

General Specifications

| Model number | All Analog "A" Series units | All Analog "A" Series units | All Digital "E" Series units | All Digital "E" Series units |
|---------------------------------|--------------------------------|--------------------------------|---------------------------------|---------------------------------|
| Exterior Unit Dimensions | | | | |
| Length | 32" (81.3 cm) | 32" (81.3 cm) | 32" (81.3 cm) | 32" (81.3 cm) |
| Width | 22.5" (57.2 cm) | 22.5" (57.2 cm) | 22.5" (57.2 cm) | 22.5" (57.2 cm) |
| Height | 22" (55.9 cm) | 22" (55.9 cm) | 22" (55.9 cm) | 22" (55.9 cm) |
| Weight | 120 lbs (54.4 kg) | 120 lbs (54.4 kg) | 165 lbs (74.9 kg) | 165 lbs (74.9 kg) |

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|------------------------------------------|--------------------------------|--------------------------------|---------------------------------|---------------------------------|
| Electrical - Standard Temperature | | | | |
| Voltage AC | 120 | 220-240 | 120 | 220-240 |
| Amperage | 5.0 | 3.0 | 5.0 | 2.5 |
| Wattage | 625 | 725 | 625 | 625 |
| Frequency | 60 | 50/60 | 60 | 50/60 |
| High Temperature | | | | |
| Voltage AC | 120 | 220-240 | 120 | 220-240 |
| Amperage | 9.0 | 5.0 | 9.0 | 4.5 |
| Wattage | 1100 | 1200 | 1100 | 1100 |
| Frequency | 50/60 | 50/60 | 50/60 | 50/60 |
| Refrigerated | | | | |
| Voltage AC | 120 | 220-240 | 120 | 220-240 |
| Amperage | 14.0 | 7.0 | 14.0 | 7.0 |
| Wattage | 1500 | 1500 | 1500 | 1500 |
| Frequency | 60 | 50 | 60 | 50 |

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|-----------------------|------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------|
| Speed Accuracy | 40 to 400 rpm | 40 to 400 rpm | 15 to 500 rpm ±1 rpm | 15 to 500 rpm ±1 rpm |
| Timer | Continuous or timed operation from 1-60 min. | Continuous or timed operation from 1-60 min. | Continuous or timed operation 0.1-999 hours or 0.1-999 mins. | Continuous or timed operation 0.1-999 hours or 0.1-999 mins. |
| Display | 3 individual LED displays indicate temperature in 1°C increments. Analog tachometer displays speed in rpm. | 3 individual LED displays indicate temperature in 1°C increments. Analog tachometer displays speed in rpm. | 3 individual LED displays indicate temperature, time and speed simultaneously. 3 characters height 1/2 inch (1.27 cm) | 3 individual LED displays indicate temperature, time and speed simultaneously. 3 characters height 1/2 inch (1.27 cm) |
| Mutable Alarms | None | None | Audible portion of the alarm can be silenced for a period of 1 hour without deactivating the actual alarm condition by depressing any key. | Audible portion of the alarm can be silenced for a period of 1 hour without deactivating the actual alarm condition by depressing any key. |

| Motor | Permanent Magnet DC | Permanent Magnet DC | Solid State Brushless DC | Solid State Brushless DC |
|---------------------------|---------------------|---------------------|--------------------------------------------------------------------|--------------------------------------------------------------------|
| Soft Start Feature | None | None | Software algorithms prevent sudden start/stops. | Software algorithms prevent sudden start/stops. |
| RS232 Interface * | None | None | Monitor speed, temperature in °C and time with a computer. | Monitor speed, temperature in °C and time with a computer. |
| Recorder Output * | None | None | 10 mv/°C output monitors temperature with external chart recorder. | 10 mv/°C output monitors temperature with external chart recorder. |

* Interface cables not to exceed 9.8 ft. (3 m) in length.

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|------------------------|----------------------------------------|----------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Alarms | | | | |
| Speed | None | None | Audible with flashing LED indicate when speed deviates more than 10% of set point. | Audible with flashing LED indicate when speed deviates more than 10% of set point. |
| Speed Shut off | None | None | When speed deviates 10% of set point, unit will shut down immediately. | When speed deviates 10% of set point, unit will shut down immediately. |
| Timer | None | None | Beeps twice when time has expired. Shaking motion stops. | Beeps twice when time has expired. Shaking motion stops. |
| Unbalanced Load | None | None | If the unit is running in an unbalanced condition, an alarm will sound and the shaker will stop until the end user corrects the condition. The speed display will flash “bAL” on speed panel LED. | If the unit is running in an unbalanced condition, an alarm will sound and the shaker will stop until the end user corrects the condition. The speed display will flash “bAL” on speed panel LED. |

| Optional Platform Dimensions in. (cm) | |
|----------------------------------------------|--------------------------------------|
| Catalog Number | L x W |
| 30110 | Universal 18” x 18” (45.7 x 45.7 cm) |

GENERAL SPECIFICATIONS

The Barnstead|Lab-line MaxQ 4000 series of bench top, incubated and refrigerated shakers are available in either analog or digital control configurations:

- A-Class shakers: SHKA4000, SHKA4000-1CE, SHKA4000-5, SHKA4000-6CE, SHKA4000-7, SHKA4000-8CE: control temperature by a Proportional/Integral/Derivative (PID) micro-processor-based controller. Solid-state control maintains time and speed and is adjustable with rotary dials. Analog tachometer displays speed in RPM, verifying accuracy of speed setting. Refrigerated units feature environmentally safe CFC free insulation and coolant.
- E-Class shakers: SHKE4000, SHKE4000-1CE, SHKE4000-5, SHKE4000-6CE, SHKE4000-7, SHKE4000-8CE: control temperature, time and speed by a Proportional/Integral/Derivative (PID) microprocessor-based controller that is adjustable with membrane switches on a keypad in 1 rpm increments. Refrigerated units feature environmentally safe CFC free insulation and coolant. Flashing display indicates power interruption. Pressing any key will clear display. Non-volatile memory maintains speed and time set points in the event of a power interruption. Speed and time set points are automatically reactivated after power is restored.
- Temperature range and accuracy follow. All units have a uniformity of $\pm 0.5^{\circ}\text{C}$ at 37°C in flask:

Standard Temperature: SHKA4000, SHKA4000-1CE, SHKE4000, SHKE4000-1CE, 10°C above ambient to 60°C , $\pm 0.1^{\circ}\text{C}$ at 37°C in flask.

High Temperature: SHKA4000-5, SHKA4000-6CE, SHKE4000-5, SHKE4000-6CE, 10°C above ambient to 80°C , $\pm 0.1^{\circ}\text{C}$ at 37°C in flask.

- Refrigerated: SHKA4000-7, SHKA4000-8CE, SHKE4000-7, SHKE4000-8CE, 15°C below ambient to 60°C, $\pm 0.1^\circ\text{C}$ at 37°C in flask. Refrigeration system needs to be turned off whenever the set point is at or above 32°C.

In addition, all versions offer:

- Space efficient tubular heaters.
- Drive interrupt halts shaking action when lid is opened.
- All set points are retained by non-volatile memory that automatically reactivates after power is restored.
- Visual, user adjustable over-temperature safety signal with independent thermostat controls the heat if main controller fails.
- 3/4 inch (1.9 cm) triple eccentric orbital drive.
- 6 permanently lubricated ball bearings.
- 50 lb (22.7 kg) platform load capacity at safe speeds less than 400 rpm for A-Class shakers and less than 500 rpm for E-Class shakers.
- UL, cUL and CE certification.

GENERAL SPECIFICATIONS

Environmental Operating Conditions

| | |
|-------------------------|------------------------------------------------------|
| Pollution Degree** | 2 |
| Installation Category** | II |
| Altitude | 2000 meters MSL (Mean Sea Level) |
| Relative Humidity | 20% to 80% maximum, non-condensing |
| Electrical Supply | 120 VAC or 240 VAC |
| Voltage Tolerance | ±10% of normal rated line |
| Temperature | 15°C to 32°C |
| Product Usage | This product is intended for use indoors only |

**Refer to IEC 664-1



Caution

It is not recommended to operate shaker in a CO₂ enriched atmosphere. The formation of carbonic acid could cause electrical failures.

Declaration of Conformity

(for CE models only)

Barnstead International hereby declares under its sole responsibility that this product conforms with the technical requirements of the following standards:

| | | |
|---------|----------------|-------------------------------------------------------------------------------------------------------------------------|
| EMC: | EN 61000-3-2 | Limits for harmonic current emissions |
| | EN 61000-3-3 | Limits for voltage fluctuations and flicker |
| | EN 61326-1 | Electrical equipment for measurement, control, and laboratory use; Part I: General Requirements |
| Safety: | EN 61010-1 | Safety requirements for electrical equipment for measurement, control, and laboratory use; Part I: General Requirements |
| | EN 61010-2-051 | Part II: Particular requirements for laboratory equipment for mixing and stirring |

per the provisions of the Electromagnetic Compatibility Directive 89/336/EEC, as amended by 92/31/EEC and 93/68/EEC, and per the provisions of the Low Voltage Directive 73/23/EEC, as amended by 93/68/EEC.

The authorized representative located within the European Community is:

Electrothermal Engineering Ltd.
419 Sutton Road
Southend On Sea
Essex SS2 5PH
United Kingdom

Copies of the Declaration of Conformity are available upon request.