

> DESCRIPTION

The Double Tip Tilt mechanism DTT35XS Space Grade is a very light piezoelectric mechanism (25 grams) designed according to space rules. The mechanism uses Strain Gauges (SG) as positioning sensor and allows to reach a 1:4000 stability (1 μ rad rms). The mechanism is ideal for pointing mechanisms or laser beam steering.

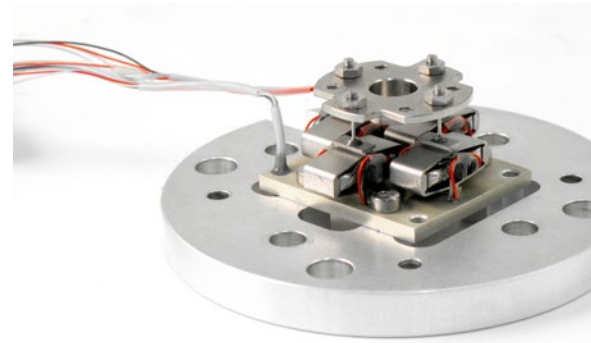
> SPACE EVALUATION PROGRAM

The DTT35XS Space Grade has followed a space qualification program according to ECSS standards (European Space Agency standards).

- Thermal – vacuum: -20 / 75 °C,
- Random vibration: 41 grms,
- Palyoad 1 gr (mirror),
- Lifetime: 2e8 cycles full stroke.

> SPACE HERITAGE

The technology is well proven with several mechanisms already flying (Rosetta, Picard, Lisa PF...). DTT35XS Space Grade flight models have been delivered and are scheduled for flight on the ISS/ACES/PHARAO instrument in 2017.



DTT35XS Space Grade mechanism

REFERENCES	UNIT	DTT35XS SPACE GRADE
Notes		Space product
Sensors option		SG
Active axis		RX, RY, TZ
Max No-load displacement	um	35.0
Max. Angular displacement	mrad (+/-)	2.00
Out of plane Y displacement	um	10.0
Voltage range	V	-20...150
Stiffness	N/um	2.0
Heigth	mm	22.0
Diameter	mm	30.0
Vertical Resolution	nm	0.4
Angular resolution	urad	0.0
Mass	g	25
Unloaded resonance frequency (in the tilt direction)	Hz	3200
Response time	ms	0.16
Capacitance (per electrical)	uF	0.50
Mechanical interfaces		Flat surface Ø 10mm
Mechanical interfaces (frame)		Cylinder Ø 38.1mm
Electrical interfaces		PTFE Insulated AWG36 wires 100mm long and shield with sub D15 connector