




Table of Contents

GENERAL INFORMATION

Our company	4
The Peltier technology	5
Product overview	7
Individual solutions	9

PRODUCT PORTFOLIO

Laboratory- and process technology	12
Circulation thermostats 	18
LABChill Benchtop	20
PROChill 19" 4 HU Rack Unit	30
Accessories circulation thermostats	40
Calibration thermostats	42
Ice point thermostats	44
Peltier modules	52
References	67

Our company

DR. NEUMANN Peltier-Technik is your reliable partner for thermoelectric solutions

In our wide range of products you will find innovative refrigerant-free cooling solutions for housings, control cabinets and the laboratory area, which are exactly tailored to your requirements. No matter in which field of application you are active, we produce individually manufactured cooling units according to your requirements.

Our enclosure coolers, thermostats and thermoelectric products have earned an excellent reputation for their outstanding quality. Customers from all over the world appreciate the effectiveness and innovation of our cooling and temperature control units. With many years of experience and expertise, our engineers are ready to assist you in finding the ideal solution for your specific application.

Do not hesitate to contact us and let our team of experts advise you. We look forward to understanding your individual requirements and providing you with customized solutions. DR. NEUMANN Peltier-Technik - your trusted partner for first-class thermoelectric cooling solutions.



Quality comes first at Dr. NEUMANN Peltier-Technik

For this reason, we have undergone various quality certifications, which confirm that our work processes meet strict quality standards and are continuously monitored and improved.



We are proud that our products are „Made in Germany“. This means that we rely on German engineering, precision and reliability in the manufacture of our cooling units. Our manufacturing facility in Germany allows us to have tight control over the entire manufacturing process and ensure that our customers receive top quality products.

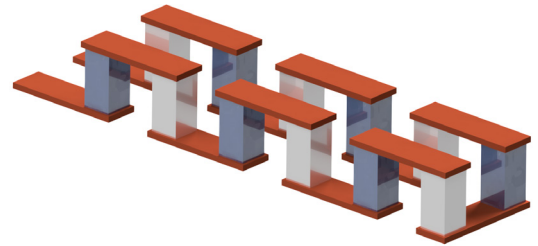


With our high quality and certified products manufactured in Germany, we offer you the assurance that you will receive first-class thermoelectric solutions. Put your trust in DR. NEUMANN Peltier technology to meet your requirements for quality, reliability and efficiency.

The Peltier technology

What are the advantages of Peltier technology and what are the differences to conventional compressor coolers?

Compared to conventional compressor chillers, Peltier chillers offer high energy efficiency, precise temperature control, silent operation and require little maintenance. Their compact design also allows flexible installation in various environments.



Energy efficiency



Peltier cooling units are extremely efficient in terms of energy consumption. They use the Peltier effect, in which a temperature difference is created by applying an electrical voltage to a Peltier cooler. This converts the energy directly into cold without the need for additional transport media such as refrigerants.

Precise temperature control



By adapting the electrical voltage, the cooling capacity can be precisely adapted to the requirements of the application. This creates optimal conditions for sensitive electronic components or other sensitive materials, especially in areas such as medical, laboratory and high-performance electronics.

Noise generation



While conventional compressor coolers are often noisy and disturbing, Peltier cooling units operate almost silently. This is particularly important in environments where quietness and concentration are required, such as in laboratories or offices.

Sustainability and cost-reduction



Dispensing with environmentally harmful refrigerants significantly reduces the environmental impact. In addition, maintenance costs are reduced and operational reliability is increased. Thanks to this unique principle, our Peltier cooling units are particularly efficient and reliable.

The Peltier-Technology

| Are there any applications where only Peltier technology can be used?

Peltier elements are essential in industries and sectors where precise temperature control, compactness and energy efficiency are required. These include medical, aerospace, optoelectronics, and automotive industries, among others. Some of these applications are described below:

Miniature-cooling



With peltier cooling elements it is possible to realize small and precisely defined cooling capacities. A feature which cannot be achieved with the use of compressor-based systems.

Precision



Peltier-cooling units are electronically controlled and operate with an accuracy of up to 0.01 Kelvin.

Robustness



Peltier coolers effortlessly cope with even extremely demanding ambient conditions. They are ideally suited for use at high ambient temperatures or in heavily polluted ambient air. In addition, they can easily handle vibrations and strong accelerations without compromising their performance.

Reversability



The operation of Peltier elements can be easily reversed by simply reversing the DC voltage direction. This allows operation to be switched from cooling to heating or from heating to cooling.

Our Products

With our innovative solutions based on the flexible Peltier technology, we offer you first-class solutions for your control cabinet temperature control. The Peltier elements' unique ability to quickly reverse heat and cold effects enables precise and effective temperature control. In addition, the Peltier elements can be easily customized to meet specific requirements and offer robustness for reliable operation.

Cabinet Cooling Solutions

Peltier cooling units from Dr. Neumann Peltier-Technik GmbH provide reliable and precise air conditioning for control cabinets. Our innovative cooling devices effectively protect electronic components from overheating, moisture and contamination, ensuring optimum temperature control in the control cabinet to ensure long-term functionality and performance of your products.



Surface Cooling Solutions

The Peltier surface cooler enables reliable and precise cooling as well as heating of surfaces, liquids and containers, but also extends its application to a wide range of other materials. With its innovative technology, the surface cooler ensures effective temperature control and thus offers versatile application possibilities.

Cabinet Dehumidification Solutions

Ensure optimum protection for your electronic components with a control cabinet dehumidifier. Whether in complex data centers, industrial manufacturing processes or robotics systems - moisture can jeopardize smooth operation. Our control cabinet dehumidifiers effectively reduce humidity. This minimizes the risk of corrosion, short circuits and other damage to ensure the reliability of your electrical equipment and reduce downtime.



Our Products

Sensor Technology

Sensor technology plays a central role in our systems. Our sensors use the thermoelectric effect to convert even small temperature differences into electrical energy. An outstanding example is our patented sensor system „TOC“, which not only functions energy-autonomously and wirelessly, and is certified immune to dust, dirt and moisture with IP56 protection class. TOC measures the temperature in short intervals and allows a quick response to unforeseen changes. The TOC system offers maximum flexibility in shoring and is covered with a special graphite heat conductive foil to ensure strong accuracy of the measurement result and provide equipotential bonding to the environment.



NEW

Laboratory- and Process Solutions



At Dr. Neumann Peltier-Technik GmbH, we offer high-precision thermoelectric products for laboratory technology including cold-heat thermostats, recirculating coolers, calibration thermostats and temperature control plates. Our Peltier technology enables precise temperature control and offers advantages such as virtually noise- and vibration-free cooling as well as fast changes between cooling and heating operation. Whether in combination with temperature-controlled water baths, thermal cyclers, centrifuges or incubators - our products guarantee precise results. We not only offer you customized solutions as an OEM manufacturer, but also fully developed products for your laboratory technology.

Accessories

As Dr. Neumann Peltier-Technik GmbH, we supply high-quality products in the field of Peltier technology. In doing so, we always pursue one goal: your direct benefit. In order to ensure the functionality of our product and to adapt it to your needs, we naturally offer you the appropriate accessories in addition to our products.

Customized Solutions

Discover our limitless flexibility for customized solutions!

Sometimes a glance at the catalog is not enough to solve a problem. But at Dr. Neumann Peltier-Technik we have the solution: Our almost unlimited flexibility.

If you can't find the right device in our range, we'll simply design it for you. **Our experienced team combines expertise with many years of experience to meet your individual requirements.**

Our developers do not shy away from any challenge and will quickly and precisely develop application-oriented and economically sensible solutions for your special application - always in close coordination with you.

All our processes for developing and manufacturing customized products are certified in accordance with ISO 9001 quality guidelines. This is how we ensure that even customized solutions meet the high quality standards you are used to from us.

Do you need approvals for specific markets? We have extensive experience in

UL certification as well as development and manufacturing according to military standards. Rely on our expertise and experience.

We also offer comprehensive project documentation in accordance with all relevant norms and standards. Our efficient, modular document structure enables us to offer you this service cost-effectively - even for multilingual requirements.

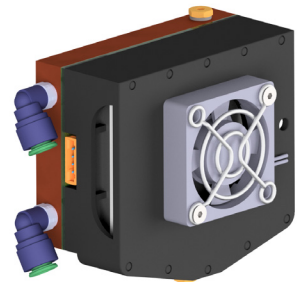
Rely on Dr. Neumann Peltier technology for customized solutions that exceed your expectations. Contact us today!

Customized Solutions

Immerse yourself in the world of customized solutions from Dr. Neumann Peltier-Technik! In the following case studies, you will learn how we have mastered individual challenges of our customers and developed innovative products and solutions. Be inspired by real-life application examples and discover the diverse possibilities of our flexible and precise technology.

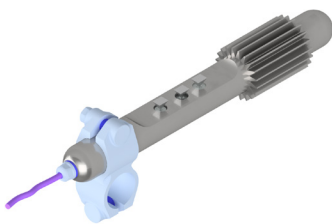
Mini-Dehumidification for Laser-Heads

For the reduction of humidity in laser heads, we developed a customized solution for our customer: a water-recooled mini dehumidifier. This innovative dehumidifier consists of a **special copper heat exchanger** and an **integrated condensate drain**. The active ventilation of the condensate plate not only increases the dehumidification performance, but also creates a gentle air movement inside the laser head. The module is kept at its **ideal operating point** via an external control system also developed by us, thus ensuring **efficient dehumidification** of the laser head.



Active Camera-Cooling for Food-Industry application

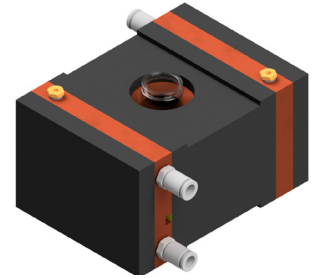
Compliance with **strict legal requirements** places high demands on cooling systems in the food industry. We have developed a tailor-made solution for the camera cooling system shown opposite. Our closed system, consisting of food-friendly **stainless steel**, uses **free convection** to specifically dissipate waste heat. In the process, three cameras are tempered with our Peltier system to ensure their optimal operating point. The resulting waste heat is effectively transferred to a stainless steel cooling star, which ensures sufficient cooling in the environment



Customized Solutions

Highly Precise Test Tube Tempering

To enable automated and extremely **precise temperature control** of test tubes and their contents, we have developed an innovative system. With a control accuracy in the range of 0.01 K, it ensures exact temperature settings. The system has also been **economically optimized** and, for this purpose, consists of two identical water recirculating chillers that provide efficient cooling. Thanks to its special geometry and design, the system is also designed for **autonomous robot operation**. An external control unit specially developed by us regulates the system precisely and according to requirements in order to achieve optimum results.



Of course, we will be happy to advise you personally on the implementation of your individual application..








Lab- & Process- Technology

Lab- and Process-Technology by Dr. Neumann Peltier-Technik

Applications in the laboratory and process technology require the highest precision and compact designs. In this field, even the smallest inaccuracies of the temperature control have a negative impact on measurement results and process quality. Details are crucial in order to exclude falsified results and to draw reliable conclusions. Peltier technology offers ideal conditions for meeting these requirements. Dr. Neumann Peltier-Technik GmbH has specialized in the development and manufacturing of thermoelectric products and offers its extensive expertise in the area of laboratory technology.

The Peltier technology is characterized by highly precise controllability of temperature and is therefore indispensable in laboratory technology. The products based on Peltier technology generate temperature gradients by the use of semiconductor elements. The applied current controls the temperature control, and the extremely precise regulation of the current ensures high precision in temperature control. Peltier technology also offers high power density and allows switching between heating and cooling modes by reversing the current flow. The operation of these products is silent and vibration free.

 Another advantage of Peltier technology in laboratory technology is the **elimination of environmentally harmful refrigerants**. Thus, the Peltier technology contributes to the **fulfillment of the F-gas regulation** of the European Union and to **ecological guidelines of many companies and users**.

Dr. Neumann Peltier-Technik offers a wide range of products in the field of laboratory technology, including **NEW** Recirculating Thermostats as benchtop or 19-inch rack unit solutions, calibration thermostats and temperature control plates.

Dr. Neumann Peltier-Technik offers customized solutions for individual requirements in the laboratory environment. For example, the company designs and constructs individual test benches, incubators for environmental simulation, or assemblies for the integration into existing products. In addition to the thermal and mechanical design of Peltier-based cooling and temperature control solutions, the company also has extensive expertise in the area of peltier (TEC) controller.

Product Overview

Recirculating Thermostats **NEW**

LABChill Benchtop

Temperatures from -20 °C to 70 °C

600 Watt Cooling Capacity

Temperature stability of <0,05 K



PROChill 19" Rack Unit

Temperatures from -20 °C to 45 °C

600 Watt Cooling Capacity

Temperature stability of <0,05 K



Calibration Thermostats

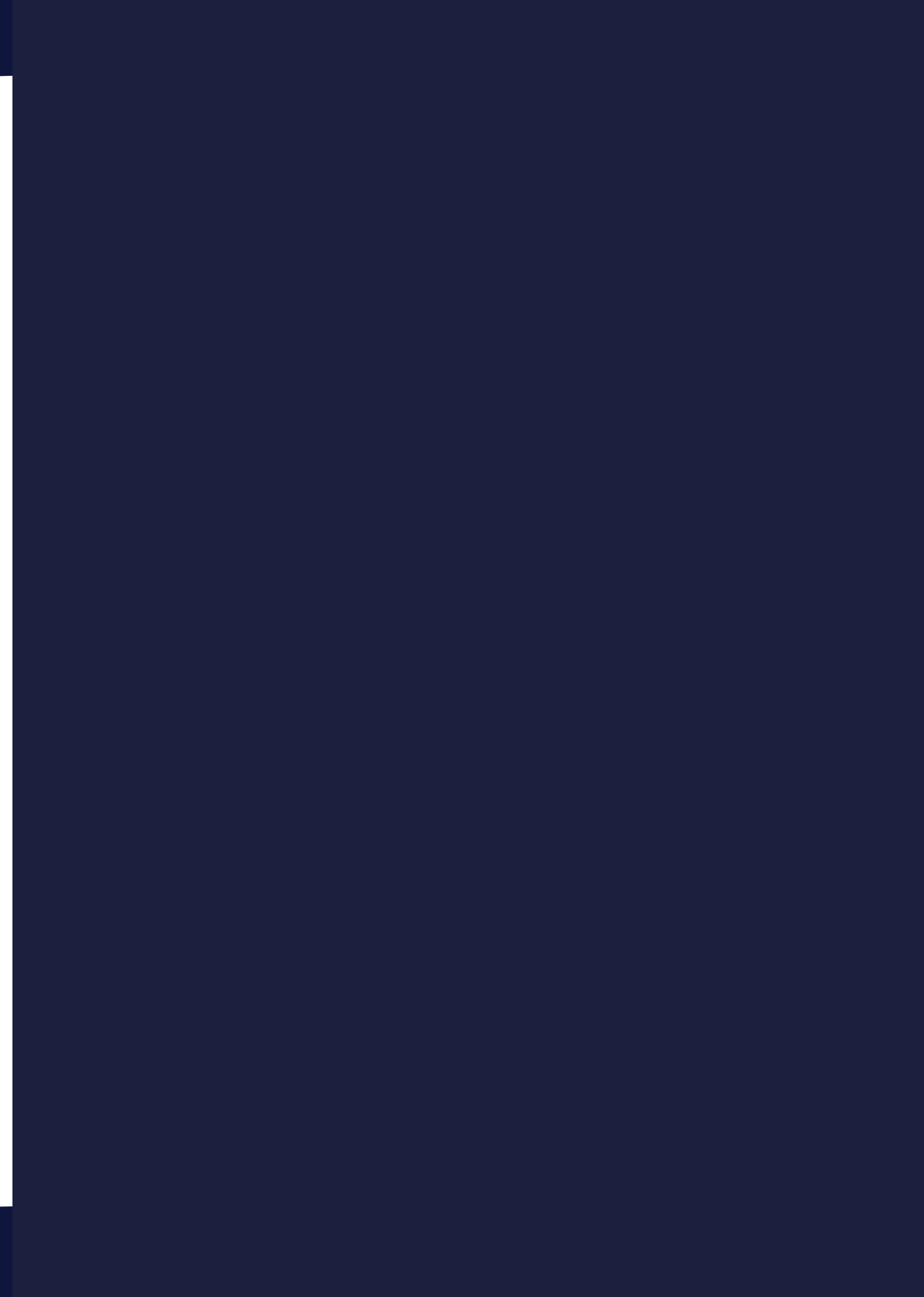
Ice-Point Thermostat

Precision of +/- 0,01 K

Less than 10 minutes until reaching the ice-point

Customizable calibration temperature within -20 °C und 40 °C







Laboratory- & Process
Technology

Recirculating Ther- mostats

Explore the world of circulating thermostats - the solution for **precise temperature regulation and control in demanding applications**. Recirculating thermostats are indispensable tools in laboratories and industrial processes to maintain a constant temperature in experiments, reactions and test runs.

With our circulators you can **reliably temperature control a wide range of samples and materials**. Whether it's laser systems, rotary evaporators, bioreactors, or test & analysis setups and devices - the precise temperature control ensures a consistent and stable environment.

To achieve desired results, our circulating thermostats use **advanced technologies**. The Peltier technology creates temperature gradients through the use of semiconductor elements which are precisely controlled by the application of a defined current to achieve and maintain the desired temperature.

Further advantages of the Recirculating Thermostats also lie in their **efficiency and user-friendliness**. Dr. Neumann Peltier technology circulating thermostats offer intuitive operation, easy programmability, and a variety of setting options to meet the requirements of different applications.

Another important aspect is the possibility of using **various integrated safety features** to protect the sample from overheating or undercooling. Alarm systems and temperature limits ensure that the temperature remains within a defined range and that potentially dangerous situations are avoided.

When selecting a fitting Recirculating Chiller or Thermostat, it is important to consider the **specific requirements of your application**. Performance, capacity, temperature range, accuracy, control capabilities, and integration into your laboratory environment are just a few of the factors that are influencing the decision at hand.

Trust in our expertise and find the optimal solution for your application together with us!




NEW

Recirculating Thermostat LABChill Benchtop

Discover the LABChill Benchtop recirculating thermostat - the efficient and precise Peltier solution for cooling and temperature control tasks in laboratory environments. With an impressive **cooling capacity of 600 watts** and a **compact design**, LABChill circulators are the most powerful of their kind, making them ready for any challenge. Precise temperature control is critical for accurate measurement and testing results. The LABChill ensures exceptionally accurate temperature control with an impressive temperature stability of less than 0.05 K. This level of accuracy ensuring **reliable results for your application**.

With the **simple switch between cooling and heating mode**, a wide temperature range from -20°C to +70°C can be chosen freely. Precise control is provided by the integrated Peltier controller, which also offers extensive integration options and safety features.

 The use of Peltier technology enables **efficient cooling and temperature control without the need for refrigerants**, which not only meets the requirements of the **European Union's F-Gases Regulation**, but also ensures **resource-saving and efficient operation** of your temperature control solution. .

The integrated touch display as well as several communication interfaces allow **easy operation and optimal integration** of the LABChill Peltier circulation thermostat into any application.

Experience the impressive performance and precision of the LABChill Benchtop circulator. Rely on reliable temperature control in your laboratory and achieve outstanding results in your applications. Choose the efficient Peltier temperature control solution for the highest demands - the LABChill Benchtop recirculating thermostat from Dr. Neumann Peltier-Technik GmbH.

The LABChill offers a variety of benefits...



Powerful Peltier-Cooling- & Heating unit

- Peltier-cooling unit with 600 Watt capacity
- Integrated cooling as well as heating operation
- Rapid temperature curves by the „Boost-Mode“ which enables short-tem performance increase

Easy operation

- Easy operation via 2,83“ integrated Touch-Display
- Visual display showing necessary information for temperature control & safety features
- Status Notifications for a comprehensive Overview of the device’s status.

Noise- optimized operation

- Optimized for laboratory applications
- Silent-Mode for minimal noise-emission
- Fan speed control depending on required cooling capacity

... for highest requirements in laboratory applications.



Integrated Peltier-Controller

- Specifically developed Peltier Controller
- Precise temperature control with a temperature stability of $<0,05$ K
- Continuous monitoring of critical functions like temperature values and tank levels.

Various communication interfaces

- Ideal integration into laboratory environments through various communication interfaces like LAN, RS232 and RS485
- Future option for Wifi-connection and control via web-based user-interface

Plug-In Connectors

- Easy connection to laboratory applications
- Included self-closing Plug-In connectors for safe and sealed operation
- Easy draining through Plug-In hose

Features of LABChill Thermostats

Technical Specification

General Data

Dimensions (HxWxD)	425 x 265 x 430 mm
Weight	~ 21 kg
Noise emission	< 56 dB(A) (60%) < 63 dB(A) (100%)

Cooling & temperature control

Nominal cooling capacity ($\Delta T = 0$) [Q_c]	~ 600 W
Heating capacity	~ 1000 W
Temperature stability	$\leq 0,05$ °C

Specification recirculating fluid & pump

Temperature range recirculating fluid	- 20 °C ... 70 °C
Contact materials	Aluminium, plastic, stainless steel
Pump specification	Centrifugal pump (other pump types, e.g. gear-pumps optionally available)
Maximum pump-rate	3 l/min @ 1 Bar

Control & Communication

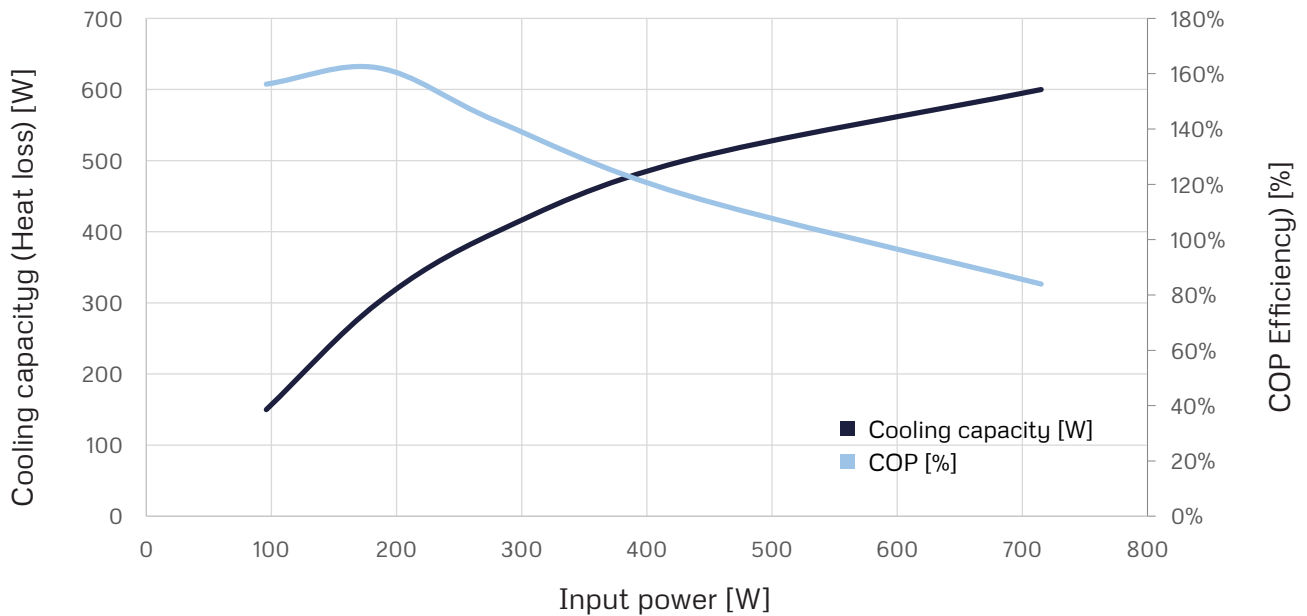
HMI	2,83" Touch-Display
Communication interfaces	RS485; RS232; Ethernet; WLAN & Bluetooth (coming soon)

Safety-features

The LABChill Peltier circulator has several safety features, such as flow and level monitoring, overheating and freezing protection, as well as leak sensor and fan speed control, to ensure safe and reliable use.

Performance data

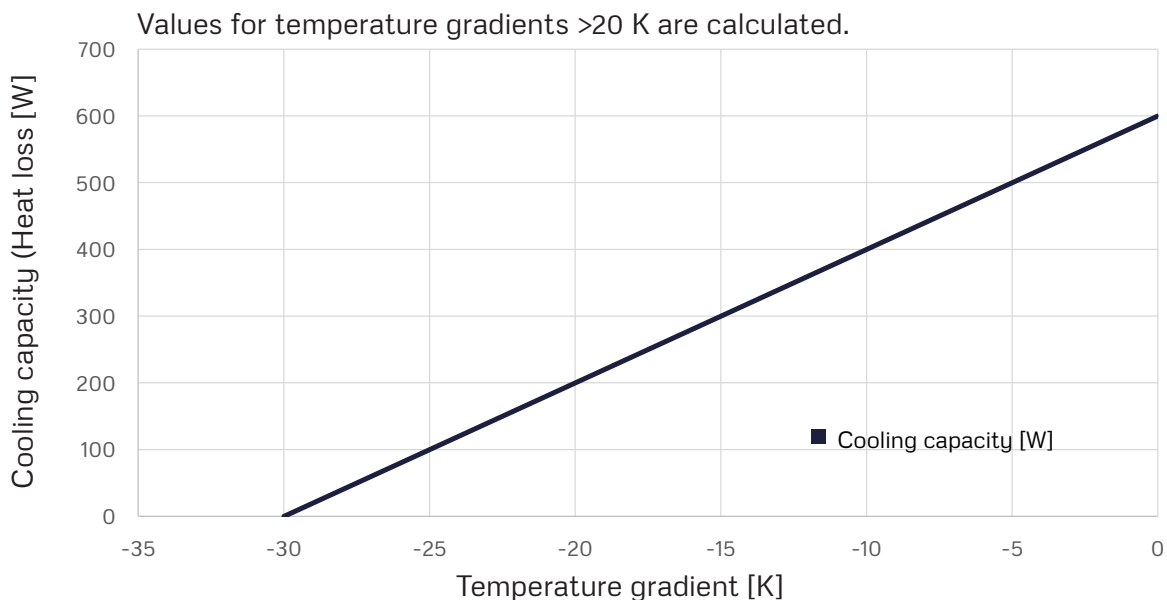
Cooling capacity and COP-efficiency



Description

The measured values refer to a measuring point with temperature equality ($\Delta T = 0$ K) between circulating medium and ambient temperature.

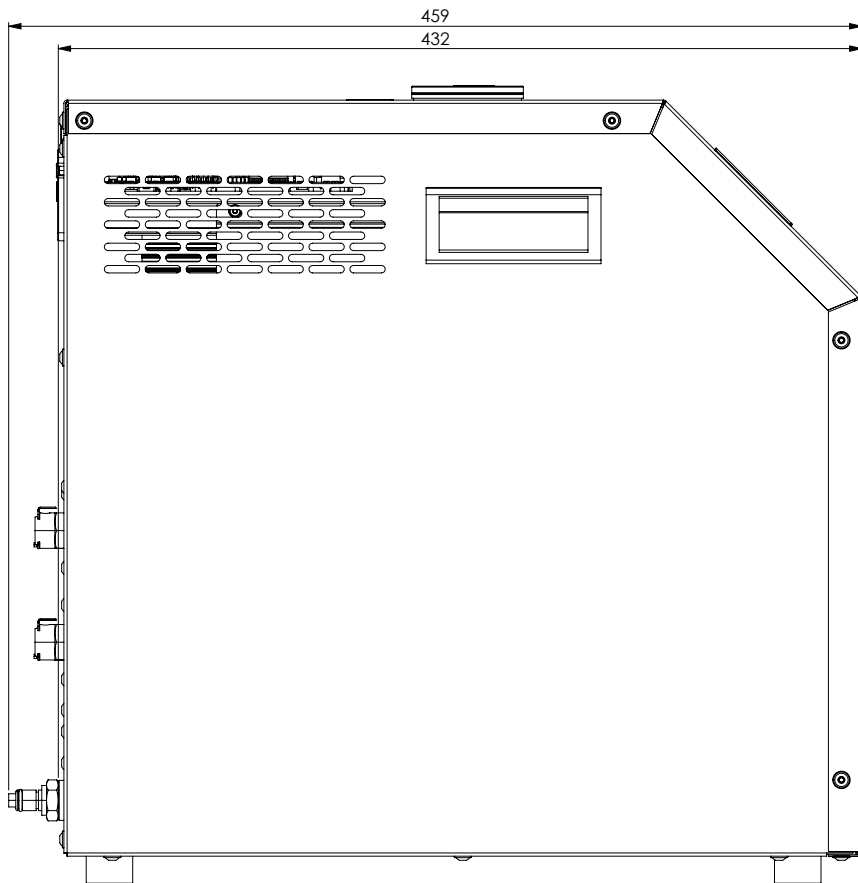
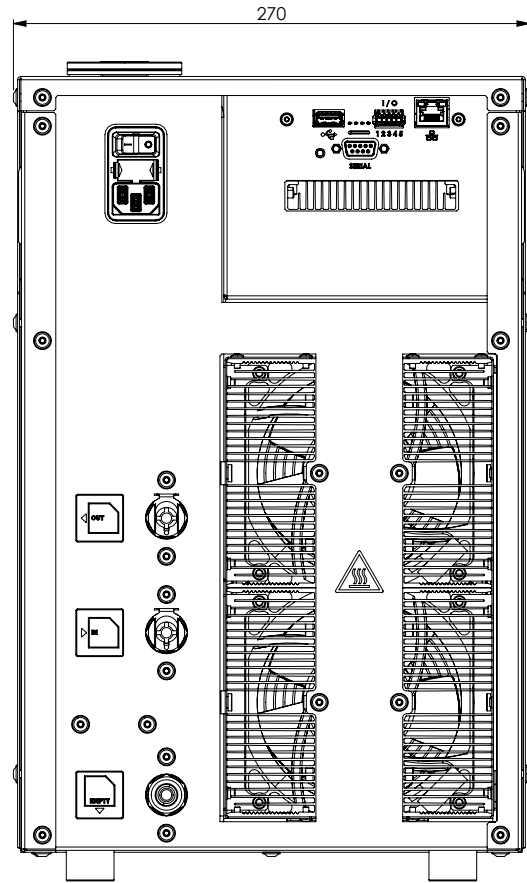
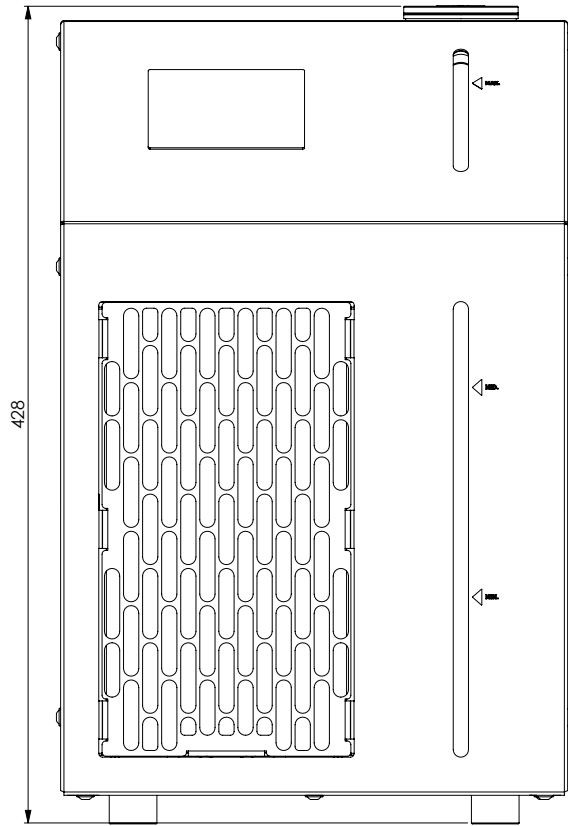
Cooling capacity at Temperature gradient to ambient temperature



Description

The diagram shows the cooling capacity at a temperature difference of the circulating cooling medium [100% water] to the ambient temperature. The ambient temperature is assumed to be 25 °C

Dimensions



Examples of possible applications for the LABChill Peltier circulation thermostat

Reliable temperature control is essential for laboratory applications to ensure a controlled and efficient process or to achieve precise measurement results. Our devices are **refrigerant-free** and thus not only comply with the **F-Gases Regulation**, but also with the increased ecological demands in laboratories. They can be optimally integrated into the laboratory environment and are characterized by their space-saving, compact design.



Re-cooling of rotational evaporators

The LABChill ensures a constant and low temperature of the cooling medium during the immersion of the flask in the heated water bath. The condensate precipitates at the cooling coil through which the cooling medium flows. The Peltier cooler enables fast and efficient condensation. Compared to compressor coolers, the LABChill thus reaches the target temperature much faster and can reduce process times. The use of Peltier coolers **without refrigerants** enables largely maintenance-free operation and meets the **ecological requirements of modern laboratories**.

Temperature control of water baths

The LABChill offers reliable and precise temperature control of water baths, with a wide working temperature range. It combines cooling and heating operation in one and is also suitable for use with silicone oils. The high temperature stability ensures precise temperature control, even in demanding applications such as sensor calibrations..



Further examples of possible applications for the LABChill Peltier circulation thermostat



Analytical devices like e.g. refractometers, viscosity-meters or polarimeter

In order to produce accurate measurement results, refractometers, viscometers or polarimeters depend on precise temperature control. Our device meets these requirements with a temperature accuracy of < 0.05 K. At the same time, the LABChill operates with low vibration and almost no noise in silent mode. In addition, it is characterized by its compactness and is therefore an indispensable tool in every laboratory.

Bioreactors

Temperature has a major influence on the growth and development of organisms, bacteria and viruses. Precise regulation of temperature is therefore crucial for controlled processes. Our bioreactor enables optimal control of the process through a wide media temperature range and agile adjustment of temperature control. This allows reactions in the bioreactor to be accelerated or slowed down to achieve the desired results.



The LABChill at a glance **NEW**



- ✓ Media temperatures from -20 °C to 70 °C
- ✓ 600 Watt cooling capacity
- ✓ Integrated 2,83" Touch-Display
- ✓ Silent-Mode & Boost-Mode for every laboratory application
- ✓ Temperature stability of <math><0,05\text{ K}</math>
- ✓ Extremely compact design

| The gold-standard of thermoelectric temperature control

LABChill Peltier circulators offer a powerful and **environmentally friendly solution** for temperature control of laboratory equipment, including recooling of rotary evaporators, bioreactors or water baths, with **600 watts cooling capacity**.

Peltier technology enables **precise temperature control** with a **temperature stability of 0.05 K** and is therefore also suitable for extremely temperature-sensitive applications.

The integrated Peltier controller takes over the precise control and offers extensive functions and interfaces for integration into any application




NEW

Recirculating Thermostat 19" rack unit PROChill

Discover the **PROChill 19" 4HU rack unit** - the efficient and precise solution for cooling and temperature control tasks in process technology and special plant engineering. With a **cooling capacity of 600 watts** and a compact design, the PROChill circulators are the most powerful of their kind and thus equipped for any challenge.

Precise temperature control is critical for a controlled process solution and safe plant operation. The PROChill ensures exceptionally accurate temperature control with a **temperature stability below 0.05 K**, ensuring **precise and repeatable results** from your plant.

With the simple change between **cooling and heating mode**, a wide temperature **range from -20 °C to +45 °C** (if required also >45 °C) can be covered. An extremely precise control is provided by the integrated Peltier controller, which offers extensive functions and protection mechanisms.  The use of Peltier technology **enables precise temperature control without the need for refrigerants**, which not only meets the requirements of the **F-Gases Regulation** of the European Union, but also ensures a **resource-saving and efficient operation**.

The **integrated touch display** as well as several communication interfaces allow easy operation and **optimal integration of the PROChill Peltier circulation thermostat** into any application.

Take advantage of the impressive performance and precision of the **PRO-Chill 19" rack-mount** recirculating thermostat and rely on reliable temperature control in your plant to protect your components and achieve the best results in your application. The PROChill is the **ideal solution for the demanding requirements of process technology and special plant engineering**.

The PROChill offers a variety of benefits...



Powerful Peltier-Cooling- & Heating unit

- Peltier-cooling unit with 600 Watt capacity
- Integrated cooling as well as heating operation
- Rapid temperature curves by the „Boost-Mode“ which enables short-term performance increase.

Easy operation

- Easy operation via 2.83 integrated Touch-Display
- Visual display showing necessary information for temperature control & safety features
- Status notification for a comprehensive overview of the device's status

Noise- optimized operation

- Minimal Noise for laboratory applications
- Silent-Mode for minimal Noise-emission
- Fan speed control depending on required cooling capacity

... for the most demanding process and lab applications



Integrated Peltier-Controller

- Specifically developed Peltier controller
- Precise temperature control with a temperature stability of $<0,05$ K
- Continuous monitoring of critical functions like temperature values and tank levels

Various communication interfaces

- Ideal integration into laboratory environments through various communication interfaces like LAN, RS232 and RS485
- Future option for Wifi-connection and control via web-based user-interface

Plug-In Connectors

- Easy connection to laboratory applications
- Included self-closing Plug-In connectors for safe and sealed operation
- Easy draining through Plug-In

Features of the PROChill Thermostat

Technical Specification

General Data

Dimensions (HxWxD)	477 x 484 x 176 mm, 19"rack unit; 4HU
Weight	~ 21 kg
Noise emission	< 56 dB(A) (60%) < 63 dB(A) (100%)

Cooling & temperature control

Nominal cooling capacity ($\Delta T = 0$) [Q_c]	~ 600 W
Heating capacity	~ 1.000 W
Temperature stability	$\leq 0,05$ °C

Specification recirculating fluid & pump

Temperature range recirculating fluid	- 20 °C ... 45 °C (higher media-temperature on request)
Contact Materials	Aluminium, Plastic, Stainless Steel
Pump specification	Centrifugal pump (other pump types, e.g. gear-pumps optionally available)
Maximum pump-rate	3 l/min @ 1 Bar

Control & Communication

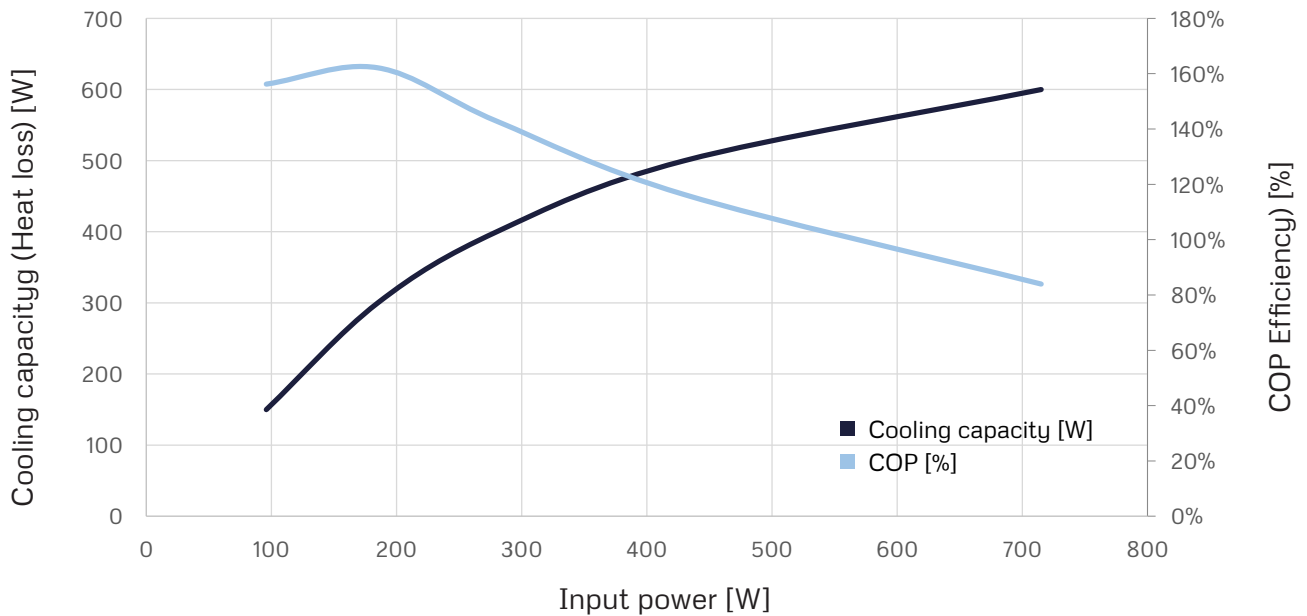
HMI	2,83" Touch-Display
Communication interfaces	RS485; RS232; Ethernet

Safety-features

The PROChill Peltier circulator has several safety features, such as flow and level monitoring, overheat and freeze protection, and leak sensor and fan speed control to ensure safe and reliable use.

Performance data

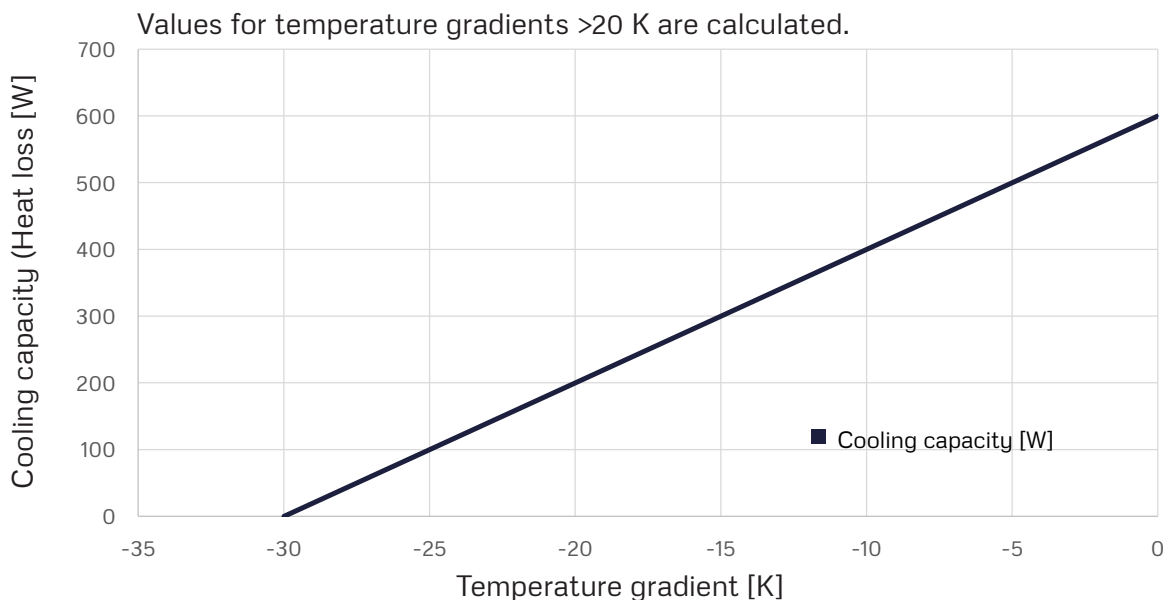
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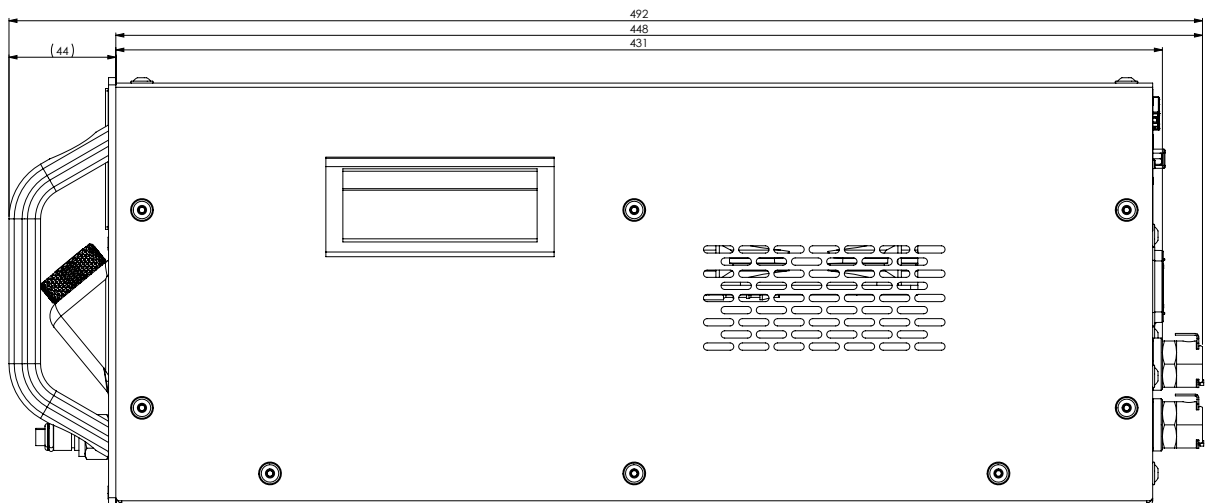
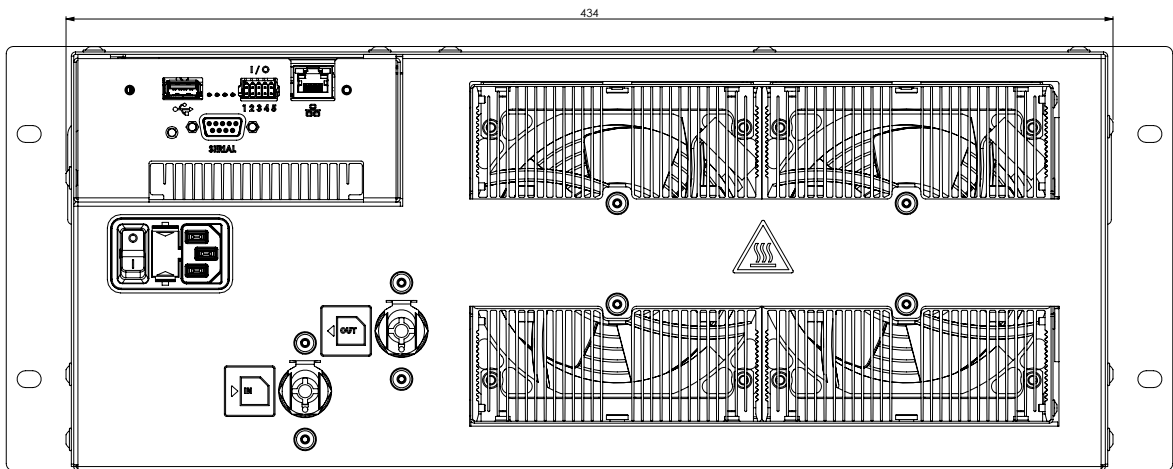
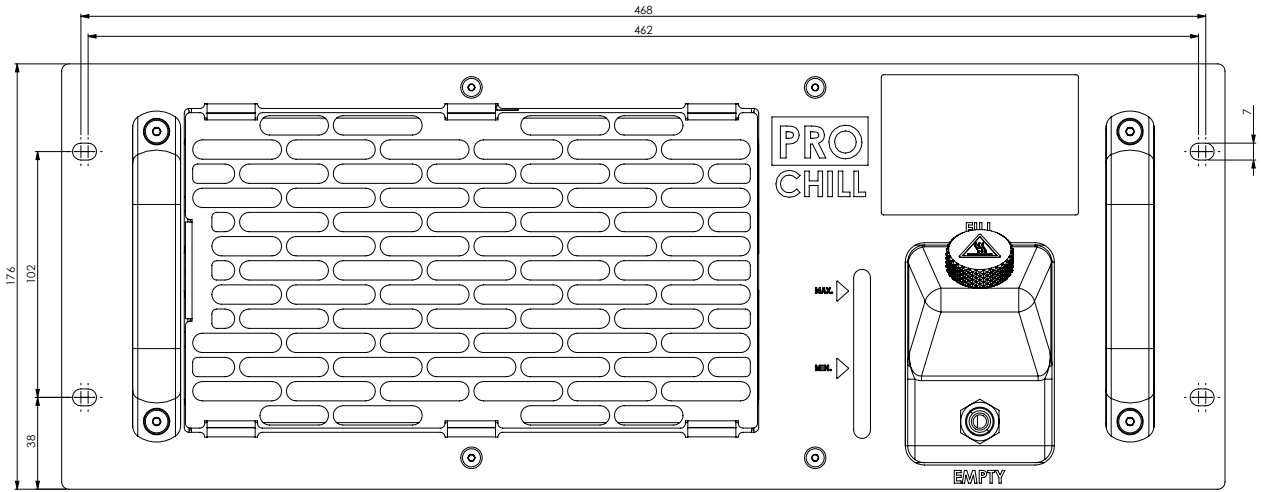
Cooling capacity at Temperature gradient to ambient temperature



Description

The diagram shows the cooling capacity at a temperature difference of the circulating cooling medium [100% water] to the ambient temperature. The ambient temperature is assumed to be 25 °C

Dimensions

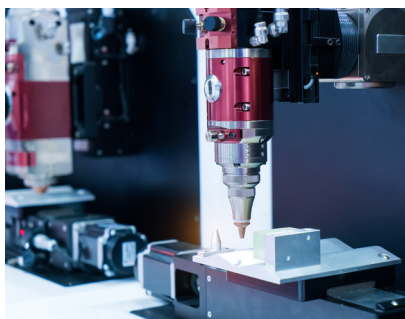


Examples of possible applications for the PROChill Peltier recirculating thermostat

To ensure optimal reliability, process engineering applications and plants depend on dissipating the thermal power loss of some components. In addition to that, temperature consistency and control accuracy are crucial for analytical processes in order to achieve optimal results. The PROChill not only combines these requirements, but also enables uncomplicated installation in standard racks, especially due to its compactness with only four height units as a 19" rack. Like all our Peltier circulators, our LABChill devices also offer freedom from refrigerants as well as a largely maintenance-free operation.

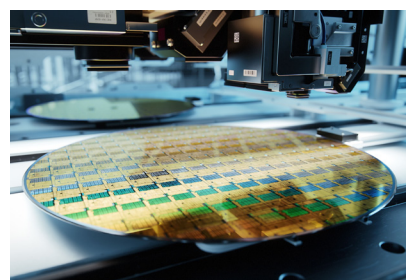
Laser-Sources

The use of temperature control plays a crucial role in ensuring repeatable operation in many applications. One example are laser sources, which only operate accurately at a specific temperature range. Accurate temperature control ensures stable operation and minimizes the risk of failure. In addition to that, precise temperature control protects the laser source against overheating, preventing potential damage to the equipment. With the right temperature control, reliable and efficient plant control is ensured, enabling optimal results and high process reliability.



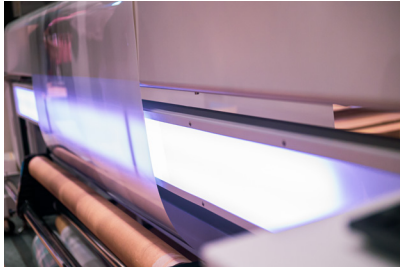
Semiconductor industry

Precise temperature control of thermal chucks, as an example for applications within the semiconductor industry, ensures optimum positioning accuracy within the specific application. Through the use of communication interfaces, extensive monitoring of the process is possible, which enables optimal control of the manufacturing process. Various parameters can be monitored and adjusted if necessary. This not only contributes to efficient operation, but also increases the reliability of the system,



Further examples of possible applications for the PROChill Peltier recirculating thermostat

Cooling of UV-lamps



The PROChill offers an ideal solution for cooling UV lamps or during lithographic processes. Waste heat is for example generated when UV lamps are used to illuminate adhesives. Efficient cooling is essential to avoid machine downtime. In addition to that, no maintenance of the cooling solution is required, which keeps the operation efficient.

Medical Applications

Among lithographic processes, imaging and analytical procedures within medical applications also require cooling and temperature control so that the components can work properly and fail-safe. The PROChill offers perfect solutions not only for these problems in medical technology. Especially in analytics, highest precision in temperature control is important. The PROChill ensures precise temperature control in order to deliver reproducible and accurate results even within the most demanding applications.



The PROChill at a glance

NEW



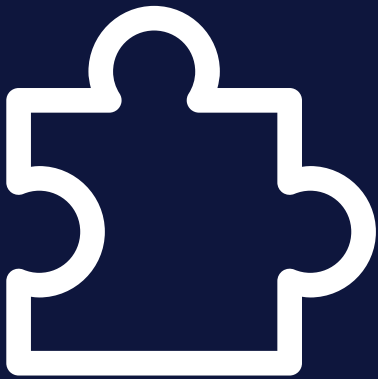
- ✓ Temperatures from -20 °C to 45 °C
- ✓ 600 Watt cooling capacity
- ✓ Integrated 2,83" Touch-Display
- ✓ Silent-Mode and Boost-Mode for various lab applications
- ✓ Temperature stability of <0,05 K
- ✓ Plug-In Connectors for easy installation

| Powerful and compact: Our PROChill

The **PROChill 19" 4HU rack unit** from Dr. Neumann Peltier-Technik GmbH offers an **efficient and precise solution** for **cooling and temperature control** tasks in process technology and special plant construction.

With an impressive **cooling capacity of 600 watts**, precise temperature control and a wide **temperature range from -20°C to +45°C**, the PRO-Chill is ready for any challenge.

The Peltier circulation thermostat also offers a **refrigeration-free resource-saving operation**, simple operation and **optimal integration** into various applications.



Recirculating Thermostats **Accessories**



Glycotherm® heat-transfer liquids

Water-glycol mixtures for use at especially at low temperatures. Our Glycotherm products are available as Glycotherm 5, Glycotherm 20 and Glycotherm 30 with an operating temperature range down to -5 °C, -20 °C and -30 °C, respectively. Additionally, the composition of the substances prevents algae formation during operation and thus ensures trouble-free use in your application..



Silotherm® Silicone oils

Silotherm silicone oils are especially suitable for use at high temperatures at which water or glycotherm products could outgas. The viscosity of our Silotherm silicone oils is also specifically matched to the operation with LABChill and PROChill recirculating thermostats.



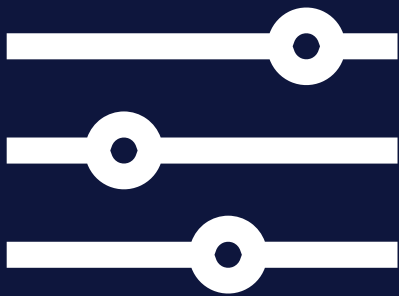
Connection hoses

Our connection hoses enable quick and safe installation of the cooling-heating thermostats to the respective application. The self-sealing connectors allow for a plug & play connection without the danger of liquid leakage when connecting the hose.



Insulated connection hoses

Insulated connection hoses are particularly suitable for applications with high temperature differences to the ambient temperature. The insulation prevents additional energy input in cooling mode or energy loss in heating mode of the cooling-heating thermostats. Our insulated hoses are also equipped with self-sealing connectors.



Laboratory- & Process
Technology

Calibrating Ther- mostats



Calibration Thermostats

Ice-point Thermostat

Our digital ice point thermostat is a powerful constant-temperature source with a **precise accuracy of $\pm 0.01\text{ }^{\circ}\text{C}$** and a **stable operating temperature of $0\text{ }^{\circ}\text{C}$** (other target temperatures selectable).

Due to the air-cooled design, the device does not require any liquids, which **eliminates leakage**. **Easy handling** is ensured by the rotatable handle, which allows safe transport and convenient set-up. The device can also be operated in the vertical position to guarantee easy and safe filling when using it in combination with thermal oil.

The ice point thermostat is equipped with a **central bore with a diameter of 10 mm** as well as **8 further drillings** with a diameter of 7.2 mm, all 150 mm deep and double insulated. This allows you to position your samples safely and precisely.

Thanks to our innovative technology, the device **reaches the ice point in only about 10 minutes** after being switched on. In addition, it operates RF interference-free, as no triacs or thyristors are used.

The ice point thermostat from Dr. Neumann Peltier-Technik GmbH is ideal for applications in **laboratory technology, the chemical industry and materials testing**. It provides a reliable and precise constant temperature source and ensures safe and easy handling.

Invest in an ice point thermostat from Dr. Neumann Peltier-Technik GmbH and benefit from our expertise in Peltier technology.

Our Ice-Point-Thermostat offers a variety of benefits...



Transportable Casing

- Light and compact aluminium casing
- Integrated carrying handle for convenient transport and flexible use in diverse work environments

Multiple calibration and reference-drillings

- Possibility of simultaneous calibration of several sensors through eight holes
- Simple measurement and use of a reference by utilizing the reference temperature of the central bore

Extreme Precision

- $\pm 0,01$ °C Accuracy for precise measurements
- Ideally suitable for calibrating sensors

... for the most demanding laboratory applications



Efficient through rapid temperature control

- Fast heating- & cooling cycles
- Reaches the desired temperature fast and saves time when calibrating a variety of sensors

Refrigerant-free operation

- No internal refrigerant necessary thanks to Peltier technology
- Increased environmental friendliness and reduced maintenance effort and costs

Specification of the Ice-Point Thermostat

Technical Specification

General Data

Dimensions (HxWxD)	368 x 300 x 197 mm
Diameter measurement drillings	1x d = 10 mm, 8x d = 7,2 mm
Depth measurement drillings	150 mm
Weight	< 7,7 kg

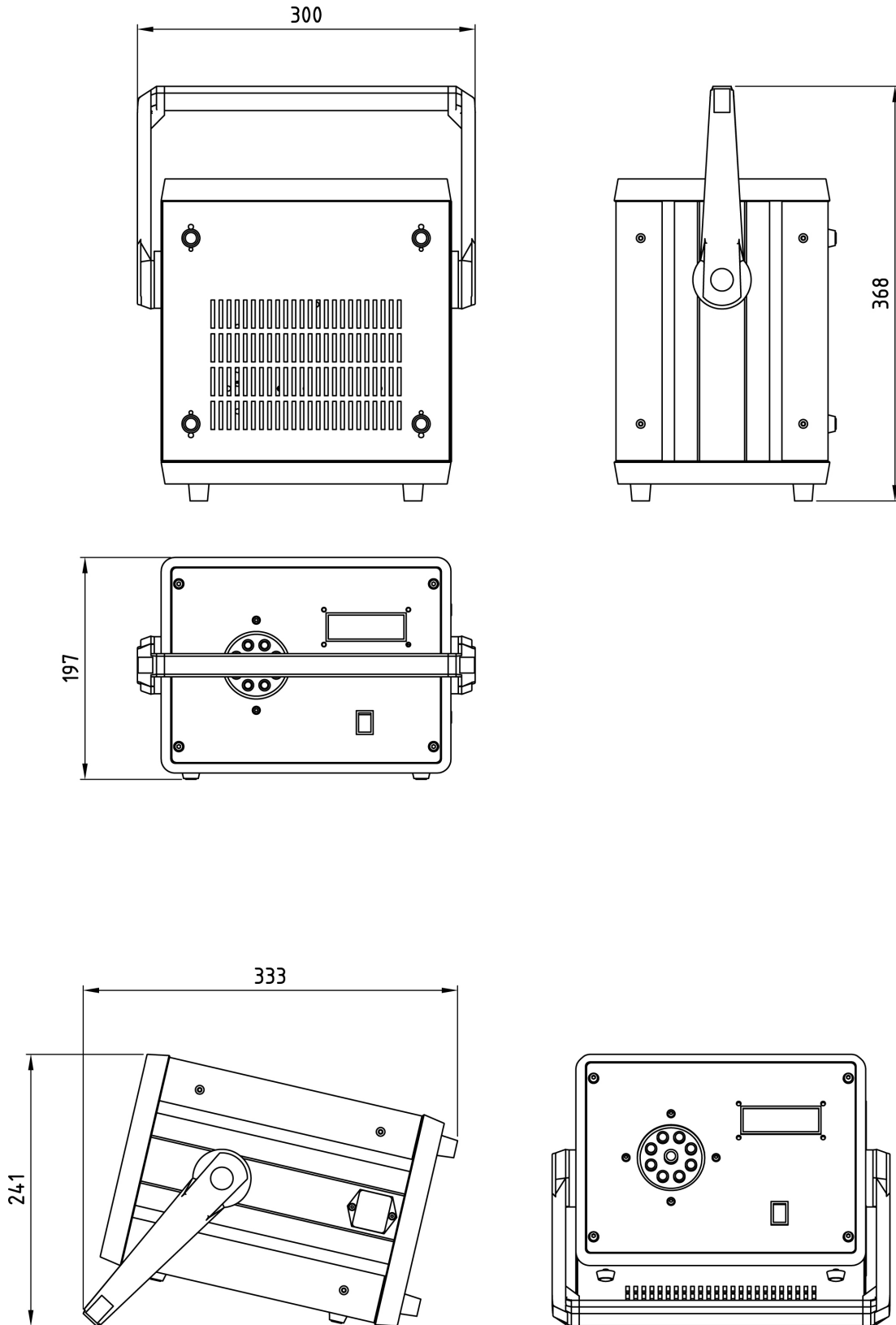
Temperature Control

Control	Digital
Re-cooling	Air-cooling, controlled
Accuracy	+/- 0,01 K
Time to reach ice-point	~ 10 min

Safety features

HF-interference free, as no triacs or thyristors are used.

Dimensions



Examples of possible applications for the ice point thermostat

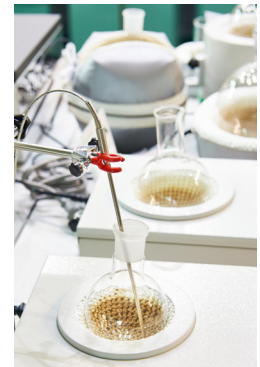


Food technology/ Hygienic applications

In food technology, especially in dairies, the precise calibration of sensors is crucial. To avoid harmful bacteria, it is essential to ensure a controlled and constant temperature and to monitor it reliably. The accuracy of the sensors plays an essential role in this. The mobility of the ice point thermostat is particularly advantageous in this application, as the user often has to calibrate a large number of sensors at different positions.

Laboratory applications

In laboratory technology, precise temperature control is essential, whether working with living test objects such as bacteria and viruses or analyzing samples. To achieve reliable and reproducible results, exact calibration of the sensors is important. The ice point thermostat provides the solution for precise temperature control. With its extremely accurate temperature control, it enables optimal conditions for precise results.



Building and construction



Precise temperature monitoring plays a crucial role in HVAC (heating, ventilation, air conditioning) technology. Inadequate control of temperatures can lead to inefficient processes and result in losses of the overall energy efficiency. The ice point thermostat from Dr. Neumann Peltier Technik GmbH offers a reliable solution for temperature monitoring in building services. With its precise temperature control, it ensures accurate control of temperatures to ensure efficient HVAC processes.

Process solutions

In various industrial processes, especially in the handling of gases, wired temperature sensors are of great importance. Our ice point thermostat provides precise calibration of such sensors and therefore exact temperature monitoring and is crucial for the safety, efficiency and quality of these processes.



The Peltier-Ice-Point-Thermostat at a glance



- ✓ Accuracy of $\pm 0,01$ K
- ✓ Time to reach ice-point in 10 min
- ✓ Vertical operation possible
- ✓ Center drilling with 10 mm diameter & 8 calibration drillings

| Peltier-Ice-Point-Thermostat: Precise & compact consistency

Our digital ice point thermostat from Dr. Neumann Peltier-Technik GmbH is a powerful constant temperature source with **extremely precise accuracy** ($\pm 0.01^{\circ}\text{C}$) and a **stable operating temperature** of 0°C (other target temperatures on request).

It offers easy handling, an **air-cooled design** without liquids and various holes for safe positioning of samples.

Ideal for laboratory technology, chemical industry and materials testing, it allows the **target temperature to be reached quickly** and operates without RF interference.



Peltier Modules

Our Peltier-Modules: Combined Quality and Efficiency

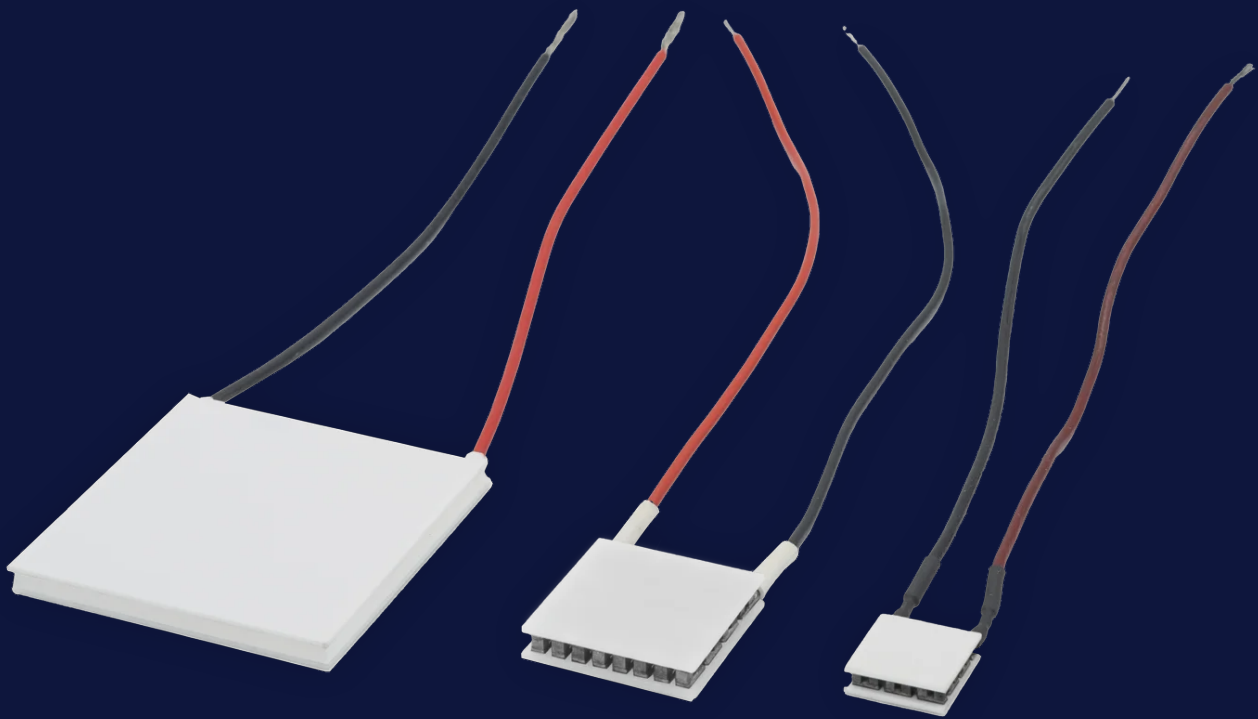
As a specialist in Peltier technology, Dr. Neumann Peltier Technik GmbH offers a **wide range of high-quality Peltier modules** that form the basis for our efficient and effective control cabinet coolers, control cabinet dehumidifiers, recirculating thermostats and sensors.

Thanks to our **extensive experience** in this field, we can guarantee not only the best possible quality of our products, but also the best possible advice in selecting the right Peltier module for your application.

Our Peltier modules feature **high manufacturing quality** and **low tolerances**, ensuring **optimal performance and repeatable results**. From industrial use to medical and laboratory applications, we offer a wide range of modules. Particularly noteworthy is the high cycle stability of our Peltier modules, which ensures **maximum longevity** even when the modules are used under extreme conditions.

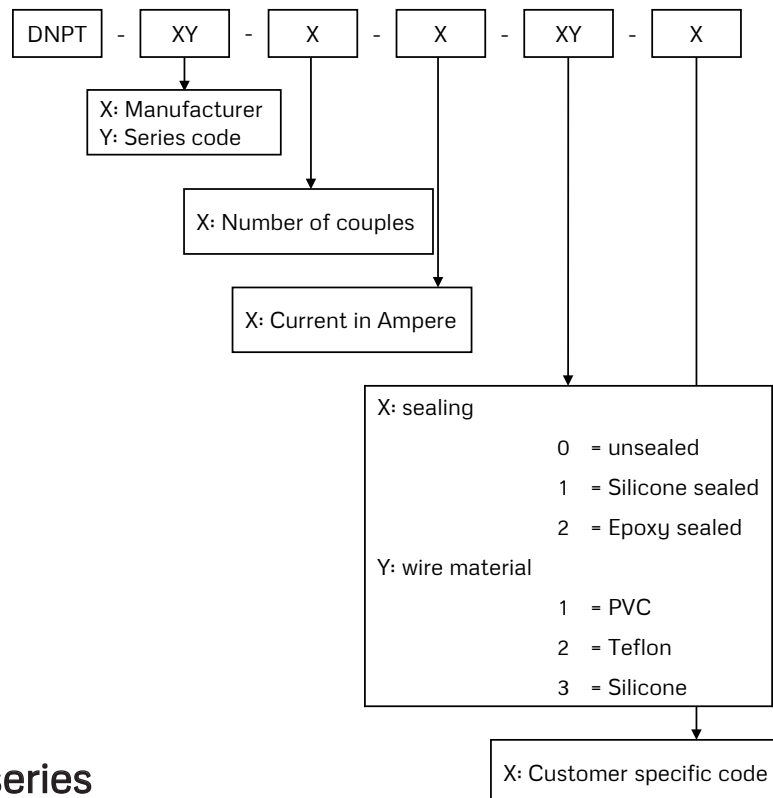
Our product portfolio includes Peltier modules in **various geometries and performance classes**. From miniature modules to standard dimensions as well as modules with large surface areas for special applications - both single-stage and cascaded modules to achieve large temperature differences. In addition to that, we also offer the possibility of supplying special geometries with central bore, cut-outs and completely **customized special geometries**, even in small quantities. This is made possible by our competent partners with their own ceramic manufacturing facilities.

Our Peltier modules offer high efficiency, accuracy and reliability, making them the perfect choice for any application requiring precise temperature control. Contact us and let our experts advise you!



Peltier-Modules and their classification

Simply put together your own suitable Peltier module. We deliver it for you!



Definition of series

„Industrial“: Modules of the Industrial series are characterized by an optimal price-performance ratio and at the same time technically high-quality processing. An all-round product suitable for most applications.

„Two-Stage“: In two-stage modules, the hot side of a module is re-cooled by another Peltier module. This achieves maximum temperature differences between the cold and hot sides..

„Mini“: Mini modules are ideal for use in geometrically restricted environments. These modules are not only extremely compact but also have a high power density.

„Scientific“: Scientific modules are particularly powerful due to the use of extruded semiconductors and have especially low manufacturing tolerances. This makes them suitable for particularly demanding applications.

„Industrial“-Modules

The current, voltage, power and dimensions of the „Industrial“ modules are listed below based on their couples and current ratings:

Module	I_{MAX}	V_{MAX}	$Q_{C, MAX}$	Dimensions (LxWxH)
DNPT-11-17-07	6,0	2,1	8,2	15 x 15 x 3,90
DNPT-11-17-08	8,5	2,1	11,3	15 x 15 x 3,40
DNPT-11-31-02	2,0	3,8	5,0	15 x 15 x 4,70
DNPT-11-31-03	3,0	3,8	8,0	15 x 15 x 3,80
DNPT-11-31-04	3,9	3,8	9,5	15 x 15 x 3,60
DNPT-11-31-06	6,0	3,8	14,3	15 x 15 x 3,10
DNPT-11-31-07	6,0	3,8	14,9	20 x 20 x 3,90
DNPT-11-31-08	8,5	3,8	20,8	20 x 20 x 3,40
DNPT-11-53-10	10,0	6,4	40,0	40 x 15 x 3,60
DNPT-11-63-08	8,5	7,6	42,0	40 x 20 x 3,60
DNPT-11-71-02	2,0	8,8	11,2	20 x 20 x 4,70
DNPT-11-71-03	3,0	8,8	18,0	20 x 20 x 3,80
DNPT-11-71-04	3,9	8,8	20,9	20 x 20 x 3,60
DNPT-11-71-06	6,0	8,8	32,7	20 x 20 x 3,10
DNPT-11-71-07	6,0	8,8	34,2	30 x 30 x 3,95
DNPT-11-71-08	8,5	8,8	48,0	30 x 30 x 3,45
DNPT-11-127-02	2,0	15,7	19,5	30 x 30 x 4,75
DNPT-11-127-03	3,0	15,7	32,5	30 x 30 x 3,85
DNPT-11-127-04	3,9	15,7	39,0	30 x 30 x 3,65
DNPT-11-127-06	6,0	15,7	59,1	30 x 30 x 3,15
DNPT-11-127-07	6,0	15,7	61,0	40 x 40 x 3,95
DNPT-11-127-08	8,5	15,7	85,0	40 x 40 x 3,45
DNPT-11-127-10	10,5	15,4	102,0	40 x 40 x 3,30
DNPT-11-127-12	12,5	15,4	121,0	40 x 40 x 3,70
DNPT-11-127-15	15,0	15,4	145,0	50 x 50 x 4,15
DNPT-11-199-03	3,5	24,1	55,2	40 x 40 x 4,70
DNPT-11-199-04	4,0	24,1	63,7	40 x 40 x 4,60
DNPT-11-199-06	6,0	24,1	95,7	40 x 40 x 4,00
DNPT-11-199-08	8,5	24,1	135,4	40 x 40 x 3,50
DNPT-11-199-10	10,5	24,1	169,7	40 x 40 x 3,30
DNPT-11-199-13	13,0	24,1	224,0	50 x 50 x 3,40

„Two Stage“-Modules

The current, voltage, power and dimensions of the „Two-stage“ modules are listed below based on their couples and current ratings::

Module	I_{MAX}	V_{MAX}	$Q_{C, MAX}$	Dimension (LxBxH)
DNPT-12-158-28	2,8	15,0	5,8	30 x 15 x 7,20
DNPT-12-198-08	8,5	16,1	58,0	40 x 40 x 7,05

„Mini“-Modules

The current, voltage, power and dimensions of the „Mini“ modules are listed below based on their couples and current ratings::

Module	I_{MAX}	V_{MAX}	$Q_{C, MAX}$	Dimension (LxBxH)
DNPT-13-12-03	3,0	1,5	2,7	5 x 10 x 2,50
DNPT-13-310-08	0,8	3,8	1,8	8 x 8 x 3,00
DNPT-13-710-08	0,8	8,8	4,2	10 x 10 x 3,00

„Scientific“-Modules

The current, voltage, power and dimensions of the „Scientific“ modules are listed below based on their couples and current ratings::

Module	I_{MAX}	V_{MAX}	$Q_{C, MAX}$	Dimension (LxBxH)
DNPT-14-119-08	8,5	14,4	80,0	40 x 40 x 3,50
DNPT-14-127-08	8,5	15,7	87,0	40 x 40 x 3,45

Convince yourself about the various...

Low manufacturing tolerances

- Optimal thermal connection through small manufacturing tolerances
- Reliable and constant quality for consistent and optimal results in the application



High duty-cycle resistance

- Long product life due to reliable operation with frequent changes between cooling and heating mode
- Exceptional durability due to GL-II design

... benefits of our peltier-modules

Sealing options

- Protection against condensation and environmental influences by sealing in silicone or epoxy
- Reliable operation of the Peltier modules even under demanding environmental conditions

High temperature gradients

- Maximum temperature differences due to specially developed Peltier modules for high performance
- Cascaded design allows even larger temperature differences for demanding applications

Various design possibilities

- Versatile selection of geometries for Peltier modules: square, rectangular, round and special shapes
- Adjustment of the module depending on the requirements for power, voltage and current

Different wire configurations

- Configurable wires in PVC, silicone or Teflon
- Flexible selection of lengths according to the requirements of the application

Versatile Peltier modules for every application

Camera Cooling

In image processing and photography applications, cooling of the imaging sensor is crucial to reduce image noise and obtain high-quality images. Peltier elements ensure efficient and precise cooling for such applications. Our Peltier elements enable extremely compact cooling with minimal dimensions while maintaining a constant temperature.



Medical applications

Peltier elements are used in medical technology, especially in PCR testers and temperature cycling applications. They enable seamless switching between cooling and heating operation, which is essential for the PCR process, as samples must be repeatedly heated and cooled to achieve reliable test results.

Laboratory applications

For accurate analysis of capillary samples, it is essential that they are maintained at a constant temperature. Our Peltier elements provide an even heat distribution e.g. for block thermostats to ensure consistent temperature control. This allows capillary samples to be analyzed effectively without temperature fluctuations affecting the results..



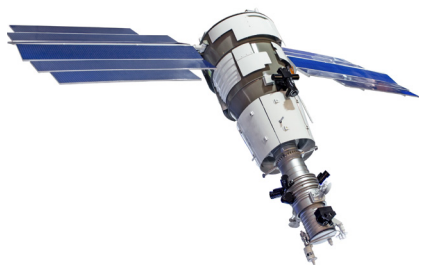
Laser technology

For small laser diodes that display low power consumption, our Peltier elements enable efficient cooling. Targeted cooling allows the laser diodes to operate optimally and ensure stable performance. In doing so, our Peltier elements provide precise temperature control to maximize the life and performance of the laser diodes. Another application example is the use of Peltier elements in connection with the Seebeck effect. Here, the Peltier element is used as a precise power meter of the laser.

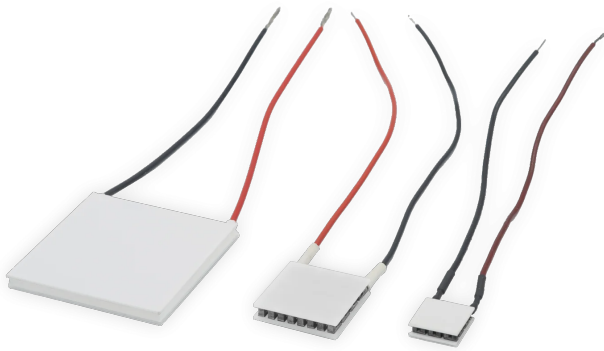


Aviation and space applications

Peltier elements have become indispensable in the demanding aerospace industry. They precisely solve demanding cooling and temperature control tasks even when exposed to vacuum and under diverse mechanical stresses such as vibration, position changes or even thermal and mechanical shocks. Our Peltier modules thus provide the stability, precision and robustness required to ensure that sensory and optical instruments in satellites and other space applications function optimally.



Peltier-Modules at a glance



- ✓ Extremely high cycle-resistancy through innovative GL-II structure
- ✓ Silicone- oder Epoxy sealing possible
- ✓ Silicone & Teflon wires with up to 220°C Temperature resistancy
- ✓ Operational temperature range up to 200°C
- ✓ Individual customization possible in size, material and performance classes

| Also for the smallest components: Our quality promise

Dr. Neumann Peltier-Technik GmbH offers **high-performance and high-quality Peltier modules** for various application areas. Modules qualified by us are characterized by **high manufacturing quality, low tolerances and impressive cycle stability**. The broad portfolio includes **various geometries and performance classes**, including special modules that are also available in small quantities.

Benefit from our expertise in the selection of a customized module according to your specific requirements!

