 | 12.1 | 10.7 | 9.2 | 5.7 | 2.1 | 1.4 | 2.1 |
| 57.5° | 10.7 | 9.9 | 8.5 | 7.1 | 7.8 | 7.1 | 6.4 | 3.6 | 2.1 | 1.4 | 2.1 |
| 60° | 6.4 | 5.7 | 5.0 | 4.3 | 5.0 | 5.0 | 5.0 | 2.1 | 2.1 | 1.4 | 2.1 |
| 61° | 5.0 | 4.3 | 3.6 | 3.6 | 4.3 | 4.3 | 4.3 | 2.1 | 2.1 | 1.4 | 2.1 |
| 62° | 3.6 | 3.6 | 2.8 | 2.8 | 4.3 | 3.6 | 3.6 | 2.1 | 2.1 | 1.4 | 2.1 |
| 63° | 2.8 | 2.8 | 2.8 | 2.1 | 3.6 | 3.6 | 3.6 | 2.1 | 2.1 | 1.4 | 2.1 |
| 64° | 2.1 | 2.1 | 2.1 | 2.1 | 2.8 | 3.6 | 3.6 | 1.4 | 2.1 | 1.4 | 2.1 |
| 65° | 2.1 | 2.1 | 1.4 | 1.4 | 2.8 | 2.8 | 2.8 | 1.4 | 2.1 | 1.4 | 2.1 |
| 66° | 1.4 | 1.4 | 1.4 | 1.4 | 2.8 | 2.8 | 2.8 | 1.4 | 2.1 | 1.4 | 2.1 |



TEST NUMBER: P170924

CATALOG NUMBER: LDA4A13940D010TE LAR15SP 4LA1 30° Tilt

CANDELA DISTRIBUTION (continued):

| | 27.5° | 30° | 32.5° | 35° | 37.5° | 40° | 42.5° | 45° | 67.5° | 90° | 112.5° |
|-------|-------|-----|-------|-----|-------|-----|-------|-----|-------|-----|--------|
| 72.5° | 0.7 | 0.7 | 0.7 | 0.7 | 2.1 | 2.1 | 2.8 | 1.4 | 2.1 | 2.1 | 2.1 |
| 75° | 0.7 | 0.7 | 0.7 | 0.7 | 2.1 | 2.1 | 2.8 | 1.4 | 2.1 | 2.1 | 2.1 |
| 77.5° | 0.7 | 0.7 | 0.7 | 0.7 | 2.1 | 2.1 | 2.8 | 1.4 | 2.1 | 2.1 | 2.8 |
| 80° | 0.7 | 0.7 | 0.7 | 0.7 | 2.1 | 2.1 | 2.8 | 1.4 | 2.1 | 2.1 | 2.8 |
| 82.5° | 0.7 | 0.7 | 0.7 | 0.7 | 2.1 | 2.1 | 2.8 | 1.4 | 2.1 | 2.1 | 2.8 |
| 85° | 0.7 | 0.7 | 0.7 | 0.7 | 2.1 | 2.1 | 2.8 | 1.4 | 2.1 | 2.1 | 2.8 |
| 87.5° | 0.7 | 0.7 | 0.7 | 0.7 | 2.1 | 2.1 | 2.8 | 1.4 | 2.1 | 2.1 | 2.1 |
| 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: P170924

CATALOG NUMBER: LDA4A13940D010TE LAR15SP 4LA1 30° Tilt

CANDELA DISTRIBUTION (continued):

| | 135° | 157.5° | 180° |
|-------|-------|--------|-------|
| 0° | 66.8 | 66.8 | 66.8 |
| 2.5° | 50.4 | 48.3 | 46.9 |
| 5° | 43.3 | 41.2 | 40.5 |
| 7.5° | 40.5 | 39.8 | 40.5 |
| 10° | 44.7 | 47.6 | 51.1 |
| 12.5° | 59.7 | 70.3 | 76.0 |
| 15° | 98.7 | 128.6 | 141.3 |
| 17.5° | 174.0 | 198.2 | 212.4 |
| 20° | 153.4 | 139.9 | 147.7 |
| 22.5° | 83.1 | 72.4 | 74.6 |
| 25° | 46.2 | 39.8 | 40.5 |
| 26° | 36.9 | 32.0 | 32.0 |
| 27° | 29.8 | 25.6 | 25.6 |
| 28° | 24.1 | 20.6 | 20.6 |
| 29° | 19.2 | 16.3 | 16.3 |
| 30° | 15.6 | 13.5 | 13.5 |
| 31° | 12.8 | 10.7 | 10.7 |
| 32° | 10.7 | 9.2 | 8.5 |
| 33° | 9.2 | 7.8 | 7.1 |
| 34° | 7.8 | 6.4 | 5.7 |
| 35° | 6.4 | 5.0 | 5.0 |
| 36° | 5.7 | 4.3 | 4.3 |
| 37° | 5.0 | 3.6 | 3.6 |
| 38° | 4.3 | 2.8 | 2.8 |
| 39° | 3.6 | 2.8 | 2.1 |
| 40° | 2.8 | 2.1 | 1.4 |
| 42.5° | 2.1 | 1.4 | 0.7 |
| 45° | 2.1 | 0.7 | 0.0 |
| 47.5° | 1.4 | 0.7 | 0.0 |
| 50° | 1.4 | 0.0 | 0.0 |
| 51° | 1.4 | 0.0 | 0.0 |
| 52° | 1.4 | 0.0 | 0.0 |
| 53° | 0.7 | 0.0 | 0.0 |
| 54° | 1.4 | 0.0 | 0.0 |
| 55° | 0.7 | 0.0 | 0.0 |
| 57.5° | 1.4 | 0.0 | 0.0 |
| 60° | 1.4 | 0.0 | 0.0 |
| 61° | 1.4 | 0.0 | 0.0 |
| 62° | 1.4 | 0.0 | 0.0 |
| 63° | 1.4 | 0.0 | 0.0 |
| 64° | 1.4 | 0.7 | 0.0 |
| 65° | 1.4 | 0.7 | 0.0 |
| 66° | 1.4 | 0.7 | 0.0 |



TEST NUMBER: P170924

CATALOG NUMBER: LDA4A13940D010TE LAR15SP 4LA1 30° Tilt

CANDELA DISTRIBUTION (continued):

| | 135° | 157.5° | 180° |
|-------|------|--------|------|
| 72.5° | 1.4 | 0.7 | 0.0 |
| 75° | 1.4 | 0.7 | 0.0 |
| 77.5° | 1.4 | 0.7 | 0.0 |
| 80° | 1.4 | 0.7 | 0.0 |
| 82.5° | 1.4 | 0.7 | 0.0 |
| 85° | 1.4 | 0.7 | 0.0 |
| 87.5° | 1.4 | 0.7 | 0.0 |
| 90° | 0.0 | 0.0 | 0.0 |



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







| | | | | | | | | | | | |
|-------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 67.5° | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 1.4 | 1.4 |
| 70° | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 1.4 | 1.4 | 0.7 | 0.7 |





| | | | | | | | | | | | |
|-------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 67.5° | 1.4 | 0.7 | 1.4 | 1.4 | 2.1 | 2.8 | 2.8 | 1.4 | 2.1 | 1.4 | 2.1 |
| 70° | 0.7 | 0.7 | 0.7 | 0.7 | 2.1 | 2.1 | 2.8 | 1.4 | 2.1 | 1.4 | 2.1 |





| | | | |
|-------|-----|-----|-----|
| 67.5° | 1.4 | 0.7 | 0.0 |
| 70° | 1.4 | 0.7 | 0.0 |



(END OF REPORT)