

9 Technical data

9.1 Specifications



The use of baffled flasks will significantly reduce maximum speed for any shaker.

These specifications assume that load and speed that are consistent with load and speed graphs, (see *Load and speed graphs on p. 64*).

9.1.1 Shaking

Speed	• 2.5 cm (1 in) orbit: 25 rpm – 500 rpm • 5.1 cm (2 in) orbit: 25 – 300 rpm
Control accuracy	• ± 1 rpm
Stroke	• 2.5 cm (1 in) • 5.1 cm (2 in)
Indication	• Displayed in 1 rpm increments
Alarm signal	• ± 5 rpm
Drive mechanism	• Triple-eccentric counterbalanced drive • 9 permanently lubricated ball bearings • Poly-V belt • Self-calibrating • Solid-state brushless DC motor
Safety	• Drive interrupt shuts off power to shaker when lid is opened • Acceleration/deceleration circuit prevents sudden starts and stops, minimizing both splashing and mechanical damage.

9.1.2 Temperature control

Heaters	• Low watt-density resistance heaters • High-temperature safety thermostat cut-out
Control accuracy	• ± 0.1 °C from 30 – 40 °C • ± 0.5 °C over the remaining range
Temperature range (Innova 43)	• 5 °C above ambient temperature to 80 °C
Temperature range (Innova 43R)	• 20 °C below ambient to 80 °C (minimum 4 °C) • Dependent on ambient temperature
Alarm signal	• ± 1 °C

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New Brunswick™ Innova®43/43R Shaker
English (EN)

9.1.3 Power supply

Power supply	100 V $\pm$ 10 %, 50 – 60 Hz 120 V $\pm$ 10 %, 60 Hz 230 V $\pm$ 10 %, 50 Hz	Innova 43: 800 VA Innova 43R: 1500 VA
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9.1.4 Ambient conditions

Ambience	Only for use indoors
Ambient temperature	10 °C – 35 °C
Relative humidity	20 % – 80 %, non-condensing
Altitude	Up to 2000 m

9.1.5 Dimensions and weight

Space requirements	Width: 135.6 cm (53.5 in) Depth: 101 cm (40 in) Height: 162.7 cm (64.1 in)
Dimensions	Width: 115.6 cm (45.5 in) Depth: 81 cm (32 in) Height: 103 cm (40.6 in) Lid open height: 162.7 cm (64.1 in)
Chamber dimensions	Width: 87.6 cm (34.5 in) Depth: 61 cm (24 in) Height: 48 cm (19 in)
Platform dimensions	Width: 46 cm (18 in) Depth: 76 cm (30 in) (Select universal or dedicated styles)
Weight	Innova 43 weight: 209 kg (460 lb) Innova 43R weight: 231 kg (510 lb)

9.1.6 Photosynthetic lamps

Lamp type	T8 fluorescent lamp
Initial lumens	325 at 25 °C
Watts	15

9.1.7 Alarms

There is a visible and audible warning indication when:

- Speed deviates more than 5 rpm from high or low setpoints
- Temperature deviates more than ± 1 °C from high or low setpoints
- When timer has expired

Audible alarm can be muted.

9.1.8 Display

- 240 × 128 backlit LCD

9.1.9 RS-232

- Remote control
- Remote monitoring
- Remote data logging

9.1.10 Setpoint retention

- Operating setpoints are retained in non-volatile memory

9.1.11 Automatic restart

- After power is restored
- Indicated by flashing display

9.1.12 ETL regulatory standards

- UL 61010A-1
- UL 61010A-2-010
- CAN/CSA-C22.2 No. 1010.1
- CAN/CSA-C22.2 No. 1010.2.010