



LEADING THE WAY OF INNOVATION

H5 In Vacuum Wafer Handling Robots

Diamond Series

The Diamond H5 series vacuum robots represent a significant engineering advancement in the design and reliability of wafer handling equipment.

Benefiting from technologically superior components, the robots utilize ultra low inertia, high-response brushless servomotors coupled with zero-backlash Harmonic Drive® gears to achieve greatly enhanced dexterity and precision.

The innovative, all-in-one design incorporates the motion controller, servo amplifiers, and power supply within the robot'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 robots into an OEM application environment.

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



FEATURES

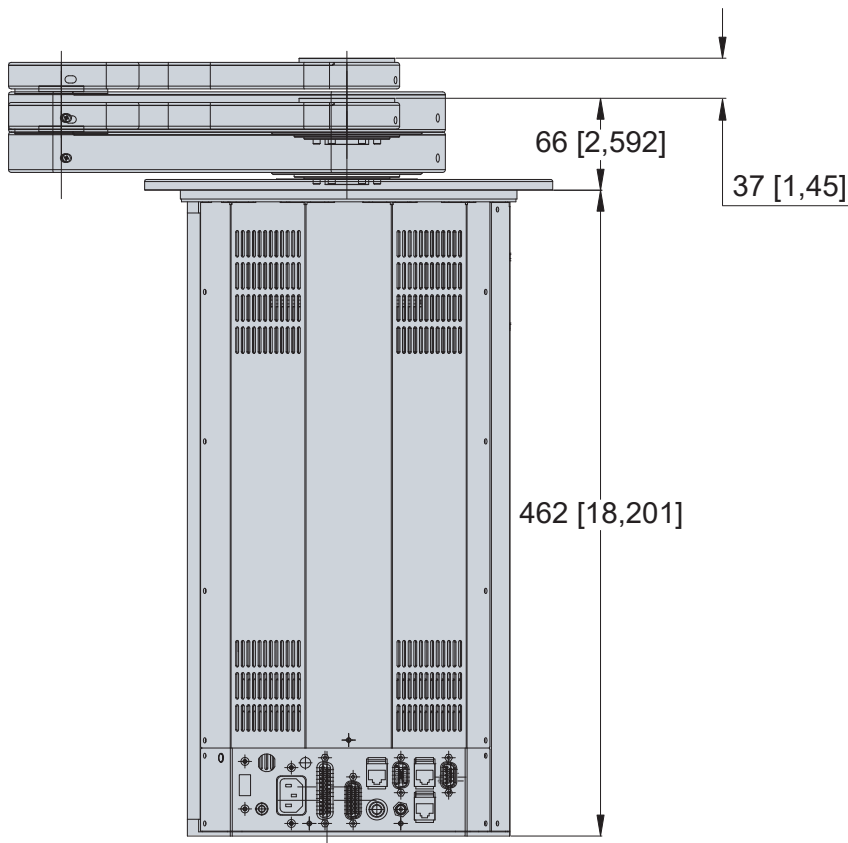
- **Excellent structural rigidity**
- **Modular and highly customizable design**
- **Arm length from 16" to 20"**
- **Vertical travel up to 1.45"**
- **Fully integrated motion controller, servo amplifiers and power supply**
- **High response brushless motors and precise zero-backlash Harmonic Drive® gears**
- **Standard RS-232 interface and Ethernet (Telnet) interfaces to the host computer**
- **Seamless integration with E5 vacuum elevator**
- **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

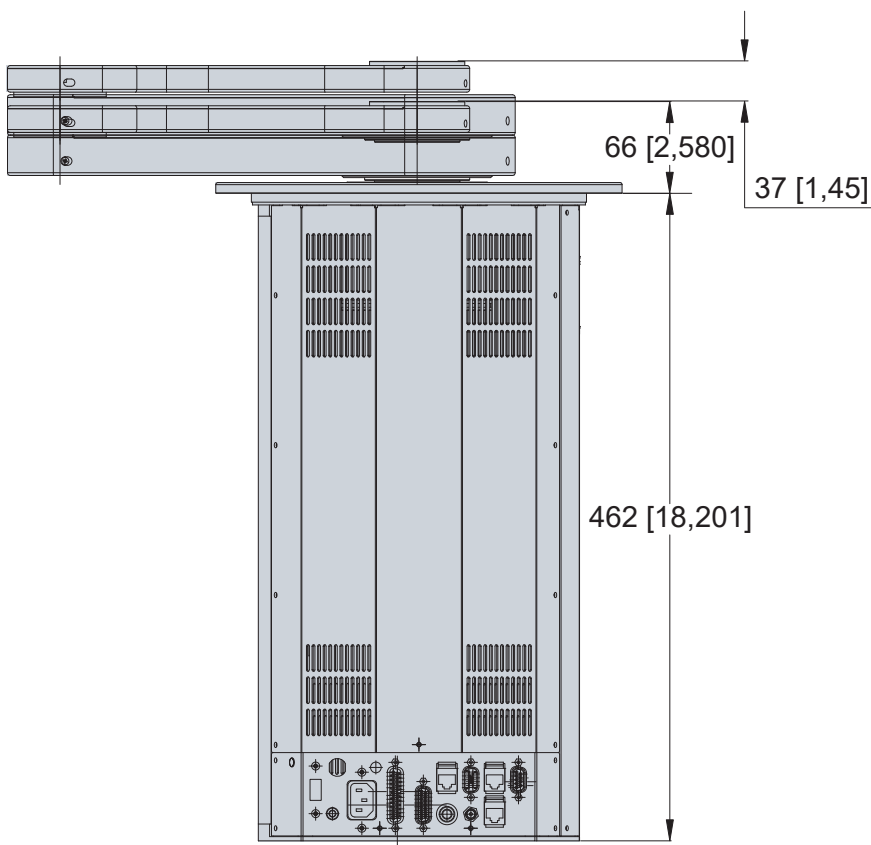
- Payload**
up to 2.20 lbs (1 kg)
- Encoders**
Absolute, 131072 pulse/rev
- Motor type**
Brushless, low inertia high response
- Weight**
from 65 lbs (29.5 kg)
- Cleanliness**
ISO 3 (ISO14644) / Class 1 (FED STD 209E) Clean room compliant
- Operating temperature in vacuum**
Up to 50°C (122°F)
- Operating temperature in atmosphere**
10°C - 40°C (50°F - 104°F)
- Facility requirements**
Voltage range
100-120AVC, 200-240VAC
- Base vacuum**
Up to 1x10⁻⁹ Torr
- Vacuum supply**
< 1x10⁻⁹ std.cc/sec He
- Materials exposed to Vacuum**
Aluminum, Stainless Steel, Bellows (AM-350 SST Annealed), Ferro-magnetic sealing fluid, Viton
- Compliance:**
 - CE and UKCA compliant
 - Certified: TUV (IEC/UL 61010-1), KCs (KOSHA)
 - SEMI S2, S8, S22 compliant



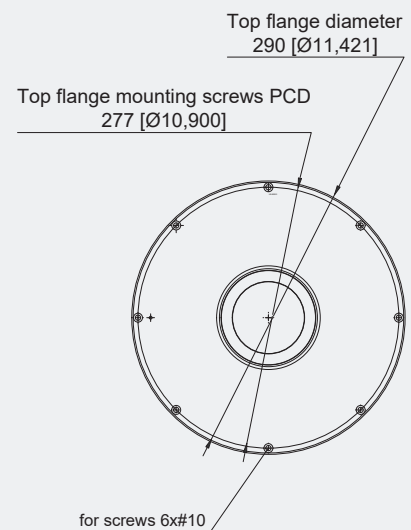
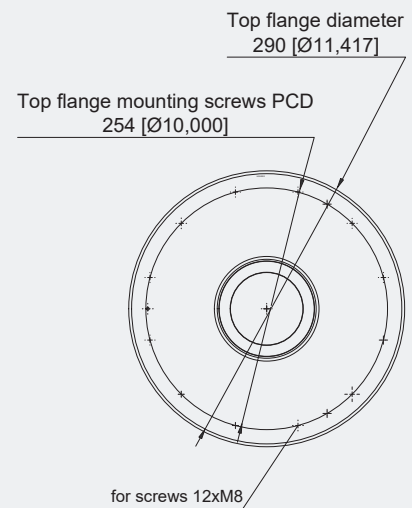
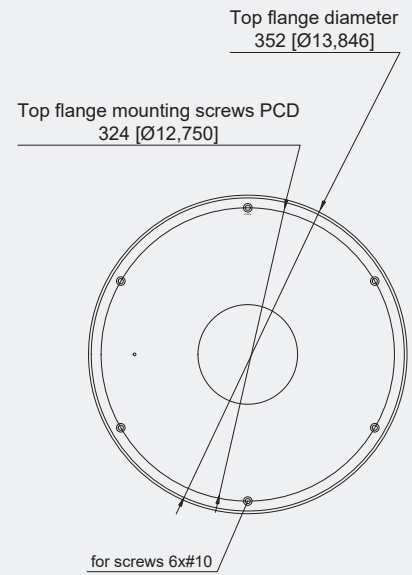
H5 - 16" arms with 1,45" Z body



H5 - 20" arms with 1,45" Z body



FLANGE TYPES

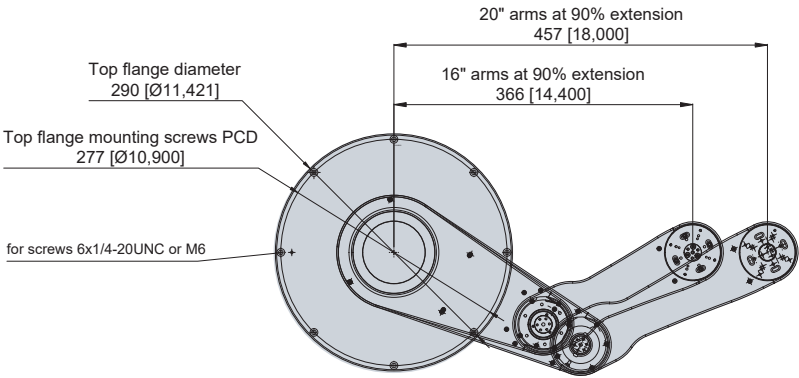


*Z travel measurement is from Hard Stop to Hard Stop

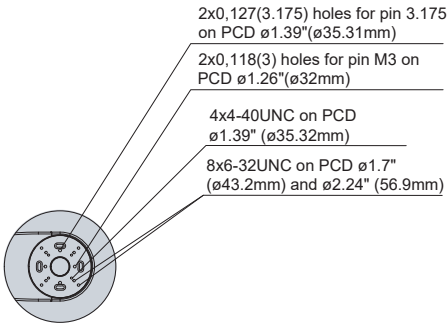
Unless otherwise specified all dimensions are in mm [inch]

Axis	Motion	Maximum velocity	Maximum acceleration	Axis Repeatability
T	> 500° (infinite optional)	180°/s	360°/s ²	±0.01°
R	from 18" to 14.400"	25 inch/s	90 inch/s ²	±0.001" (0.025mm)
Z	1.45"	4 inch/s	12 inch/s ²	±0.001" (0.025mm)

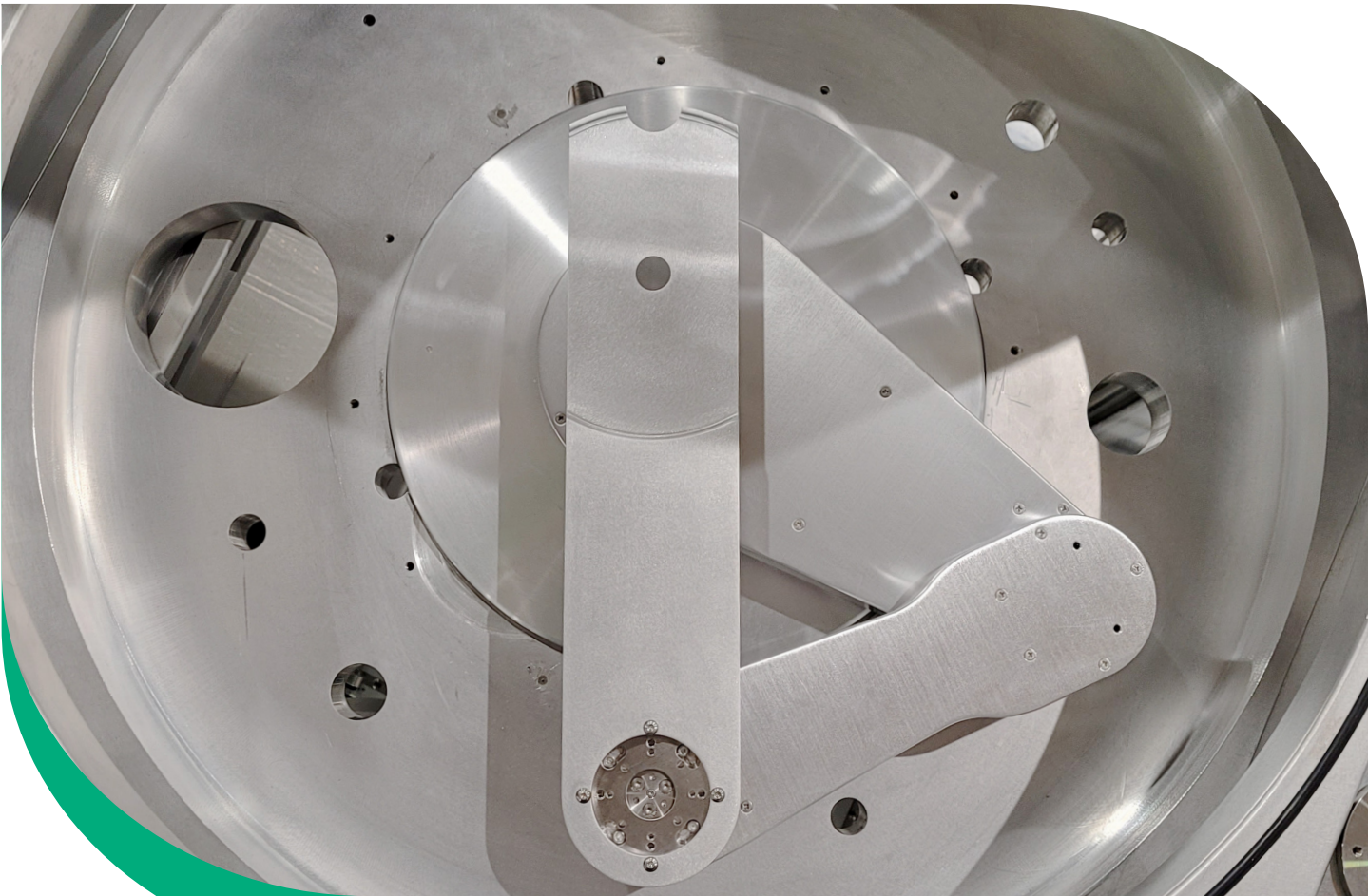
Standard Mounting



End Effector Mounting Interface



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MODEL: H5-1.38X16

Made in USA by Milara®, Inc. (www.milarasmt.com), Designed by Logosol, Inc. (www.logosolinc.com)