



**ORBITEK®**  
Range of Bio-equipment



**LAB PLUS**  
**INCUBATOR SHAKER**

4676 SERIES

[www.scigenicsbiotech.com](http://www.scigenicsbiotech.com)

## ABOUT US

SCIGENICS BIOTECH PVT. LTD. (SCIBIO) was setup in 1997 as a pioneering venture to address the instrumentation needs of Life Sciences and Biotechnology scientists in India. With an installed base of several thousand shakers and other lab products, our brand ORBITEK® is currently the leading Indian manufacturer.

ORBITEK® occupies pride of place in most leading labs in the country among multiple indigenous and imported suppliers.

## HIGHLIGHTS

The Lab Plus series of shakers are carefully designed to address critical applications for microbial cultivation – seed preparation in Bio Pharma industry, R&D involving large scale cultivation of micro-organisms, etc.

- ◉ Robust design ensuring consistent troublefree operation
- ◉ Ergonomically designed
- ◉ Smooth movement ensuring silent operation
- ◉ The cooling unit optimized for Indian conditions of higher ambient temperature

- ◉ Uniform temperature distribution throughout the chamber, ensuring homogenous growth of the cultures
- ◉ Various options of clamps and holders for different types of flasks, test tubes, etc.

## RECOGNITION

- ◉ ORBITEK® is now synonymous for shakers among the user scientists
- ◉ Largest installed base of shakers with prestigious customers - Pharmaceutical majors, reputed universities, research institutes
- ◉ ISO 9001:2015 Certification
- ◉ Government of India (DSIR) recognized in-house R&D unit
- ◉ Globally recognized CE marking

## MILESTONES

- ◉ Global installation presence including Japan, Malaysia, Saudi Arabia, Egypt, Europe, Finland, Bangladesh etc.
- ◉ Installations in USFDA certified facilities, meeting cGMP norms including 21CFR Part 11 compliance



# GENERAL FEATURES

## CONSTRUCTION

- ☑ Exterior MS powder coated with corrosion resistant SS 304 interior for easy cleaning & disinfection
- ☑ Large toughened double glazed glass viewing window for chamber visibility
- ☑ Universal platform to accommodate Erlenmeyer, round bottom, volumetric flasks, test tube holders, micro plate, deepwell plate holders, etc.
- ☑ Humidification tray for humidifying the chamber to reduce sample evaporation. Pluggable drains are provided to capture accidental spillage in the chamber
- ☑ Noiseless operation less than 55db (A)

## SHAKING

- ☑ Triple-eccentric counter balanced drive, mounted on permanently lubricated bearings to ensure non-deviated amplitude for uniform growth of culture
- ☑ Smooth start/stop cycle with programmed acceleration and deceleration circuit to prevent contamination due to cotton wetting, cell shear, etc.
- ☑ Large orbital diameter of 26mm / 50mm to suit different growth requirements

## TEMPERATURE

- ☑ Finned tubular air heater for better heat transfer
- ☑ Hermetically sealed CFC free refrigeration system for LE4676 series
- ☑ Gentle, forced air circulation inside the chamber ensures a good balance between uniform temperature distribution and minimal evaporative loss
- ☑ High grade insulation on all sides for uniform temperature maintenance and low energy consumption

- ☑ Wide temperature range ensures cultivation of vast type of microorganisms / applications

## SAFETY

- ☑ Thermostat cut-off for temperature over shoot
- ☑ Audible & visual alarms 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
- ☑ Side mounted refrigeration unit and electronic assembly to protect from any spillage or water condensation
- ☑ Abnormal Condition System Shutdown (ACSS) feature ensures additional system safety
- ☑ Safety stop switch available during door opening

## VERSATILE

- ☑ All SS 304 construction
- ☑ 21 CFR part II compliant system available to meet GMP requirements
- ☑ LED light bank with different color temperature, monochromatic light with specific wavelength, provision to linearly control intensity are available as add-on



# STACKABLE VERSION

## ROBUST CONSTRUCTION

- Stackable shaker has optimal foot print with robust structure for stable noiseless operation at full stack
- Double open door ensures ease of operation, reduced temperature disturbance while door opening
- Lift up tray for convenient changing of flasks / clamp
- Top Platform height is under 1.5m from floor level for the third stack for convenient accessibility
- Stationary (split) trays along the depth of inner chamber for incubation of culture plates/ petri plates
- Side mounted refrigeration unit / electronic assembly for ease of serviceability
- Stacking kits standard (for more than one unit)
- Available with a raiser for convenience of loading / unloading for single / double units



**MODEL: LE4676**  
**PART NO: LE4676-AH**

## TOP OPEN VERSION

- Top open models provide ease of loading / unloading of large flasks
- Maintenance friendly design
- Space saving and flexible design

**MODEL: LE4676**  
**PART NO: LE4676-T-A**



# CLASSIC Variants

## LT4676-A, LE4676-A

- Basic economical variant
- Robust industrial model suitable for continuous operations
- Soft touch key pad control for speed and temperature



**MODEL: LE4676**  
**PART NO: LE4676-A**

# TOUCH SCREEN Variants

## (LT4676-AH, LT4676-T-AH, LT4676-T-BH, LE4676-AH, LE4676-T-AH, LE4676-T-BH)

- Large LCD touch screen (screen color selectable) as Human Machine Interface
- Powerful Program Logic Controller (PLC) provides precise & expandable control system
- Multiple steps (20 steps) programmable control (user selectable) automatically changes parameters (up to 4) at timed intervals
- Optional auto ramping facilities of speed / temperature
- User friendly touch sensitive screen operation
- Audible (with muting facility) and visual alarm for deviation of speed (+/-5 RPM) and temperature (+/-1°C)
- 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



# Specification (stackable version)

Part No	LT4676-A	LT4676-AH	LT4676-BH	LE4676-A	LE4676-AH	LE4676-BH
Shaking Frequency <sup>1</sup> (26mm Throw)			25-400 RPM (Single) 25-400 RPM (Double) 25-400 RPM (Triple)			
Shaking Frequency (50mm Throw)			30-350 RPM (Single) 30-300 RPM (Double) 30-250 RPM (Triple)			
Deviation	± 1 RPM					
Diameter of Orbital Motion	26/ 50 mm (1 inch/2 inches)					
Drive	Brushless AC motor (BLAC)		Brushless DC motor (BLAC)	Brushless AC motor (BLAC)		Brushless DC motor (BLAC)
Temperature Range <sup>2,3</sup>	Ambient +7°C to 80°C			Ambient - 20°C to 80°C (min.set. 4°C < 26°C)		
Accuracy <sup>4</sup>	+ 0.1°C					
Uniformity <sup>4,5</sup>	± 1°C					
Sensor	Class PT 100					
Control	Microprocessor based PID	PLC with Inbuilt PID		Microprocessor based PID	PLC with Inbuilt PID	
Display	Digital LED	LCD		Digital LED	LCD	
Parameter setting	Soft Touch Keypad	HMI Touch Screen		Soft Touch Keypad	HMI Touch Screen	
Material of construction (MOC): Internal	Stainless steel (SS 304)					
Material of construction (MOC): External	MS Powder Coated / Stainless steel SS304 (optional)					
Universal platform Size ( W x D)	542 X 800 mm (21" x 31")					
Equipment Size Internal Dimensions (W x D x H)	930x685x505mm					
External Dimensions (W x D x H) per unit	1330x880x735mm					
Noise Level	Less than 55 db (A)					
Net Weight	190 kg			210 kg		
Chamber Capacity	260 Litre					
Erlenmeyer Flask Size & Range <sup>6</sup> (on Standard Universal Platform)	10ml to 6l					
Electricals	16 A, 1 phase, 230 V AC					
Safety Door safety	Door Switch for stopping the shaking when the door is opened					
Thermal Safety	Thermostat cut off for temperature overshoot					
Alarm - visual/ audio Temperature deviation	YES					
Alarm - visual/ audio Speed deviation	YES					
Electrical Safety	RCCB, VP Relay					
Spillage protection	YES					

## Notes

1. Achievable Maximum speeds depends on load
2. Permissible Ambient condition 23°C +/- 3°C
3. Minimum Settable Temperature : 4°C at an ambient of < 26°C
4. @37°C at an Ambient temperature <26°C

5. Uniformity Across the tray
  6. For details holding capacity- review accessories
  7. ( in 15 points(3plane)using thermowell put in sensor )
- All the specification /Model number in this catalogue subject to change without notice

# Specification Top Open

Part No	LT4676-T-A	LT4676-T-AH	LT4676-T-BH	LE4676-T-A	LE4676-T-AH	LE4676-T-BH
Diameter of Orbital Motion	26/ 50 mm (1 inch/2 inches)					
Shaking Frequency <sup>1</sup> (26mm Throw)	25-400 RPM					
Shaking Frequency (50mm Throw)	30-350 RPM					
Deviation	± 1 RPM					
Drive	Brushless AC motor (BLAC)		Brushless DC motor (BLAC)	Brushless AC motor (BLAC)		Brushless DC motor (BLAC)
Display	Digital LED	LCD		Digital LED		LCD
Speed changes via	Soft touch Keypad		HMI Touch Screen	Soft touch Keypad		HMI Touch Screen
Temperature Range <sup>3,2</sup>	Ambient +7°C to 80°C			Ambient - 20°C to 80°C		
Accuracy <sup>4</sup>	± 0.1°C					
Uniformity <sup>4,5</sup>	± 1°C					
Sensor	Pt 100					
Control	Microprocessor based PID		PLC with Inbuilt PID	Microprocessor based PID		PLC with Inbuilt PID
Display	Digital LED		LCD	Digital LED		LCD
temperature Change Via	Soft Touch Keypad		HMI Touch Screen	Soft Touch Keypad		HMI Touch Screen
Material of construction (MOC): Internal	Stainless steel (SS 304)					
Material of construction (MOC): External	MS Powder Coated / Stainless steel SS304 (optional)					
Universal platform Size ( W x D)	510 X 800 mm (21" x 31")					
Equipment Size Internal Dimension (W x D x H)	875 X 600 X 508 mm					
External Dimension (W x D x H) per unit	1205 X 750 X 1205 mm					
Noise Level	Less than 55 db(A)					
Net Weight	250kg		265 kg			
Chamber Capacity	260 Litre					
"Erlenmeyer Flask Size & Range (on standard Universal Platform)"	10mL to 6L					
Electricals	16 A, 1 phase, 230 VAC					
"Safety Standard Door safety "	Door Switch for stopping the shaking as the door is opened					
Thermal Safety	Thermostat cut off for temperature overshoot					
Electrical Safety	RCCB, VP Relay					
Spillage protection	YES					

## Notes

1. Achievable Maximum speeds dependent on load
2. Permissible Ambient condition 23°C +/- 3°C
3. Minimum Settable Temperature : 4°C at an ambient of < 26°C
4. @37°C at an Ambient temperature < 26°C
5. Uniformity Across the tray
6. For details holding capacity- review accessories

# LE4676/LE4676-T model are Refrigerated LT4676/LT4676 -T modles are Non - refrigerated

# LE4676/LT4676 - Stackable Shakers

# LE4676-T/LT4676-T-Floor mounted Trip open Version

All the specification /Model number in this catalogue subject to change without notice

# CELL CULTURE SHAKER



**MODEL: LT4676**  
**PART NO: LT4676-CC-AH**

- These shakers offer CO<sub>2</sub> control & humidity control, in addition to speed & temperature
- These shakers are carefully designed to address the criticality of cell cultivation - less vibration for shear sensitive application, non-condensing inner chamber to prevent contamination, excellent temperature uniformity across the chamber
- The applications include cultivation of mammalian cells, Stem cells, etc.,

Part No.	LT4676-CC-AH	LE4676-AS-AH
Shaking Frequency' (26mm Throw)	25-250 RPM 25-250 RPM 25-250 RPM	25-250 RPM 25-250 RPM 25-250 RPM
Frequency (50mm Throw)	30-250 RPM 30-250 RPM 30-250 RPM	30-250 RPM 30-250 RPM 30-250 RPM
Deviation	+1 RPM	+1 RPM
Diameter of Orbital Motion	26/50 mm (1inch/2inch)	26/50 mm (1inch/2inch)
Drive	Brushless AC motor (BLAC)	Brushless AC motor (BLAC)
Temperature Range <sup>3,2</sup>	30°C to 40°C	Ambient -20°C to 80°C
Accuracy <sup>4</sup>	+/- 0.1°C in 30°C to 40°C	+ 0.5°C
Uniformity <sup>4,5</sup>	+1°C	
Sensor	Class PT 100	Class PT 100
Control	PLC with Inbuilt PID	PLC with Inbuilt PID
CO <sub>2</sub> Range	0 to 10% with accuracy +/- 0.1% 10 to 15% with accuracy +/- 0.3% 15 to 20% with accuracy +/- 1.5%	NA
Accuracy	0.2% @ 5% to 7%	NA
Sensor	IR, NDIR	NA
Increment/ Decrement CO <sub>2</sub>	+/-0.10%	NA
Stability	Downtime from 5% to 4% 5 hrs (in power failure)	NA
Recovery time	<2 minutes to achieve set CO <sub>2</sub> for 30 sec. door opening	NA
O <sub>2</sub> Range	NA	0 to 21%
Accuracy	NA	+/- 0.1% @ 0%
Sensor	NA	IR
Increment/ Decrement CO <sub>2</sub>	NA	+/-0.1%

## NOTES

1. Achievable Maximum speeds dependent on load	2. Permissible Ambient condition 21°C +/-3°C	3. Minimum Settable Temperature: 4°C at an ambient of <26°C
--	---	---



# ANAEROBIC SHAKER

- These shakers provide an environment with controlled oxygen & humidity, in addition to temperature and speed
- Inter locked purging facility with commission cycle
- Pass box with viewing glass and air lock for sample entry and exit
- Suitable for growing organisms which are anaerobic/micro aerobic
- Research on Micro-organisms, clinical anaerobic pathogenic bacteria research, are some of the areas where these product can be used



**MODEL: LE4676**  
**PART NO: LE4676-AS-AH**

Part No.	LT4676-CC-AH	LE4676-AS-AH
Humidity Range	Above 85% @ 30°C to 40°C	Above 85% @ 30°C to 40°C
Accuracy	+/- 5%	+/- 5%
Increment/Decrement	1%	1%
Display	LCD	
Parameter setting	HMI Touch Screen	
Construction Material of construction (MOC): Internal	Stainless steel (SS 304)	Stainless steel (SS 304)
Construction Material of construction (MOC): External	MS Powder Coated / Stainless steel SS304 (optional)	MS Powder Coated / Stainless steel SS304 (optional)
Universal platform Size (WxD)	542 X 800 mm (21" x 31")	542 X 800 mm (21" x 31")
Equipment Size Internal Dimension (W x D x H)	930x685x505mm	1420 x 900 x 730
External Dimension (W x D x H) per unit	1330x880x735	1990 x 1200 x 1550
Noise Level	Less than 55 db(A)	
Net Weight	210 kg	520 kg
Chamber Capacity	260 Litre	850 Litre
Erlenmeyer Flask Size & Range (on standard Universal Platform)	10mL to 6L	
Electricals	16 A, 1 phase, 230 VAC	
Standard Safety Door safety	Door Switch for stopping the shaking as the door is opened	
Alarm - visual/audio Temperature deviation	YES	
Alarm - visual/audio Speed deviation	YES	
Alarm - visual/audio CO2 deviation	YES	-
Alarm - visual/audio humidity deviation	YES	
Alarm - visual/audio O2/pre mixed gas/N2 deviation	-	YES
Thermal Safety	Thermostat cut off for temperature overshoot	
Electrical Safety	RCCB, over Voltage protection	
Spillage protection	YES	

4. @37°C at an Ambient temperature <26°C

5. Uniformity Across the tray

6. For details holding capacity-review accessories

## Clamp Capacity

Parameters	All models		
	Clamps Size	Flasks Type	Universal Tray 542 X 800 mm / 500 X 800 mm
10ml	Conical Flask	74	145
25ml	Conical Flask	74	108
50ml	Conical Flask	70	108
100 ml/125ml	Conical Flask	60	80
150ml	Conical Flask	40	48
250ml/300ml	Conical Flask	40	48
500ml	Conical Flask	24	33
1L	Conical Flask	15	18
2L	Conical Flask	12	12
2.5L	Low form culture Flask	3	3
3L	Conical Flask	8	8
4L	Conical Flask	6	6
5L	Conical Flask	6	6
6L	Conical Flask	5	5
2.8L	Fernbach	6	6
2.8L	Haffkine Flask	3	3



### Stationary tray

Full width stationary tray for incubating samples are available



### Flask Holders

Single piece SS holder for standard erlenmeyer flasks. spring tied leaves for high speed applications

## Special Holder

Clamps Size	Flasks Type	Capacity
50ml (49 nos in 1 Holder)	Round Bottom Flask holder	1
500ml ( 9nos in1 Holder)		1
5000ml		3
4 no of micro plates (OR) 2 no of deep well plates accomodated in each plate holder	Plate holder	9
5ml, 7ml 8ml (12 dia x 12 Places )	Fixed and Tiltable Test Tube Holders	✓
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 - Small Rack 50 - 100ml (Volumetric Flask) 50- 500ml (Conical Flask)*	Spring Wire Rack1	1
Spring Wire Rack - Large Rack 250 - 500ml (Volumetric Flask) 1000 ~2000ml (Concial Flask)*		✓
Utility Tray with Anti slip rubber mat <sup>2</sup>		✓
Anodized Platform Tray		✓
Number of sticky mat with anodized Tray <sup>3</sup>		7
Stationary Trays for Incubation <sup>4</sup>		1 pair of Split Tray



### Microplate / Deep Well Plate Holders

Holders for microplate / wellplate can be easily fitted on a standard universal platform.

### IMPORTANT:

- Accessories shown in the image are illustrative and actual accessories are subject to change
- Special holders will be available upon request

### Notes :

- Spring wire rack --> Max. Speed 180 RPM
- Anti Slip Rubber Mat --> Max 180 RPM - Max Speed is dependent on type of container and application
- Sticky Mat --> Max. Speed 250 RPM / Temp range 16°C to 60°C
- With split trays 3 Nos of 5L only can accommodate

# Additional Accessories:

Parameters		LT4676-A	LT4676-AH LT4676-BH	LT4676-T-A	LT4676-T-AH LT4676-T-BH	LE4676-A	LE4676-AH LE4676-BH	LE4676-T-A	LE4676-T-AH LE4676-T-BH
Photosynthetic Light Bank for Illuminations <sup>1,2,3</sup> Factory Fitted	Lux	5000							
	μmoles/m <sup>2</sup> /sec	67.5							
	Lamp	LED							
	Temperature Range	Amb +10°C to 70°C				7°C to 70°C			
Max clamp capacity with light bank		2L		5L		2L		5L	
	UV-C lamp for decontamination	8w ✓							
UV-B lamp		8w ✓							
Full width Stationary Tray <sup>1</sup>	Max Qty	1		NIL		1		NIL	
	Max clamp capacity with FW St tray	2L		NA		2L		NA	
Timer Real Clock (hr.min) :0.0 to 23.59 (OR) Cyclic timer: 0.1s to 999hr	Speed	✓	Default	✓	Default	✓	Default	✓	Default
	Temperature	✓	Default	✓	Default	✓	Default	✓	Default
	Speed & Temperature	✓	Default	✓	Default	✓	Default	✓	Default
	Illumination	✓	Default	✓	Default	✓	Default	✓	Default
Gas purging Port	✓								
Gas Purging through manifold	✓								
Humidity Measurement ( % RH)	✓								
Data logging for Speed & Temperature	Via software, through RS485	✓							
	Printer output through RS232	-	✓	-	✓	-	✓	-	✓
	Through Ethernet port	-	✓	-	✓	-	✓	-	✓
Comprehensive Data logging	21 CFR part 11	✓	-	✓	-	✓	-	✓	-
Castor Wheel	✓								
Moisture Proof Internal Electrical Socket (6 amps)	✓								
Power failure alarm	✓								
Vibration alarms	✓								
Overload Sensor /Imbalance sensor	✓								
Remote Alarm - 50m Distance	-	✓	-	✓	-	✓	-	✓	
Timer expiry alarm	✓								
Door open alarm	✓								
Door Lock and Key for User safety	✓								
Raiser for Max 2 units	✓		-		✓		-		
Stacking Kit and Leveling Base	✓		-		✓		-		

## Notes

1. Temperature range varies with light intensity
2. Full width stationary tray not available with illumination

3. Higher intensity of illumination, linear control are available as customised versions
- (All the specifications /model numbers in this catalogue are subject to change without notice)



Spring Wire Rack



Universal Tray



Test tube Holder



Sticky Mat

**Address for communication:**  
#2/605, East Coast Road  
Neelankarai, Chennai 600 115  
[sales@scigenicsbiotech.com](mailto:sales@scigenicsbiotech.com)

**Customer Support:** +91 97909 39608/02  
**Service Support:** +91 97909 39603/12

[service@scigenicsbiotech.com](mailto:service@scigenicsbiotech.com)



**SCIGENICS BIOTECH  
PRIVATE LIMITED**

