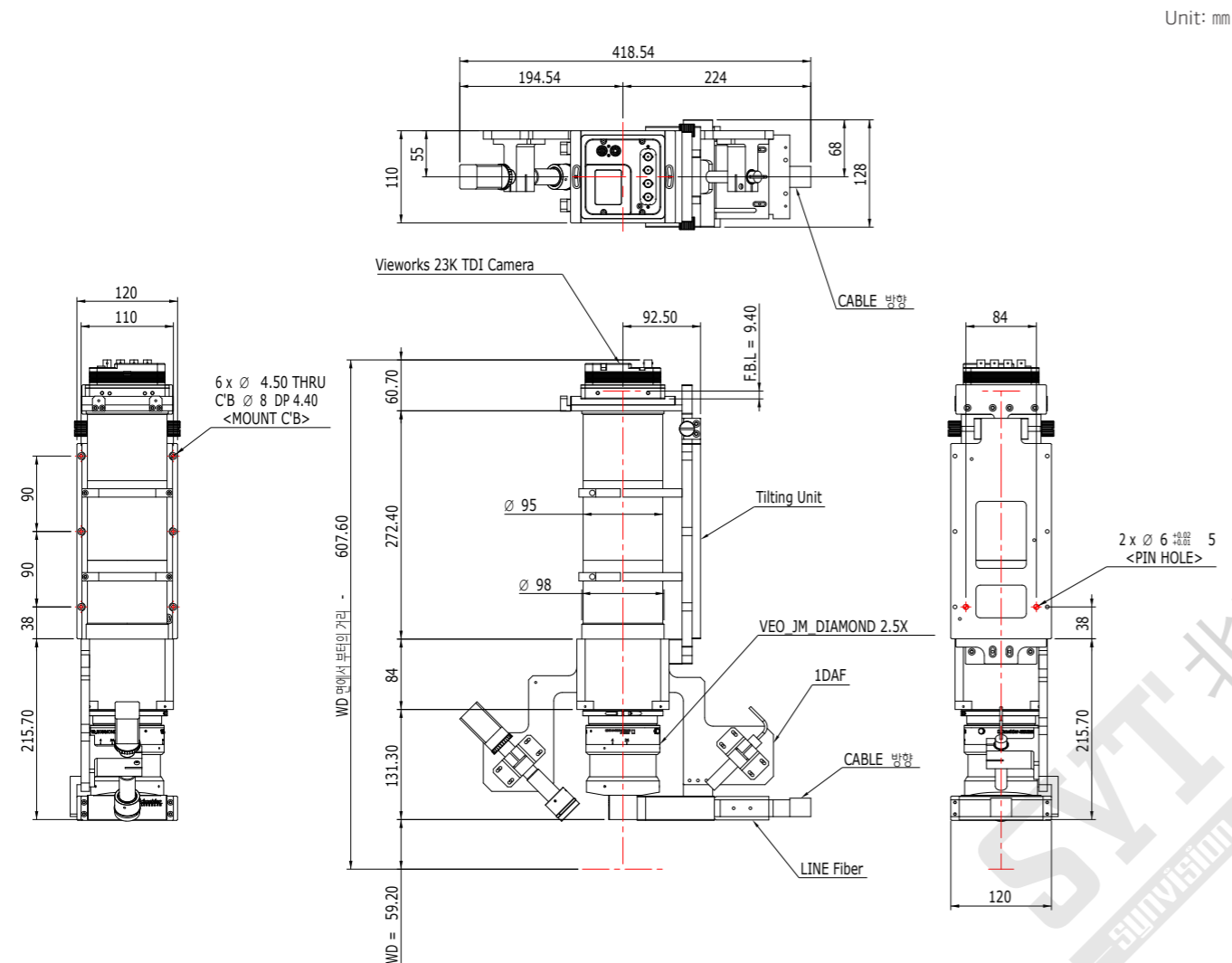


## Auto Focus Tracking System

System Enable to Adjust Focus of an Optical Instrument Precisely and Automatically in Real Time

### Mechanical Dimensions



\*Applicable other high-magnification optical instruments(3.33X, 5.0X, 7.0X) depending on operational application

Preliminary

## Auto Focus Tracking System

System Enable to Adjust Focus of an Optical Instrument Precisely and Automatically in Real Time

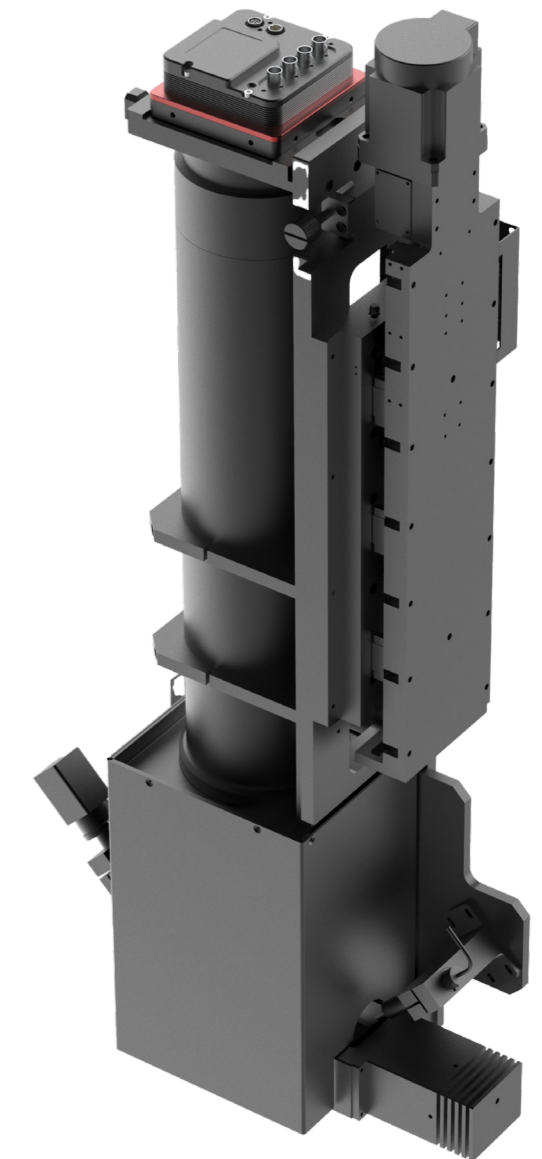
Vieworks Auto Focus Tracking System equipped with a sensor, a control system and a motor focuses to the selected point or area automatically so that it continues to shoot a moving subject precisely.

This system delivers accurate data continuously in consideration of equipment's flatness and DOF(Depth Of Field), when shooting for highly sophisticated inspections. Moreover, Vieworks' specialized smart camera provides images by calculating the focal length or direction on its own without any other device and it enables the system to deliver precise data fast and continuously.

This system is as configurable as you need for ultra-precise inspection, especially.

### Main Features

- No need any other computing device such as a PC
- Available to shoot, analyze displacement, or generate analog output signals with only one camera
- Open-type and changeable optical instrument depending on the characteristic of sample materials, or on what lens to use for inspection
- High-speed response to information on displacement
- Available to check real location of a motor via its own encoder

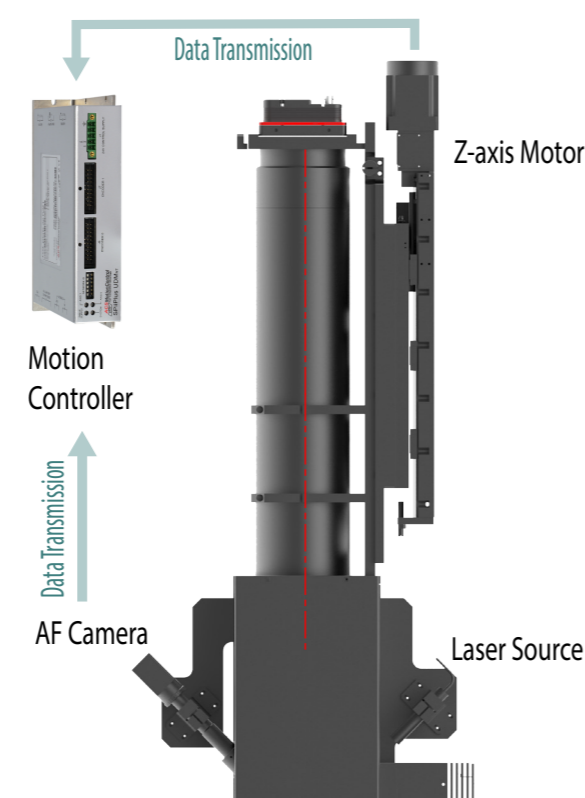


# Auto Focus Tracking System

System Enable to Adjust Focus of an Optical Instrument Precisely and Automatically in Real Time

## AFTS Structure

- AF Camera (Smart Camera)
- AF Optical Instrument (Lens)
- Lighting (Laser)
- Z-axis Motor
- Motion Controller



## AFTS Specifications

Item	Auto Focus Tracking System	Remarks
AF Method	Optical triangulation method based on a line-shaped beam	-
AF Tracking Deviation	Less than $\pm 3 \mu\text{m}$	125 mm/sec
AF Tracking Slope	More than 4 [ $\mu\text{m}/\text{mm}$ ]	125 mm/sec
Measurable Range	Less than $\pm 500 \mu\text{m}$ (in case of $72^\circ$ of the laser's incidence angle based on the normal line)	M.R. : $\pm 900 \mu\text{m}$
AF Sensing Rate	707 Hz (AF-camera speed at 1280 x 300) 3000 Hz (AF-camera speed at 760 x 100)	-
Main Devices	AF sensor + Z-axis motor + motion controller	-
Interface	GigE (Motion, AF camera)	-
AF Sensor	VS-1300(AF camera) + Line-shaped laser(Wavelength: 685 nm)	-
Motion Controller	UDMnt2C2xxxxxx (ACS motion)	Varies depending on number of axes, configurations
AF Stage	<ul style="list-style-type: none"><li>• Stage: Rotary Motor + Linear Motion Stage (Ballscrew)</li><li>• Model: TS4607S6221E600 Tamagawa)</li><li>• Stroke: 25 mm (Guide Type: LM Guide)</li><li>• Size: 120 mm x 120 mm x 450 mm</li><li>• Weight: 5.0 kg (including a motor)</li><li>• Resolution: 1 <math>\mu\text{m}</math></li><li>• Maximum Speed: 50 mm/sec</li><li>• Repeatability: <math>\pm 1 \mu\text{m}</math>(uni-dir), <math>\pm 2 \mu\text{m}</math>(bi-dir)</li><li>• Load Capacity: 20 kg</li></ul>	-

The information above is an example of combination provided to help understanding, and is not a fixed specification. AFTS varies greatly depending on the system conditions of the optical instrument or the installation environment, therefore, please contact your dealer for exact specifications.

# Auto Focus Tracking System

System Enable to Adjust Focus of an Optical Instrument Precisely and Automatically in Real Time

## AF Camera

The camera for AFTS, developed by Vieworks, is a smart camera specialized on AF(Auto Focusing), and it converts the line-shaped beam into displacement information via camera's internal arithmetic, and after that, it enables to output the displacement information including the setting gain value as analog signals. It is configurable for user's demand and is also available to change its logic for analyzing displacement if necessary.



## AF Camera Specifications

Item	AF Camera
Model	VS-1300
Resolution (H x V)	1280 x 1024
Pixel Size	4.8 $\mu\text{m}$ x 4.8 $\mu\text{m}$
Electronic Shutter	Global Shutter
Mount Type	C-Mount
Interface	GigE (Configurable)
Frame Rate	260 FPS @ Full Resolution, 700 FPS @ 1280 x 300 (Default: 3,000 FPS @ 760 x 100)
Mechanical (W x H x V)	35mm x 35 mm x 49.3 mm
Power	12 ~ 24 VDC , Typ. 6 W
Connector	GPIO connector x 1, RJ-45(I/O, GigE) x 1
AF Special Feature (Built-in)	Multi-exposure Sensing, Data-output Filtering