# Pioneer®

*Analytical and Precision Balances*

## *The Economical Choice of Balance for Routine Weighing Applications*

The OHAUS Pioneer Series analytical and precision balances are designed for reliable routine weighing at an affordable price. Equipped to handle a variety of laboratory, industrial and education applications, the Pioneer balances are available in both external and internal calibration models. With a backlit LCD, new application modes and built-in environmental settings—these compact yet durable balances fit right in any work setting.

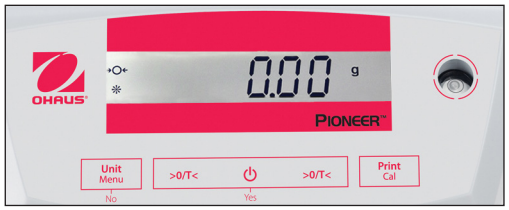
### *Standard Features Include:*

- **Easy-to-Clean Draftshield Protects Samples from Contamination**
  The draftshield features removable glass panels and three sliding doors which help to avoid sample contamination. These can be easily removed for cleaning the balance.
- **Backlit LCD Makes Viewing of Results Easier — Even in Low Light Conditions**
  The Pioneer is equipped with a bright backlit LCD which enables clear viewing of results regardless of the lighting conditions-making it ideal for use in any work setting.
- **Selectable Environmental Settings Minimize External Influences & Ensure Accuracy**
  Three filter modes and adjustable zero tracking help to adjust the balance's sensitivity to environmental disturbances, vibrations and slow filling applications, ensuring the accuracy of measurements.

# Pioneer® Analytical and Precision Balances

## Removable Doors Provide Convenient Access and Cleaning

To address the need for easy cleaning often expressed by routine users, the draftshield has been designed with easy-to-remove doors and panels. It takes only seconds to disassemble, and all of the balance's components including the housing can be quickly wiped clean. Periodic cleaning made easy helps to avoid sample contamination, and extends the product life.




## Bright, Backlit Display Shows Results Clearly

The Pioneer balances are equipped with a bright backlit LCD which makes viewing of results very easy, even in laboratories with dim lighting—thereby, increasing the efficiency of workflow.

## Selectable Environmental Settings for Working in Practically Any Condition

Pioneer is designed with selectable environmental settings, which help to adapt the balance to real life working conditions. When working in harsh environments, the balance can be adjusted to compensate for vibrations and other disturbances. Conversely, the balance can also be adjusted when working in slow filling applications where sensitivity is an important factor. A replaceable standard in-use cover is also available which provides additional protection against accidental spillage, dust and debris — and helps to minimize the chance of damage to the display and keypad.

## Application Modes

- **Weighing**—Determines the weight of items on the pan in the selected unit of measure.
- **Parts Counting**—Counts the number of pieces on the pan using a uniform weight.
- **Percent Weighing**—Measures the weight of a sample displayed as a percentage of a pre-established reference weight.
- **Density Determination**—Determines density of solids or liquid. With the integrated weigh below hook, it is possible to perform specific gravity tests for objects that cannot be easily placed on the weighing pan.
- **Dynamic Weighing**—Weighs an unstable sample load. The balance takes an average of weights over a period of time.

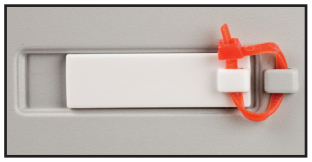
## Standard Features

**Integral Security Bracket**

Allows you to secure the balance to a workstation - preventing unwarranted movement or even theft

**RS232 Interface**
RS232 allows connection to an OHAUS printer or computer. Sends Balance ID plus spaces for recording User ID, Project ID, time and date

**Integral Menu Lock**
Is a combination of software and a mechanical switch which allows you to lock menus, including the calibration menu



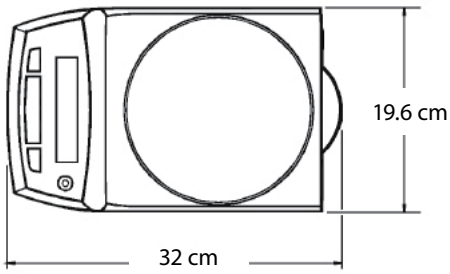
**Multiple Application Modes and Units**
Features Basic Weighing, Parts Counting, Percent Weighing, Dynamic Weighing and Density Determination modes. 15 international weighing units plus one custom unit are also available

**Up-Front Level Indicator**
A quick glance at the up-front level indicator helps to ensure that the balance is level prior to each use

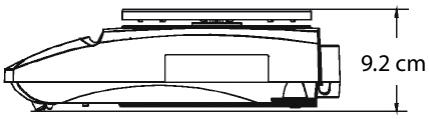
**Weigh Below Hook**
The built-in weigh below hook enables you to suspend an item belowthe balance for density/specific gravity measurements

**Backlit Display**
Enables optimal viewing of results in various lighting conditions

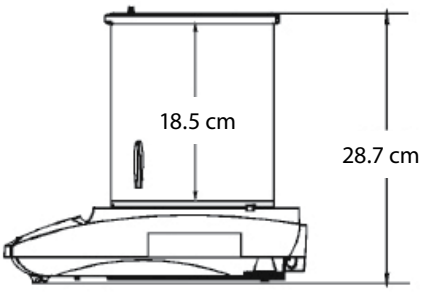
## Outline Dimensions




All Models




0,01 and 0,1g Models




0,1 and 1mg Models

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| Model | PA124C | PA224C | PA223C | PA423C | PA2202C | PA4202C | PA4201C |
|---|---|---|---|---|---|---|---|
| External Calibration Model | PA124 | PA224 | PA223 | PA423 | PA2202 | PA4202 | PA4201 |
| Approved Model | PA124CM/2 | PA214CM/2 | PA223CM/2 | PA423CM/2 | PA2202CM/2 | PA4102CM/2 | — |
| Capacity (g) | 120 | 220<br>210 (M model) | 220 | 420 | 2200 | 4200<br>4100 (M model) | 4200 |
| Readability d | 0.1 mg | | 1 mg | | 10 mg | | 100 mg |
| Approved Readability | 1 mg | | 10 mg | | 100 mg | | — |
| Repeatability (Std Dev) | 0.1 mg | | 1 mg | | 10 mg | | 100 mg |
| Linearity | 0.2 mg | 0.3 mg | 2 mg | | 20 mg | | 100 mg |
| Application Modes | Weighing, Parts Counting, Percent Weighing, Animal/Dynamic Weighing, Density Determination | | | | | | |
| Weighing Units | mg, g, ct, oz, dwt, tical, tola, mommes, baht, grain, mesghal, Newton, ozt, custom unit | | | | g, kg, lb, ct, oz, dwt, tical, tola, mommes, baht, grain, mesghal, Newton, ozt, custom unit | | |
| Approved Model Units | mg, g, ct, custom unit | | g, kg, ct, custom unit | | mg, g, ct, custom unit | | g, kg, ct, custom unit |
| Platform Size | Ø 90 mm | | Ø 120 mm | | Ø 180 mm | | |
| Cal Weight-Span | 50 g, 100 g | 100 g, 200 g | 100 g, 200 g | 200 g, 400 g | 1 kg, 2 kg | 2 kg, 4 kg | 2 kg, 4 kg |
| Cal Weight-Linearity | 50 g/100 g | 100 g/200 g | 100 g/200 g | 200 g/400 g | 1 kg/2 kg | 2 kg/4 kg | 2 kg/4 kg |
| Taring Time | 1 second | | | | | | |
| Stabilization Time | 3 seconds | | 2 seconds | | | | 1 second |
| Min-Weight (typical) (USP, u=0.10%, k=2) | 0.2 g | | 2 g | | 20 g | | 200 g |
| Draftshield | 18.5 cm inside height | | | | N/A | | |
| Operating Conditions | 10° C to 30° C at 10% to 80% relative humidity, non-condensing, up to 2000 m above sea level | | | | | | |
| Storage Temperature | -40° C to 55° C at 10% to 80% relative humidity, non-condensing | | | | | | |
| Net Weight | 4.6 kg (except for External Calibration Model: 4 kg) | | | | 4.5 kg (except for External Calibration Model: 3.4 kg) | | |
| Shipping Weight | 7.5 kg (except for External Calibration Model: 6.9 kg) | | | | 6.3 kg (except for External Calibration Model: 5.4 kg) | | |
| Balance Dimensions (W × H × D) | 19.6 × 28.7 × 32 cm | | | | 19.6 × 9.2 × 32 cm | | |
| Carton Dimensions (W × H × L) | 39.5 × 52.2 × 49.5 cm | | | | 39.5 × 32.7 × 49.5 cm | | |

## Other Standard Features and Equipment

Metal base, ABS housing, stainless steel pan, weigh below hook, security bracket, in-use cover, menu and calibration locks, up-front level indicator, multiple application modes and units, software reset menu, stability indicator, auto tare, RS232 interface, mechanical and software overload/underload protection, user-selectable communication and printing settings, user-selectable span calibration points

## Compliance

- **Product Safety:** cCSAus (CAN/CSA-C22.2 No. 61010-1-04, UL Std. No. 61010-1 2nd Edition); CE (EN 61010-1:2010)
- **Electromagnetic Compatibility:** FCC (Part 15 Class A); Industry Canada (ICES-003 Class A); CE (EN 61326-1:2013 Class B emissions, basic immunity); RCM (IEC 61326-1 Ed 2.0 Class B)

## Accessories

**Ionizer ION-100A** ..... 30095929
**SF40A Impact Printer** ..... 30064202
**SF40A Paper Roll 57.5mm (2 Rolls)** ..... 12120799
**SF40A Ink Ribbon Cassette** ..... 12120798
**RS232 Cable, PC 9 Pin** ..... 00410024
**Cable, USB-RS232 Converter** ..... 30268619
**Auxiliary Display Kit** ..... 80251396
**Security Device** ..... 80850000
**Density Determination Kit** ..... 80253384
**In-use Cover** ..... 83020221

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OHAUS®

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