

Electric Multi-Dimensional Turntable

The VenusLab-R-3D Series is a high-performance multi-axis motion system designed to provide 360° spherical rotation and precise spatial positioning. By integrating robust single-axis rotary stages into orthogonal 2-axis (Tilt/Rotate) or 3-axis (Gimbal) configurations, this series offers a flexible solution for complex motion simulation. Whether for antenna testing, gyroscope calibration, or 3D scanning, the VenusLab-R-3D Series delivers exceptional stability, high load capacity, and synchronized multi-degree-of-freedom control.

Key Features

- **Modular Multi-Axis Design**
Configurable as X-Y (2-axis) or X-Y-Z (3-axis) for flexible motion.
- **Precision Worm Gear Drive**
High-precision worm gear (up to 180:1) for smooth torque & power-off self-locking.
- **Continuous 360° Rotation**
All axes rotate continuously; premium models (e.g., VL-3RA200MD) include conductive slip rings to prevent cable tangling.
- **High Load & Stability**
High-strength aluminum alloy with cross-roller bearings/heavy-duty shafts; supports 5 – 25kg+.

Applications

- Precisely position antennas for spherical-coordinate signal-strength measurement.
- Simulate multi-axis motion for IMU/gyro calibration.
- Simulate target tracking in EO pods or radar systems.
- Automate rotation for full 3D model reconstruction.

One Platform Many Possibilities

Contact Us sales@venuslabtech.com

Get a Quote



Get Expert Advice
+65 8099 5547



Visit Us
www.venuslabtech.com

Part 5: VenusLab-R-3D-Series (Multi-Axis Systems)

Overview:

The 3D-Series integrates multiple rotary stages to provide complex multi-degree-of-freedom motion (2-Axis or 3-Axis). Ideal for applications requiring full spherical coverage, such as antenna testing, gyro calibration, and 3D scanning.

1. 3-Axis Precision Gimbal System

New Model: VL 3RA200S-1

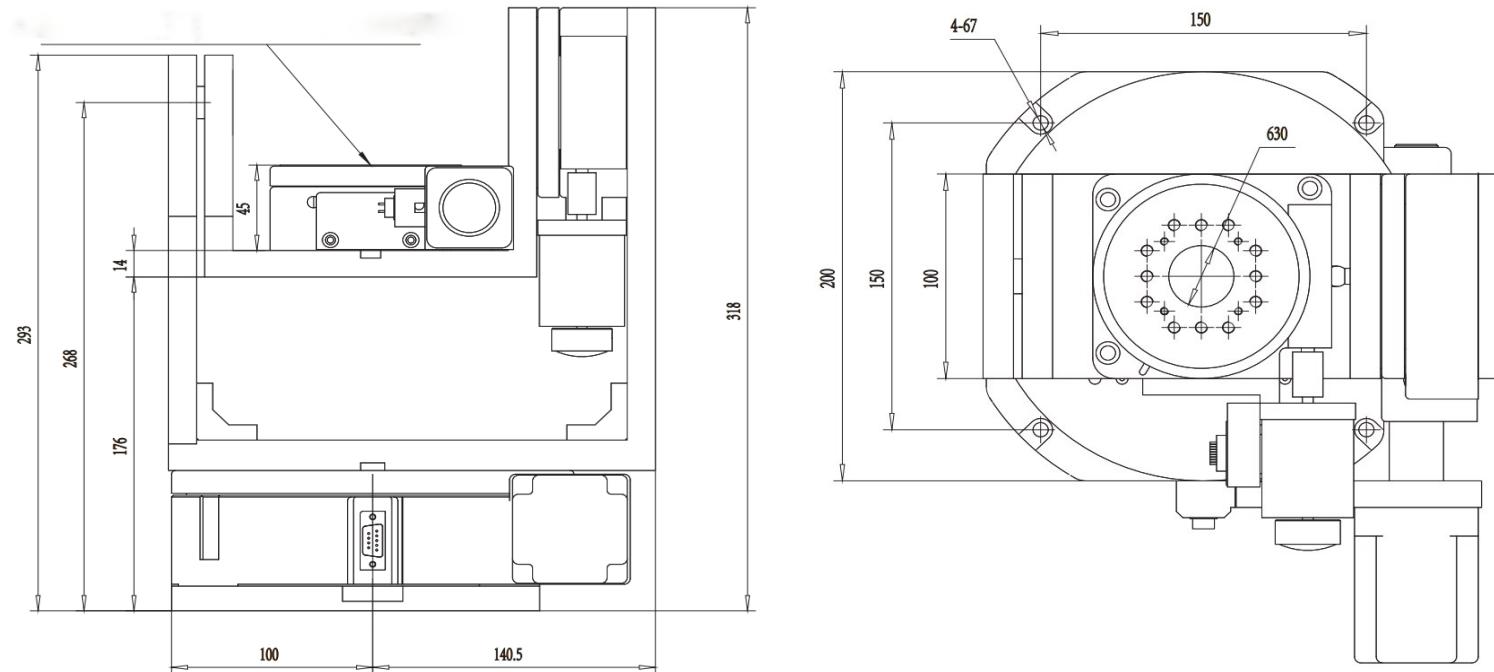


Model No.	Axis Config	Base Stage	Max Load	System Weight
VL 3RA200S-1	3-Axis (X, Y, Z)	VL03RA200S + VL02RA100S	15 kg	15 kg

Drive Mechanism: Worm Gear (Ratio 180:1)

Resolution: 0.0005° (20 micro-steps)

Dimensions



Applications

- Gyroscope testing, 3D motion simulation.

2. Heavy-Duty 3-Axis Rotation System

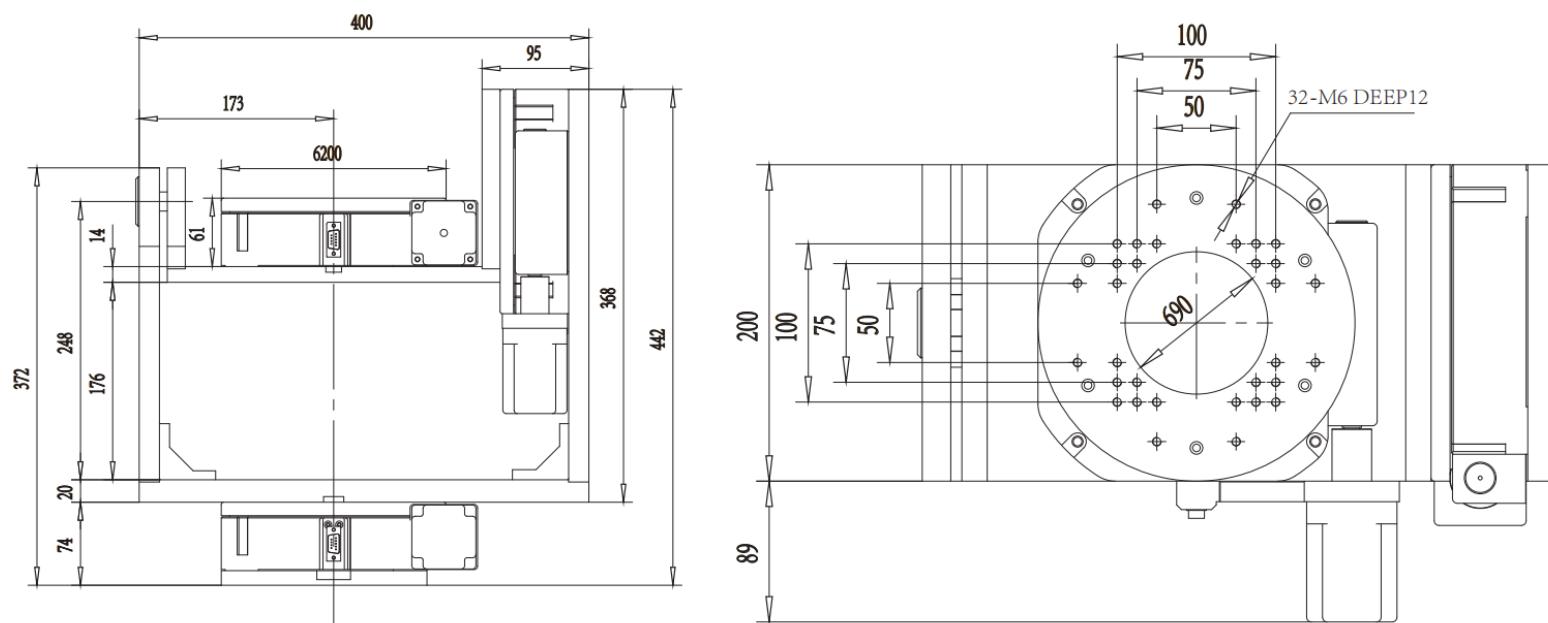
New Model: VL 3RA200S



Model No.	Axis Config	Base Stage	Max Load	System Weight
VL 3RA200S	3-Axis (X, Y, Z)	VL03RA200S Series	25 kg	36 kg

Features: Robust aluminum alloy construction, heavy load capacity for industrial samples.

Dimensions

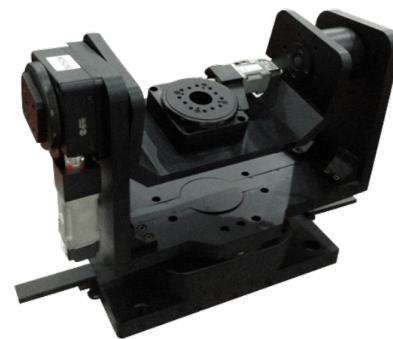


Applications

- Large antenna alignment, complex machining orientation.

3. Servo-Driven 3-Axis System

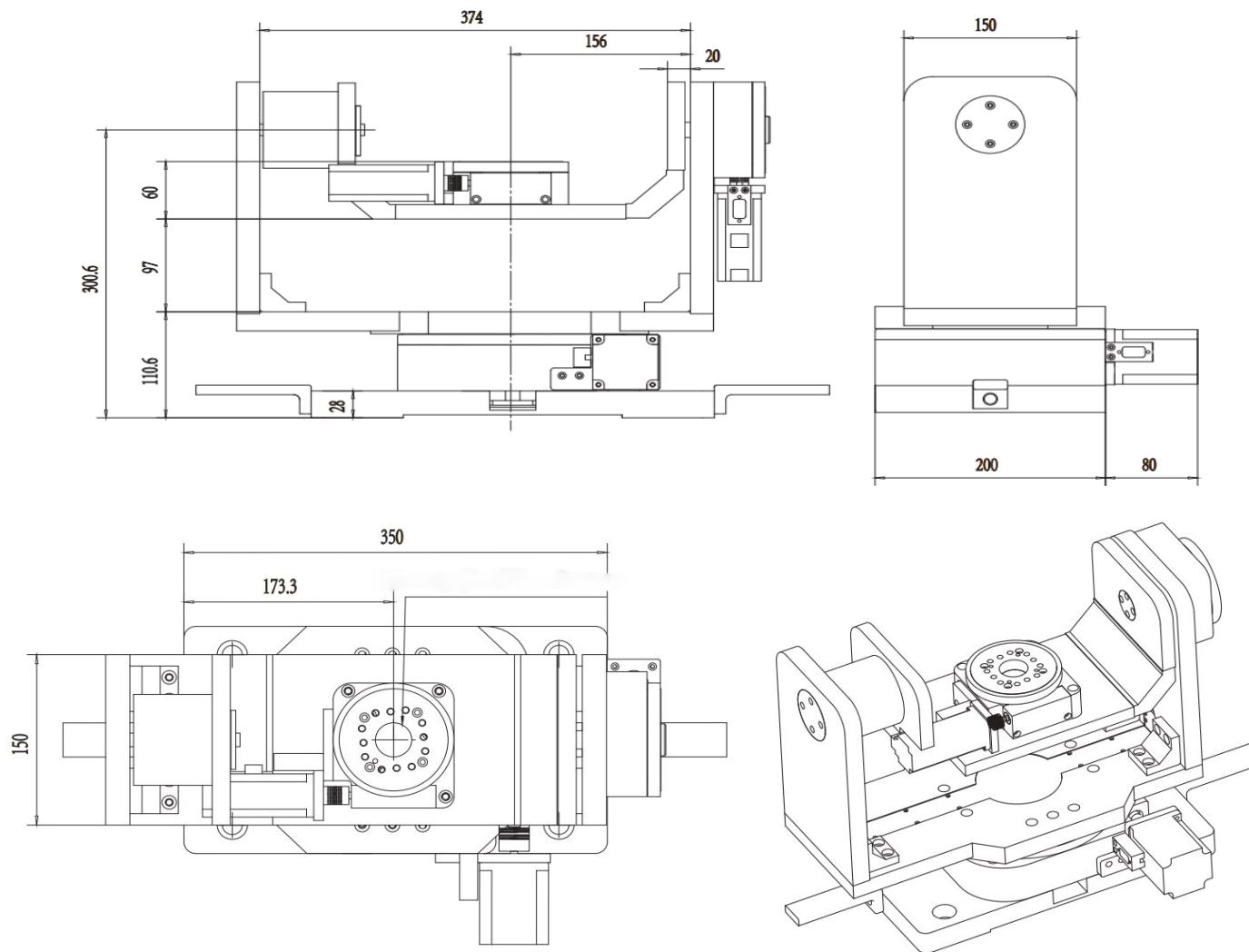
New Model: VL 3RA200MD



Model No.	Axis Config	Drive Type	Slip Ring	Max Speed
VL 3RA200MD	3-Axis	Servo Motors (200W/100W)	Included (2 units)	35°/sec

Key Feature: Integrated conductive slip rings allow for continuous rotation without cable tangling.

Dimensions



Applications

- Automated surveillance systems, radar tracking.

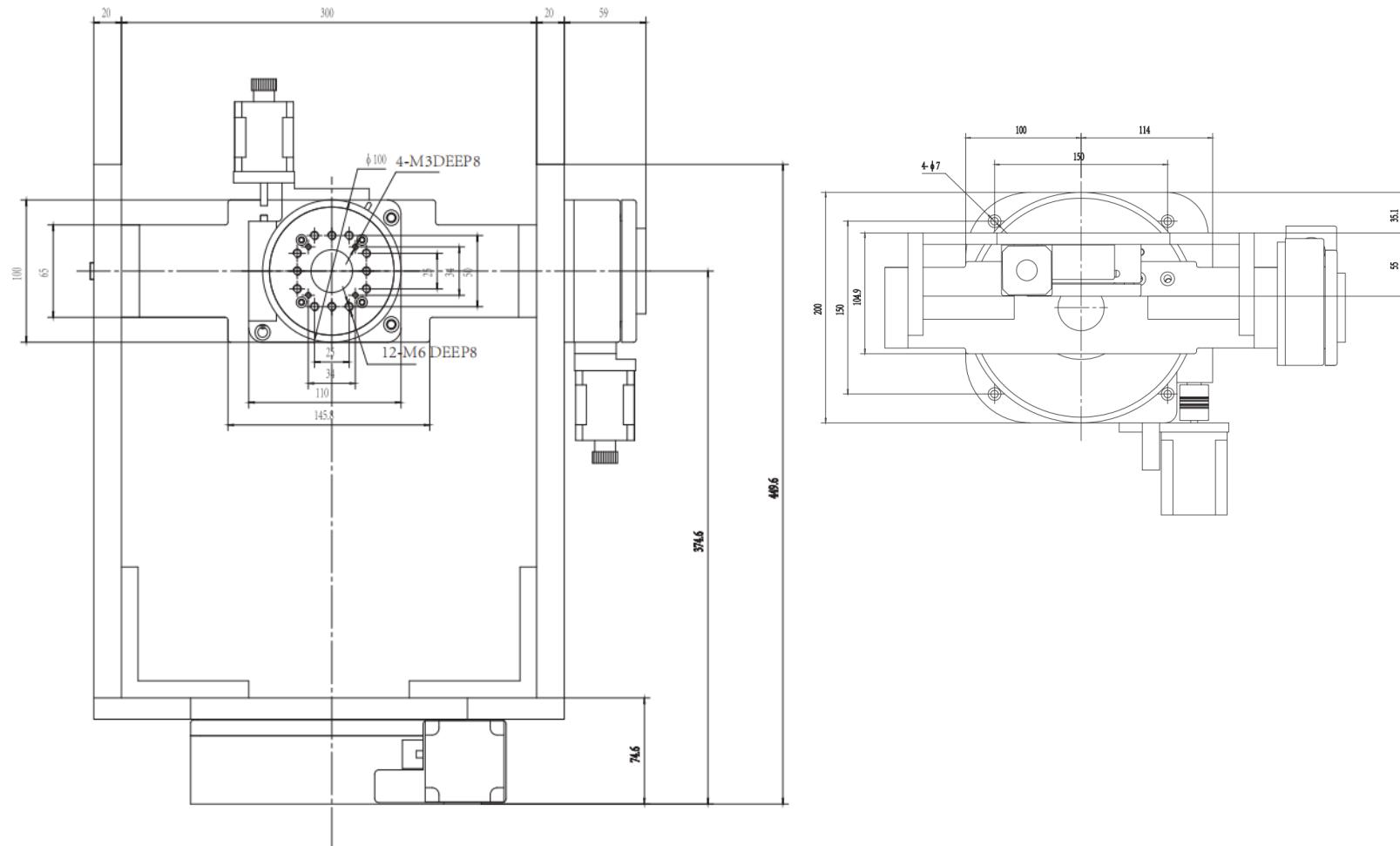
4. 2-Axis Rotation System (Standard)

New Model: VL 2RA200M



Model No.	Axis Config	Dimensions	Ratio	Load
VL 2RA200M	2-Axis (X, Y/Z)	φ100 mm Base	180:1	10 kg

Dimensions

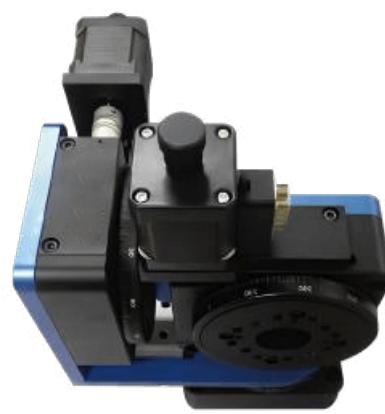


Applications

- Pan-tilt camera mounts, simple 2D scanning.

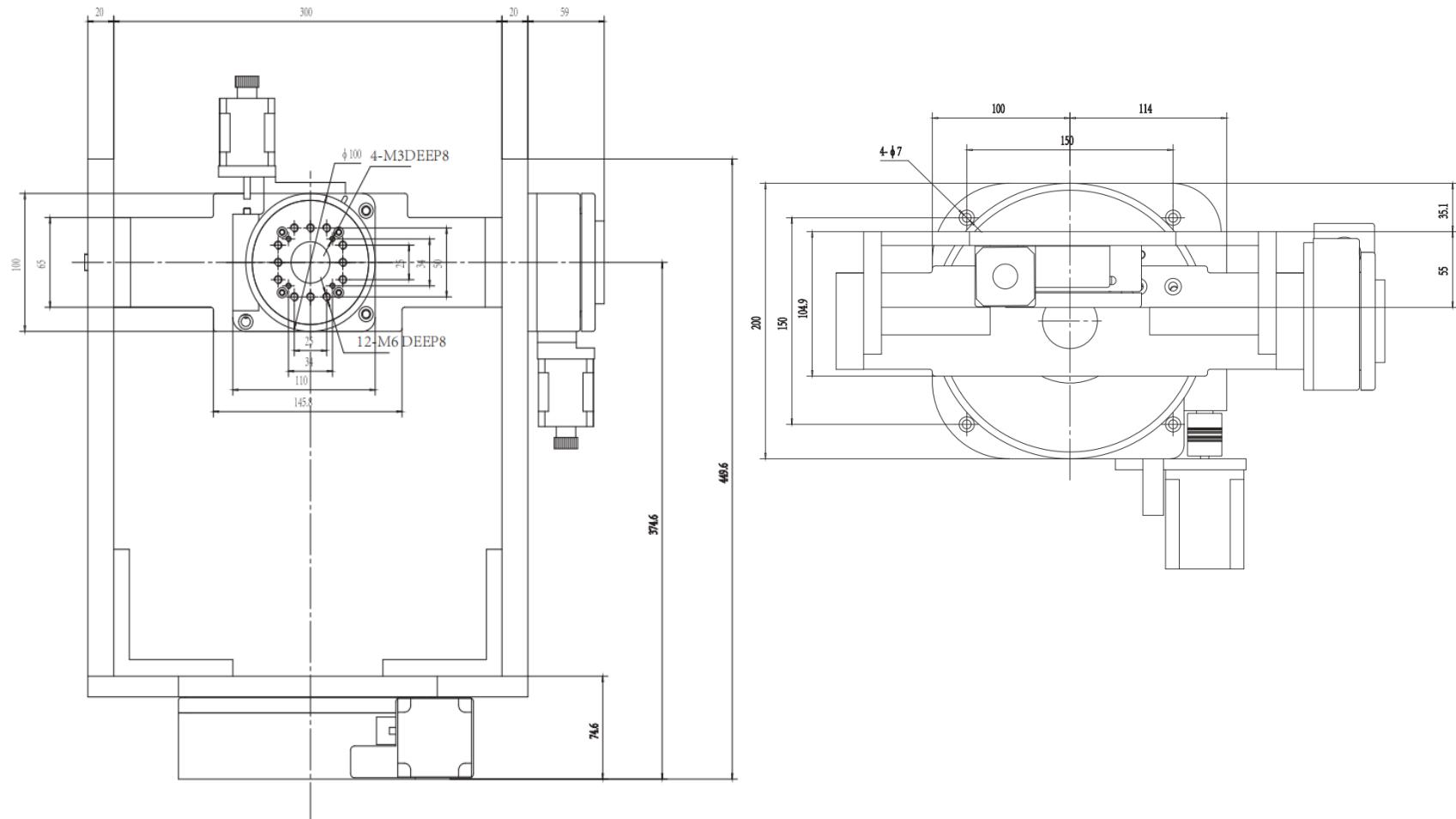
5. Compact 2-Axis System (Medium)

New Model: VL 2RA100M



Model No.	Axis Config	Composition	Ratio	Load
VL 2RA100M	2-Axis	Based on VL02RA100M	180:1	6 kg

Dimensions



Applications

- Laboratory optical inspection, small object orientation.

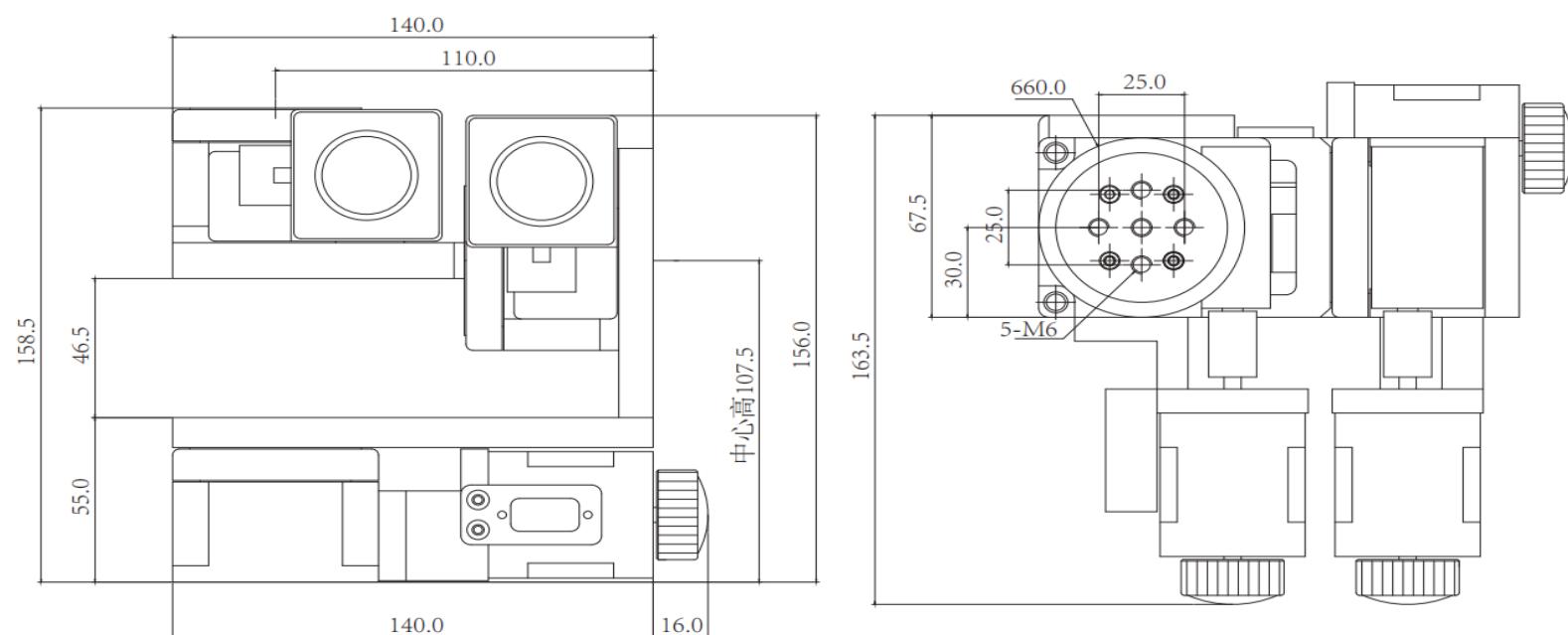
6. Miniature 3-Axis System (Small)

New Model: VL 1RA60M



Model No.	Axis Config	Base Stage	Ratio	Load
VL 1RA60M	3-Axis	Based on VL01RA60M	90:1	5 kg

Dimensions



Applications

- Miniature sensor calibration, educational demonstrations.

 Get in touch with our team to explore configurations, request a quote, or learn more about customized solutions tailored to your needs.

Let us help you move science forward—faster and smarter.

[Get a Quote](#)



Get Expert Advice
+65 8099 5547



Visit Us
www.venuslabtech.com