

# AFTvision ZML 系列工业变倍缩放镜头

(工业缩放镜头、工业显微镜头、工业倍率可变微距镜头、工业近摄镜头)

AFTvision ZML 系列小型变倍缩放工业镜头采用全新超低失真、高分辨率设计，具有清晰度高，倍率可变，光学无畸变，高对比度等特点。体积小巧、易于安装，采用焦阑法，测量误差少，能配合百万像素以上 1/3, 1/2, 2/3 工业相机使用，用于高精度检测、高精度尺寸测量、目标位置定位等机器视觉系统中。

可按客户要求的工作距离及视场范围定做镜头

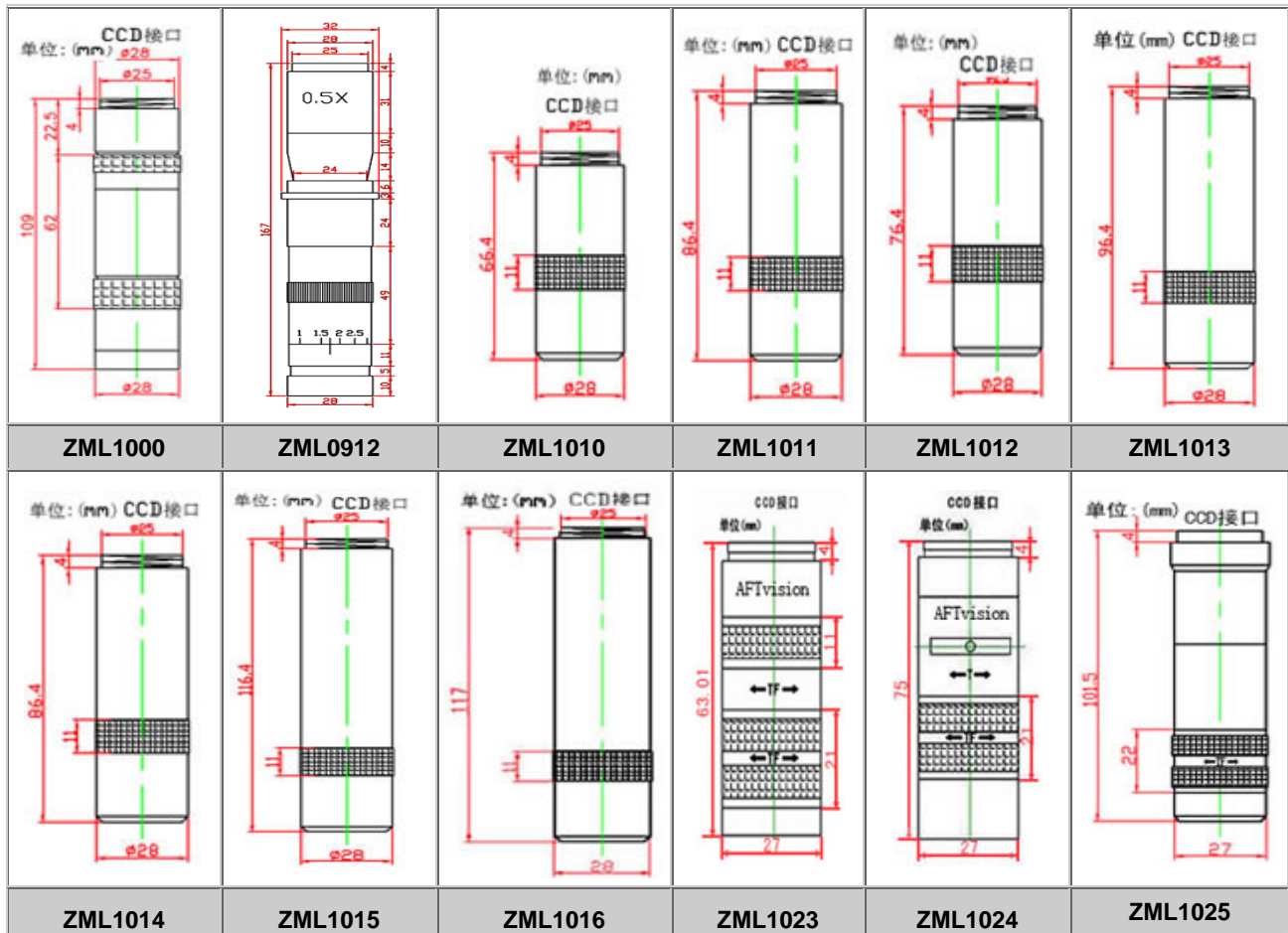
【参数对照表】单位(mm)

| 型号         | 放大倍率<br>×倍数     | 工作距离<br>mm | 视场 H×V (mm)               |                       | 接口<br>类型                     | 最大兼<br>容 CCD | 外形尺寸     | 备注                         |
|------------|-----------------|------------|---------------------------|-----------------------|------------------------------|--------------|----------|----------------------------|
|            |                 |            | 1/3"CCD                   | 1/2"CCD               |                              |              |          |                            |
| ZML1000    | ×0.2~×1.6       | 145~52     | 21.0×<br>16.9~<br>3.0×2.3 | 29.0×21.0~<br>4.0×3.0 | C                            | ~1/2         | φ 28*110 |                            |
| 重点推<br>荐产品 | ×0.2            | 145        | 21.0×15.8                 | 29.0×21.8             | 左表列出的是镜头在某放大倍数时的物距和视场范围，以便参考 |              |          | 透光口径较大<br>可锁紧<br>成像质量好     |
|            | ×0.3            | 103        | 16.0×12.0                 | 21.3×16.0             |                              |              |          |                            |
|            | ×0.4            | 75         | 12.0×9.6                  | 16.0×12.0             |                              |              |          |                            |
|            | ×0.5            | 59         | 9.6×7.2                   | 12.8×9.6              |                              |              |          |                            |
|            | ×0.6            | 51         | 8.0×6.0                   | 10.7×8.0              |                              |              |          |                            |
|            | ×0.7            | 46         | 6.8×5.1                   | 9.1×6.9               |                              |              |          |                            |
|            | ×0.8            | 44         | 6.0×4.5                   | 8.0×6.0               |                              |              |          |                            |
|            | ×0.9            | 43         | 5.3×4.0                   | 7.1×5.3               |                              |              |          |                            |
|            | ×1.0            | 42         | 4.8×3.6                   | 6.4×4.8               |                              |              |          |                            |
|            | ×1.1            | 42         | 4.4×3.3                   | 5.8×4.4               |                              |              |          |                            |
|            | ×1.2            | 44         | 4.0×3.0                   | 5.3×4.0               |                              |              |          |                            |
|            | ×1.3            | 46         | 3.7×2.8                   | 4.9×3.7               |                              |              |          |                            |
|            | ×1.4            | 48         | 3.5×2.6                   | 4.6×3.4               |                              |              |          |                            |
|            | ×1.5            | 50         | 3.2×2.4                   | 4.3×3.2               |                              |              |          |                            |
| ×1.6       | 52              | 3.0×2.3    | 4.0×3.0                   |                       |                              |              |          |                            |
| ZML0912    | ×0.35~<br>×2.25 | 85-90      | 13.3×10<br>~2.1×1.6       | 18.3×13.7<br>~2.9×2.2 | C                            | 1/2"         | φ 28*167 | 0.5×<br>CCD 接口             |
|            | ×0.35           | 90         | 13.3×10.0                 | 18.3×13.7             | 左表列出的是镜头在某放大倍数时的物距和视场范围，以便参考 |              |          |                            |
|            | ×0.5            | 89         | 9.6×7.2                   | 13.6×10.2             |                              |              |          |                            |
|            | ×0.75           | 88         | 6.3×4.7                   | 8.8×6.6               |                              |              |          |                            |
|            | ×1.0            | 87         | 4.5×3.4                   | 6.2×4.7               |                              |              |          |                            |
|            | ×1.25           | 87         | 3.8×2.9                   | 5.0×3.8               |                              |              |          |                            |
|            | ×1.5            | 86         | 3.0×2.3                   | 4.2×3.2               |                              |              |          |                            |
|            | ×1.75           | 86         | 2.6×2.0                   | 3.6×2.7               |                              |              |          |                            |
|            | ×2.0            | 85         | 2.3×1.7                   | 3.2×2.4               |                              |              |          |                            |
| ×2.25      | 85              | 2.1×1.6    | 2.9×2.2                   |                       |                              |              |          |                            |
| ZML0912    | ×0.7~×4.5       | 85-90      | 6.8×5.1<br>~1.0×0.7       | 9.3×7.0<br>~1.5×1.1   | C                            | 1/2"         | φ 28*181 | 0.5× CCD 接口<br>+<br>2×变倍接口 |
|            | ×0.7            | 90         | 6.8×5.1                   | 9.3×7.0               | 左表列出的是镜头在某放大倍数               |              |          |                            |

|         |               |         |                        |                         |                              |       |          |                           |
|---------|---------------|---------|------------------------|-------------------------|------------------------------|-------|----------|---------------------------|
|         | ×1.0          | 89      | 4.8×3.6                | 6.8×5.1                 | 时的物距和视场范围，以便参考               |       |          |                           |
|         | ×1.5          | 88      | 3.2×2.4                | 4.4×3.3                 |                              |       |          |                           |
|         | ×2.0          | 87      | 2.2×1.7                | 3.1×2.3                 |                              |       |          |                           |
|         | ×2.5          | 87      | 1.9×1.4                | 2.5×1.9                 |                              |       |          |                           |
|         | ×3.0          | 86      | 1.5×1.1                | 2.1×1.6                 |                              |       |          |                           |
|         | ×3.5          | 86      | 1.3×1.0                | 1.8×1.4                 |                              |       |          |                           |
|         | ×4.0          | 85      | 1.1×0.8                | 1.6×1.2                 |                              |       |          |                           |
|         | ×4.5          | 85      | 1.0×0.7                | 1.5×1.1                 |                              |       |          |                           |
| ZML1010 | ×0.3~×0.5     | 226~164 | 16.1×12.1~<br>10.1×7.6 | 21.5×16.1~<br>13.5×10.1 | C                            | ~2/3" | φ 28*67  | 通光口径较小<br>物距相对较大<br>成像质量好 |
|         | ×0.3          | 226     | 16.1×12.1              | 21.5×16.1               | 左表列出的是镜头在某放大倍数时的物距和视场范围，以便参考 |       |          |                           |
|         | ×0.4          | 185     | 12.0×9.0               | 16.0×12.0               |                              |       |          |                           |
|         | ×0.5          | 164     | 10.1×7.6               | 13.5×10.1               |                              |       |          |                           |
| ZML1011 | ×0.6~×0.7     | 141~127 | 8.7×6.5~<br>6.6×5.0    | 11.6×8.7~<br>8.8×6.6    | C                            | ~2/3" | φ 28*86  | 通光口径较小<br>物距相对较大<br>成像质量好 |
|         | ×0.6          | 141     | 8.7×6.5                | 11.6×8.7                | 左表列出的是镜头在某放大倍数时的物距和视场范围，以便参考 |       |          |                           |
|         | ×0.7          | 127     | 6.6×5.0                | 8.8×6.6                 |                              |       |          |                           |
| ZML1012 | ×0.7~×1.0     | 142~116 | 7.2×5.4~<br>4.9×3.7    | 9.6×7.2~<br>6.5×4.9     | C                            | ~2/3" | φ 28*76  | 通光口径较小<br>物距相对较大<br>成像质量好 |
|         | ×0.7          | 142     | 7.2×5.4                | 9.6×7.2                 | 左表列出的是镜头在某放大倍数时的物距和视场范围，以便参考 |       |          |                           |
|         | ×0.8          | 130     | 6.0×4.5                | 8.0×6.0                 |                              |       |          |                           |
|         | ×0.9          | 123     | 5.3×3.4                | 7.1×5.3                 |                              |       |          |                           |
|         | ×1.0          | 116     | 4.9×3.7                | 6.5×4.9                 |                              |       |          |                           |
| ZML1013 | ×1.1~×1.6     | 122~106 | 4.3×3.2~<br>3.1×2.3    | 5.7×4.3~<br>4.1×3.1     | C                            | ~2/3" | φ 28*96  | 通光口径较小<br>物距相对较大<br>成像质量好 |
| ZML1014 | ×1.5~×2.1     | 125~105 | 3.2×2.4~<br>2.3×1.7    | 4.3×3.3~<br>3.1×2.3     | C                            | ~2/3" | φ 28*86  | 通光口径较小<br>物距相对较大<br>成像质量好 |
| ZML1015 | ×2.2~×<br>3.2 | 127~110 | 2.0×1.5~<br>1.5×1.1    | 2.7×2.0~<br>2.0×1.5     | C                            | ~2/3" | φ 28*116 | 通光口径较小<br>物距相对较大<br>成像质量好 |
| ZML1016 | ×2.7~×3.6     | 118~102 | 1.8×1.4~<br>1.35×1.0   | 2.4×1.8~<br>1.8×1.35    | C                            | ~1/2  | φ 28*117 | 通光口径较小<br>物距相对较大<br>成像质量好 |
| ZML1023 | ×0.5~×0.7     | 67~49   | 10.5×7.9~<br>7.1×5.3   | 14×10.5~<br>9.4×7.1     | C                            | ~2/3" | φ 28*75  | 通光口径较大<br>倍率可变            |
|         | ×0.5          | 63      | 10.5×7.9               | 14×10.5                 | 左表列出的是镜头在某放大倍数时的物距和视场范围，以便参考 |       |          |                           |
|         | ×0.6          | 67/49   | 8.0×6.0                | 10.7×8.0                |                              |       |          |                           |
|         | ×0.7          | 58      | 7.1×5.3                | 9.4×7.1                 |                              |       |          |                           |
| ZML1024 | ×0.4~×1.1     | 211~106 | 12.4×9.3~<br>4.4×3.3   | 16.5×12.4~<br>5.9×4.4   | C                            | ~2/3" | φ 28*75  | 通光口径可变<br>倍率可变            |
|         | ×0.4          | 211     | 12.4×9.3               | 16.5×12.4               | 左表列出的是镜头在某放大倍数时的物距和视场范围，以便参考 |       |          |                           |
|         | ×0.5          | 174     | 9.6×7.2                | 12.8×9.6                |                              |       |          |                           |
|         | ×0.6          | 148     | 8×6                    | 10.6×8                  |                              |       |          |                           |

|         |           |       |                     |                     |                              |       |         |
|---------|-----------|-------|---------------------|---------------------|------------------------------|-------|---------|
|         | ×0.7      | 135   | 6.8×5.1             | 9.1×6.8             |                              |       |         |
|         | ×0.8      | 125   | 6×4.5               | 8×6                 |                              |       |         |
|         | ×0.9      | 116   | 5.3×4               | 7.1×5.3             |                              |       |         |
|         | ×1.0      | 110   | 4.8×3.6             | 6.4×4.8             |                              |       |         |
|         | ×1.1      | 106   | 4.4×3.3             | 5.9×4.4             |                              |       |         |
| ZML1025 | ×1.1~×1.7 | 82~77 | 4.5×3.4~<br>2.9×2.1 | 6.0×4.5~<br>3.8×2.9 | C                            | ~2/3" | φ28*101 |
|         | ×1.1      | 82    | 4.5×3.4             | 6.0×4.5             | 左表列出的是镜头在某放大倍数时的物距和视场范围，以便参考 |       |         |
|         | ×1.2      | 80    | 4.0×3.0             | 5.3×4.0             |                              |       |         |
|         | ×1.3      | 78    | 3.7×2.8             | 4.9×3.7             |                              |       |         |
|         | ×1.4      | 77    | 3.5×2.6             | 4.6×3.5             |                              |       |         |
|         | ×1.5      | 77    | 3.2×2.4             | 4.3×3.2             |                              |       |         |
|         | ×1.6      | 77    | 3.0×2.3             | 4.0×3.0             |                              |       |         |
|         | ×1.7      | 77    | 2.9×2.1             | 3.8×2.9             | 通光口径较大<br>倍率可变               |       |         |

【外形尺寸图】



【应用领域】

广泛用于丝网印刷机械、贴合、切割、PS 打孔机、PCB 补线机、PCB 打孔机、玻璃割片机、点胶机、SMT 检测、贴版机等工业精密对位、定位、零件确认、尺寸测量、工业显微等 CCD 视觉对位、测量装置等领域。