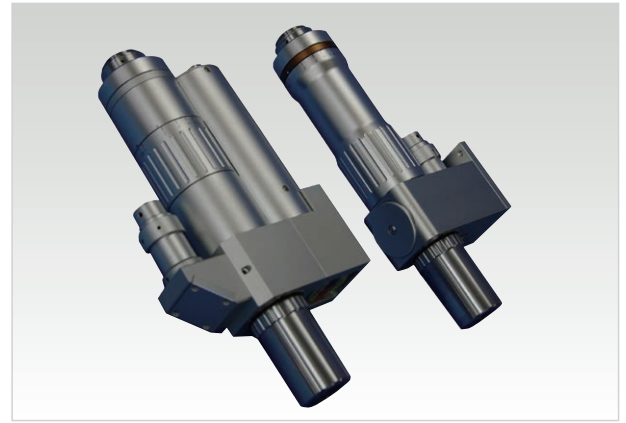


# High Magnification Zoom Tube

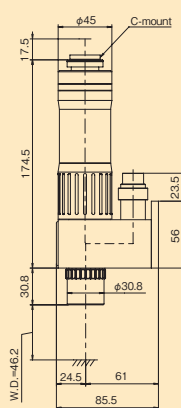
High Magnification Manual Zoom Tube

High Magnification Motorized Zoom Tube

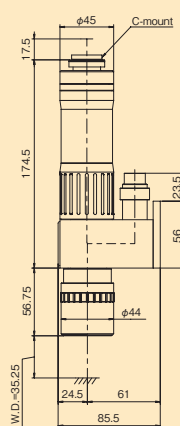
Compatible with wide range of options at zoom ratio 12X.  
High magnification and high resolution inspection can be made with the use of objective lens. Ideal for integrating to systems due to its lightweight and compact design.



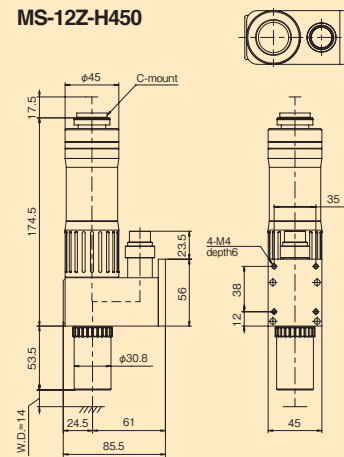
MS-12Z-L1215



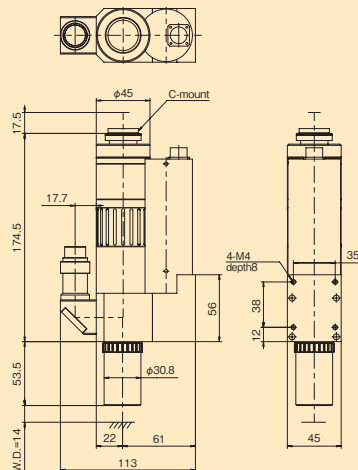
MS-12Z-M2530



MS-12Z-H450



MS-12AZ series



## Connecting diagram with this lens tube.

Connector is HR10A-10R-12P(HIROSE) and feeding side connector is HR10A-10P-12S.

| TELE(high magnification) limit |       | Pin number | Signal name  | Signal explanation                      |
|--------------------------------|-------|------------|--------------|-----------------------------------------|
| +V                             | Brown | 1          | +V           | CW limit sensor+power supply(DC5-24V)   |
| OUT                            | Black | 2          | CCWLS output | TELE limit sensor output(shading OFF)   |
| OV                             | Blue  | 3          | OV           | CW limit sensor, signal ground          |
| SUNX PM-F24                    |       |            |              | NPN open collector DC30V/50mA or less   |
| WIDE(low magnification) limit  |       | Pin number | Signal name  | Signal explanation                      |
| +V                             | Brown | 4          | +V           | CCW limit sensor+power supply (DC5-24V) |
| OUT                            | Black | 5          | CCWLS output | WIDE limit sensor output (shading OFF)  |
| OV                             | Blue  | 6          | OV           | CCW limit sensor, signal ground         |
| SUNX PM-R24                    |       |            |              | NPN open collector DC30V/50mA or less   |
|                                |       | 7          | NC           |                                         |
|                                |       | 8          | Motor lead   | —                                       |
|                                |       | 9          | Motor lead   | —                                       |
|                                |       | 10         | Motor lead   | —                                       |
|                                |       | 11         | Motor lead   | —                                       |
|                                |       | 12         | Motor lead   | —                                       |

0.72°/1Pulse  
(FullStep)  
Motor : Oriental  
PK525PMA

Recommended driver CRD5103PB or CRD5103P

## Specification

| Model #                            | MS-12Z-L1215 / MS-12AZ-L1215  |                         |                        | MS-12Z-M2530 / MS-12AZ-M2530   |                        |                        | MS-12Z-H450 / MS-12AZ-H450    |                        |                        |
|------------------------------------|-------------------------------|-------------------------|------------------------|--------------------------------|------------------------|------------------------|-------------------------------|------------------------|------------------------|
| Magnification                      | 1.25X                         | 7.5X                    | 15X                    | 2.5X                           | 15X                    | 30X                    | 4.16X                         | 25X                    | 50X                    |
| WD                                 | 46.2mm                        |                         |                        | 35.25mm                        |                        |                        | 14mm                          |                        |                        |
| Focal depth                        | $\pm 305.56 \mu\text{m}$      | $\pm 16.27 \mu\text{m}$ | $\pm 6.88 \mu\text{m}$ | $\pm 76.36 \mu\text{m}$        | $\pm 3.51 \mu\text{m}$ | $\pm 2.12 \mu\text{m}$ | $\pm 27.5 \mu\text{m}$        | $\pm 1.42 \mu\text{m}$ | $\pm 1.36 \mu\text{m}$ |
| Resolution                         | $11.2 \mu\text{m}$            | $2.6 \mu\text{m}$       | $1.7 \mu\text{m}$      | $5.59 \mu\text{m}$             | $1.20 \mu\text{m}$     | $0.93 \mu\text{m}$     | $3.4 \mu\text{m}$             | $0.76 \mu\text{m}$     | $0.75 \mu\text{m}$     |
| N.A                                | 0.03                          | 0.13                    | 0.20                   | 0.06                           | 0.28                   | 0.36                   | 0.1                           | 0.44                   | 0.45                   |
| Illumination                       | Coaxial illumination          |                         |                        |                                |                        |                        |                               |                        |                        |
| Equivalent sensor                  | under 1/2 inch camera         |                         |                        |                                |                        |                        |                               |                        |                        |
| Camera mount                       | C-MOUNT                       |                         |                        |                                |                        |                        |                               |                        |                        |
| Weight<br>(without camera and LED) | 1.05kg/1.4kg (Motorized type) |                         |                        | 1.3kg/ 1.65kg (Motorized type) |                        |                        | 1.15kg/1.5kg (Motorized type) |                        |                        |