

# ANALYTICAL / SEMI-MICRO BALANCES



# PHOENIX™ SERIES

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



-  • 0.01mg Semi-Micro Resolution
-  • Balance ID Number
-  • Internal Calibration Standard
-  • Full Digital Calibration
-  • Data Memory Function
-  • User Friendly Operation
-  • Automatic Counting Accuracy Improvement
-  • Liquid Crystal Display
-  • Auto Power On Function
-  • RS-232C Bi-directional Interface
-  • Underhook Capability
-  • Windows Communication Tools Software
-  • 5 Year Warranty
-  • GLP/GMP/GCP/ISO Compliance

## 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



**0.01 mg** • 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

**ID** • Balance ID Number



• Time and Date Function



• Data Memory Function



• Automatic Counting Accuracy Improvement



• Underhook Capability



• 5 Year Warranty

## 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 / 8 seconds
Sensitivity Drift (10°C – 30°C)		±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 option (Standard for "i" models)



•Windows Communication Tools Software



•GLP/GMP/GCP/ISO Compliance



•Balance ID Number



•Automatic Counting Accuracy Improvement



•Auto Power On Function



•Underhook Capability



•5 Year Warranty

## 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 (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 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



**User Friendly Balances**



•**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.



•**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.



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

## Options and Accessories

**AD-8920A** Remote Display

**AD-8922A** Remote Controller

**AD-1653** Density Determination Kit

**AD-1682** Rechargeable Battery Pack (Ni-MH, external)

**AD-1683** Static Eliminator

**AD-1191** Compact Printer with Time & Date

**AD-8121B** Compact Printer with Time, Date and Statistics

**Win-CT** Data Collection Software

**AD-100-2** Anti-Theft Device

**HR-03** RS-232C output for HR models (Standard for HR-i, GR, GH)

**HR-05** 20mA Current Loop Interface; (HR-60, HR-120 & HR-200 only)

**HR-09** Rechargeable Battery Pack (internal, for HR-60, HR-120 & HR-200 only)



### 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-8922A Remote Controller

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



Access Device	AD-8922A 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 <sup>1)</sup>	Output weighing data to an external device <sup>2)</sup>	Switches the weighing unit <sup>3)</sup>	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	—	—	—	—	—	—

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