

CRYOGENIC VIBRATION ISOLATION PLATFORM (CVIP)



Features

- 3 DoF vibration attenuation inside the cryostat
- Vibration attenuation just below the experiment
- High insensitivity to cables and thermal braids
- High payload to carry the complete experiment
- Optimal performance with JPE stages
- High Q factor (no forced damping)
- All phosphor bronze construction, non-magnetic
- Central open aperture
- Up to 6kg load capacity

Description / Applications

The CVIP is a passive vibration isolation platform with z, Rx and Ry attenuation of floor vibrations. It is placed directly on the cryostat cold plate and carries the experiment. It is a relatively stiff spring design, which results in atypical high cut-off frequencies and high payload. Although this will limit the damping of low frequencies, compared to conventional dampers with low cut-off frequencies, it is much more insensitive to added cables and thermal braids between cold plate and experiment. These can become the limiting factor for stability in conventional dampers.

Specifications

specs	unit	CVIP1	CVIP2	CVIP3
Isolated axes	-		z, Rx, Ry	
Main dimensions	mm	Ø50 x 21.8	Ø90 x 25.8	Ø120 x 26.3
Central open aperture	mm	Ø16	Ø22	Ø45
Mass	grams	150	700	1300
Max payload	grams	500	1500	6000
Moving mass excluding payload	grams	70	410	690
Linear stiffness z-axis*	N/m	3,90E+04	7,80E+04	4,70E+05
Rotation stiffness x-axis*	Nm/rad	7,8	47,5	613
Rotation stiffness y-axis*	Nm/rad	7,8	47,5	613
Rotation axis position below platform	mm	-14,7	-18,2	-17,6
z, Rx, Ry cut-off frequencies @ max payload**	Hz	42, 12, 12	32, 17, 17	42, 30, 30
Bi-directional	-	can be used upside down (hanging)		
Overload protection endstops	mm	+/-0.5		
Main construction material	-	Phosphor bronze		
* ±20%.				
** ±10%. Payload center of gravity on center axis, 35mm above platform				