



LABORATORY EQUIPMENT CATALOG

Professional 3500 Incubating Orbital Shaker

- Patented Opti-Flow forced ventilation system
- Patented Accu-Drive shaking system
- Calibration mode for temperature and speed

The Talboys Professional 3500 Incubating Orbital Shaker offers exceptional temperature uniformity and is designed for a variety of shaking and incubating applications, such as cell cultures.

Operating Features:

Accu-Drive Shaking System: The exclusive patented Accu-Drive Shaking System delivers exceptional speed control, accuracy, and durability. The system continuously monitors shaking speed and maintains set-point, even under changing loads. When unit is set to a speed above 100rpm, the speed accuracy is $\pm 1\%$ of set speed. When set under 100rpm, speed accuracy is ± 1 rpm.

Opti-Flow Forced Ventilation System: The exclusive patented Opti-Flow Forced Ventilation System uses twin induction fans and air deflectors to deliver exceptional temperature uniformity and stability.

Microprocessor Control: The variable speed microprocessor control provides consistent uniform shaking action. Microprocessor will display last set-point and will restart if power is interrupted.

PID Temperature Controller: Maintains precise temperature control from ambient $+5^{\circ}\text{C}$ to 65°C . Easy-to-use controls allow users to adjust temperature in 1°C increments. Meets ASTM E1292 specification for temperature uniformity.

Triple Eccentric Drive: Permanently lubricated ball bearings and maintenance free, brushless DC motor provide reliable service and continuous duty operation.

LED Display: Touch pad controls with easy-to-read, independent LED displays for temperature, speed and time allow operator to view all settings at once. Timer will display elapsed time or when programmed to user defined limit, will shut off unit when time reaches zero. Display will show last used settings, even after power has been turned off.

Temperature Calibration Mode: Allows user to calibrate unit to an external temperature device.

Speed Calibration Mode: Allows user to automatically recalibrate speed display.

RS-232 Interface: Provides two-way communication for data logging and unit control.

Safety Features:

Load Sensor: A built-in load sensor detects unbalanced conditions and automatically reduces rpm to a safe speed to protect samples.

Overload Protection: Audible and visual signals will activate when system detects an obstruction or overload of the tray.

Overshoot Protection: Audible and visual signals will activate if temperature deviates $\pm 1^{\circ}\text{C}$ from set-point.

Speed Ramping Feature: Slowly increases speed to desired set-point to avoid splashing.

Audible Alarm: In timed mode, alarm will sound when the time reaches zero. Alarm has optional mute function which can be set from the touch pad control.

Caution Hot Indicator: Symbol illuminates when the temperature of the air in the chamber reaches 40°C and remains lit until temperature cools down.

Spill-Resistant Design: Channels fluids away from internal components.

Polycarbonate Lid: Permits viewing of samples without disturbing internal temperature. When lid is opened, automatic shut off of the circuit will stop the shaker tray to protect operator.



980188 with platform 980169

Operating Conditions:

Unit can be run in conditions from 15 to 32°C (59 to 90°F), maximum 80% relative humidity, non-condensing.

Applications:

Cell cultures, solubility studies, bacterial suspensions, and extraction procedures.

Ordering Information:

Unit includes a $92"$ (234cm) detachable, 3-wire cord and plug (230 volt units are supplied with Euro type plug). Unit is also supplied with a $13 \times 11"$ ($33 \times 27.9\text{cm}$) non-skid rubber mat. **5 year limited warranty on parts and labor.**

Optional NIST Traceable Calibration Certificate provided by Troemner's ISO/IEC 17025 accredited laboratory. Multiple data points within the temperature and speed ranges, and time function, are reported on the certificate with the associated uncertainties.

Specifications	
Temperature Range	Ambient $+5^{\circ}\text{C}$ to 65°C
Temperature Uniformity	$\pm 0.5^{\circ}\text{C}$ at 37°C
Speed Range	15 to 500rpm
Speed Accuracy	above 100rpm $\pm 1\%$ of set speed; below 100rpm $\pm 1\text{rpm}$
Timer	1 second to 160 hours
Orbit	19mm ($0.75"$)
Maximum Weight Capacity	35lbs (15.9kg)**
Tray Material	Aluminum
Tray Dimensions (L x W)	$13 \times 11"$ ($33 \times 27.9\text{cm}$)
Interior Dimensions (L x W x H)	$13.4 \times 12 \times 9.5"$ ($34 \times 30.5 \times 24.1\text{cm}$)
Overall Dimensions (L x W x H)	$25.5 \times 14 \times 16"$ ($64.8 \times 35.6 \times 40.6\text{cm}$)
Ship Weight	83lbs (37.7kg)

Description	Electrical (50/60 Hz)	Part Number
Professional 3500 Incubating Orbital Shaker	120V 5.0 amps 450 watts	980188
Professional 3500 Incubating Orbital Shaker	230V 5.0 amps 450 watts	980189
Professional 3500 Incubating Orbital Shaker with NIST Traceable Certificate	120V 5.0 amps 450 watts	980188-C
Professional 3500 Incubating Orbital Shaker with NIST Traceable Certificate	230V 5.0 amps 450 watts	980189-C