# CIAO SWIR

## Improve your optical link capability

Adaptive Optics platform
**Small, simple & robust**

Up to 3.5kHz closed loop
Simply interfaced to all telescopes
From 1 μm to 1.7 μm wavelength



**imagine Optic**

# CIAO SWIR +

**CIAO is a compact innovative adaptive optics add-on that enhances your optical link datarate.**

We customize for our users, so please contact us to discuss how CIAO could benefit your application !

## APPLICATIONS

+ Downlink satellite communication (SatCom)
+ Horizontal path free space optics (FSO) communication
+ Quantum key distribution
+ Fast adaptive optics in SWIR
+ Daytime or nighttime operation
+ Atmosphere characterization in SWIR

## FEATURES

+ Includes 12x12 microlenses high performance HASO SWIR FAST wavefront sensor optimized for SWIR & high speed
+ Corrects up to 40 modes thanks to piezo-electric deformable mirror
+ Facilitates access to beam-splitter allowing to choose one adapted to your needs (dichroic function or split ratio)
+ Integrates a source, making calbration & auto-check easier
+ Is optimized for f/10 telescopes, but customization available for any f#
+ Includes a high dynamic tip-tilt corrector to compensate large pointing errors
+ Integrates an optimized fiber injector
+ Works with dedicated software that includes autocalibration and one button to start AO
+ Has a negligible impact on polarization
+ Optional user filter holder
+ 0° or 90° installation
+ Compatible with up to 100µW (-10dBm) of 1550nm at the input

# SPECIFICATIONS*

**CIAO SWIR**

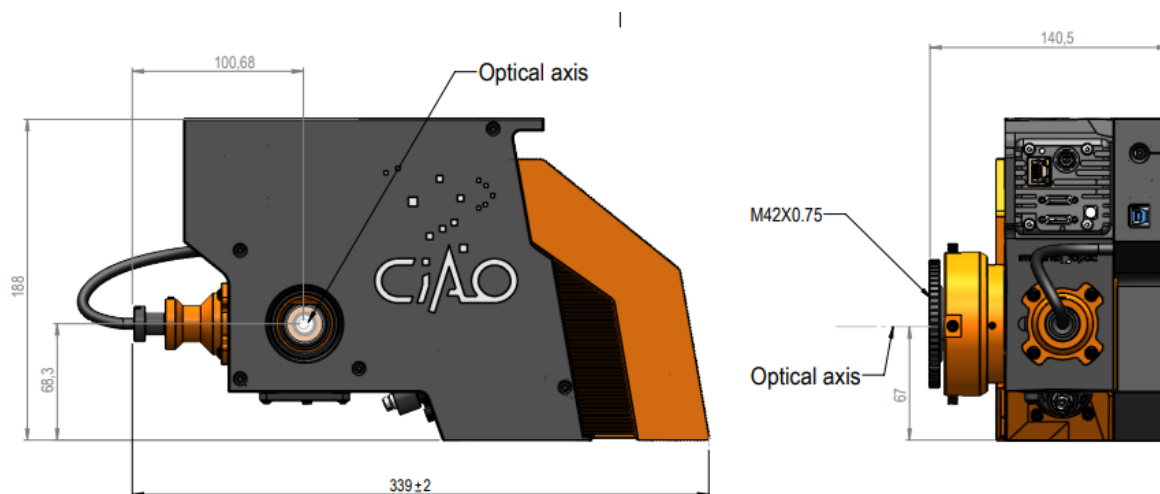| | |
|---|---|
| HASO wavefront sensor nb of microlenses | 12x12 |
| HASO accuracy | 15nm RMS |
| HASO repeatability @1550nm @4000ph/microlens | 30nm RMS |
| Spectral range | 1-1.7 µm |
| Deformable mirror | 40 piezo actuators |
| Max closed loop frequency | 3.5kHz |
| BeamSplitter | 50-50 (other split ratio or dichroic available) |
| Closed loop average delay | 0.9 ms |
| Internal source | 1550 nm |
| Switch from telescope to internal source | motorized |
| Rejection bandwidth cut-off frequency | 115 Hz |
| Output f# | f/3.7 or fiber holder |
| Dimension | 315x315x127mm³ |
| Weight | 3kg |
| Cable length to PC | 2m (extenders available, optional) |

**Compatible telescopes**

| | |
|---|---|
| Diameter | from 200mm to 1m |
| Input f# | f/9 to f/12 (other f# available with custom) |
| Mechanical interface | T2 (M42x0.75mm) |
| Pointing accuracy | ± 1arcmin |

Rejection bandwidth CIAO SWIR
3.3kHz, g=0.3
showing cutting frequency at 115Hz
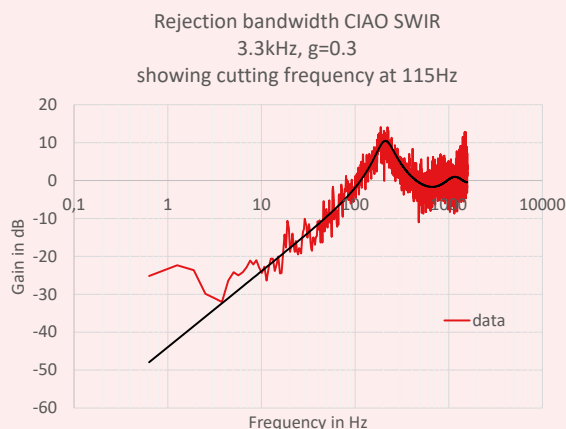


*Subject to changes without further notice
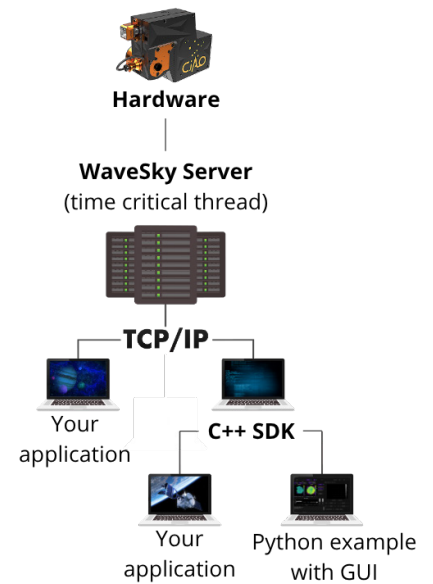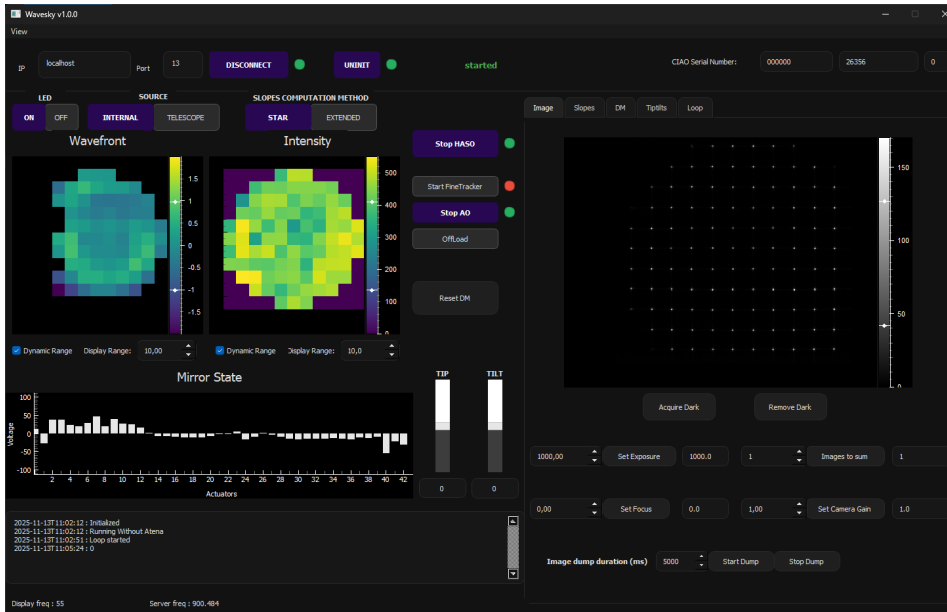
# DIMENSIONS (mm)

# SOFTWARE

## WAVESKY

Wavesky was made with a RunTime approach, meaning it has no GUI. When connected via TCP-IP, you can setup the server, drive the loop and make diagnostics.

It includes C++ and Python client examples and runs under Win10 and Win11 environment.



# ACCESSORIES

+ Additional beam splitters
+ Optical system by-pass
+ Optical USB and CamLink extender
+ Focal plane optimization (other fiber coupler, specific f#...)

# CONTACT US

**Imagine Optic Headquarters**
18, rue Charles de Gaulle
91400 ORSAY · France
Phone +33 (0)1 64 86 15 60
sales@imagine-optic.com
www.imagine-optic.com

**imagine optic**