

# TURBOLAB Turbomolecular Pump Systems

for researchers  
relying on vacuum



This new TURBOLAB generation is built on one basic design platform with the opportunity to create three 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 all new smart high vacuum TURBOLAB systems are compact, fully assembled and ready-to-operate!

### Highlights

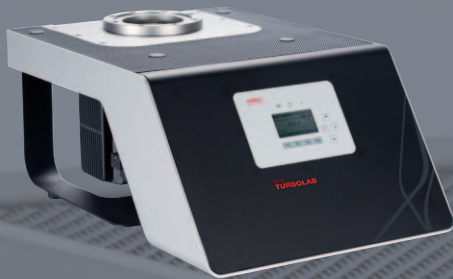
- Enhanced pump performance
- Compact mobile design
- Small foot print
- Easy to relocate pumps out and away from the frame
- Backlight display (control/monitoring/configuration)
- Monitored data like frequency, temperature, current or pressure are automatically stored to a data log file in the TURBOLAB. 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 more applications with a full range of high vacuum and dry or wet forevacuum pumps to cover more high vacuum applications
- Benchmark turbostation offering dedicated ports for the connection of
  - six different accessories
  - two gauges
- Benchmark functionality, reliability and design
- Prepared for worldwide voltage coverage
- Price-to-performance ratio



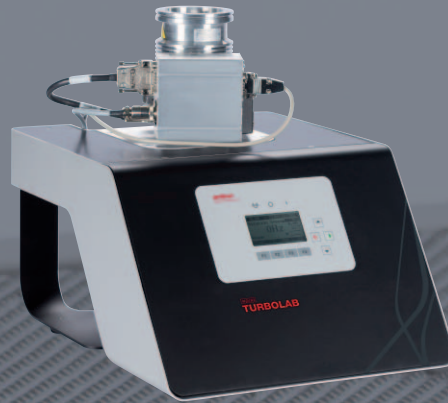
# TURBOLAB

## Compact Turbomolecular Pump Systems

One basic design ... three variants



TURBOLAB 350



TURBOLAB 80



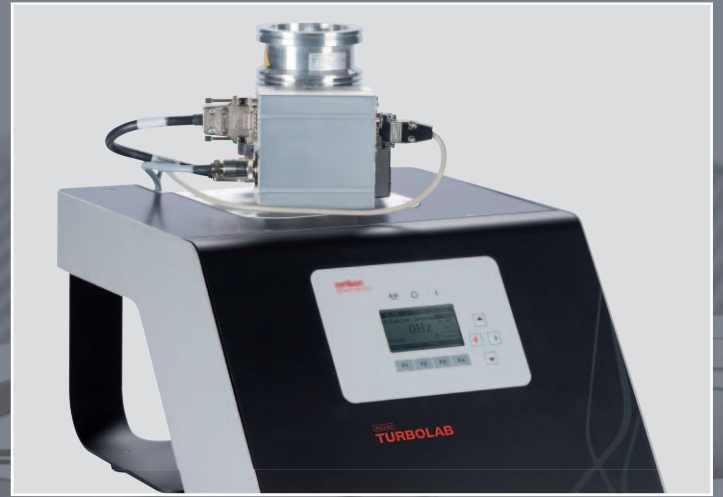
TURBOLAB 350 Cart

## Basic Equipment

- **Turbomolecular pump**  
TURBOVAC i models from 80 l/s to 450 l/s including frequency converter
- **Backing pump**  
Dry or oil-sealed,  
1 m<sup>3</sup>/h - 30 m<sup>3</sup>/h,  
24 V DC/110-230 V AC
- **Backlight Display**  
Every TURBOLAB comes with the Turbo Pressure Unit TPU for control, configuration and monitoring of the pump system
- **Built-in support for accessories**
  - Purge
  - Vent
  - Air or water cooling unit
  - Flange heaters
  - 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 Turbomolecular pumps & proven backing pumps



### 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
  - Foreline venting valve
  - SECUVAC safety valve
  - Adsorption trap
  - Exhaust filter
- Complete the system with 2 vacuum pressure gauges
  - High vacuum sensor PENNINGVAC PTR 90
  - Fore-vacuum sensor THERMOVAC TTR 91 or THERMOVAC TTR 101
- Alternatively ISO-K or CF connection
- The Cart version comprises a baseplate, mounting column, castors or a benchtop frame with rubber feet
- Relocation kits available to relocate the pumps away from the frame and onto your chamber

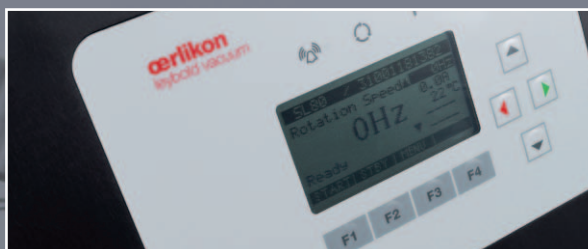
Whatever you desire  
**Plug & Play**

cerikon  
laboratory

VENT



including the all new smart TPU display.



## Typical Applications

- Analytical instrumentation
- Spectroscopy
- Tube manufacturing
- Beam guidance systems
- Micro balances
- Sputtering and evaporating systems
- Surface physics
- Laboratories

## Monitoring and Data Analysis

We understand data is critical for research and data management can be tricky, that is why we simplified this for you.

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.

The built-in Webserver allows you to analysis the conditions and events of your TURBOLAB system.

Opening the trend view on your laptop or mobile device will display the events otop of your trended parameter. This allows you to quickly compare the data surrounding your system events. This new way of looking at the data around the event helps to diagnosis conditions that effect your system.

# Technical Data

## Pump-down Times

### Technical Data

		TURBOLAB 80 / Cart	TURBOLAB 350 / Cart	TURBOLAB 450 / Cart
High vacuum connection	DN	63 ISO-K or 63 CF	100 ISO-K or 100 CF	160 ISO-K or 160 CF
Pumping speed for N <sub>2</sub>	l/s	65	290	430
Attainable ultimate pressure	ISO/CF mbar	10 <sup>-7</sup>	< 10 <sup>-8</sup> / < 10 <sup>-10</sup>	< 10 <sup>-8</sup> / < 10 <sup>-10</sup>
Mains supply	V	110 / 230 ±10 %	110 / 230 ±10 %	110 / 230 ±10 %
Power consumption, max.	VA	350	240	240
Weight	ISO kg	14.5	22	22
Accessories		6	6	6
Gauges		2	2	2
CBM			Internal Condition Monitoring	
Software			Internal Webserver (no software to install)	

### Pump-down Times

**Estimation** (hypothetically values)

Pump-down times from 1,000 mbar to 1 · 10<sup>-5</sup> mbar for vacuum chamber sizes of 10 liters, 100 liters or 1,000 liters.

Turbomolecular Pump	Backing Pump	Time [s] 10 l	Time [s] 100 l	Time [s] 1000 l
	<b>TURBOLAB 80H</b>			
TURBOVAC SL80	DIVAC 0,8T	583	5750	not suitable
	DIVAC 3.0	219	2150	not suitable
	<b>TURBOLAB 80H Cart</b>			
	DIVAC 3.8 HV3	87	833	8285
	SCROLLVAC SC5D	65	609	6050
	SCROLLVAC SC15D	34	289	2841
TURBOVAC SL80	SCROLLVAC SC30D	24	194	1856
	TRIVAC D4B	74	706	7015
	TRIVAC D8B	47	423	4188
	SOGEVAC SV16B	33	287	2815
	<b>TURBOLAB 350i</b>			
TURBOVAC 350i	DIVAC 3.0	207	2003	not suitable
	<b>TURBOLAB 350i Cart</b>			
	DIVAC 3.8 HV3	70	659	6540
	SCROLLVAC SC5D	52	484	4798
	SCROLLVAC SC15D	25	208	2036
TURBOVAC 350i	SCROLLVAC SC30D	17	133	1260
	TRIVAC D4B	67	622	6168
	TRIVAC D8B	37	334	3297
	SOGEVAC SV16B	24	204	1987

Turbomolecular Pump	Backing Pump	Time [s] 10 l	Time [s] 100 l	Time [s] 1000 l
	<b>TURBOLAB 450i</b>			
TURBOVAC 450i	DIVAC 3.0	205	1984	19740
	<b>TURBOLAB 450i Cart</b>			
	DIVAC 3.8 HV3	68	640	6347
	SCROLLVAC SC5D	50	465	4606
	SCROLLVAC SC15D	24	199	1952
TURBOVAC 450i	SCROLLVAC SC30D	16	124	1176
	TRIVAC D4B	66	615	6102
	TRIVAC D8B	36	325	3213
	SOGEVAC SV16B	24	196	1921

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