

CTTPS₁ – CRYO TIP/TILT/PISTON STAGE 1



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” mounting hole (25,4 mm)
- Optics side-clamped with a spring-loaded screw
- Membrane eliminates erratic lateral motion

Description / Applications

The CTTPS₁ accepts 1” or 25,4 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 functionality 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	170 g
Stepping motion	
Tip / tilt range	-5,6 deg to 5,6 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” or 25,4 mm
Free aperture diameter	21 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-V Cryo Tip/Tilt/Piston Stage 1"

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

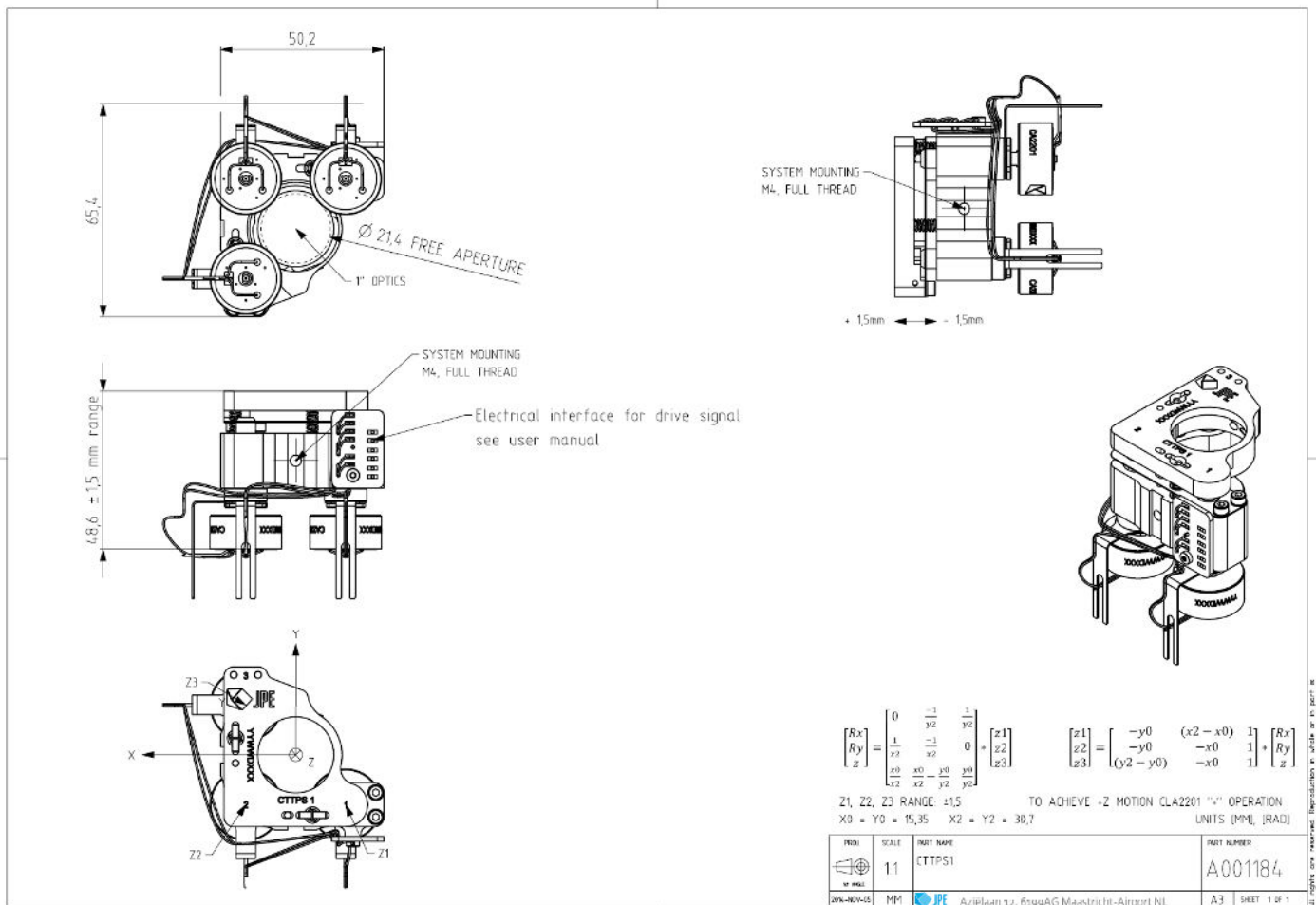
Mechanical and electrical information

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



50,2

65,4

Ø 21,4 FREE APERTURE

1" OPTICS

SYSTEM MOUNTING
M4, FULL THREAD

Electrical interface for drive signal
see user manual

48,6 ± 1,5 mm range

SYSTEM MOUNTING
M4, FULL THREAD

+ 15mm ← → - 15mm


Z1, Z2, Z3 RANGE: ±15

X0 = Y0 = 15,35 X2 = Y2 = 38,7

TO ACHIEVE +Z MOTION CLAZ201 "Z" OPERATION
UNITS [MM], [RAD]

$$\begin{bmatrix} Rx \\ Ry \\ z \end{bmatrix} = \begin{bmatrix} 0 & -1 & 1 \\ 1 & -1 & 0 \\ x0 & x0 & -y0 \\ -x2 & -x2 & -y2 \end{bmatrix} \begin{bmatrix} z1 \\ z2 \\ z3 \end{bmatrix} + \begin{bmatrix} z1 \\ z2 \\ z3 \end{bmatrix}$$

$$\begin{bmatrix} z1 \\ z2 \\ z3 \end{bmatrix} = \begin{bmatrix} -y0 & (x2 - x0) & 1 \\ -y0 & -x0 & 1 \\ (y2 - y0) & -x0 & 1 \end{bmatrix} \begin{bmatrix} Rx \\ Ry \\ z \end{bmatrix}$$

PROJ.	SCALE	PART NAME	PART NUMBER
11	1:1	CTTPS1	A001184
 Aziëlaan 12, 6599AG Maastricht-Airport NL			A3 SHEET 1 OF 1

STATUS: RELEASED