CRYO TIP / TILT / PISTON STAGE (CTTPS)

Features

- Driven by Cryo Linear Actuators (CLA)
- Preloaded actuators to ensure play free motion
- Frictionless membrane guides instead of v-grooves
- Materials: stainless steel, titanium
- 20 mK to 375 K, vacuum compatible
- Sub-nanometer stability
- 1/2" or 1" version standard
- Optics side-clamped with a spring loaded screw
- Self locking; no power dissipation when "off"

Description / Applications

The Cryo Tip / Tilt / Piston Stage (CTTPS) accepts 1/2" or 1" optical elements and can be operated in a cryo-vacuum environment. It is actuated with JPE's Cryo Linear Actuators (CLA). The actuators are preloaded and the in-plane position of the optics is not achieved via traditional ball in v-groove constructions, but by using a deformable metal membrane. Combined these features eliminate play and friction in the tip / tilt / piston axes, and therefore allow very accurate and stable positioning. The system will hold its position when powered-off.

Specifications

specs	unit	CTTPS1/2	CTTPS1
SYSTEM SPECIFICATIONS			
Active axes	-	3	
Type of motion	-	Tip / Tilt / Piston	
Optical diameter	mm (inch)	12.7 (1/2)	25.4 (1)
Open aperture diameter	mm	11,5	21
System tip / tilt range w.r.t optics centre	deg	± 7.2	± 5.6
System piston range	mm	± 1.5	
Actuator	-	CLA2201	
Main construction material	-	Titanium, stainless steel	
Mass	grams	160	170
ACTUATOR SPECIFICATIONS			
Specifications are given for individual CLA actuators unless otherwise mentioned. See interface drawing for transformation matrix from actuator outputs to system motion			
Range	mm	± 1.5	
Step size @ 293 K	nm	5-25	
Step size @ 4 K	nm	1-5	
Operating temperature	K	0.02-375	
Actuator spindle pitch	mm/turn	0,25	
DRIVE ELECTRONICS			
Controller/driver	-	CAB-230(115), CADM2	