

Thermo Scientific VARIOKLAV® Modular Laboratory Autoclaves

Versatile, space-saving
performance for steam
sterilization applications



Thermo Scientific Varioklav Laboratory Autoclaves

Performance you can trust –
with the modularity to meet your needs

Thermo Scientific Varioklav laboratory autoclaves are designed and manufactured to exacting quality standards for safe, reproducible steam sterilization performance.

Performance You Can Trust

Ideally suited for laboratories where space is at a premium, our Varioklav range spans slimline floor model and compact tabletop autoclaves with capacities from 25 to 160 liters.

Units are fully equipped for routine sterilization tasks, and can be customized with a variety of modules to provide unmatched versatility for specialist processes and high-throughput applications.

- Ultra-flat steam generators minimize autoclave size
- Four standard programs for safe sterilization of liquids, culture media, equipment and waste
- Fast, optimized deaeration with steam flushing and up to eight pressure changes
- Fast heating and cool-down for rapid throughput

Space-Saving Steam Generators

Uniquely small Varioklav autoclaves are characterized by their compact size. They are equipped with ultra-flat steam generators that reduce external autoclave dimensions to a minimum.



Separation of the steam generator and sterilization chamber maximizes useful capacity and eliminates chamber fittings for easy cleaning – no heating elements and no feed water inside the chamber



The separate steam generator prevents contamination of feed water by condensate, waste or media



Custom Solutions for Steam Sterilization Tasks

Custom Solutions with Versatile Modules

Module options for our Varioklav range dramatically enhance applications versatility. Standard units can be equipped with many different modules, enabling:

- High-throughput sterilization of liquids and culture media
- Sterilization of solids and porous goods
- Specific programs for special applications available on demand
- GLP/GMP sterilization cycle traceability

Easy and Comfortable to Use

Every Varioklav autoclave is equipped with the same, easy-to-use control interface. All phases of the sterilization process run

automatically. Frequently-used programs can be initiated with a single button-press.

- Fast-close, easy-open lid/door lock mechanism operates at the touch of a button
- Pneumatic support lifts lid on floor model autoclaves
- Automatic water filling from water source or tank
- Low deck height on floor models for easier loading and unloading

Efficient, Reproducible Sterilization

Precise temperature control ensures reproducible cycles and delivers reliable sterilization without overheating or damage to media.

- Measurements from up to four temperature sensors are continuously compared to exact reference values
- Varioklav autoclave chambers can be pre-heated while the operator prepares the load, reducing the heating time of a cold unit

Safer by Design

Our Varioklav autoclaves are designed with utmost operator safety in mind. They comply with the DIN 58951-2 standard, and are certified to Category I or II under the European Pressure Equipment Directive. The pressure vessel is manufactured from 1.4571 stainless steel in accordance with DIN 17440 standards.



Secure operation

Steam pressure that impacts on lids and doors is evenly distributed across multiple points on the closing ring of the Quick Lock mechanism, ensuring maximum safety

Fail-safe operation

Two pressure sensors check for complete pressure release before Varioklav autoclaves can be opened



◀ Unique Fingertip Quick Lock

Safe, quick and convenient – our automatic lock mechanism allows you to open and close your Varioklav floor or tabletop autoclave at the touch of a button.

A pneumatic silicone seal secures the chamber for perfect pressure and vacuum tightness.

Thermo Scientific Varioklav Laboratory Autoclaves

Performance you can trust, with the modularity to meet your needs.



Outstanding capacity with fast loading and unloading

Thermo Scientific Varioklav floor model autoclaves

Slimline Varioklav floor model autoclaves accommodate large loads in high-capacity sterilization baskets.

- Chamber capacities of 75, 100, 135 and 160 L
- Deck heights as low as 750 mm for fast, easy loading and unloading
- Automatic exhaust steam condensation
- Pneumatic drain valve in chamber floor eliminates dead space, ensuring a sterile condensate
- Pneumatic lid lift for easy access
- Optional lifting hoist for heavy loads



Our Varioklav floor model autoclaves provide outstanding capacity for large loads ▶

Maximized chamber capacity

Varioklav floor model and tabletop autoclave design eliminates heating elements and feed water from the sterilization chamber, maximizing the useful capacity of the autoclave and enabling easy cleaning.



◀ A rack for our Varioklav 25 T tabletop autoclave provides adjustable loading levels for applications flexibility (see Accessories).

Outstanding capacity where space is limited

Thermo Scientific Varioklav tabletop autoclaves

Varioklav tabletop autoclaves offer chamber capacities of 75, 100, 135 and 160 L in a compact design.

- Easy to clean and maximized capacity, with no heating elements or feed water in the chamber
- Efficient loading capacity, up to 24 x 1 L bottles (135 T)
- Automatic exhaust steam condensation
- Low feed water consumption for high throughput



High capacity with tabletop convenience

Thermo Scientific Varioklav 25 T tabletop autoclave

Our ultra-compact Varioklav 25 T autoclave provides an exceptional 25 L capacity for the smallest of work areas.

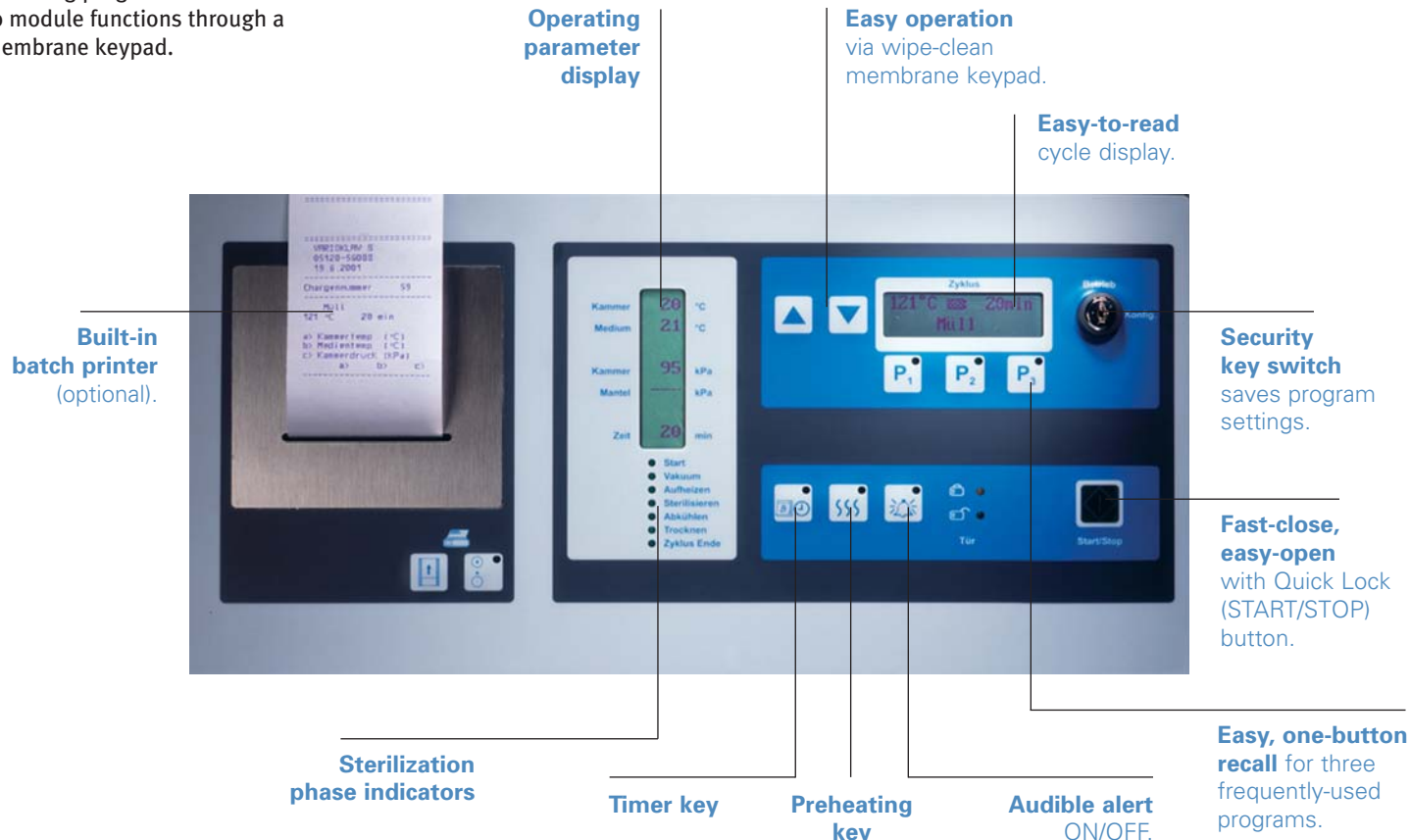
- Exceptionally small footprint of only 385 x 680 mm (W x D)
- Efficient loading capacity, up to 4 x 1 L bottles
- Connection to a feed water supply is not required
- Feed water reservoir enables up to eight runs
- Liquid (or media) temperature probe included



Simple, User-Friendly Microprocessor Control

Varioklav autoclaves are equipped with identical, easy-to-use controls. The same intuitive user interface is fitted as standard across the range, providing program control and access to module functions through a membrane keypad.

- Four standard sterilization programs for liquids, equipment and waste
- 16 program memory
- Safe shut-down in the event of program interruption
- Convenient delayed start mode



Technical Specifications and Ordering Information

Thermo Scientific Varioklav Floor Model and Tabletop Laboratory Autoclaves

Model (Catalog No.)	Electrical Supply	Chamber Net Volume (L)	Operating Temperature (°C)	Maximum Operating Pressure/Vacuum (Bar)	Reservoir Capacity (L)	Steam Generator Capacity/Total Volume (L)	Power Requirement/Heat Output (kW)	Ext. Dimensions W x D x H (mm)	Weight (kg)
Varioklav 75 S (51024301)	3N ~ 400 V /50Hz	75	98 - 134	4.0/-1	–	4.0/6.0	4.8/4.5	500 x 650 x 1000	140
Varioklav 100 S (51024301 + 51900820)	3N ~ 400 V /50Hz	100	98 – 134	4.0/-1	–	4.0/6.0	4.8/4.5	500 x 650 x 1200	160
Varioklav 135 S (51024302)	3N ~ 400 V /50Hz	135	98 - 134	4.0/-1	–	5.0/8.0	7.8/7.5	600 x 750 x 1050	170
Varioklav 160 S (51024302 + 51900830)	3N ~ 400 V /50Hz	160	98 - 134	4.0/-1	–	5.0/8.0	7.8/7.5	600 x 750 x 1150	195
Varioklav 25 T (51024306)	230 V /50Hz	25	98 - 134	3.0/-1	7.0	1.5/3.0	3.2/3.0	385 x 680 x 525	75
Varioklav 75 T (51024303)	3N ~ 400 V /50Hz	75	98 - 134	4.0/-1	–	4.0/6.0	4.8/4.5	540 x 810 x 780	150
Varioklav 100 T (51024303 + 51900820)	3N ~ 400 V /50Hz	100	98 – 134	4.0/-1	–	4.0/6.0	4.8/4.5	540 x 1010 x 780	170
Varioklav 135 T (51024304)	3N ~ 400 V /50Hz	135	98 - 134	4.0/-1	–	5.0/8.0	7.8/7.5	640 x 890 x 880	180
Varioklav 160 T (51024304 + 51900830)	3N ~ 400 V /50Hz	160	98 – 134	4.0/-1	–	5.0/8.0	7.8/7.5	640 x 990 x 880	205

Varioklav Module Options

Module options allow our Thermo Scientific Varioklav autoclaves to be configured for a variety of specialized sterilization tasks and process requirements.

fast cooling



High throughput liquid and culture media sterilization

Our fast cooling modules dramatically shorten autoclave cooling times, enabling greater throughput in batch processing applications.

- Cooling times are reduced to between 5 and 80 minutes, depending on procedure, vessel size and autoclave load

RM module – for sterilization of liquids in open vessels

- Integrated stainless steel water jacket provides cooling without reducing autoclave capacity
- Cooling times reduced by up to 40%
- Media temperature probe for precise control of sterilization time
- Ideal for thermally unstable media



RG module – for sterilization of liquids in hermetically-closed and open vessels

- Integrated stainless steel water jacket, ventilator fan and counter-pressure system for rapid, secure cooling of closed vessels
- Ultra-fast cooling times for open vessel sterilization
- Media temperature probe for precise control of sterilization time
- Ideal for thermally unstable media



Description	Catalog No.
RM Cooling Module	51900801
RG Cooling Module*	51900803

*Not available with Varioklav 25 T.

Varioklav Module Options

pre-vacuum



Sterilization of solids and porous material

Integrated pre-vacuum modules for Varioklav autoclaves ensure safe sterilization of porous materials and items that are difficult to deaerate.

Examples include:

- Equipment and materials with hollows or cavities
- Pipette tips in boxes
- Wrapped instruments
- Fabrics
- Tubes, syringes, pipettes

VF module – for thorough deaeration before sterilization

- Fractionated pre-vacuum cycle completely removes atmosphere to enhance steam penetration and improve sterilization quality
- Adjustable vacuum levels and pressure cycling for complete deaeration



VT module – prevents re-contamination after sterilization

- After-sterilization, deep vacuum drying with powerful double wall heating eliminates moisture to prevent re-contamination
- Chamber is uniformly heated from the outside, followed by sterile venting



Description	Catalog No.
VF Fractionated Pre-Vacuum Module* (including single vacuum program)	51900805
VT Fractionated Pre-Vacuum and Vacuum Drying Module*	51900807

*Not available with Varioklav 25 T.

Varioklav Module Options

*emission-free
sterilization*



Hazardous material sterilization

Our Varioklav autoclaves are available with exhaust-air filtration and condensate sterilization. This enables safe, emission-free sterilization of hazardous biological materials, including pathogens, infectious agents and genetically engineered samples. Both the external atmosphere and waste-water drainage system are protected from contamination.

- Sterile disposal of potentially infectious laboratory waste in Protection Classes 2 to 4
- Sterile disposal of material from level 2 to level 4 safety laboratories
- Safe sterilization of infectious material or pathogens

FA module – for safe sterilization of hazardous materials

- Aerosols contained in exhaust air are retained by an easy-to-exchange filter prior to sterilization
- Simultaneous sterilization of chamber contents, collected condensate and filter housing
- Short steam paths ensure complete sterilization
- Safety shut-down in the event of supply media failure or program termination before sterilization cycle



Description	Catalog No.
FA Exhaust-Air Filtration with Condensate Sterilization Module	51900809

Varioklav Module Options

*compliance
documentation*



Sterilization cycle traceability

Integrated printers for Varioklav autoclaves provide a hard copy of batch process parameters.

- Successfully documents sterilization and ensures regulatory compliance

Batch printer for GLP compliance

- Documents process steps, start/stop times, chamber/reference temperatures, chamber pressure, and any alert alarms
- Recommended for routine procedures and level 2 safety laboratories



Independent Measuring System (IMS) batch printer for GMP compliance

- Documents process steps, start/stop times, chamber/reference temperatures, chamber pressure, and any alert alarms
- Documents temperature and pressure data from independent reference sensors calibrated to ISO 9000 standards
- Recommended for demanding applications, pharmaceutical manufacturing and Protection Class 3 waste



Description	Catalog No.
GLP Batch Printer	51900810
GMP IMS Batch Printer*	51900811

*Not available with Varioklav 25 T.

Varioklav Module Options

enhanced versatility



Exact sterilization times

The media temperature-controlled timing module is recommended for sterilizing large liquid volumes or documenting reaction times.

- Suitable for thermally unstable media

Media Temperature Controlled Timing Module

- Timer-controlled sterilization times
- Flexible liquid sensor for reference vessel
- Target temperatures are reached more quickly
- Eliminates media overheating



Description	Catalog No.
Media Temperature Controlled Timing	51900818

Further Options

Description	Catalog No.
Standard-compliant validation duct for 6 PT 100 temperature sensors (not available for Varioklav 25 T)	51900826
Standard-compliant validation duct for 4 PT 100 temperature sensors (Varioklav 25 T only)	51900847
Steam pot program	51900812
Durham tubes (broth program), must be combined with RM or RG fast cooling module	51900813
Sterilization temperature increased to 140°C in saturated steam (all programs)	51900815



Accessories

Thermo Scientific Varioklav Floor Model and Tabletop Laboratory Autoclaves

Description	Dimensions Ø x H (mm)	Catalog No.
20 L condensate collector	–	50089353
20 L feed water tank	–	50095734
Magnetic stirrer* (with 1 stirring point, stirring bar and external control unit)	–	50107364
Lifting hoist (maximum lift 900 mm, maximum weight 35 kg)	–	50095875
Caster set for floor model autoclaves	–	51900851
Stand for Varioklav 75 T	–	50098202
Stand for Varioklav 135 T	–	50098207
Sterilization basket for Varioklav 135 S	485 x 320	50092114
Sterilization basket for Varioklav 135 S	485 x 200	50091748
Sterilization basket for Varioklav 135 S, with integrated drip tray	485 x 320	50092112
Intermediate tray for sterilization baskets for Varioklav 135 S	–	50090683
Metal basket for Varioklav 135 S	490 x 310	50099824
Metal basket with rotating cover for Varioklav 135 S	490 x 435	50095753
Sterilization basket for Varioklav 75 S	385 x 260	50091747
Sterilization basket for Varioklav 75 S, with integrated drip tray	385 x 260	50091196
Metal basket for Varioklav 75 S	390 x 280	50092106
Metal basket with rotating cover for Varioklav 75 S	380 x 260	50095759
Chamber insert tray with 1 metal basket for Varioklav 25 T	–	50091319
3 metal insert baskets for Varioklav 25 T	–	50089667

*Not available with Varioklav 25 T.



Loading Capacity Examples

Thermo Scientific Varioklav Floor Model and Tabletop Laboratory Autoclaves

Model	Round Flasks (500 ml)	Round Flasks (1000 ml)	Round Flasks (2000 ml)	Square Flasks (250 ml)	Square Flasks (500 ml)	Erlenmeyer Flasks (1000 ml)	Solids (kg)	Waste (kg)
Varioklav 135 S	63 – 66	30	16	140	66	24	≤ 30	≤ 30
Varioklav 75 S	26	16 – 18	8	80	28	10	≤ 25	≤ 25
Varioklav 135 T	52	21 – 28	14	100	52	14 – 15	≤ 30	≤ 30
Varioklav 75 T	21 – 28	14 – 16	8	32	21	8 – 9	≤ 25	≤ 25
Varioklav 25 T	5 – 6	4	–	14	12	3	≤ 8	≤ 5

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