

Functional Description – Tecan Freedom EVO-2 150

The **Tecan Freedom EVO-2 150** is a modular automated liquid handling and laboratory workflow platform designed for high-throughput and precision laboratory applications. It is commonly used in biotechnology, pharmaceutical research, molecular diagnostics, clinical laboratories, and academic research facilities.



System Dimensions

Base Unit Dimensions

Parameter	Freedom EVO-2 150
Width	1450 mm (57.1 in)
Depth	780 mm (30.7 in)
Height	870 mm (34.3 in)
Approximate Installed Width	1900 mm (74.8 in)
Weight (base unit)	Approx. 130 kg (286 lbs)

Instrument Requirements

Electrical Requirements

The Freedom EVO-2 150 typically requires:

- 100–120 VAC or 220–240 VAC
- 50/60 Hz power supply
- Grounded electrical connection

Environmental Requirements

Recommended laboratory conditions include:

- Stable room temperature
- Controlled humidity
- Dust-free laboratory environment

Main Functional Components

1. Robotic Liquid Handling System

The core functionality of the Freedom EVO-2 150 is automated liquid handling with high pipetting accuracy and reproducibility.

Capabilities include:

- Automated aspirating and dispensing
- Single and multi-channel pipetting
- Disposable or fixed-tip operation
- Serial dilution and reagent distribution
- Mixing and sample normalization
- Low-volume and standard-volume pipetting

The system supports multiple pipetting technologies and channel configurations:

- 2-, 4-, or 8-channel liquid handling arms
- 96-channel and 384-channel pipetting heads
- Air displacement and liquid displacement pipetting

Typical pipetting range: 0.1 µL to 5000 µL depending on configuration

Additional pipetting features:

- Liquid level detection
- Clot detection
- Pressure monitoring
- Conductive pipetting control
- Automatic tip loading and disposal

2. Robotic Manipulator Arm (RoMa)

The integrated RoMa arm automates labware transportation between deck positions and external instruments.

Functions include:

- Plate transportation
- Lid handling
- Device loading/unloading
- Stacker interaction
- Workflow synchronization

The robotic arm enables unattended operation and integration into complex laboratory workflows.