

Precision Electronic Balance Laboratory Analytical Weighing Scale

Item Number: KT-TP



Introduction

Engineered for demanding analytical workflows this high precision electronic balance delivers exceptional weighing accuracy seamless ISO GLP compliant data logging and versatile bidirectional connectivity to optimize laboratory productivity measurement integrity and rigorous quality assurance compliance across modern scientific environments

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Application	Description	Key Benefit
Pharmaceutical Formulation and Drug Compounding	Precise gravimetric portioning of active pharmaceutical ingredients (APIs), excipients, and micro-dose dry powders during drug formulation, capsule filling validation, and quality release testing.	Delivers sub-milligram dosing precision while generating fully traceable documentation compliant with cGMP and pharmacopeia standards.
Analytical Chemistry and Standard Preparation	High-precision weighing of primary analytical chemical standards, buffer salts, and reagent concentrates for accurate quantitative dilution and volumetric glassware calibration.	Eliminates manual preparation discrepancies, ensuring baseline reproducibility for downstream chromatographic (HPLC, GC) and spectroscopic (ICP-MS) analyses.
Battery Research and Nanomaterial Synthesis	Gravimetric dispensing of active battery materials, solid electrolytes, binder polymers, and carbon nanotubes within dry rooms or glovebox environments.	Guarantees precise stoichiometric control across experimental batches, eliminating compositional variances in advanced energy storage testing.
Materials Science and Metallurgical Assay	Measurement of sample mass before and after high-temperature furnace sintering, thermal decomposition, loss-on-ignition (LOI) testing, and gravimetric density determination.	Resists high-density specimen loads and minimizes thermal-convective weighing errors through rapid damping and high structural stability.
Environmental Particulate and Filter Monitoring	High-accuracy tare and gross mass determination of delicate air particulate filter membranes (PM2.5 and PM10) used in ambient air quality monitoring and emission testing.	Mitigates electrostatic disturbance when handling delicate membrane filters, securing reliable microgram-level differential mass calculations.
Food Science and Moisture Analysis	Sample preparation for Karl Fischer titration, fat content extraction assays, food additive dosing, and precise loss-on-drying (LOD) moisture verification protocols.	Provides cleanable, non-reactive stainless steel surfaces that meet food hygiene testing standards while delivering rapid reading stabilization.
Petrochemical Quality Assurance and Testing	Accurate formulation of lubricant additives, polymer blend catalyst additions, and gravimetric ash testing of petroleum distillates and heavy crude fractions.	Exceptional chemical resilience protects structural components against degradation from aggressive aromatic solvents, fuels, and acidic vapors.

Academic Instruction and Biotechnological Research	Routine gravimetric tasks including cell culture nutrient preparation, agar plate formulation, enzymatic assay buffers, and student instruction in analytical methods.	Combines intuitive user operation with durable overload-resistant mechanics, reducing user training overhead and preventing hardware damage.
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Parameter Classification	Specification Detail	Operational Context / Standard
Product Item Number	KT-TP	Primary System Identifier
Display Type	Liquid Crystal Display (LCD)	High-contrast digital readout without linear graphic display
Weighing Pan Dimensions	Ø3.5 inch (approx. 88.9 mm)	Circular stainless steel surface
Linear Display (Bar Graph)	No	Non-linear numeric focus for rapid optical processing
Calibration System	External Calibration (Supported / Optional)	Calibration via certified reference mass standards

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Static Elimination / Ionizer Support	External Ionizer (Optional)	Neutralizes electrostatic charge on vessels and powders
ISO / GLP Output Compliance	Yes	Compliant reporting via optional printer or PC connection
Communications Interface	RS-232C Bidirectional Interface	Standard serial port for automated bidirectional communication

Feature	Implementation	Performance / Functional Value
Data Transfer Mode	Bidirectional Serial Communication	Enables remote polling, tare execution, and data extraction
Compliance Documentation	ISO / GLP Formatted Data Strings	Automated generation of balance ID, time, date, and weights
Peripheral Compatibility	Dedicated Thermal Printers, Laboratory PCs	Direct hardware handshaking without requiring driver converters
Signal Damping Modes	Multi-Stage Digital Filter Adjustments	Optimizes response speed across drafty or vibrating lab environments

Environmental Parameter	Recommended Operating Range	Tolerance / Protection Metric
Weighing Chamber Construction	Corrosion-Resistant Enclosure	Sealed membrane keypad against liquid ingress
Pan Construction Material	Surgical-Grade Stainless Steel	Non-magnetic, corrosion-resistant, easily sanitizable
Ambient Operating Temperature	+10°C to +30°C (+50°F to +86°F)	Stable thermal equilibrium recommended
Relative Humidity Range	15% to 80% (Non-condensing)	Protected internal electronic circuitry
Power Supply Requirements	Standard Universal Adapter	Low-voltage DC input to internal weighing electronics