TORONTECH

PRECISION BALANCE

Precision Balance (10 mg) - ToronAB™ NP Series

ToronAB™ NP Series is a 10 mg precision balance designed for high-capacity weighing across three models. Capacities cover 3,100 g, 4,100 g, and 5,100 g, each on a 180 × 180 mm square platform sized for bulk containers, industrial samples, and oversized vessels. A cast aluminum shell provides anti-static and anti-interference shielding throughout the sensing cell. The slim 345 × 205 × 105 mm form factor, 4 kg weight, and 15–30°C operating range suit bench-top deployment across production areas, laboratories, and warehouse sampling stations.

The wide-view LCD HD display presents the readout clearly at various viewing angles, reducing errors when the operator is not positioned directly in front of the balance. Counting mode calculates piece quantity from a stored reference weight, supporting component counting in production, receiving inspection, and laboratory settings. Unit conversion between g, ct, and oz supports multi-discipline use without hardware adjustment. Print output is configurable in continuous real-time and single-point modes, with adjustable baud rate for RS232 transmission.

The open top-loading platform gives unrestricted pan access from all sides, simplifying placement and removal of large containers, irregular samples, and bulk materials. External calibration uses a reference weight to correct the balance output and maintain traceability between sessions. Full-capacity tare zeroes the display with any container, and an overload alarm protects the sensing cell when load approaches the model limit. Adjustable leveling feet and a built-in level bubble confirm horizontal positioning before each use.

APPLICATIONS

Precision Balance (10 mg) - ToronAB™ NP Series Applications

The ToronAB™ NP Series suits production, quality-control, and general laboratory environments where large sample masses and bulk containers exceed the capacity of standard analytical balances.

- **Industrial Production and QC**: batch weighing of bulk raw materials, large intermediates, and packaging components where 10 mg accuracy meets production-floor tolerances at capacities above 3 kg
- **Receiving and Goods-In Inspection**: incoming material weight verification against purchase specifications across high-capacity sample sizes and large-vessel deliveries
- **Pharmaceutical Bulk Weighing**: large-scale ingredient weighing for granulation inputs, blending operations, and bulk formulation steps where capacity exceeds standard sub-kilogram laboratory balances
- **Gold and Jewelry Trade**: mass verification of precious metal lots and gem collections where 10 mg resolution meets trade-lot accuracy requirements at high capacities
- **Food Manufacturing**: ingredient weighing for large-batch recipes and process formulation where 10 mg resolution satisfies production recipe tolerance requirements
- **Chemical and Industrial Laboratories**: weighing large-volume reagent containers, solvent bottles, and bulk chemical supplies where capacity and pan size determine instrument selection
- **Precision Counting of Large Lots**: counting mode supports piece verification where individual item weights are at the milligram level and large sample quantities require a high-capacity platform
- **Educational Institutions and General Lab Use**: top-loading platform balance for teaching environments and general laboratory tasks requiring high-capacity mass measurement with straightforward operation


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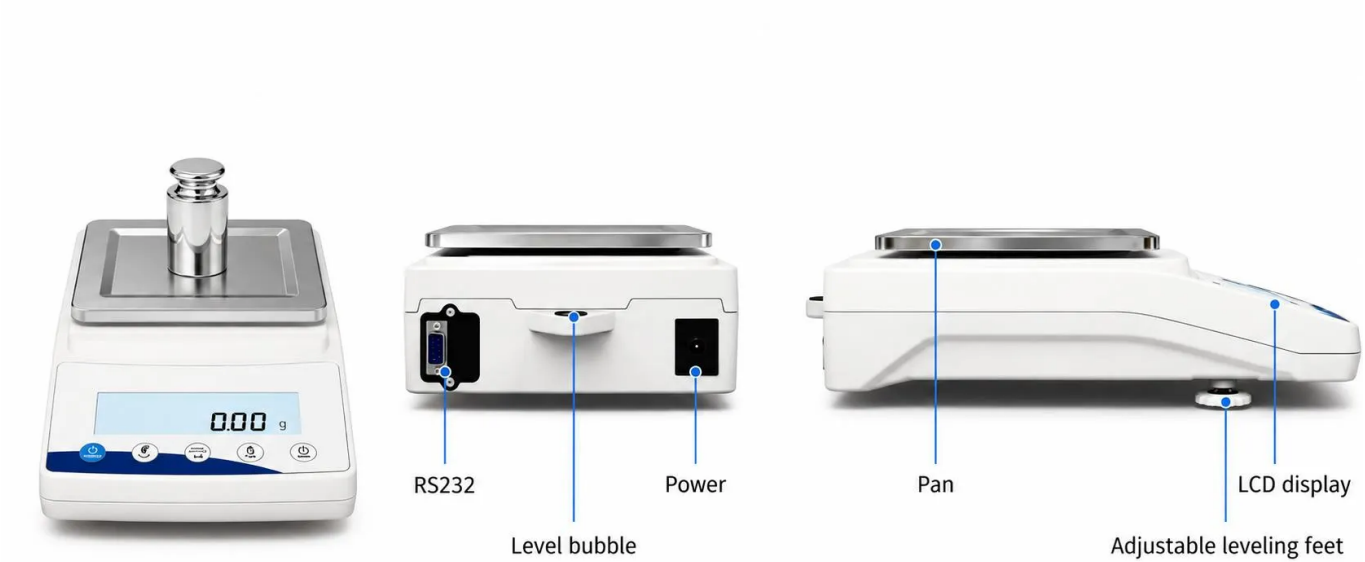
ToronAB™ NP Series
Precision Balance
0.00 g
ON-OFF
UNIT
+0/T+
CAL
TARE

FEATURES

Precision Balance (10 mg) - ToronAB™ NP Series Key Features



The ToronAB™ NP Series delivers high-capacity precision weighing with a practical feature set suited to production, industrial, and general laboratory environments.

- **Large 180 × 180 mm Square Platform**: oversized stainless steel pan accommodates bulk containers, industrial vessels, and sample packages too large for standard round analytical balance pans
- **High-Capacity Models**: three configurations cover 3,100 g, 4,100 g, and 5,100 g, making the NP Series suited to bulk material weighing, large-batch ingredient handling, and high-capacity inspection tasks

- **10 mg Resolution**: 0.01 g readability with ±20 mg repeatability and ±30 mg linearity meets the mass accuracy requirements of production QC, trade, and general laboratory applications
- **Cast Aluminum Anti-Static and Anti-Interference Shell**: aluminum housing shields the force sensing cell from electromagnetic and electrostatic disturbance, supporting consistent readings with conductive samples and powder materials
- **Open Top-Loading Platform Design**: unrestricted pan access from all sides simplifies placement of large containers, irregularly shaped materials, and bulk samples that cannot be placed through a draft shield
- **Wide-View LCD HD Display**: high-definition display presents the mass reading clearly from various viewing angles, supporting floor-level and off-axis reading in production and warehouse environments
- **Full-Capacity Tare**: tare function operates across the entire weighing range, zeroing the display with any container before sample addition
- **Counting Function**: piece-count mode calculates quantity from a stored reference piece weight, supporting production counting, component sorting, and goods-in inspection tasks
- **Unit Conversion (g / ct / oz)**: reading switches between grams, carats, and ounces without hardware adjustment, supporting multi-discipline use across industrial, trade, and laboratory applications
- **External Calibration**: calibration uses a 200 g reference weight placed on the pan, correcting the force-cell output and maintaining traceability at user-defined intervals
- **RS232 Serial Interface**: standard RS232 connects the NP Series to printers or data management systems for direct mass output
- **Multi-Mode Print Output**: continuous real-time and single-point print modes with configurable baud rate for RS232 transmission to connected printers or data systems
- **Overload Alarm**: visual alert for tare overload and weighing excess conditions, protecting the force cell from load damage in high-throughput production environments
- **Slim Profile (345 × 205 × 105 mm)**: shallow 105 mm height fits under low-clearance storage shelves and integrates into production lines and sampling stations with minimal vertical space
- **Adjustable Leveling Feet and Level Bubble**: four adjustable feet and a built-in level bubble allow the operator to confirm correct horizontal positioning on any bench surface
- **Optional External Printer**: an optional printer connects via RS232 for paper record output of each weighing session

- **Wide Operating Temperature Range (15–30°C)**: extends the NP Series to production areas, warehouses, and sampling environments outside the narrow temperature range required by analytical balances

THEORY & METHOD

Theory and Method

The ToronAB™ NP Series uses an electronic force sensing cell to convert applied mass to a digital readout at 10 mg resolution. The sensing cell outputs a signal proportional to the applied force; the onboard processor linearizes this signal and displays a stable reading within three seconds. Cast aluminum housing shields the sensing cell from electromagnetic interference and electrostatic discharge generated by bulk powders and plastic vessels. The anti-static, anti-interference construction supports ±20 mg repeatability and ±30 mg linearity across all three capacity configurations.

External calibration aligns the balance output with a traceable reference by placing a calibration weight on the pan and running the sequence; the balance stores the correction factor for subsequent readings. Regular calibration compensates for force-cell drift across the 15–30°C operating range. The 180 × 180 mm square pan accommodates containers and samples that exceed a standard round analytical balance pan. Adjustable leveling feet and a built-in level bubble let the operator confirm correct horizontal positioning before each session.

TECHNICAL SPECIFICATIONS

Precision Balance (10 mg) - ToronAB™ NP Series Technical Specifications

ToronAB™ NP Series Models

Parameter	ToronAB™ NP3100	ToronAB™ NP4100	ToronAB™ NP5100
Capacity	3,100 g	4,100 g	5,100 g
Readability	10 mg		

Common Specifications

Parameter	Specification
Minimum Weight	500 mg
Repeatability	±20 mg
Linearity	±30 mg
Pan Size	180 × 180 mm
Calibration Mode	External
Stabilization Time	≤3 s
Working Temperature	15–30°C
Interface	RS232
Optional	External printer
Product Dimensions (W × D × H)	345 × 205 × 105 mm
Packing Dimensions	410 × 260 × 165 mm
Gross Weight	4 kg

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