Colo Science
Laboratory & Scientific Equipment

COLO.SCIENCE · TECHNICAL SPECIFICATION

ORSHAH · ORSHAHC

Orbital Shaking Incubators · Benchtop · Ø20 mm Orbit · 20–300 rpm · Heating 50 L or Heating/Cooling 70 L

ORSHAH and ORSHAHC orbital shaking incubators combine a temperature-controlled chamber with an orbital shaking platform for flasks. A brushless DC motor drives the tray on a Ø20 mm orbit from 20 to 300 rpm with a slow start, so the liquid does not splash. Horizontal air convection keeps the temperature even, and a large window with an inner LED light lets you watch the flasks without stopping the run. ORSHAH heats from 5 °C above room temperature; ORSHAHC also cools, down to 4 °C.

50 L · 70 L | RT+5 TO 65 °C | 4 TO 65 °C (HC) | 20–300 RPM | ORBIT Ø20 MM | BRUSHLESS DC MOTOR | SLOW START | LCD · PID | HORIZONTAL CONVECTION | LED LIGHT

Document type: **Technical Specification Sheet**
Product family: **ORSHAH / ORSHAHC benchtop orbital shaking incubators**
Models / SKU: **ORSHAH · PRO3344 | ORSHAHC · PRO3345**
Format: **A4 landscape · CORE-TECHSPEC 1.2**

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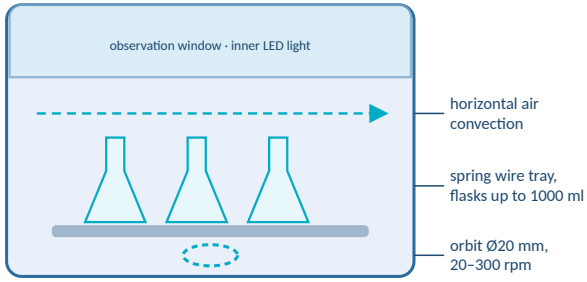
Choose the temperature mode

HEATING ONLY
ORSHAH · 50 L
RT+5 °C to 65 °C · 0.6 kW · up to 6 × 500 ml

HEATING AND COOLING
ORSHAHC · 70 L
4 °C to 65 °C · 0.8 kW · up to 6 × 1000 ml



ORSHAHC · benchtop orbital shaking incubator with spring wire tray



Schematic, not to scale

Inside the chamber · orbital tray, flasks, horizontal air convection

VOLUMES
50 L · 70 L

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Technical data sheet · Informational document · Controlled electronic document
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ORSHAH · ORSHAHC · technical specification

Benchtop orbital shaking incubators, heating (50 L) or heating and cooling (70 L), Ø20 mm orbit, 20–300 rpm, LCD controller with PID

50 · 70 L | 20–300 RPM | Ø20 MM | HEATING OR HEATING/COOLING | LCD · PID — **Shake and incubate in one benchtop unit**

Product Overview

Application profile

Microbiology: shake-flask culture of bacteria and yeast at controlled temperature.

Cell and enzyme work: gentle mixing of cultures, enzyme reactions and temperature-sensitive samples.

Below room temperature: ORSHAHC cools to 4 °C for slow growth, protein expression and cooled reactions.

Long runs: brushless motor and power-failure memory for overnight and multi-day incubation.

Core technical summary

Parameter	Specification
Models	ORSHAH · ORSHAHC
Chamber volume	**50 L · 70 L**
Temperature range	RT+5 to 65 °C · 4 to 65 °C
Fluctuation / uniformity	±0.1 °C / ±0.5 °C
Speed / orbit	20–300 rpm · Ø20 mm
Drive	brushless DC motor
Control	LCD, PID, timer
Power	0.6 kW · 0.8 kW
Supply	220 V, 50 Hz

Key features

Shaking: orbital, Ø20 mm, 20 to 300 rpm, speed accuracy ±1 rpm.

Motor: brushless DC motor, maintenance-free, slow start, automatic change of rotation direction.

Temperature: ORSHAH RT+5 °C to 65 °C; ORSHAHC 4 °C to 65 °C; fluctuation ±0.1 °C, uniformity ±0.5 °C.

Air: horizontal air convection through the chamber.

Control: LCD with PID control of temperature, speed and time; timer 0 to 9999 min or continuous.

Protection: over-temperature alarm, door switch, speed lock, menu lock, power-failure memory.

Observation: large resin window with inner LED light.

Tray: universal spring wire tray; flask clamp trays on request.

VOLUMES	TEMPERATURE	SPEED	ORBIT
50 L · 70 L	**4 °C to 65 °C**	**20–300 rpm**	**Ø20 mm**

RT = room temperature. Values are typical, measured without load. Flask capacity depends on the tray and clamps; suitability for a specific method is confirmed in the COLO.Science quotation.

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Models Compared

Parameter	ORSHAH · PRO3344	ORSHAHC · PRO3345
Temperature mode	heating	heating and cooling
Temperature range	RT+5 °C to 65 °C	4 °C to 65 °C
Chamber volume	**50 L**	**70 L**
Inner chamber W × D × H	455 × 380 × 290 mm	560 × 390 × 320 mm
Exterior W × D × H	500 × 640 × 480 mm	600 × 770 × 500 mm
Power	0.6 kW	0.8 kW
Net / gross weight	25 / 35 kg	65 / 85 kg
Load per tray	≤ 10 kg	≤ 15 kg
Max. flask capacity	16 × 100 ml · 10 × 250 ml · 6 × 500 ml	28 × 100 ml · 15 × 250 ml · 8 × 500 ml · 6 × 1000 ml

Technical Specifications · common to both models

Shaking and temperature	Value
Shaking mode	orbital (cyclotron)
Orbit	Ø20 mm
Speed	20 to 300 rpm, accuracy ±1 rpm
Drive	brushless DC motor, slow start
Direction	automatic change of rotation direction
Temperature resolution	0.05 °C
Fluctuation / uniformity	±0.1 °C / ±0.5 °C
Timer	0 to 9999 min; 0 = continuous

Chamber and construction	Value
Air circulation	horizontal convection
Chamber	mirror stainless steel
Housing	ABS
Window	resin, with inner LED light
Insulation	polyurethane
Sensors	3 × Pt100, Hall speed sensor
Tray	universal spring wire tray
Supply	220 V, 50 Hz

RT = room temperature. Dimensions in mm, W × D × H. Flask capacity is the maximum with clamps for the given size and depends on the tray, fill volume and speed. Values are typical, measured without load.

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Shaking, Temperature and Protection

Shaking

Brushless motor: high speed accuracy and no carbon brushes to wear or contaminate the chamber.

Slow start: the speed rises gradually, so the liquid in the flasks does not splash.

Speed lock: the drive stops automatically if the speed gets out of control.

Temperature

PID control: temperature, speed and time are set and shown on one LCD.

Horizontal air: warm or cooled air flows across the chamber for an even temperature.

Cooling (ORSHAHC): runs below room temperature down to 4 °C.

Protection

Over-temperature alarm: warns and stops heating if the limit is exceeded.

Door switch: shaking stops when the lid is opened.

Power-failure memory: the run resumes with the same settings after a power cut.

Good practice

Fill volume: fill flasks to no more than about 20–30 % of their volume for good aeration at higher speed.

Balance: spread the flasks evenly over the tray.

Speed: start low and increase; large flasks need a lower speed than small ones.

Load: keep within 10 kg (ORSHAH) or 15 kg (ORSHAHC) per tray.

Installation and care

Place: firm, level bench that does not vibrate, with free space at the back for ventilation.

Supply: earthed 220 V socket.

Cleaning: neutral detergent and a soft cloth; do not use solvents on the resin window.

ACCURACY	FLUCTUATION	UNIFORMITY	TIMER
±1 rpm	±0.1 °C	±0.5 °C	0–9999 min

Values are typical, measured without load.

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Visuals, Configuration Guidance and Support



ORSHAH · ORSHAHC orbital shaking incubators · 50 and 70 L

Ordering information

Item	SKU
ORSHAH orbital shaking incubator, heating, 50 L, spring wire tray	PRO3344
ORSHAHC orbital shaking incubator, heating and cooling, 70 L, spring wire tray	PRO3345
Options: flask clamp trays and clamps, universal shelf 300 × 300 mm, adhesive pad, temperature data logger, temperature certificate	on request

Configuration checklist

Temperature: above room temperature only → ORSHAH; below room temperature or near 4 °C → ORSHAHC.

Flasks: size and number per run decide the model and the clamp tray.

Speed: typical 100–250 rpm; up to 300 rpm with small flasks.

Records: do you need a temperature data logger or a certificate?

Supply: 220 V, 50 Hz; confirm the plug type for your country.

SUPPLIER AND SUPPORT

COLO Lab Experts

Polje ob Sotli 4, SI-3255, Slovenia

Selection guidance: Send the flask size and number, the temperature and the speed. COLO.Science will confirm the model, the clamp tray and the delivery time.

QUICK CONTACT

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COLO.SCIENCE · MICROBIOLOGY SUPPORT

Heating only or heating and cooling?

Send the flasks, the temperature and the speed. COLO.Science will propose the model and confirm the configuration in the quotation.

Web: **colo.si**

Ask us:
Price and current discount, delivery time, installation, application support and service — write to sales@colo.si or call us.

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