



LEADING THE WAY OF INNOVATION

E5 Vacuum Elevator

Diamond Series

The Diamond E5 series vacuum elevator represent a significant engineering advancement in the design and reliability of wafer handling equipment.

Benefiting from technologically superior components, the elevator utilize ultra low inertia, high-response brushless servomotors to achieve greatly enhanced dexterity and precision.

The innovative, all-in-one design incorporates the motion controller, servo amplifiers, and power supply within the elevator's industry standard footprint.

High-strength structural members enable top, bottom or side mount configurations without compromising the system rigidity.

Networkable RS-485 and Ethernet interfaces complement the standard RS-232 and teach pendant connections.

Powerful native wafer handling and scripting languages facilitate rapid software development for embedding the elevator into an OEM application environment.

Comprehensive emulation of legacy "macro" commands offers a drop-in compatibility with a wide variety of existing semiconductor tools.



FEATURES

- *Excellent structural rigidity*
- *Modular and highly customizable design*
- *Vertical travel up to 13"*
- *Fully integrated motion controller, servo amplifiers and power supply*
- *Standard RS-232 interface and Ethernet (Telnet) interfaces to the host computer*
- *Seamless integration with H5 vacuum robot*
- *Comprehensive software tools and utilities*
- *Powerful wafer handling firmware*
- *Software emulation for legacy robot macro commands*
- *Optional teach pendant terminal*
- *General purpose digital inputs and outputs for custom use*
- *Reliability - MTBF > 60,000 hours (MCBF > 10,000,000 cycles)*

SPECIFICATION

Payload
up to 51.1 lbs (25 kg)

Encoders
Incremental, 10000 pulse/rev on motor shaft

Motor type
Brushless, low inertia high response

Weight
46.5 lbs (21 kg)

Cleanliness
ISO class 3 / FED STD 209E class 1

Operating temperature in vacuum
Up to 100°C (212°F)

Operating temperature in atmosphere
10°C - 40°C (50°F - 104°F)

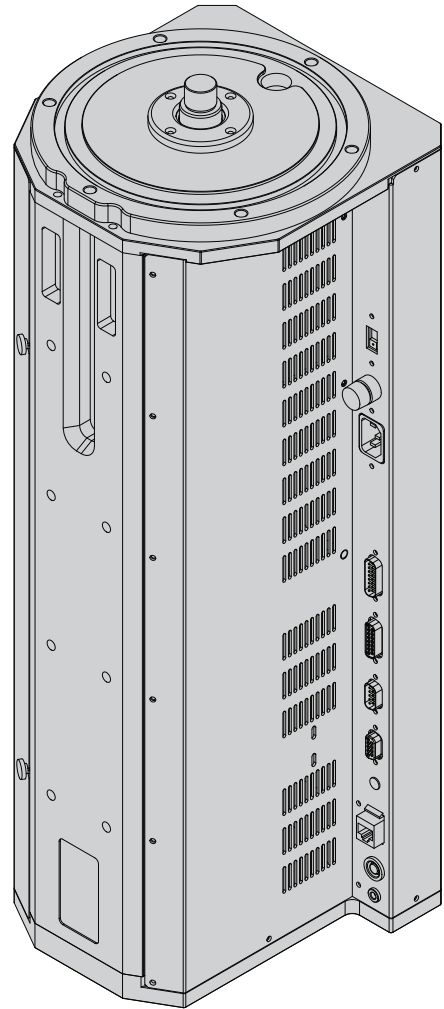
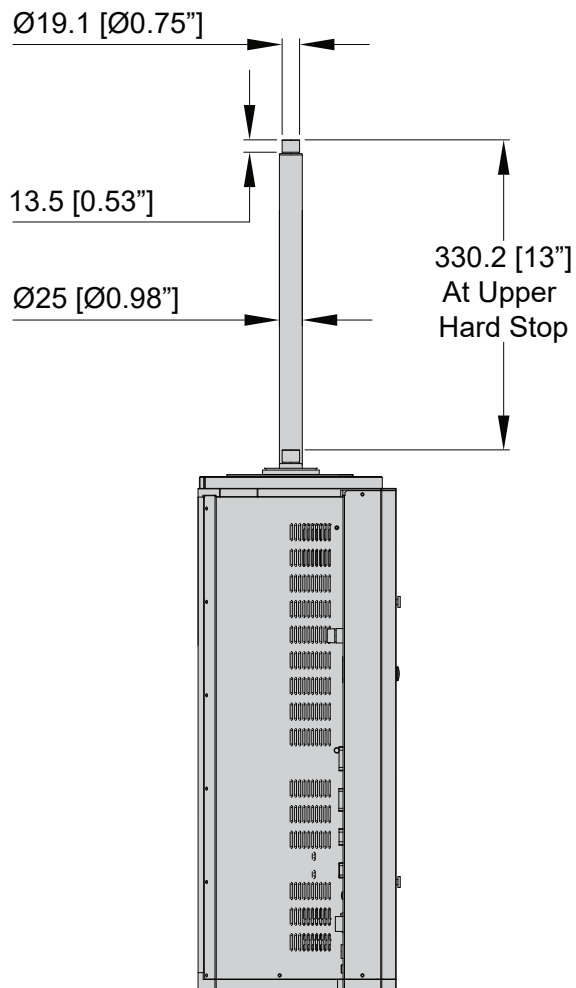
Facility requirements:

Voltage range
100-120 VAC, 200-240 VAC

Base vacuum
Up to 1×10^{-9} Torr

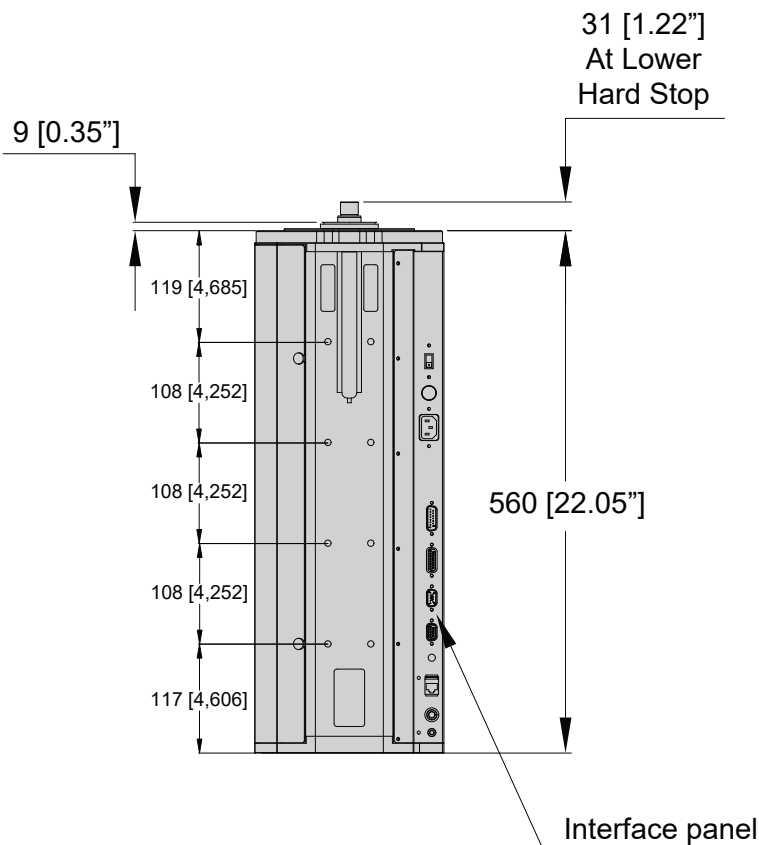
Materials exposed to Vacuum
Aluminum, Stainless Steel,
Bellows (AM-350 SST Annealed)

Range of motion at Upper Hard Stop

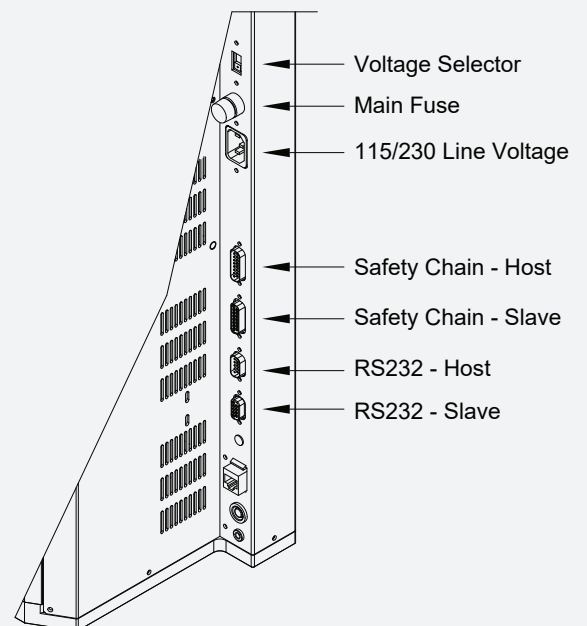


Unless otherwise specified all dimensions are in mm [inch]

Range of motion at Lower Hard Stop

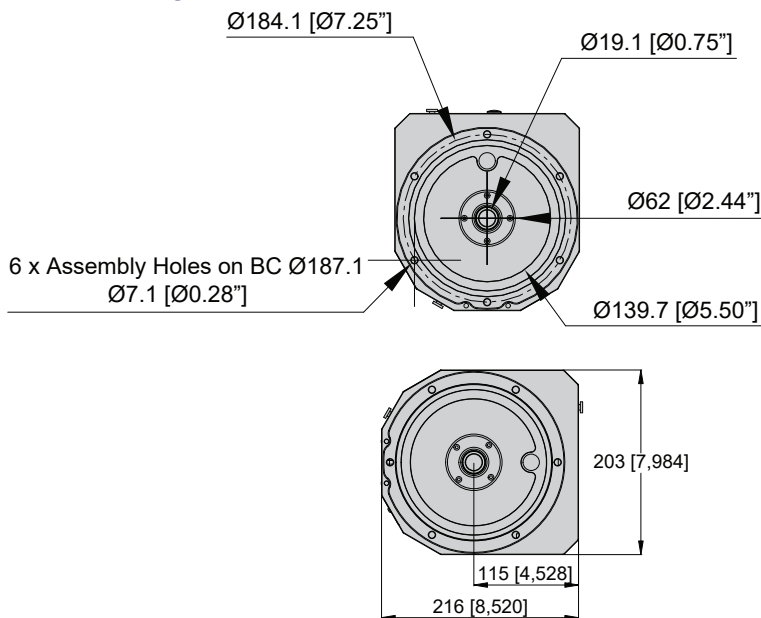


INTERFACE PANEL

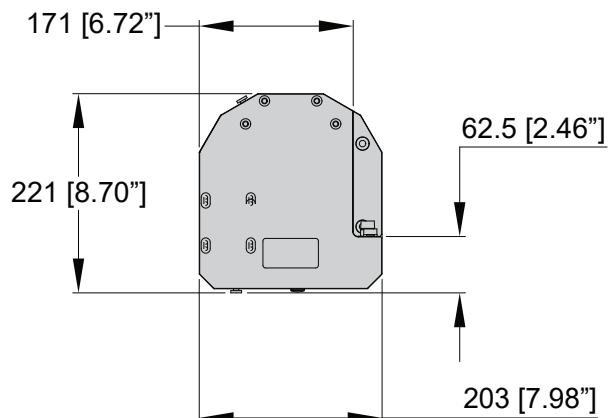


Range of motion	13" (330.2mm) hard stop to hard stop
Maximum Velocity	8 inch/sec
Maximum Acceleration	12 inch/ sec ²
Axis Repeatability	± 0.001" (0.025mm)
Wafer size	2" (50mm) to 12" (300mm)
Leak Rate	< 1x10 ⁻⁹ std.cc/sec He
Control Interface	LDCN Robot Slave Device (daisy chainable RS-232 interface) General purpose digital I/O Optional: Intelligent device with RS-232 and Ethernet (Telnet) interface

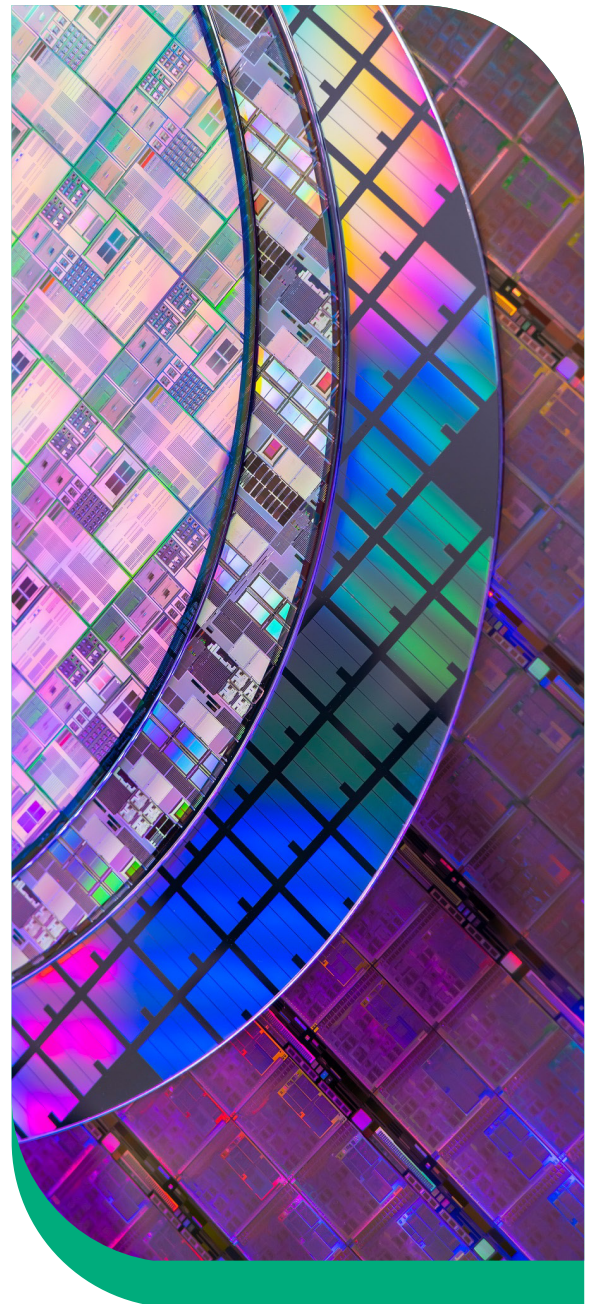
Standard Top Mounting



Standard Bottom Mounting



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