

## CRYOGENIC PRODUCTS

# CRYOGENIC TRANSLATION UNIT

### What is the CTU?

The Cryogenic Translation Unit (CTU) is a low-range ( $\pm 1$  mm), high-resolution ( $< 50$  nm) translation unit for use at cryogenic temperatures. This multipurpose unit enables precise closed-loop positioning. The CTU's motion system ensures repeatability by relying on the deformation of thin flexures, caused by the closed-loop motion of a precise linear actuator, controlled by a calibrated, contactless capacitive sensor.



This device can be used as an active element in IR instrumentation to compensate for thermoelastic deformations that move optical elements or sensors.

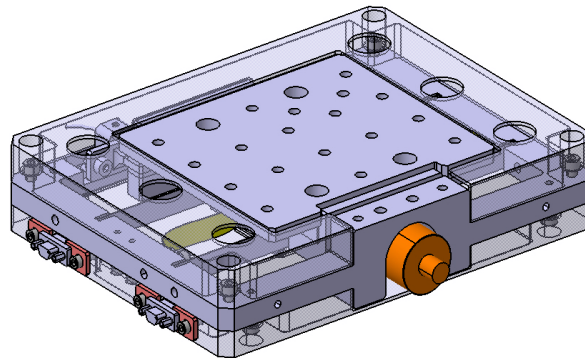
### Features

- Suitable for vacuum conditions ( $< 10^{-6}$  mbar).
- Suitable for cryogenic temperatures ( $\approx 12$  K).
- Uses the LIDAX Cryogenic Submicron Actuator (CSA) as the driving element.
- Temperature is measured by calibrated PT-100 sensors.

### CTU applications

The CTU is specifically designed for use in a wide range of demanding applications, including cryogenic mechanisms, space systems, optical instruments, medical devices, and scientific research. Its advanced thermal performance ensures reliability and efficiency in extremely low-temperature environments.

## CRYOGENIC TRASLATION UNIT



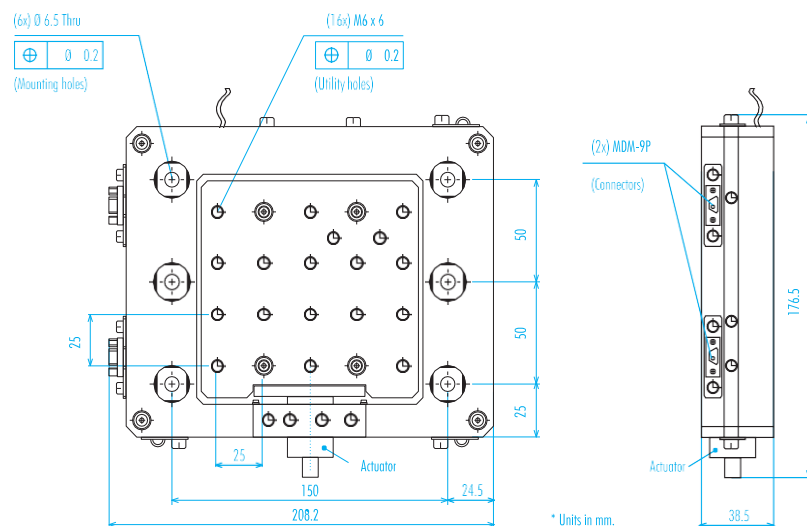
## Technical information



1.315 g (46 oz)



Body material: Al 6082 T6



Part number	CTU-10000
Size	208 x 177 x 39 mm 8.19 x 6.97 x 1.54 in
Displacement range	$\pm 1$ mm $\pm 0.04$ in
Speed range	0.001 - 0.5 mm/s 0.0004 - 0.02 in/sec
Load capability	> 30 N > 6.74 lbf

Temperature range	12 - 300 K -438 to 80 F
Pressure range	$< 10^{-6}$ to $10^3$ mbar $< 7.5 \times 10^{-7}$ to 750 Torr
Resolution	0.05 $\mu$ m $1.97 \times 10^{-6}$ in
Repeatability	0.20 $\mu$ m $7.87 \times 10^{-6}$ in
I/F Connectors Type	(2x) MDM-9P (Micro-D)