

## CTTPS<sub>1/2</sub> – CRYO TIP/TILT/PISTON STAGE 1/2



### Features

- Driven by Cryo Linear Actuators
- Play free
- Self locking; no power dissipation when “off”
- Materials: stainless steel, titanium
- 20 mK to 375 K, vacuum compatible
- Sub-nanometer stability
- 1/2” mounting hole (12,7 mm)
- Optics side-clamped with a spring-loaded screw
- Membrane eliminates erratic lateral motion

### Description / Applications

The CTTPS<sub>1/2</sub> accepts 1/2” or 12,7 mm optical elements and can be operated in a cryo-vacuum environment. It is actuated with JPE’s Cryo Linear Actuators (CLA). Play of the tip / tilt / piston motion is eliminated by built-in preload springs. The optics are clamped from the side with a single spring-loaded screw.

### Specifications

General info	
Type of motion	Tip / tilt / piston
Dimensions	See drawings below
Operational environmental conditions	20 mK to 375 K, ambient to UHV
Weight	160 g
Stepping motion	
Tip / tilt range	-7,2 deg to 7,2 deg
Piston range	-1,5 mm to 1,5 mm
Actuator	CLA2201
Minimal step size	μrad
Drive voltage	-30 V to 120 V
Forces and load capacity	
Mounting hole diameter	1/2” or 12,7 mm
Free aperture diameter	11,5 mm
Load capacity	100 g
Materials	
Main body	Titanium, stainless steel 316L
CLA2201	Stainless steel 316L, ceramic, piezo actuator*
*Piezo actuator	Low voltage multilayer, ceramic insulated
-V, -HV or -UHV	Level of vacuum compatibility, see the glossary on the homepage for details
Electronics CPSC	
Controller Base Cabinet	CAB
Driver for stepping and scanning	CADM

## Ordering Information

### Available Models

CTTPS1/2-V                      Cryo Tip/Tilt/Piston Stage 1/2"

### Available Options

-HV                                      Upgrade to High Vacuum compatibility  
 -UHV                                    Upgrade to Ultra High Vacuum compatibility

### Accessories

AKM1                                    Accessory Kit Mechanical 1  
 AKE1                                    Accessory Kit Electrical 1

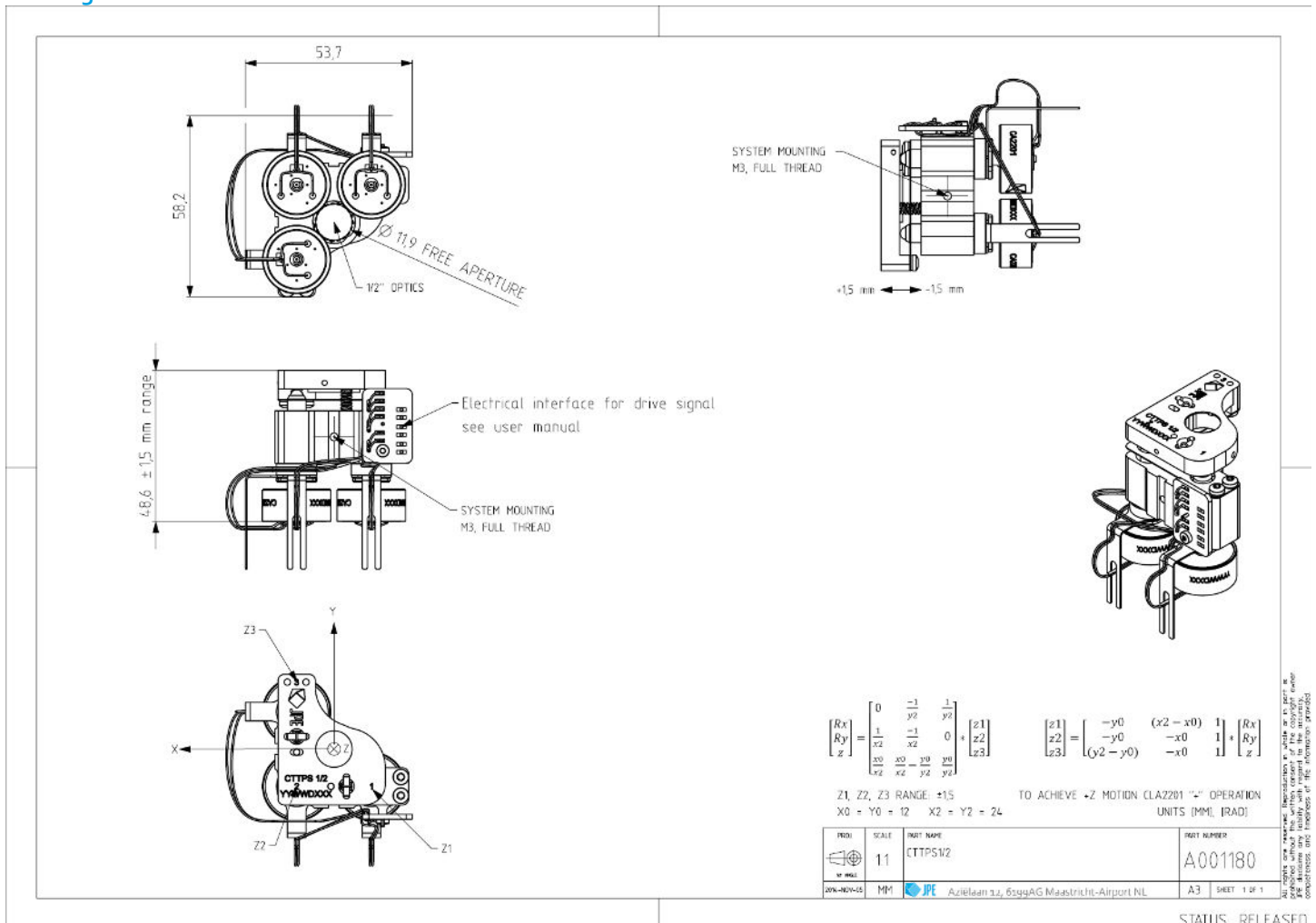
### Mechanical and electrical information

Download 3D step files and manuals from:  
<https://www.jpe-innovations.com/cryo-nano-products/>

### Contact

For quotations, specials, or engineering services, please contact us at:  
<https://www.jpe-innovations.com/contact/>

## Drawings



53,7

56,2

∅ 11,9 FREE APERTURE

1/2" OPTICS

SYSTEM MOUNTING M3, FULL THREAD

±15 mm    -15 mm

48,6 ± 1,5 mm range

Electrical interface for drive signal see user manual

SYSTEM MOUNTING M3, FULL THREAD

Z1, Z2, Z3 RANGE: ±15  
 X0 = Y0 = 12    X2 = Y2 = 24

TO ACHIEVE +Z MOTION CLAZ201 "L" OPERATION  
 UNITS (MM, IRAD)

$$\begin{bmatrix} R_x \\ R_y \\ z \end{bmatrix} = \begin{bmatrix} 0 & -1 & 1 \\ 1 & y_2 & y_1 \\ 1 & -1 & 0 \end{bmatrix} \begin{bmatrix} z_1 \\ z_2 \\ z_3 \end{bmatrix}$$

$$\begin{bmatrix} z_1 \\ z_2 \\ z_3 \end{bmatrix} = \begin{bmatrix} -y_0 & (x_2 - x_0) \\ -y_0 & -x_0 \\ (y_2 - y_0) & -x_0 \end{bmatrix} \begin{bmatrix} R_x \\ R_y \\ L \end{bmatrix}$$

PROJ	SCALE	PART NAME	PART NUMBER
1st DRG	1:1	CTTPS1/2	A001180
JPE-REV-02	MM	JPE Aziëlaan 12, 6599AG Maastricht-Airport NL	A3 SHEET 1 OF 1

STATUS: RELEASED