

A&D WEIGHING

ANALYTICAL/SEMI-MICRO BALANCES



A&D
A&D WEIGHING
...Clearly a Better Value

PHOENIX™ SERIES

Internal Calibration Mass with Rear-Mount Motor Drive Assembly and Anti-Static Glass



• 0.01mg Semi-Micro Resolution



• GLP/GMP/GCP/ISO Compliance



• Internal Calibration Standard



• Balance ID Number



• Full Digital Calibration



• Time and Date Function



• User Friendly Operation



• Data Memory Function



• Liquid Crystal Display



• Automatic Counting Accuracy Improvement



• RS-232C Bi-directional Interface



• Auto Power On Function



• Windows Communication Tools Software



• Bluetooth® Interface (optional)



• Underhook Capability

Phoenix Series Specifications

| Capacity / Resolution | | GH-120 | GH-200 | GH-300 | GH-202 | GH-252 |
|---------------------------------|-------|---|---------------|-----------------------|-------------------------------|-------------------------------|
| Gram | (g) | 120x0.0001 | 220x0.0001 | 320x0.0001 | 220x0.0001 / 51x0.00001 | 250x0.0001 / 101x0.00001 |
| | (mg) | 120,000x0.1 | 220,000x0.1 | 320,000x0.1 | 220,000x0.1 / 51,000x0.01 | 250,000x0.1 / 101,000x0.01 |
| Decimal Ounce | (oz) | 4.23x0.00001 | 7.76x0.00001 | 11.29x0.00001 | 7.76x0.00001 / 1.80x0.000001 | 8.82x0.00001 / 3.56x0.000001 |
| Troy Ounce | (ozt) | 3.86x0.00001 | 7.07x0.00001 | 10.29x0.00001 | 7.07x0.00001 / 1.64x0.000001 | 8.04x0.00001 / 3.25x0.000001 |
| Pennyweight | (dwt) | 77.2x0.0001 | 141.5x0.0001 | 205.8x0.0001 | 141.5x0.0001 / 32.8x0.00001 | 160.8x0.0001 / 64.9x0.00001 |
| Carat | (ct) | 600x0.001 | 1100x0.001 | 1600x0.001 | 1100x0.001 / 255x0.0001 | 1250x0.001 / 505x0.0001 |
| Momme | (mom) | 32.0x0.0001 | 58.7x0.0001 | 85.3x0.0001 | 58.7x0.0001 / 13.6x0.00001 | 66.7x0.0001 / 26.9x0.00001 |
| Grain Unit | (GN) | 1852x0.002 | 3395x0.002 | 4938x0.002 | 3395x0.002 / 787x0.0002 | 3858x0.002 / 1559x0.0002 |
| Tola | (t) | 10.29x0.00001 | 18.86x0.00001 | 27.44x0.00001 | 18.86x0.00001 / 4.37x0.000001 | 21.43x0.00001 / 8.66x0.000001 |
| Tael | (TL) | 3.20x0.00001 | 5.87x0.00001 | 8.53x0.00001 | 5.87x0.00001 / 1.36x0.000001 | 6.67x0.00001 / 2.69x0.000001 |
| Percentage Min Div | | 0.01%, 0.1% or 1% (auto prompt) | | | | |
| Counting Min Weight | | 0.1 mg | | | | |
| Linearity | | ±0.2 mg | ±0.2 mg | ±0.3 mg | ±0.2 mg / ±0.03 mg | ±0.2 mg / ±0.1 mg |
| Repeatability / Std Dev | | 0.1 mg | 0.1 mg | 0.2 mg | 0.1 mg / 0.02 mg | 0.1 mg / 0.03 mg |
| Stabilization Time | | Approx. 3.5 sec (0.1 mg) / 8 sec (0.01 mg) | | | | |
| Sensitivity Drift (10°C – 30°C) | | ±2ppm / °C (when automatic self calibration is not used) | | | | |
| Display Refresh | | 5 times per second / 10 times per second | | | | |
| Pan Size | | Ø 90 mm / 3.6 inches | | | | |
| Physical Dimensions | (mm) | 217(W) x 442(D) x 316(H) | | | | |
| | (in) | 8.54(W) x 17.4(D) x 12.24(H) | | | | |
| Breeze Break Dimensions | (mm) | 183(W) x 148.5(D) x 251(H) | | | | |
| | (in) | 7.2(W) x 5.84(D) x 9.88(H) | | | | |
| Operating Temperature | | 5°C to 40°C (41°F to 104°F), 85% RH or less (no condensation) | | | | |
| Weight | | Approx. 8.2 kg / 18 lb | | | | |
| Power | | 100, 120, 220, 240 VAC (AC Adapter) 50 Hz / 60 Hz, 11 VA | | | | |
| Standard Accessories | | WinCT in CD-ROM, Manual, AC Adapter | | | | |
| Ext. Cal. Mass (optional) | | 50 g / 100 g | 100 g / 200 g | 100 g / 200 g / 300 g | 20 g / 50 g / 100 g / 200 g | |

GEMINI™ SERIES

Internal Calibration Mass with Large Breeze Break and Compact Footprint



• 0.01mg Semi-Micro Resolution



• Internal Calibration Standard



• Full Digital Calibration



• User Friendly Operation



• Liquid Crystal Display



• RS-232C Bi-directional Interface



• Windows Communication Tools Software



• GLP/GMP/GCP/ISO Compliance



• Balance ID Number



• Time and Date Function



• Data Memory Function



• Automatic Counting Accuracy Improvement



• Bluetooth® Interface (optional)



• Underhook Capability

Gemini Series Specifications

| Capacity / Resolution | | GR-120 | GR-200 | GR-300 | GR-202 |
|---------------------------|-------|---|---------------|---------------|----------------------------|
| Gram | (g) | 120x0.0001 | 210x0.0001 | 310x0.0001 | 210x0.0001 / 42x0.00001 |
| | (mg) | 120,000x0.1 | 210,000x0.1 | 310,000x0.1 | 210,000x0.1 / 42,000x0.01 |
| Decimal Ounce | (oz) | 4.2x0.00001 | 7.4x0.00001 | 10x0.00001 | 7.4x0.00001 / 1.4x0.000001 |
| Troy Ounce | (ozt) | 3.8x0.00001 | 6.7x0.00001 | 9.9x0.00001 | 6.7x0.00001 / 1.3x0.000001 |
| Pennyweight | (dwt) | 77x0.0001 | 135x0.0001 | 199x0.0001 | 135x0.0001 / 27x0.00001 |
| Carat | (ct) | 600x0.001 | 1050x0.001 | 1550x0.001 | 1050x0.001 / 210x0.0001 |
| Momme | (mom) | 32x0.0001 | 56x0.0001 | 82x0.0001 | 56x0.0001 / 11x0.00001 |
| Grain Unit | (GN) | 1851x0.002 | 3240x0.002 | 4784x0.002 | 3240x0.002 / 648x0.0002 |
| Tola | (t) | 10x0.00001 | 18x0.00001 | 26x0.00001 | 18x0.00001 / 3.6x0.000001 |
| Tael | (TL) | 3.1x0.00001 | 5.5x0.00001 | 8.2x0.00001 | 5.5x0.00001 / 1.1x0.000001 |
| Percentage Min Div | | 0.01% | | | |
| Counting Min Weight | | 0.1 mg | | | |
| Linearity | | ±0.0002 g | ±0.0002 g | ±0.0002 g | ±0.0002 / ±0.00003 g |
| Repeatability / Std Dev | | 0.0001 g | 0.0001 g | 0.0001 g | 0.0001 / 0.00002 g |
| Stabilization Time | | 3.5 seconds | 3.5 seconds | 3.5 seconds | 3.5 / 8 seconds |
| Sensitivity Drift | | ±2ppm / °C (10°C ~ 30°C / 50°F ~ 86°F) | | | |
| Display Refresh | | 5 times per second / 10 times per second | | | |
| Pan Size | | Ø 85 mm / 3.3 inches | | | |
| Physical Dimensions | (mm) | 249(W) x 330(D) x 327(H) | | | |
| | (in) | 9.8(W) x 12.99(D) x 12.87(H) | | | |
| Breeze Break Dimensions | (mm) | 178(W) x 160(D) x 233(H) | | | |
| | (in) | 7.01(W) x 6.5(D) x 9.17(H) | | | |
| Operating Temperature | | 5°C ~ 40°C / 41°F ~ 104°F RH less than 85% | | | |
| Weight | | Approximately 6.0 kg / 13.2 lb | | | |
| Power | | 100, 120, 220, 240 VAC (AC Adapter) 50 Hz / 60 Hz, 11VA | | | |
| Standard Accessories | | Manual, AC Adapter, Reference Card | | | |
| Ext. Cal. Mass (optional) | | 50 g / 100 g | 100 g / 200 g | 200 g / 300 g | 100 g / 200 g |

ORION™ SERIES

An Exceptional Combination of Remarkable Features at Affordable Prices



• **0.01mg Semi-Micro Resolution**



• **User Friendly Operation**



• **Liquid Crystal Display**



• **RS-232C Bi-directional Interface**



• **Windows Communication Tools Software**



• **GLP/GMP/GCP/ISO Compliance**



• **Balance ID Number**



• **Automatic Counting Accuracy Improvement**



• **Auto Power On Function**



• **Bluetooth® Interface (optional)**



• **Underhook Capability**

Orion Series Specifications

| Capacity / Resolution | | HR-60 | HR-120 | HR-200 | HR-300i | HR-202i |
|---------------------------|-------|---|--------------|--------------|---|-----------------------------|
| Gram | (g) | 60x0.0001 | 120x0.0001 | 210x0.0001 | 320x0.0001 | 220x0.0001 / 51x0.00001 |
| | (mg) | 60,000x0.1 | 120,000x0.1 | 210,000x0.1 | 320,000x0.1 | 220,000x0.1 / 51,000x0.01 |
| Decimal Ounce | (oz) | 2.1x0.000005 | 4.2x0.000005 | 7.4x0.000005 | 10x0.00001 | 7.4x0.00001 / 1.4x0.000001 |
| Troy Ounce | (ozt) | 1.9x0.000005 | 3.8x0.000005 | 6.7x0.000005 | 9.9x0.00001 | 6.7x0.00001 / 1.3x0.000001 |
| Pennyweight | (dwt) | 38x0.0001 | 77x0.0001 | 135x0.0001 | 199x0.0001 | 135x0.0001 / 27x0.00001 |
| Carat | (ct) | 300x0.001 | 600x0.001 | 1050x0.001 | 1550x0.001 | 1050x0.001 / 210x0.0001 |
| Momme | (mom) | 16x0.00005 | 32x0.00005 | 56x0.00005 | 82x0.0001 | 56x0.0001 / 11x0.00001 |
| Grain Unit | (GN) | 925x0.002 | 1851x0.002 | 3240x0.002 | 4784x0.002 | 3240x0.002 / 648x0.0002 |
| Tola | (t) | 5x0.00001 | 10x0.00001 | 18x0.00001 | 26x0.00001 | 18x0.00001 / 36x0.000001 |
| Tael | (TL) | 1.5x0.000005 | 3.1x0.000005 | 5.5x0.000005 | 8.2x0.00001 | 5.5x0.00001 / 1.1x0.000001 |
| Percentage Min Div | | 0.01%, 0.1% or 1% (auto prompt) | | | | |
| Counting Min Weight | | 0.1 mg | | | | |
| Linearity | | ±0.0002 g | | | ±0.0003 mg | ±0.0002 / ±0.00003 g |
| Repeatability / Std Dev | | 0.0001 g | | | 0.0002 mg | 0.0001 / 0.00002 g |
| Stabilization Time | | 3 seconds (typically) | | | Approx. 3.5 seconds | Approx. 3.5 / 8 seconds |
| Sensitivity Drift | | ±2ppm / °C (when automatic self calibration is not used) | | | | |
| Display Refresh | | 5 times per second / 10 times per second | | | | |
| Pan Size | | Ø 85 mm / 3.3 inches | | | Ø 90 mm / 3.6 inches | |
| Physical Dimensions | (mm) | 213(W) x 319(D) x 301(H) | | | 217(W) x 442(D) x 316(H) | |
| | (in) | 8.4(W) x 12.6(D) x 11.9(H) | | | 8.54(W) x 17.4(D) x 12.24(H) | |
| Breeze Break Dimensions | (mm) | 180(W) x 192(D) x 200 (H) | | | 164(W) x 148.5(D) x 251(H) | |
| | (in) | 7.1(W) x 7.5(D) x 7.9(H) | | | 6.45(W) x 5.84(D) x 9.88(H) | |
| Operating Temperature | | 5°C to 40°C (41 °F to 104 °F), 85% RH or less (no condensation) | | | | |
| Weight | | Approximately 5.7 kg / 12.5 lb | | | Approximately 8.0 kg / 17.6 lb | |
| Power | | 100, 120, 220, 240 VAC (AC Adaptor) 50 Hz / 60 Hz 10 hours continuous operation with rechargeable battery pack | | | 100, 120, 220, 240 VAC (AC Adapter) 50 Hz / 60 Hz, 11 VA | |
| Standard Accessories | | Manual, AC Adaptor, Protective Cover | | | WinCT in CD-ROM, Manual, AC Adapter | |
| Ext. Cal. Mass (optional) | | 50 g | 100 g | 200 g | 300 g / 200 g / 100 g | 200 g / 100 g / 50 g / 20 g |

0.01 mg

- **0.01mg Semi-Micro Resolution** (some models).



- **Internal Calibration** Built-in motor driven calibration mass.



- **Full Digital Calibration** simplifies calibration by eliminating the need to continuously load and unload calibration weights to adjust Zero and Span.



- **User Friendly Operation** with large, clearly marked keys.



- **Liquid Crystal Display** with large, easy-to-read digits.



- **RS-232C Bi-directional Interface** for use with PC, Printer or Remote Display.



- **Windows Communication Tools Software** provides easy transmission of weighing data from A&D Balances and Scales to a computer using an RS-232C interface.



- **Bluetooth® Interface** (optional) allows Wireless Communication between the Balance and a PC.



- **GLP/GMP/GCP/ISO Compliance** allows for GLP and LIMS balance management. The data can be output to an AD-8121B printer or a computer. Date, Time, Balance ID number, Serial number and Calibration data.



- **Balance ID Number** is user specified and stored when power is off.



- **Time and Date Function** complies with GLP and Interval Weighing in the Data Memory Function.



- **Data Memory Function** 200 PCS Weigh Data. (GH Models also offer choices of 100 PCS Weigh Data with T&D, or 50 Sets of Calibration Data).



- **Automatic Counting Accuracy Improvement** Ensures optimum count accuracy by continuous recalculation of average piece weight.



- **Auto Power On Function** Balance turns itself on when plugged in.



- **Legal for Trade (model HR-60 only).**



- **Underhook Capability** for Density Measurement and weighing of large or magnetic materials.

Options and Accessories:

| | | | |
|----------|--|----------|---|
| AD-8920 | Remote Display | GH-29 | Bluetooth® (wireless) Adapter for GH and HRi Models |
| AD-8922 | Remote Controller | GR-29 | Bluetooth® (wireless) Adapter for GR Models |
| AD-1653 | Density Determination Kit | HR-29 | Bluetooth® (wireless) Adapter HR-60/120/200 |
| AD-1682 | Rechargeable Battery Pack (Ni-MH, external) | AD-100-2 | Anti-Theft Device |
| AD-1683 | Static Eliminator | CC:103E | Carrying Case (for HR-60, HR-120, HR-200 only) |
| AD-1191 | Compact Printer with Time & Date | HR-03 | RS-232C is standard for all HR-I, GH & GR Models |
| AD-8121B | Compact Printer with Time, Date and Statistics | HR-05 | 20mA Current Loop Interface; (HR-60, HR-120 & HR-200 only) |
| AD-8118A | Universal Printer | HR-09 | Rechargeable Battery Pack (internal, for HR-60, HR-120 & HR-200 only) |
| AD-8118B | Multi-Function Printer | | |
| Win-CT | Data Collection Software | | |



AD-1683 Static Eliminator

The AD-1683 Static Eliminator is a small, high-voltage, DC-powered device which can eliminate static electricity from charged objects. The AD-1683 is compact, lightweight, and requires no high-voltage wiring.



AD-8922 Remote Controller

The AD-8922 Remote Controller can be connected to specific A&D weighing instruments for display of weighing data and access to control functions.

| Access Device | AD-8922 Key Functions | | | | | |
|--|------------------------------|--------------------------------|---|--|--|---------------------------------------|
| | ON : OFF | CAL | SAMPLE | PRINT | MODE | RE-ZERO |
| GH, GP, GX, GX-K | Turns the display on and off | Calibrates using internal mass | Turns the minimum weighing value on and off ¹⁾ | Output weighing data to an external device ²⁾ | Switches the weighing unit ³⁾ | Returns weighing value to zero (tare) |
| GR | | — | | | | |
| AD-4212, EK-H, GF, GF-K | — | — | — | — | — | — |
| HR, HR-i | — | — | — | — | — | — |
| EK-i, EW-i | — | — | — | — | — | — |
| EK-G, EW-G, FC-i, FC-Si, FG, FP, FS, FS-KL, HV-G, HV-WP, HW-G, HW-WP | — | — | — | — | — | — |

¹⁾ Excluding PCS and % mode. ²⁾ When the weighing machine is in stream mode, and AD-8922 is in key mode. ³⁾ Excluding AD-4212

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