VCS-1010 Voice Coil Stage

Overview: Cost-efficient and easily customized, the VCS-1010 Voice Coil Stage is a high performance, and compact positioning system specifically developed for applications requiring both high precision and high-speed positioning over a short to medium stroke. It is ideal for optical focusing and other micro-positioning applications such as semiconductor, medical, optical testing, scanning microscopy, circuit board assembly and micro manufacturing.

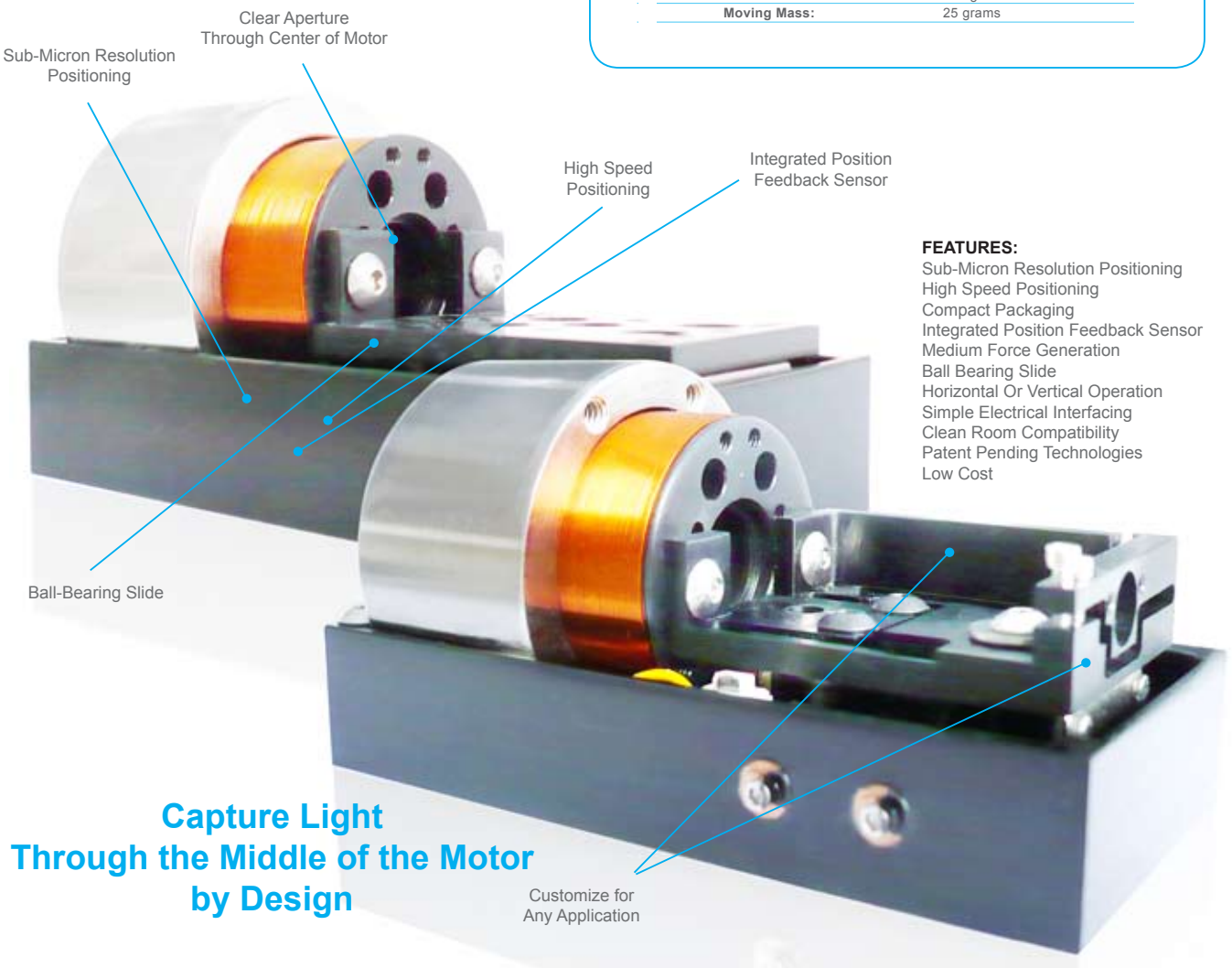
Stage: The VCS-1010 is guided along a single axis by a high precision ball bearing slide. The use of a linear slide produces a compact and light-weight package and overall stage structure has been optimized for reduced weight, allowing it to be mounted vertically or horizontally. Multiple sets of mounting holes along various surfaces are included for convenient mounting.

Voice Coil: The VCS-1010 uses a high force voice coil motor to move the stage. Moving mass has been optimized to be as light as possible—extremely important for providing minimum response time. Voice coil motors produce the least amount of electrical noise of *any* motor type available today and our voice coil motor adds no additional friction to the stage while providing superior responsiveness over micro-positioners with conventional screw drives.

Positioning Feedback Sensor: Using a frictionless, non-contact optical technology, the VCS-1010's sub-micron resolution linear displacement sensor has high bandwidth and low noise for responsive and precise movements. The compactness of this system and its extremely low mass, improves system performance.

VCS-1010 Specifications:

Range of Motion:	10 mm
Positioning Resolution:	150 nm
Peak Force:	3 lbs, 10 sec
Max Continuous Force:	1.5 lbs Overview
Motor Constant	0.6 lbs./Amp
Coil Resistance	4 ohms
Coil Inductance	200 µH
Non-linearity:	<±0.5%
Repeatability, Short Term	200 nm
Repeatability, Long Term:	50 ppm/1000 hrs.
Temperature Stability:	±250 nm/°C
Hysteresis:	None
Deadband:	None
Travel Non-Straightness:	<10µm
Max Bandwidth:	1 kHz
Footprint:	1.5" x 3.0" x 1.6"
Total Mass:	255 grams
Moving Mass:	25 grams



FEATURES:
Sub-Micron Resolution Positioning
High Speed Positioning
Compact Packaging
Integrated Position Feedback Sensor
Medium Force Generation
Ball Bearing Slide
Horizontal Or Vertical Operation
Simple Electrical Interfacing
Clean Room Compatibility
Patent Pending Technologies
Low Cost

Capture Light Through the Middle of the Motor by Design

We pride ourselves in giving OEMs and VARs precisely the tools they need to make the best systems possible—our highest priority is in applications support. Our knowledgeable engineers will help you analyze your objectives to achieve the very best solutions, even before you become a customer. Undivided attention and long term relationships ensures your success—and ours. Please contact Paul Swanson or our office by phone: (408) 245-7161, fax: (408) 245-7160, mail: 461 East Evelyn Avenue / Sunnyvale, CA 94086, or by email: pa.swanson@equipsolutions.com