

Compact cooling water chiller and heat exchanger in 19" rack housing for laser cooling



INDUSTRIAL COOLING AND HEATING



Industrial cooling and heating.

Partner of the industry for over 45 years.

Since 1971 **DELTATHERM®** has belonged to **Hirmer GmbH**, a family business with its headquarters in Much near Cologne, one of the leading German manufacturers of cooling and temperature control systems. In three plants, 120 employees produce and distribute about 10,000 chillers, temperature control units, heating and cooling equipment and cooling components per year. All plants are located in the greater Cologne area. **DELTATHERM®** has a plant of its own for manufacturing casings and cabinets. We also have our own software development and build our own control electronics. Working closely together with our customers, our engineers are happy to develop special solutions and individual designs. 120 service partners support our plant customer service in 60 countries on 6 continents. We always have 95% of all replacement parts in stock, ready for dispatch within 24 hours. Quality, process safety, ease of maintenance and user-friendliness are our top priorities.

The safety of your production plants and of the production process are, to a large extent, dependent upon how well and how reliably your processes are temperature-controlled or cooled. At **DELTATHERM®**, qualified specialists - from trained tradespeople to master craftsmen and engineers - ensure the optimal mixture of planning, project engineering, diligent manufacturing methods and thorough quality control. Our planning and construction department, the building of our own control electronics and software development as well as our own plant for metal working all ensure that we have almost the entire vertical range of manufacture for temperature control units in-house. Purchased components such as pumps, valves, relays etc. are acquired from market-leading or renowned manufacturers.

All devices and systems are subject to a comprehensive functional test before dispatch. Because we are fully aware of what a plant standstill and the resulting production downtimes can cost our customers, we offer:

- Global plant service
- Service hotline to our experts, in German and English
- All standard components in stock and available globally in the shortest time by express mail
- Replacement part availability > 95%
- More than 120 service partners with locations on 6 continents – in Europe, North America, South America, Africa, Asia and Australia
- 24-hour online service, through which we can check and maintain your systems
- Ensuring the productivity of your **DELTATHERM®** machines

■ Made
■ in
■ Germany



„We focus on only one thing: customer satisfaction. We achieve satisfaction through our high product quality, permanently available service and the highest level of flexibility, through which we find individual solutions for all requirements. And we live out this claim - every day, for over 45 years.“

Sascha and Mario Hirmer
Managing Directors



19 inch racks of the LE 19 series

Specially designed as rack cooler for laser cooling with a temperature stability of up to ± 0.1 K in the power range from 150 to 3,000 watts.

The high-performance air- or water-cooled 19-inch rack cooling units of the LE 19 series in the power range from 150 to 3,000 watts not only increase productivity and lower production costs, but also impress with their longevity and guarantee excellent laser performance. Excess heat from the laser is removed by targeted cooling with cold water from the system. LE 19 rack cooling units have generously dimensioned components and are extremely efficient.

For ALL existing laser systems by default as well as special devices.

Short specification of the standard equipment LE 19

- Eco-friendly and energy-saving compact unit
- 19" rack unit, completely covered, 150 to 3,000 watts, air-cooled, for indoor installation
- 19" construction group in galvanised sheet steel, air intake at the front side, air outlet to the rear
- Wired ready for connection, with all switching, control and monitoring devices and electronic temperature regulator with digital target and actual value display
- Fault and monitoring signals led to a 9 pin D-SUB connector
- Cold water circuit with expansion tank
- Powerful centrifugal pump
- Floater switch for level monitoring
- Optical level indicator
- Connection for filling and emptying
- Potential-free collective fault on D-SUB
- Fully hermetic, low-noise compressor with motor protection, vibration-damped
- Condenser with axial fan
- Evaporators adapted to the field of application
- Cooling circuit completely factory-assembled with all necessary cooling system components
- Environmentally friendly and CFC free refrigerant
- Low GWP refrigerant
- Condenser with copper tubes and pressed aluminium lamellae
- Each device undergoes a performance test at the factory
- CE-, RoHS- and REACH-compliant
- Refrigeration technology designed according to DIN EN 378 part 2
- Electronics designed according to DIN EN 60204
- Easy operation and maintenance

Available options LE 19

- Water-cooled version
- Temperature stability ± 0.2 K
- Water-carrying parts made of stainless steel or plasticiser-free plastic
- Reinforced pump / pump pressure up to 5 bar
- Ion exchanger in the bypass
- Filter in the water circuit
- Wire marking
- Overflow valve
- Gate valves in flow and return
- Water inflow temperatures up to 40 °C
- Heavy-duty connector (e. g. Harting)
- Customer-specific design
- Heating for low temperatures
- Flow monitoring
- Conductivity measurement with / without regulation
- Automatic filling unit
- Maintenance timer
- RS 485, MOD bus, Profibus, Profinet interfaces
- External on/off switch
- Special voltages and frequencies (50/60 Hz)
- Limit temperature monitoring
- Differential temperature regulation
- External temperature sensor
- Painted housing

Cooling water chiller in the 19" housing

Series type LE 19		LE 03.4	LE 05.4	LE 10.4	LE 15.4	LE 20.4	LE 25.4	LE 30.4
Cooling capacity	watt	300	500	1000	1500	2000	2500	3000
Water inflow temperature	°C	20	20	20	20	20	20	20
Air capacity	m ³ /h	450	450	450	1000	1000	1000	1000
Pump capacity	l/min	3	3	3	10	10	10	10
Pump drive capacity	watt	150	150	150	500	500	500	500
Pump pressure	bar	3	3	3	3	3	3	3
Tank contents	litre	2	2	2	4	4	4	4
Water connections	inch (")	3/8	3/8	3/8	1/2	1/2	1/2	1/2
Width (W)	mm 19"	480 19"	480 19"	480 19"	480 19"	480 19"	480 19"	480 19"
Depth (D) (without connections)	mm	550	550	550	550	550	550	550
Total height (H)	mm	270 6 HE	270 6 HE	270 6 HE	400 9 HE	400 9 HE	400 9 HE	400 9 HE
Empty weight about	kg	45	47	50	60	65	70	80
Mains voltage		230 Volt / 50 Hz						

Water temperature range from +10 °C to +25 °C
 Cooling capacity based on +32 °C ambient temperature



19 inch racks of the heat exchanger (WT 19)

Specially designed as rack cooler for laser cooling with a temperature stability of up to ± 0.1 K in the power range from 150 to 10,000 watts.

A heat exchanger separates the primary circuit (to the systems to be cooled) from the secondary circuit (contaminated water). Media other than water (such as acids, lye, oil, DI water, etc.) can also be cooled in this manner.

LE 19 rack cooling units have generously dimensioned components and are extremely efficient.

For ALL existing laser systems by default as well as special devices.

Short specification of the standard equipment WT 19

- Eco-friendly and energy-saving compact unit
- 19" rack unit, completely covered, 150 to 10,000 watts, for indoor installation
- 19" construction group in galvanised sheet steel
- Wired ready for connection, with all switching, control and monitoring devices and electronic temperature regulator with digital target and actual value display
- Fault and monitoring signals led to a 9 pin D-SUB connector
- Copper brazed plate heat exchanger for cooling the process heat
- Solenoid valve on the cooling water side for controlling the medium temperature
- Dirt trap in the external cooling water inlet
- Medium circuit with PE storage tank
- Powerful centrifugal pump
- Floater switch for level monitoring
- Optical level indicator
- Connection for filling and emptying
- Potential-free collective fault on D-SUB
- Each device undergoes a performance test at the factory
- CE-, RoHS- and REACH-compliant
- Refrigeration technology designed according to DIN EN 378 part 2
- Electronics designed according to DIN EN 60204
- Easy operation and maintenance

Available options WT 19

- Temperature stability ± 0.2 K
- Water-carrying parts made of stainless steel or plasticiser-free plastic
- Reinforced pump / pump pressure up to 5 bar
- Ion exchanger in the bypass
- Filter in the water circuit
- Wire marking
- Overflow valve
- Gate valves in flow and return
- Water inflow temperatures up to 40 °C
- Heavy-duty connector (e.g. Harting)
- Customer-specific design
- Heating for low temperatures
- Flow monitoring
- Conductivity measurement with / without regulation
- Automatic filling unit
- Maintenance timer
- RS 485, MOD bus, Profibus, Profinet interfaces
- External on/off switch
- Special voltages and frequencies (50/60 Hz)
- Limit temperature monitoring
- Differential temperature regulation
- External temperature sensor
- Painted housing

Heat exchanger group in the 19" housing

Series type WT 19		WT 1	WT 3	WT 5	WT 7	WT 10
Cooling capacity	watt	200 - 1000	3000	5000	7000	10000
Water inflow temperature	°C	20	20	20	20	20
Required cooling water temperature	°C	15	15	15	15	15
Required amount of cooling water	l/min	3	9	15	21	29
Pump capacity	l/min	3	10	20	25	30
Pump drive capacity	watt	330	550	900	900	900
Pump pressure	bar	3	3	3	2,8	2,6
Tank contents	litre	2	2	4	4	4
Water connections	inch (")	3/8	1/2	3/4	1	1
Width (W)	mm	480 19"	480 19"	480 19"	480 19"	480 19"
Depth (D) (without connections)	mm	550	550	550	550	550
Total height (H)	mm	270 6 HE	270 6 HE	400 9 HE	400 9 HE	400 9 HE
Empty weight about	kg	22	25	30	36	46
Mains voltage	230 Volt / 50 Hz					

Temperature range from +20 °C to +40 °C

Cooling capacity based on +15 °C cooling water temperature

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Further products from our product range



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Dry and hybrid coolers for water, oil
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Rack chillers in the power range from
0.15 to 3 kW cooling capacity; as
heat exchanger up to 10 kW



Industrial cooling machines for
water, oil and emulsion from
0.2 to 5,000 kW cooling capacity



Temperature control systems
for water up to 160 °C and
oil up to 350 °C



Immersion chillers for water, oil
and emulsion from 1.7 to 115 kW
cooling capacity

Technical modifications and errors reserved.

