

CRYO BEARING STAGE (CBS)



Features

- Spring preloaded roller guides, full ceramic
- Horizontal and vertical motion
- xy configurable without additional brackets
- Resistive feedback sensor option -RLS
- Compact and robust design with large stroke
- Non-magnetic
- Integrated small stroke scanner functionality
- 20 mK to 375K, vacuum compatible
- Materials: titanium, bronze, ceramics

Description / Applications

The CBS is a robust linear stage for all-round applications in a cryo-vacuum and will run both horizontally and vertically. The combination of long range stepping motion and short range scanning offers nm positioning over the full range. The use of non-magnetic materials allows operation in high magnetic fields. It is equipped with high performance full ceramic linear roller guides for maximum stiffness and mechanical stability. The guides are spring preloaded, ensuring consistent performance with play free and smooth running from ambient to cryogenic temperatures.

Specifications

specs	unit	CBS10	CBS10-RLS	CBS5	CBS5-RLS
SYSTEM SPECIFICATIONS					
Active axes	-	1			
Type of motion	-	Linear, any orientation			
Step/scan actuator *	-	Piezo ceramic			
Step range	mm	10		5,5	
Speed @ ambient	mm/s	3		3	
Speed @ 4K	mm/s	1		1	
Min. step size @ ambient	nm	150		150	
Min. step size @ 4K	nm	50		50	
Scan range @ ambient **	µm	10		10	
Scan range @ 4K **	µm	2		2	
Scanner sensitivity @ ambient	nm/V	66		66	
Scanner sensitivity @ 4K	nm/V	13		13	
Driving force @ ambient	N	2		2	
Driving force @ 4K	N	1		1	
Payload for horizontal motion	grams	1000		500	
Payload for vertical motion	grams	60		50	
Mechanical endstops	-	at begin and end of range			
Operating temperature	K	0.02-375			
Main construction material	-	Titanium, bronze, ceramic			
Mass	grams	30	33	19	20
DRIVE ELECTRONICS					
Controller/driver	-	CAB-230(115), CADM2			
Sensor readout	-	N/A	RSM	N/A	RSM
* Step/scan positioning is both done with the CADM2, not simultaneously					
** CADM2 -20 to +130V, 10 bits resolution, setpoint rate approx. 10Hz					