

# Laboratory Incubator shaker Series



**SCIGENICS BIOTECH**  
PRIVATE LIMITED

CELEBRATING  
**25<sup>+</sup>**  
YEARS OF TRUST

## About us

SCIGENICS BIOTECH PVT LTD (SCIBIO) was set up in 1997 as a pioneering venture to address the instrumentation needs of Life Sciences and Biotechnology scientists in India. Over the years with several thousand shakers and other lab products, our brand **ORBITEK®** is trusted and occupies pride of place among innumerable leading labs across the country, thanks to the company's unequivocal emphasis on quality all through.

## Highlights

The laboratory series of shakers are carefully designed keeping in mind, criticality of operation for the typical Life Sciences & Biotechnology application. The equipment are absolutely dependable, assuring the scientists of a trouble free operation.

- ▶ Ergonomically designed.
- ▶ Absolutely smooth movement ensuring silent operation.
- ▶ The cooling unit optimized for typical Indian condition of higher ambient temperature.
- ▶ Uniform temperature distribution throughout the chamber, ensuring homogenous growth of the culture at all points.
- ▶ Various options of clamps of holders for different types of Flasks, Tubes and applications.

## Recognition

- ▶ **ORBITEK®** name synonymous for Shakers among the user Scientists over the years.
- ▶ Largest installation base of Shakers with a prestigious customer bank of Pharma Majors, Reputed Universities, Research Institutes
- ▶ Consistent repeat orders, stand testimony to customer satisfaction and trust.
- ▶ ISO 9001-2015 Certification
- ▶ Government of India (DSIR) recognised in-house R&D Unit
- ▶ Globally recognised **CE** marking for all manufactured products meeting European standards.

## Milestones

- ▶ State-of-the-art manufacturing facility meeting international standards
- ▶ Global presence including Europe, Japan, Malaysia, Thailand, Egypt, Saudi Arabic, Bangladesh etc.



## Features

### SHAKING

- ▶ Triple-Eccentric counter balanced drive mounted on permanently lubricated bearings fitted with housing to ensure non deviated amplitude for uniform growth of cultures.
- ▶ Incremental/Decremental speed control of 1 RPM.
- ▶ Smooth Start/Stop cycle with Programmed acceleration and deceleration circuit for Speed, to prevent spillage or cell shear.

### TEMPERATURE

- ▶ Temperature Range: Ambient +7°C to 80°C for LT-TT/LT-BT & 5°C to 80°C for LE-TT/LE-BT series.
- ▶ Finned tubular air heater for better heat transfer.
- ▶ Incremental / Decremental Temperature control of 0.1°C.
- ▶ Low energy consumption and hermetically sealed CFC free refrigeration system.
- ▶ Forced air circulation inside the chamber ensures uniform distribution of air into all culture flasks.
- ▶ High grade insulation on all sides for uniform temperature maintenance.

### CONSTRUCTION

- ▶ Robust construction for noiseless operation.
- ▶ Shakers can be placed over a table or be stacked using a stacking kit.
- ▶ Clear Digital Displays showing both, actual and set values of the parameters.
- ▶ Corrosion resistant steel (SS 304) for easy cleanability & disinfection.
- ▶ Magnetic gasket for better sealing / arresting leakage.
- ▶ Large chamber volume with option for adjustable stationary trays adds incubation space in the shaker.
- ▶ Flexibility to extend for various applications including anaerobic, algal, microbial & plant cell culture etc.
- ▶ Universal platform can accommodate Erlenmeyer, Round bottom, Volumetric flasks, Test tube holders, Micro-plate holders, etc. Dedicated platform available for dedicated clamps capacity.
- ▶ The instrument has provision for a tray for humidifying the chamber so as to reduce sample evaporation.
- ▶ Large chamber toughened front Double Glazed window & with one LED/Fluorescent Lamp for Chamber visibility
- ▶ Single Piece SS non-welded clamps with springs tied.

## Safety Features

- ▶ Thermostat cut-off for temperature over shoot.
- ▶ Audible & Visual alarm for temperature deviation.
- ▶ Electrical fuses/ Residual Current Circuit Breaker (RCCB) for user safety.
- ▶ Non-Volatile memory for automatic power failure restart.
- ▶ In built imbalance sensor to stop the movement if excess vibration is detected for HMI variants.
- ▶ Spill-cover protecting the electronic and mechanical components.
- ▶ Abnormal Condition System Shutdown (ACSS) feature ensures system safety.
- ▶ Safety stop switch available during door openings.

### COMPLIANCE WITH INTERNATIONAL REGULATIONS

- ▶ Variants with all SS 304 Construction available to suit GMP Requirement
- ▶ 21CFR part II compliant data management for system available .

### CUSTOMIZED MODEL

- ▶ Available with varying light Intensity

### HMI VARIANTS

#### LT-TT-AH,LT-TT-BH,LE-TT-AH,LE-TT-BH LT-BT-AH,LT-BT-BH,LE-BT-AH,LE-BT-BH

- ▶ Powerful Programmable Logic Controller (PLC) systems provides highly precise & expandable PID control system for working parameters.
- ▶ Multiple steps (20 Steps) programmable controls (User Selectable) automatically changes parameters (upto 4) at timed intervals.
- ▶ Optional auto ramping facilities of speed, temperature: up/down or stop agitation on a timed basis.
- ▶ Sensitive Touch Screen operation for Speed & Temperature and other parameters.
- ▶ Audio (with muting facility) and Visual alarm for deviation of Speed ( $\pm 5$ RPM) and Temperature ( $\pm 1^\circ\text{C}$ )
- ▶ Large LCD Touch Screen (Screen Colour selectable) has Human Machine Interface (HMI) for user friendly operations.
- ▶ Data logging facility for Speed and Temperature available through Standard USB port.
- ▶ RS485/Ethernet ports available for Data logging / connecting to any external Building Management Software (BMS) / external conventional lab management software.
- ▶ Chamber high temperature warning for operator safety, when door is open.
- ▶ User Password protection for control operation.
- ▶ User Adjustable calibration for speed & Temperature.

#### LT-A, LT-TT-A, LE-TT-A, LT-BT-A, LE-BT-A

- ▶ Maintenance free Brushless AC Motor.
- ▶ Speed control with slip compensation facility, ensure minimum deviation from set value.
- ▶ Noiseless operation less than 55db.
- ▶ Soft touch keypad control for Speed and Temperature.

#### LT-D, LT-TT-D, LE-D, LE-TT-D

- ▶ Compact Permanent Magnet DC Motor drive.
- ▶ Potentiometer for Speed control.
- ▶ Soft touch Keypad control for temperature.

Model | Part No  
**LT** | **LT-D**



Model | Part No  
**LE** | **LE-D**



## Specifications

Part No.#	LT-D	LE-D	LT-A	LT-TT-D	LE-TT-D
<b>Shaking</b>					
Frequency <sup>1</sup>	30-350 RPM	30-350 RPM	25-350 RPM	30-350 RPM	30-350 RPM
Deviation	± 2% RPM	± 2% RPM	± 1 RPM	± 2% RPM	± 2% RPM
Diameter of Orbital Motion	26 mm (1 inch)				
Drive	Permanent Magnet DC Motor (PMDC)		Brushless AC Motor (BLAC)	Permanent Magnet DC Motor (PMDC)	
Display	Digital LED				
Speed Change via	Potentiometer		Soft-touch Keypad	Potentiometer	
<b>Temperature<sup>2</sup></b>					
Range <sup>3</sup>	Amb +7°C to 70 °C	10°C to 70 °C	Amb +7°C to 70 °C	Amb +7°C to 80 °C	Amb -20°C to 80°C(*min 4°C)
Accuracy <sup>4</sup>	±0.1°C				
Uniformity <sup>4,5</sup>	±1°C				
Sensor	PT 100 Class A				
Control	Microprocessor based PID				
Display	Digital LED				
Temperature Change via	Soft Touch Keypad				
<b>Construction</b>					
<b>Material of Construction (MOC)</b>					
Internal	MS Powder coated			Stainless Steel (SS304)	
External	MS Powder Coated				
Universal Platform Size (WxD)	420 X 420 mm( 16" X 16")				
<b>Equipment Size</b>					
Internal Dimension (W X D X H) W/O PSLB	490 X 498 X 412 mm	500 X 490 X 425 mm			
Internal Dimension (W X D X H) With PSLB					
External Dimension (W X D X H) W/O PSLB	525 X 693 X 657 mm	570 X 702 X 815 mm			
External Dimension (W X D X H) With PSLB	525 X 693 X 747 mm	570 X 702 X 905 mm			
Noise Level	Less than 55db (A)				
Net Weight	85 Kg.	125 Kg.	100 Kg.	100 Kg.	125 Kg.
Chamber Capacity	100 lit				
Erlenmeyer Flask Size & Range (on Standard Universal Platform) <sup>4</sup>	10ml to 2 lit				
Electricals	6 Amps/230V/50 Hz/1φ	16 Amps/230V/50 Hz/1φ	6 Amps/230V/50 Hz/1φ		16 Amps/230V/50 Hz/1φ
<b>Safety Standard</b>					
Door Safety	Door switch				
Thermal Safety	Thermostat cut off at temperature overshoot				
Electrical Safety	Electrical Fuse	Electrical Fuse and RCCB	Electrical Fuse	RCCB (for electrical leakage short circuit)	
Electronics and mechanical components Spillage protection	Yes				

### Notes:

1. Achievable maximum speeds dependent on load
2. Permissible Ambient Temperature 10°C to 35°C @ 20 to 80% RH
3. @ 37°C at an ambient Temperature < 28°C
4. Uniformity across the tray
5. For detailed Holding Capacity - refer 'Accessories Table'

Model | Part No  
**LE** | **LE-TT-A**

Model | Part No  
**LE** | **LE-TT-AH**

Model | Part No  
**LE** | **LE-BT-AH**



LT-TT-A LT-BT-A		LE-TT-A LE-BT-A		LT-TT-AH LT-BT-AH		LE-TT-AH LE-BT-AH		LT-TT-BH LT-BT-BH		LE-TT-BH LE-BT-BH	
25-400 RPM( Single Double unit) / for BT Series 30 - 300 RPM for 50mm Throw											
± 1 RPM											
26mm (1 inch) / LE-TT   26/50mm(1inch/2 inch)/ LE-BT											
Brushless AC Motor (BLAC)						Brushless DC Motor (BLDC)					
Digital LED						LCD					
Soft Touch Keypad						HMI Touch screen					
Amb+7°C to 80 °C		Amb-20°C to 80 °C		Amb+7°C to 80 °C		Amb -20°C to 80 °C		Amb+7°C to 80 °C		Amb-20°C to 80 °C	
± 0.1°C											
± 0.1°C TT   ± 0.5°C /LT-BT/LE-BT											
PT100 Class A											
Microprocessor based PID						PLC With Inbuilt PID					
Digital LED						LCD					
Soft Touch Keypad						HMI Touch screen					
Stainless Steel (SS304)											
MS Powder Coated											
460 x 460 mm( 18" X18")											
520 X 540 X 445 mm LE-TT/ 530 X 530 X 500 mm LE-BT											
530 X 530 X 406 mm LE-BT											
600 X 735 X 880 mm LE-TT/800 X750 X865mm LE-BT											
600/735/1000 mm LE-TT											
Less than 55db (A)											
100/150 Kg		125/150 Kg		100/150 Kg		125/155 Kg		100/155 Kg		125/155 Kg	
100 /140 Lit											
10ml to 2 lit											
6 Amps/230V/50 Hz/1φ		16 Amps/230V/50 Hz/1φ		6 Amps/230V/50 Hz/1φ		16 Amps/230V/50 Hz/1φ		6 Amps/230V/50 Hz/1φ		16 Amps/230V/50 Hz/1φ	
Doorswitch											
Thermostat cut off for temperature overshoot											
Electrical Fuse and RCCB											
Yes											



### Stationary tray

Large adjustable Stationary Trays for incubating samples are available.



### Microplate / Well Plate Holders

Holders for Microplate / Wellplate can be easily fitted on a Standard Universal Platform.

### Stack stand

Up-to two ORBITER® units can be stacked saving Lab space.



Part No. LT-D/LE-D/LE-TT-D can be stacked with stackrack

## Optional Accessories

Parameters		All Models
Round bottom Flask Holder	50ml (49 nos in 1 Holder)	1
	500ml (9 nos in 1 Holder)	1
Plate Holder	Accommodate 4 no Micro plates, per plate holder	9
	Accommodate 2 no Deep Well plates, per plate holder	9
Test tube Holders (Fixed/Tiltable)	5ml, 7ml, 8ml (12 dia X 12 places)	✓
	12ml, 20ml, 15ml, 15ml Falcon - (16 dia X 12 places)	✓
	25ml, 27ml (20 dia X 12 places)	✓
	38ml, 55ml (25 dia X 12 places)	✓
	50ml Falcon (30 dia X 12 places)	✓
Spring Wire Rack <sup>1</sup>	Small Rack 50~100ml (Volumetric Flask) 50-500ml (Conical flask)	1
	Large Rack 250~500ml (Volumetric Flask) 1000-2000ml (Conical Flask)	1
Utility Tray with Anti slip rubber mat for low speed Application <sup>2</sup>		✓
Anodized Platform		✓
Number of Sticky mat with anodized tray <sup>3</sup> (200 mm X 200 mm)		4
Stationary Tray for Incubation <sup>4</sup>		✓
Stack Stand <sup>5</sup>		✓
Stacking and leveling Base		✓
Door Lock and key for user safety		✓

#### IMPORTANT

- Accessories shown in the image are for illustrative purpose only
- Customised options available upon request.**

## Clamp Capacity

Parameters		Tray Size 420 x 420 mm		Tray Size 460 x 460 mm	
Clamp Size	Flask Type	Universal Tray	Dedicated Tray	Universal Tray	Dedicated Tray
10 ml	Erlenmeyer flask	52	64	53	113
25 ml	Erlenmeyer flask	36	36	49	56
50 ml	Erlenmeyer flask	36	36	49	56
100 ml/125ml	Erlenmeyer flask	36	36	36	36
150ml	Erlenmeyer flask	25	25	25	25
250 ml/300ml	Erlenmeyer flask	25	25	25	25
500 ml	Erlenmeyer flask	16	16	16	16
1 L	Erlenmeyer flask	9	9	9	9
2 L	Erlenmeyer flask	4	4	6	6
2.5 L	Low form culture flask	-	-	1	4
3L/4 L	Erlenmeyer flask	-	-	4	2/4
5 L	Erlenmeyer flask	-	-	4	4
6 L	Erlenmeyer flask	-	-	2	2
2.8 L	Fernbach	1	1	4	4
2.8 L	Halfkine flask	1	1	1	1

Achievable maximum speeds is load dependent

#### Notes:

- Spring Wire Rack → Max. Speed 180 RPM for 420x420 tray, 120 RPM for 460x460 Tray
- Anti Slip rubber mat → Max. Speed 180 RPM- Speed is dependent on type of container and application / Max Temp up to 70°C
- Sticky Mat → Max. Speed 250 RPM / Temp range 16°C to 60°C  
(Anodized Platform without clamp-mounting holes to be ordered) holes
- a) Model LT/LE/LETT → Max. clamps size with 1 x stationary Tray is 500ml  
b) Model LT/LE/LETT → Max. clamps size with 2 x stationary Tray is 250ml  
c) Model LTBT/LEBT → Max. clamps size with 1 x stationary Tray is 4000ml  
d) Model LTBT/LEBT → Max. clamps size with 2 x stationary Tray is 1000ml

<sup>5</sup>Stack Stand Max.speed 25-250 Rpm (LT-D/LE-D, LETT-D)

## Accessories



### Sticky mat

For easy holding of Flasks, Bottles, Test tube holders without clamp accessories.



### Test tube holder

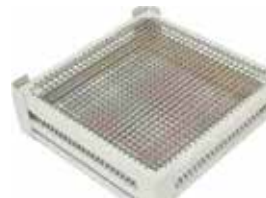
Test Tube Holders for low volume culture application of various sizes available.

Tiltable Test Tube Holders and SS Test Tube Holder options available.



### Dedicated Tray

Universal tray provides maximum flexibility for using a mix of different size of labware on a single platform.



### Spring wire rack

Two sizes of spring wire Rack for Conical & Volumetric flask available.



### Flask Holders

Single piece SS holders for standard erlenmeyer flasks. Leaves tied with spring for high speed applications

## Add-ons

Parameters		ORBITEK® LT( LAB STACKABLE INCUBATOR SHAKER )					
		ORBITEK® LE( LAB STACKABLE REFERIGERATED INCUBATOR SHAKER )					
		LT-D/ LE-D	LT-A	LT-TT-D/ LE-TT-D	LT-TT-A/LT-BT-A LE-TT-A/LE-BT-A	LT-TT-AH/LT-BT-AH LE-TT-AH/LE-BT-AH	LT-TT-BH/LT-BT-BH LE-TT-BH/LE-BT-BH
Photosynthetic Light Bank For Illuminations <sup>5</sup>	Lux	5000	5000	5000	5000	5000	5000
	μmoles/m <sup>2</sup> /sec	67.5	67.5	67.5	67.5	67.5	67.5
	Type 1-Fluorescent( Default ) Type 2 - LED	✓	✓	✓	✓	✓	✓
UV-C - lamp for decontamination		✓	✓	✓	✓	✓	✓
UV-B Lamp		✓	✓	✓	✓	✓	✓
Halogen Lamp		✓	✓	✓	✓	✓	✓
Chamber Visibility Lamp (Fluorescent( default )/LED)		✓	✓	✓	✓	✓	✓
Timer	Real Time Clock (hr:min)-00:00 to 23:59	✓	✓	✓	✓	✓	✓
	Cyclic Timer: 0.1s to 999.99 hr	✓	✓	✓	✓	✓	✓
Gas Purging		-	-	6 Ports X 4 Nos	6 Ports X 4 Nos	6 Ports X 4 Nos	6 Ports X 4 Nos
Humidity Measurement (%RH)		✓	✓	✓	✓	✓	✓
Data Logging for Speed & Temperature	Via Computer	-	✓	-	✓	✓	✓
	21 CFR part 11	-	✓	-	✓	-	-
	Printer output	-	-	-	-	✓	✓
RS 485/ Ethernet Provision for speed & Temperature		-	✓	-	✓	✓	✓
Audible/visual Alarm for Speed and temperature		✓	✓	✓	✓	✓	✓
Vibration Alarm		✓	✓	✓	✓	✓	✓
Overload Sensor/ Imbalance Sensor		-	-	-	-	✓	✓
Speed Deviation Alarm		-	-	-	-	✓	✓
Remote Alarm -50 mm distance		-	-	-	-	✓	✓
Hooter Alarm -100 mm distance		-	-	-	-	✓	✓
Door opened Alarm		-	-	-	-	✓	✓
Power failure Alarm		✓	✓	✓	✓	✓	✓
Timer Expiry Alarm		✓	✓	✓	✓	✓	✓

Notes:

<sup>5</sup>With Photosynthetic Light Bank (Illumination) following specification apply:

(a) Temperature for LTD Models: Ambient+ 7°C to 70°C Others: Ambient+ 10°C to 70°C

(b) Temperature Range for LE-D -10 to 70°C and other LE Models: 7°C to 70°C

\* All the specification / Model number in this catalogue subject to change without notice  
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\* Specification & Part No. are Subjected to Change



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