

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

ID • Balance ID Number



• Internal Calibration Standard

• Time and Date Function



• 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



•0.01mg Semi-Micro Resolution

ID •Balance ID Number



•Internal Calibration Standard



•Time and Date Function



•Full Digital Calibration



•Data Memory Function



•User Friendly Operation



•Automatic Counting Accuracy Improvement



•Liquid Crystal Display



•Underhook Capability



•RS-232C Bi-directional Interface



•5 Year Warranty



•Windows Communication Tools Software



•GLP/GMP/GCP/ISO Compliance

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			
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 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