



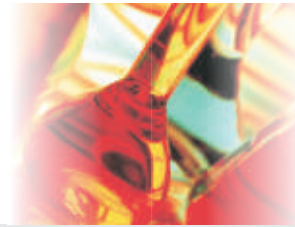
Electronic Top Loading Balance - Analytical Series



Models:

- ACM-78093-L

WEIBER[®]



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Product Overview

An analytical balance is used to measure mass to a very high degree of precision and accuracy, because unlike spring scales their accuracy is not affected by differences in the local gravity. A change in the strength of the gravitational field caused by moving the balance will not change the measured mass, because the moments of force on either side of the balance beam are affected equally by the pull of gravity.

The weighing pans of a high precision (.01 mg or better) balance are inside a transparent enclosure with doors so that dust does not collect and so any air currents in the room do not affect the balance's operation. The use of a vented safety enclosure with an analytical balance which has uniquely designed acrylic airfoils, allows a smooth, turbulence-free airflow that allows weighing of masses of as little as 1 micro gram without fluctuations or loss of product. Samples should be at room temperature to prevent natural convection from forming air currents inside the enclosure, which could affect the weighing process.



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Analytical precision is achieved by maintaining a constant load on the balance beam, by subtracting mass on the same side of the beam to which the sample is added. The final balance is achieved by using a small spring force, rather than subtracting fixed weights. This allows the weight to be added as a fine adjustment.

An analytical balance or scale used in laboratories may be in various shapes and sizes. Although often used interchangeably, scales and balances have different uses. A balance compares the mass of two sets of objects, while a scale determines the mass of an object or set of objects. The most common types in use today are beam balances, spring balances, top-loading balances, analytical balances and precision scales.



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Chemical analysis is an area where these balances are often used, since it is designed for great precision which is useful in quantitative chemical analysis. Top-loading balances, which can measure objects up to 200 g, are less expensive but also offer less resolution than do some other types of balance. A top-loading balance is considered to be a semi analytical balance, with a readability of up to three decimal places (up to .001 g). A precision balance has a readability of 0.01 g. It produces steady readings in a wider range of environmental conditions than an analytical model, being less sensitive to temperature fluctuations.

Microbalances and ultra-microbalances are used to weigh the smallest samples. They offer a capacity of up to 6 g with readability up to seven decimal (.0000001 g). Electronic scales and balances can provide weights in more than a dozen units, including grams, kilograms, pounds, newtons, grains, and ounces.



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Many things can affect the precision of an analytical balance. The environment of the lab, operating temperature, humidity, vibration and ventilation currents can all affect performance. Consequently, it is important to keep the balance inside an enclosed space, keep it clean and make sure it is leveled correctly. It is equally important to make sure it is regularly maintained and serviced. There are also personnel considerations that need to be observed. It is useful to know who will be operating and maintaining the device and the type of training they have received.

Finally, it is best to always follow the manufacturer's operating instructions, calibration frequency and maintenance recommendations for the analytical balance.

Features

- High contrast LCD displays weight and text messages to guide you every step of the way
- AC powered or battery operated so you can take your lab with you
- The perfect size - big enough for large loads but small enough to carry
- Large stainless steel weighing pans
- Windshield protects pan and blocks air currents for stable

Results

- Standard RS 232 interface
- Parts Counting & percent weighing.
- Animals Weighing.
- Below balance weighing facility
- Die cast aluminum design for long term stability & accurate result
- Density determination for Solid & liquid
- Various weighing units like ct, gm, oz, dwt, mom, GN



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Technical Specifications

Capacity x Readability (carats)	605 x 0.001 ct
Capacity(g) x Readability (mg)	121 g x 0.2 mg
Reproducibility (std deviation)	
carats (ct)	± 0.001 ct
milligrams (mg)	± 0.2 mg
Linearity: carats (ct)	± 0.002 ct
milligrams (mg)	± 0.4 mg
Response Time (average)	3 seconds
Tare Range	FULL to Capacity
Selectable Weight Units	g, ct, lb, oz, ozt, tlh, tls, tlt, Gn, dwt, mg, parts/lb, tlc, mom, K, tol, bat, and MS
Selectable Application Programs	Mass unit conversion by toggling, tare memory, net total, weighing in percent, counting, averaging
Display Update	0.1 - 0.4 seconds depended upon filter level selected
Display	LCD
Allowable Ambient Operating Temperature	5° C to 40° C (41° F to 104° F) 85% RH or less
Sensitivity Drift (10° - 30°C/50°F-86°F)	± 2 ppm / °C
External Calibration	100g

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Pan Size	ø90 mm / 3.5 in (standard round pan)
Draft Shield Chamber Height (from pan to top of glass door)	133 mm / 5.23 in
Dimensions (entire balance) W x D x H	200 x 270 x 233 mm 7.9 x 10.6 x 9.2 in
Built-in RS-232 Interface	YES - RS-232 interface is standard but the RS-232 cable is optional
Weighing Below	Not Available. Common applications for weighing below the balance include density determination.
AC Power Source	AC Adapter 120 VAC
Power Consumption	Approx. 16VA (supplied by AC adapter)
Standard Equipment	120V AC Adapter, Stainless steel weighing pan, 100g external cal mass



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