



# TURBOLAB

Turbomolecular  
Pump Systems  
for researchers  
relying on vacuum



This TURBOLAB generation is built on one basic design platform with the opportunity to create various different variants.

Each version can be customized to individual needs regarding add-ons like vacuum measurement devices, a choice of accessories, e.g. valves and heaters.

# The smart high vacuum TURBOLAB systems are compact, fully assembled and ready-to-operate!

## Highlights

- Enhanced pump performance
- Compact mobile design
- Small foot print
- Easy to relocate pumps out and away from the frame
- Backlight display (control/monitoring/configuration)
- Monitored data like frequency, temperature, current or pressure are automatically stored to a data log file in the TURBOLAB. Users can easily view the log file with the TURBOLAB data viewer software tool which can be downloaded for free from our website. Alternatively, the last 512 data points can be viewed from the TURBOLAB data viewer in the web server
- Covering a wide span of applications with a full range of high vacuum and dry or wet forevacuum pumps
- Innovative turbostation offering dedicated ports for the connection of
  - six different accessories
  - two gauges
- Benchmark functionality, reliability and design
- Prepared for worldwide voltage coverage
- Excellent price-to-performance ratio



# TURBOLAB

## Compact Turbomolecular Pump Systems

One basic design ... various options



TURBOLAB 350 / 450



TURBOLAB 90



TURBOLAB 90 Cart

## Basic Equipment

### ■ Turbomolecular pump

TURBOVAC i models from 90 l/s to 450 l/s including frequency converter

### ■ Backing pump

Dry or oil-sealed,  
15 m<sup>3</sup>/h - 20 m<sup>3</sup>/h,  
24 V DC/110-230 V AC

### ■ Backlight Display

Every TURBOLAB comes with the Turbo Power Unit for control, configuration and monitoring of the pump system

### ■ Built-in support for accessories

- Purge
- Vent
- Air cooling
- Flange heater
- Two pressure gauges (1000 mbar to 1x10<sup>-9</sup> mbar)
- Foreline safety valve

### ■ Built-in Webserver

- Condition monitoring
- Data analysis
- Software updates
- Control, monitor and configure your TURBOLAB system

### ■ Easily relocate pump

away from the frame and on your chamber

### ■ Remote Control

- via the X1 Interface
- Configurable X1 Digital/Analog I/O
- Start/Stop
- Error
- Warning
- Analog Output

### ■ Wide range voltage coverage

# High-performance components

Turbomolecular pumps, backing pumps, gauges, accessories ...



## Typical Applications

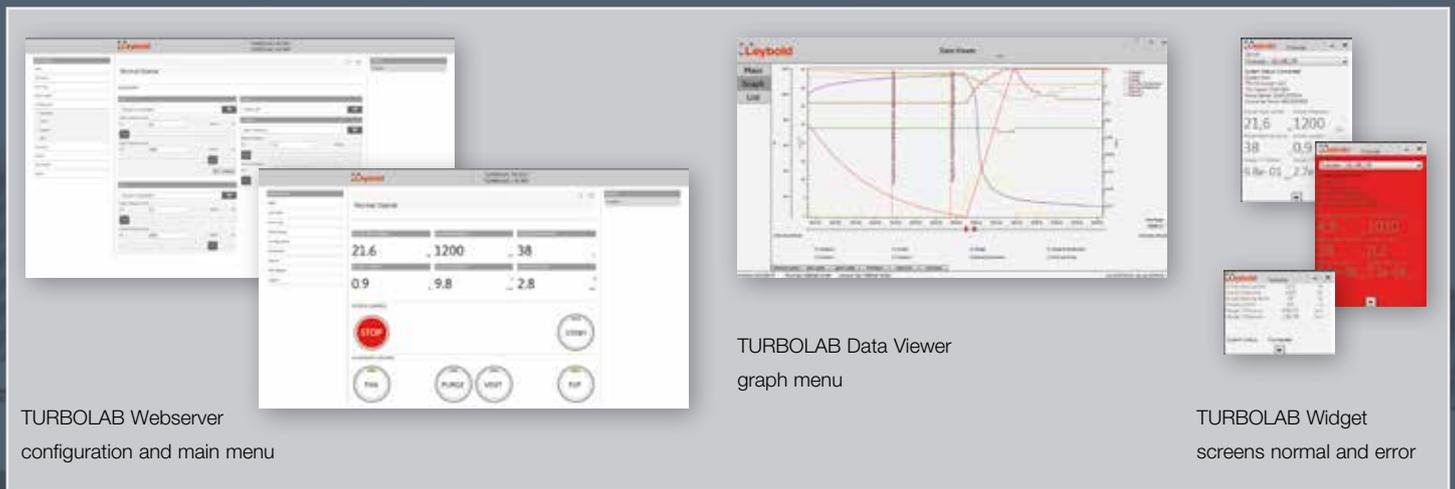
- Research and development
- High energy physics / accelerators
- High vacuum and ultra high vacuum systems
- Analytics
- Surface physics
- Industrial vacuum applications and coating processes

## Accessories / Options

- Opportunity to equip the TURBOLAB pump system with 6 accessories, like
  - Purge gas or venting valve
  - Air or water cooling unit
  - Flange heaterband
  - Safety valve
  - Adsorption trap
  - Exhaust filter
- Complete the system with two vacuum pressure gauges
  - High vacuum sensor PENNINGVAC PTR 90 N
  - Fore-vacuum sensor THERMOVAC TTR 91 N or THERMOVAC TTR 101 N
- Alternatively ISO-K or CF connection
- The Cart version comprises a baseplate, mounting column and castors
- Relocation kits available to operate the turbomolecular pump at your chamber

Whatever you desire  
**Plug & Play**

Control, monitor and configure your TURBOLAB via Webserver,



## Vacuum System Management

Data is critical for research, and data management can be challenging. Along with the TURBOLAB systems, new software tools are available to make system configuration, operation, monitoring and control extremely easy. With the TURBOLAB software tools you can manage your vacuum system(s) from your desk.

All critical parameters and conditions are automatically logged to an internal memory based on a default time interval, which can be adjusted on site with the log cycle parameter. The TURBOLAB software tools excel with intuitive operating menus and simple operation, thus providing a new and comfortable user experience.

Self-explanatory structured software  
**Clear and easy to handle**



## DataViewer and CMS Widget



## System Control, Monitoring and Data Analysis

Along with the TURBOLAB systems, new tools are available to make system configuration, operation, monitoring and control extremely easy.

- TURBOLAB Webserver  
Multi-platform browser instrument for configuration, operation, monitoring and control via PC or mobile devices
- DataViewer trend display  
of the log data on a PC (Windows)
- CMS Widget  
Central Management Software Control window for a permanent system condition status indication on a PC (Windows)

All critical parameters and conditions (like errors, warnings, frequency, temperature, etc.) are logged to an internal memory automatically based on a default time interval which you the user can change very easily.

A built-in Webserver allows remote controlling, monitoring and configuring your TURBOLAB system from your mobile device or computer using your browser.

The PC based software tool TURBOLAB Data Viewer analyzes the data log and event log files and monitors the status and the key parameters in real-time from multiple TURBOLAB systems.

The trend view displays the events of projected parameters and enables a quick diagnosis of your system events.

The software tool can be downloaded for free from the website.

# Technical Data

## Ordering Information

### Technical Data

Pump systems		TURBOLAB 90 / Cart	TURBOLAB 250 / Cart	TURBOLAB 350 / Cart	TURBOLAB 450 / Cart
High vacuum connection	DN	63 ISO-K or 63 CF	100 ISO-K or 100 CF	100 ISO-K or 100 CF	160 ISO-K or 160 CF
Forevacuum connection	DN	16 KF	16 KF	25 KF	25 KF
Pumping speed for N <sub>2</sub>	l/s	90	225	290	430
Ultimate pressure	ISO/CF mbar	8 x 10 <sup>-8</sup> / 5 x 10 <sup>-10</sup>	8 x 10 <sup>-8</sup> / 5 x 10 <sup>-10</sup>	8 x 10 <sup>-8</sup> / 5 x 10 <sup>-10</sup>	8 x 10 <sup>-8</sup> / 5 x 10 <sup>-10</sup>
Mains supply	V	110 / 230 ±10 %	110 / 230 ±10 %	110 / 230 ±10 %	110 / 230 ±10 %
Power consumption, max.	110 V / 230 V VA	1760 / 3680	1760 / 3680	1760 / 3680	1760 / 3680
Weight	ISO kg	20 / 100	20 / 100	35 / 110	35 / 110
Accessories		6	6	6	6
Gauges		2	2	2	2
System condition monitoring (CBM)		Internal condition monitoring			
Software		Access via the IP address of the TURBOLAB (no software installation required)			
Webserver		Multi-platform browser (InternetExplorer, Safari, Chrome, Fire Fox) for system configuration, control, operation, monitoring			
DataViewer		Analysing and assessing of the recorded system data. Display as graph and in a table (PC Windows)			
CMS Widget		Control window for permanent system condition monitoring (PC Windows)			

### Ordering Information

	TURBOLAB 90	TURBOLAB 250	TURBOLAB 350	TURBOLAB 450
<b>Version</b>	<b>Bench-top</b>	<b>Bench-top</b>	<b>Bench-top</b>	<b>Bench-top</b>
<b>Type of backing pump</b>	DN 63 ISO-K	DN 100 ISO-K	DN 100 ISO-K	DN 160 ISO-K
<b>Diaphragm pumps</b>				
DIVAC 3.0	501592V00001000	501592V08001000	501592V04001000	501592V06001000
<b>Version</b>	<b>Cart</b>	<b>Cart</b>	<b>Cart</b>	<b>Cart</b>
<b>Type of backing pump</b>	DN 63 ISO-K	DN 100 ISO-K	DN 100 ISO-K	DN 160 ISO-K
<b>Scroll pumps</b>				
SCROLLVAC SC 7 plus	501592V00021000	501592V08021000	501592V04021000	501592V06021000
SCROLLVAC SC 15 plus	501592V00041000	501592V08041000	501592V04041000	501592V06041000
<b>Rotary vane pumps</b>				
TRIVAC D 4 B	501592V00120000	501592V08120000	501592V04120000	501592V06120000
TRIVAC D 8 B	501592V00130000	501592V08130000	501592V04130000	501592V06130000
SOGEVAC SV 16 D	501592V00100000	501592V08100000	501592V04100000	501592V06100000
<b>Mains cables *</b>				
230 V, 5 m	800103V0030	800103V0030	800103V0030	800103V0030
110 V, 5 m	800103V0031	800103V0031	800103V0031	800103V0031
230 V, UK plug, 5 m	800103V0037	800103V0037	800103V0037	800103V0037
<b>Sensor cables **</b>				
Type A, 1.5 m	800103V0032	800103V0032	800103V0032	800103V0032
Type A, 5 m	12426	12426	12426	12426

All order numbers refer to wide range motors 230 V, 50/60 Hz. \* Mains cables must be ordered separately. \*\* Additional lengths or accessory cables on request. For detailed information on 110 V, 50/60 Hz voltage models, CF versions, and the full range of accessories, please refer to our general catalog. Visit our webshop [www.leyboldproducts.com](http://www.leyboldproducts.com).



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