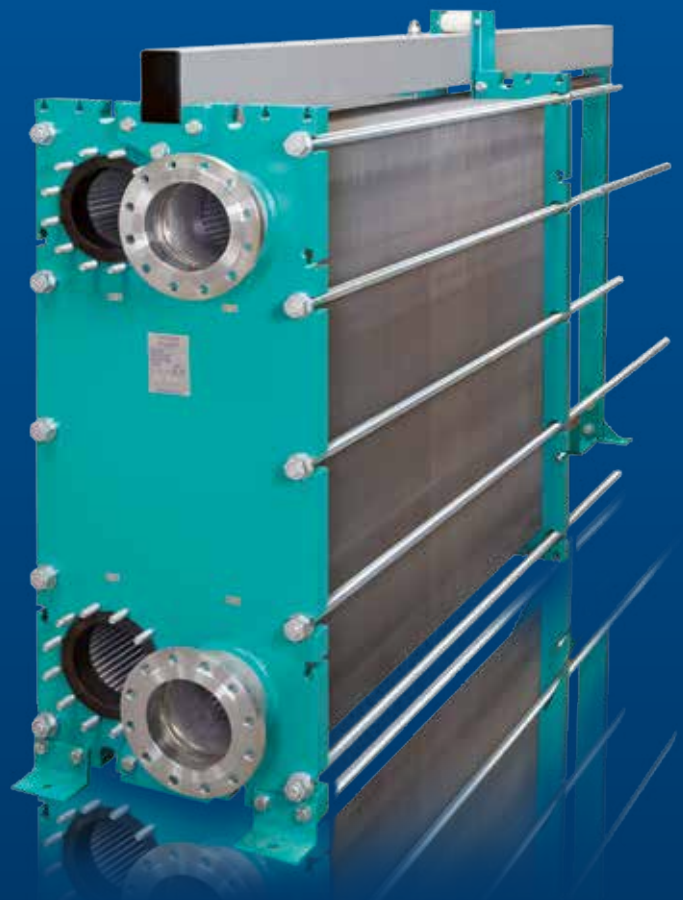


# thermolineVario

Plate heat exchangers

50 – 50.000 KW



Gasketed plates and laser welded modules for high flexibility.

# thermolineVario

Cooling foodstuffs, process media, rooms and buildings places particularly high demands on thermodynamic and hydraulic design which ultimately result in process safety.

thermowave plate heat exchangers from the thermolineVario product range are extremely flexible in design. This allows us to respond to the specific needs of our customers at all times.

## Connection variants

- Welding neck flange
- Stud bolts with lining
- Lapped flange with plain collar
- Threaded coupling

## Gaskets

- NBR
- EPDM
- Chloroprene
- Butyl
- FKM (Viton)
- FEPM
- HNBR

## Available accessories

- Stainless steel protection sheet
- Counter flange and screw
- Stainless steel drip tray
- Tightening bolts covers
- Hook wrench
- Disk spring packs



## Advantages

- Corrosion resistant
- Fail-safe operation
- Six possible gap types (combined)
- Compact design, low space requirements
- Capacity can be adjusted by adding or removing plates
- Excellent fouling resistance
- Easy to maintain
- Production based on a variety of structural specifications

## Energy-saving operation

- Efficient heat exchanger for small  $\Delta t_m$
- Ideal ratio between heat transfer and pressure drop

## Simple assembly and servicing

- Low weight
- Compact design
- Low maintenance
- Easy to clean

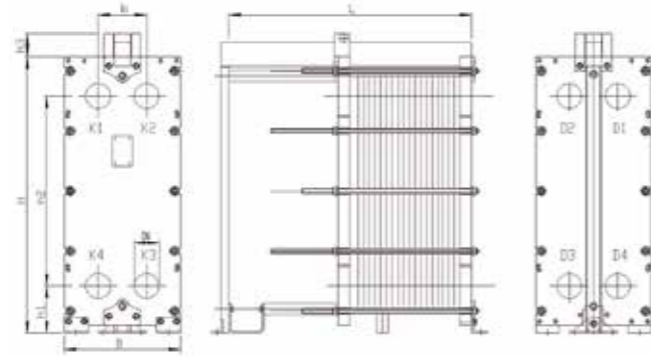
## Rack frames

- Painted carbon steel

# High flexibility and versatility

# Frame types

thermolineVario



## Technical data

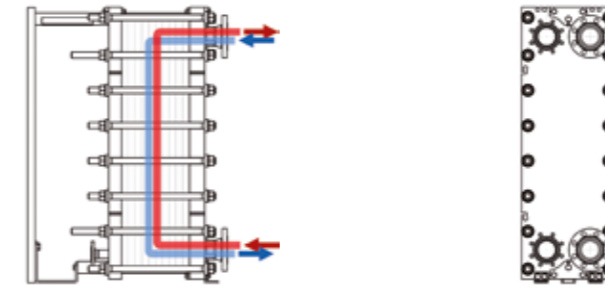
thermolineVario gasketed

TL	Frame type	H	B	L	h1	h2	h3	b	nominal size	bar	m <sup>2</sup>	kg	dm <sup>3</sup>
90	T	845	335	250-2000	152	565	0-135	125	DN 40	-1 / 30	43	120-600	0-46
		845	335		145	578		125					
150	T	1105	335	250-2000	152	825	0-135	125	DN 40	-1 / 30	70	160-830	0-70
		1105	335		145	838		125					
250	T	1140	550	500-4000	192	774	0-215	256	DN 100	-1 / 30	236	510-1820	0-256
400	T	1600	475	500-4000	206	1207	0-210	212	DN 80	-1 / 30	334	390-2100	0-347
500	T	1620	550	500-4000	192	1255	0-215	256	DN 100	-1 / 30	425	690-4160	0-425
650	K	1750	730	500-4000	323	1153	0-230	305	DN 200	-1 / 30	381	700-4700	0-496
		1750	730		297	1205		305					
850	K	2290	730	500-4000	323	1693	0-230	305	DN 200	-1 / 30	536	1000-7000	0-645
		2290	730		297	1745		305					
1100	K	2290	940	500-4000	335	1670	0-300	450	DN 250	-1 / 30	596	1900-9500	0-1116
1500	K	2834	940	500-4000	335	2214	0-300	450	DN 250	-1 / 30	833	2400-11780	0-1495

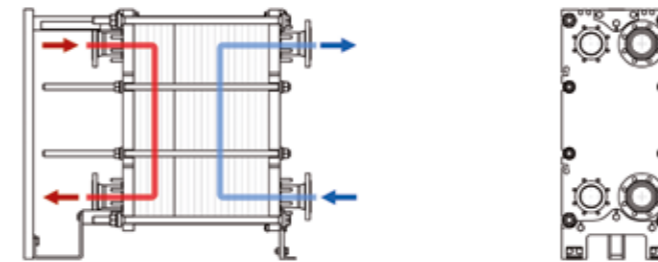
thermolineVario modul welded

TL	Frame type	H	B	L	h1	h2	h3	b	nominal size	bar	m <sup>2</sup>	kg	dm <sup>3</sup>
90	T	845	335	250-2000	152	565	0-135	125	DN 40	-1 / 30	52	120-600	0-55
		845	335		145	578		125					
150	T	1105	335	250-2000	152	825	0-135	125	DN 40	-1 / 30	83	160-830	0-83
		1105	335		145	838		125					
250	T	1140	550	500-4000	192	774	0-215	256	DN 100	-1 / 30	265	510-1820	0-287
500	T	1620	550	500-4000	192	1255	0-215	256	DN 100	-1 / 30	476	690-4160	0-477
650	K	1750	730	500-4000	323	1153	0-230	305	DN 200	-1 / 30	450	700-4700	0-585
		1750	730		297	1205		305					
850	K	2290	730	500-4000	323	1693	0-230	305	DN 200	-1 / 30	727	1000-7000	0-874
		2290	730		297	1745		305					
1100	K	2290	940	500-4000	335	1670	0-300	450	DN 250	-1 / 30	580	1900-9500	0-1086

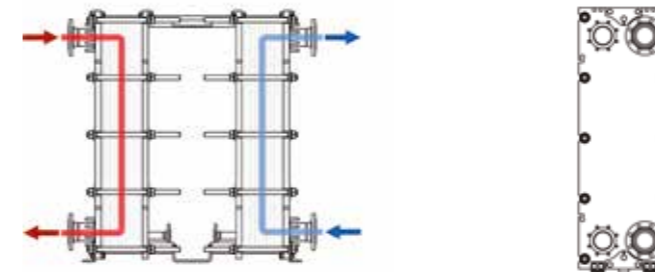
Standard



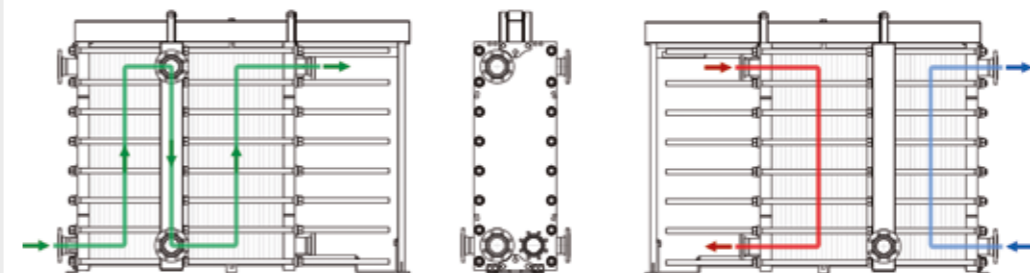
Two in one



Tandem

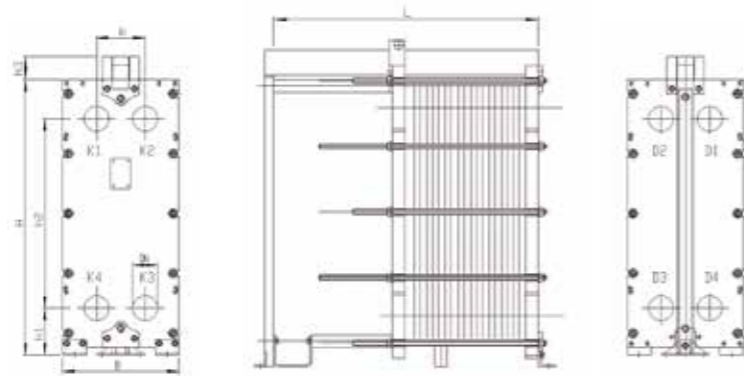


Multisection



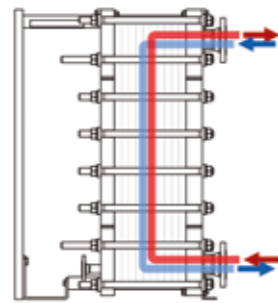
# Standardized apparatuses

## thermolineVario



## Frame type:

### Standard



## Technical data

TL	Frame type	H	B	L	h1	h2	b	nominal size	bar	m <sup>2</sup>	kg	dm <sup>3</sup>
TL0090	L	845	315	500-1000	152	565	125	DN 40	-1 / 25	21	380	44
TL0150	L	1105	315-325	500-1000	152	825	125	DN 40	-1 / 25	32	545	64
TL0400	L	1600	450-465	500-2000	206	1207	212	DN 80	-1 / 25	163	1970	340
TL0250	L	1140	520-535	500-2000	193	774	256	DN 100	-1 / 25	116	1660	250
TL0500	L	1620	520-550	500-2000	193	1255	256	DN 100	-1 / 25	207	2540	414
TL0650	L	1750	695-700	500-1750	297	1205	305	DN 150	-1 / 25	163	2750	424
				500-1750	323	1153	305	DN 200	-1 / 25			
TL0850	L	2290	695-700	500-1750	297	1745	305	DN 150	-1 / 25	263	3830	604
				500-1750	323	1693	305	DN 200	-1 / 25			

# Variety of materials for every application

## Plate types:

### StandardLine plates:

- Thermodynamically soft pattern
- High flow rates
- Low pressure drop
- Wide range of applications
- Also suitable for viscous fluids and shear-sensitive media
- Gentle treatment of products
- Corrugation depths from 3.5 to 4.0 mm

### PowerLine plates:

- Thermodynamically hard pattern
- Very high heat transfer coefficients
- High thermal efficiency
- Low filling volume
- Suitable for homogeneous and low viscosity fluids
- Corrugation depths from 2.0 to 2.5 mm

### PS modules:

- Semi-welded modules comprising a PowerLine and a StandardLine plate
- Combines the advantages of both corrugation structures
- Extends the range of applications
- Reduced surfaces, lower costs and filling volumes

A combination of different plates is also possible for our semi-welded modules. This means a perfect adaption to our customers' needs in terms of heat transfer and pressure drop. Smoother surfaces, more attractive prices and lower hold-up volumes ensure cost efficiency and process optimization.



## Your applications at a glance

Product	Application	Media	
thermolineVario		Refrigerant	Coolant
	Evaporating Condensation Desuperheating Oil Cooling Cooling Heating System Separation Free Cooling Heat Recovery District Cooling District Heating	NH <sub>3</sub> CO <sub>2</sub> Propan R22 R134A R404A R407C R502 R507  And other synthetic refrigerants	Water Oil Ethylene glycol Propylene glycol NaCl CaCl <sub>2</sub> Pekasol Tyfoxit Tyfocor Dowcal Tempering

## Tailored – to suit your requirements

We have developed the special TLC (thermoline Calculator) software so that you can custom-design your thermoline plate heat exchangers. Our software is developed continuously so that we can meet the ever-changing market demands and integrate new products.

A precise thermodynamic and hydraulic calculation is performed taking into account the selected media. Having selected the ideal device, the TLC generates a datasheet for you with technical data, dimensions, weights and prices.

### Our TLC – Your advantages:

- TÜV-certified design program
- Precise thermodynamic calculation, even with critical media
- High-performance module for designing multi-section machines
- Extremely reliable design
- 5 languages (German, English, French, Polish, Russian)
- Current gross prices and delivery times available
- Application-specific connection assignments



## References

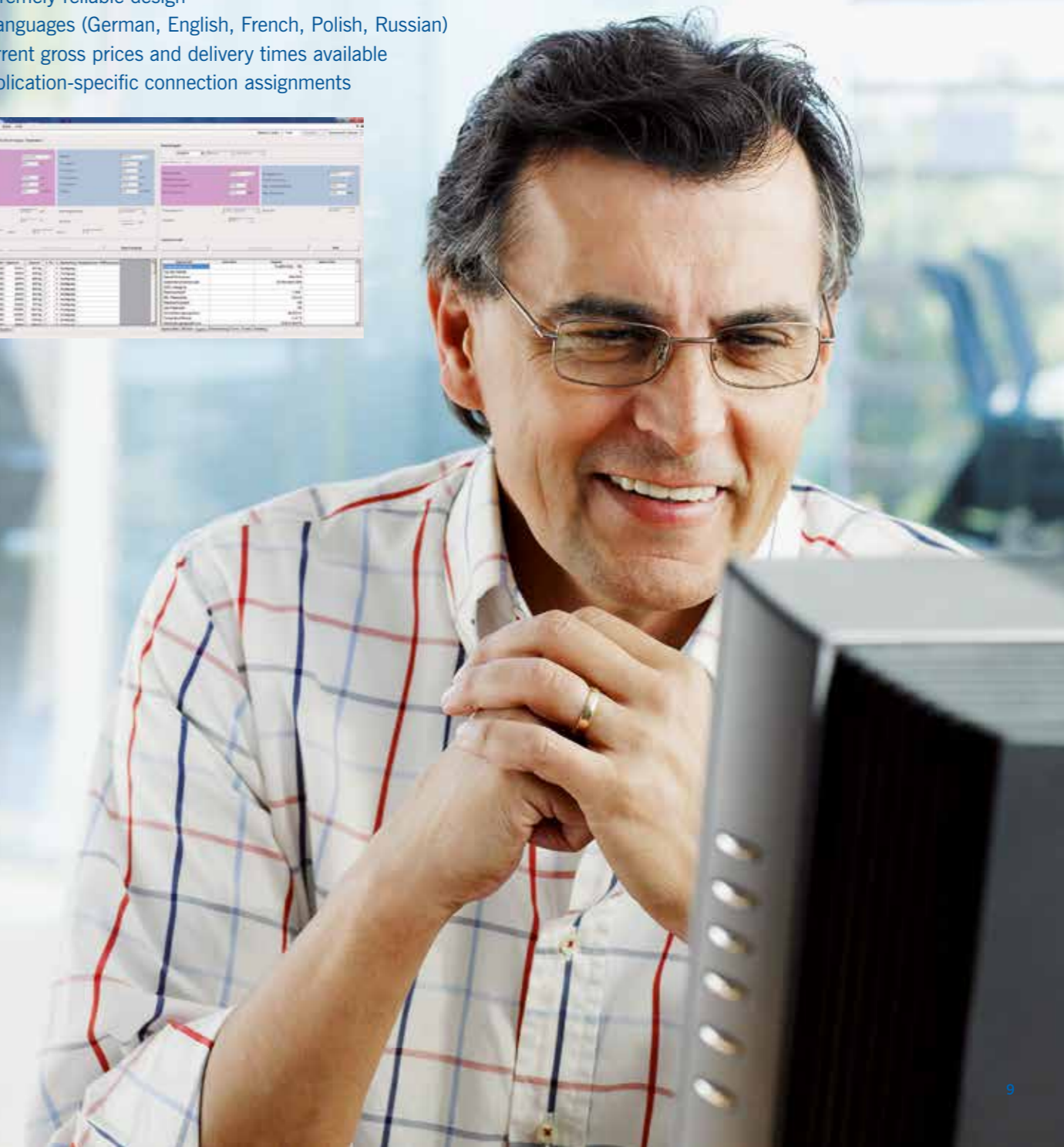
Siemens Tulip Oil



Cooperl



Verbio AG



## Trust-enhancing service

International availability not only applies to our plate heat exchangers, but also to our service. A motivated team, fast response times and proven cooperation with our international partners ensure an expert, comprehensive and reliable service on your doorstep.

An expert team of service technicians and skilled professionals is at your service. Fast availability of spare parts, individual consulting as well as a comprehensive service in the area of returns and warranty assures you of reliable assistance for any eventuality.



### Our service – Your advantage:

- All-round support for customers
- Comprehensive and individual customer consultancy
- All common spare parts in stock
- Regular servicing on request (service contracts)
- Option of on-site assembly
- Reconditioning (replacement of gaskets and cleaning of plates)
- Fast delivery of spare parts
- Flexible planning to ensure optimum maintenance of existing systems by adapting to new operating conditions while ensuring cost-effectiveness
- Expert installation with rapid availability of spare parts
- Warranty on repairs

You can reach our service team at +49 34651/418 18 or +49 800 84376698 or send an e-mail stating the manufacturing number to [service@thermowave.de](mailto:service@thermowave.de).



# Our advantages at a glance

## Material selection



We offer a wide range of standard and special materials for our plates, e.g. titanium (GR1) and SMO254. In addition, thermowave offers you different material thicknesses (0.5/0.6/0.8 mm).

## Gaskets



Our gaskets come in different materials: NBR, EPDM, FKM (Viton). It goes without saying that these gaskets are certified in line with food safety standards and have an FDA approval.

## Connection variants



We can offer you a variety of connection variants and thereby guarantee you perfect custom-fitting of your plate heat exchanger to your individual application needs.

## Testing



thermowave plate heat exchangers are continuously tested using different procedures such as dye penetrant tests, pressure tests and vacuum tests of the modules.

## Precision



We can offer you the most modern systems and top-class production technologies. Our 12,000 t plate press (3 cylinders) and the 2.5 D-CNC-CO<sub>2</sub> laser-welding machine with 6 kW for laser-welding and laser-cutting guarantee optimal precision and flexibility.

## Trust enhancing service



Our service team is on hand supporting you over the entire life-time of the plate heat exchanger – offering fast, expert and reliable advice.

**thermowave Gesellschaft  
für Wärmetechnik mbH**  
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06536 BERGA  
GERMANY

[www.thermowave.eu](http://www.thermowave.eu)



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