



5ML Glass Bottle / Vial Filler

Calibration Filler with Integrated Weighing

About

The 5ML Glass Bottle / Vial Filler is a calibration filling system with integrated gravimetric verification, engineered and manufactured by Machinelab for regulated pharmaceutical, biotechnology, diagnostics, and life sciences manufacturing environments. The system is designed for applications where fill accuracy must be measured, verified, and documented, providing controlled filling with real-time gravimetric confirmation of every dose.



Key Features

- **Integrated Gravimetric Verification** – Precision load cell system provides real-time weight measurement on every fill for verified dosing accuracy.
- **Volumetric Filling with Weight Confirmation** – Combines controlled volumetric dosing with gravimetric verification for validated filling performance.
- **Automatic Tolerance Control** – Built-in pass/fail logic ensures compliance with defined fill limits and quality standards.
- **Calibration and Validation Support** – Designed to support calibration workflows, validation protocols, and documented quality processes.
- **Data Capture and Traceability Ready** – Weight capture and logging architecture supports traceable and auditable fill records.
- **Regulated Manufacturing Design** – Engineered for pharmaceutical, diagnostics, and life sciences environments requiring controlled, compliant production.

Technical Specifications

Parameter	Specification
Filling volume range:	0.1 – 250 mL
Filling method:	Volumetric filling with integrated gravimetric verification
Weighing system:	Precision integrated load cell / weighing scale
Filling accuracy:	±0.5% with weight-based verification
Throughput:	Application dependent
Tolerance control:	Automatic pass/fail checking
Data handling:	Weight capture and calibration data logging ready



Real-World Benefits

The system addresses the limitations of volume-only filling by:

- Eliminating uncertainty in fill verification
- Reducing risk of underfill and overflow
- Supporting documented calibration processes
- Enabling traceable fill validation
- Removing manual verification steps
- Improving measurement confidence in regulated environments
- Supporting compliance with quality and validation requirements

Functional Process Flow

- Containers are received from upstream handling systems
- Bottles and vials are positioned at the filling station
- Volumetric filling is executed under controlled dosing
- Integrated weighing system performs real-time gravimetric measurement
- Weight data is compared against defined tolerances
- Automatic pass/fail logic is applied
- Fill data is captured for calibration and validation records
- Verified containers are transferred to downstream processes