

LINECARD





QUALITY

Our quality and environmental management system allows us to guarantee the high quality of our products and to offer services that meet the requirements of our customers and society, while protecting people and the environment.

CTX is certified to DIN EN ISO 9001 and DIN EN ISO 14001, and has been distinguished for its excellent credit rating by the commercial credit bureaus Bisnode and Creditreform.



THE COMPANY

CTX specialises in application-specific and custom-engineered cooling solutions. With headquarters in Nettetal in Germany's North Rhine-Westphalia region, our company has comprehensive technical expertise and experience in the development and marketing of cooling solutions for heat management and enclosure solutions.

Our unusually large spectrum of heat sinks and cooling concepts gives us a competitive edge over other companies. In Germany, we are the distributor for products from Aavid, Thermal Division of Boyd Corporation, Pada Engineering, Ritel, and competitive long-standing partners in the Far East.

However, cooling solutions are as different as their applications: Our target markets include industrial automation, medical technology, telecommunications, fossil and renewable power engineering, as well as the automotive sector, producers of brown and white goods, and e-mobility.

APPLICATION-SPECIFIC PRODUCTION PROCESSES

In the production of our cooling solutions we use both conventional extrusion and die casting processes, as well as other technologies that optimize the material properties of the heat sinks for the particular application.

For the manufacture of LED heat sinks of high-grade aluminium or copper, for example, we use the cold extrusion process, which ensures an extremely homogeneous material structure with high density. The thermal conductivity of heat sinks manufactured in this way is even higher than that of the raw material.

Skived fin heat sinks, in which very fine cooling fins are scooped out of an aluminium or copper block, have an extremely high power density. They are used primarily for cooling CPUs in server systems and other small form factor systems.

Crimped heat sinks with embedded fins are ideal for applications with limited installation space. They typically consist of a combination of a copper base with aluminium fins, in order to achieve optimal efficiency and cost effectiveness.

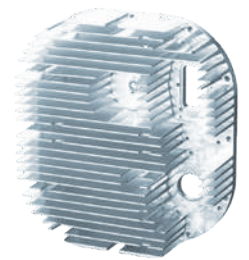
A relatively new technology is friction stir welding, which ensures an absolutely solid connection between the fins and the base of aluminium heat sinks for optimal thermal conductivity.



High-performance heat sinks



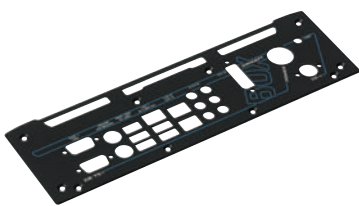
LED heat sinks



Continuous cast aluminium heat sinks

HOUSING TECHNOLOGY

The CTX portfolio also includes application-specific housings manufactured by means of profile machining or punching and bending, as well as technical aluminium parts and custom printed front panels.



Front panels



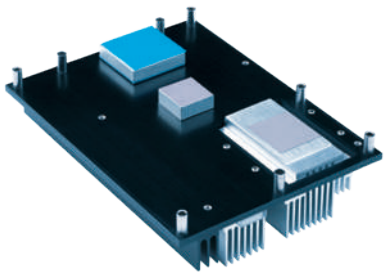
Punched and bent parts



Housings

COOLING SOLUTIONS

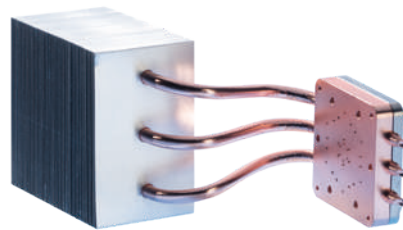
CTX offers perfectly dimensioned, high-performance and economical cooling solutions for virtually every industrial application – from standard heat sinks to custom versions for specific applications.



Embedded heat sinks



Liquid heat sinks



Heat pipes



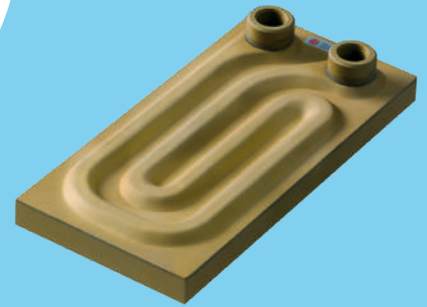
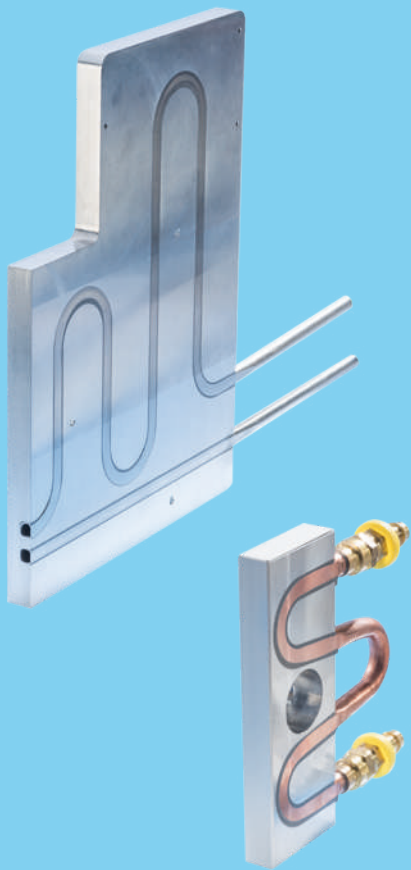
Die cast heat sinks



Rotary knobs

ROTARY KNOBS

The CTX product range likewise includes rotary knobs, scrubber knobs and custom designs, in addition to compatible accessories.



Liquid heat sinks

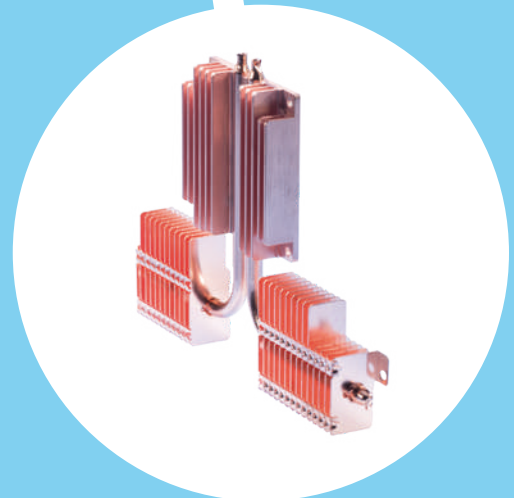
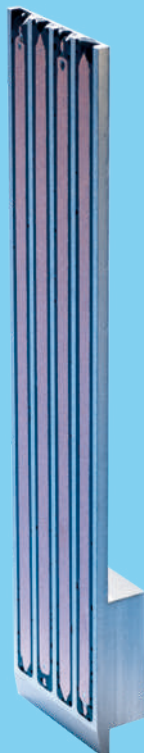
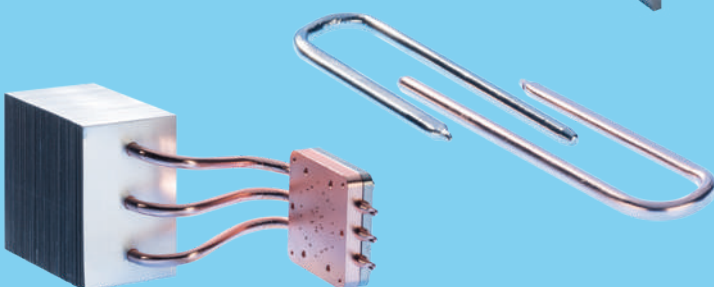
Due to the specific thermal capacity of the liquid coolant, liquid heat sinks have an extremely high power density. That enables a very compact design for installation directly at the hot spot. Custom systems are available with copper or aluminium cold plates and inlaid copper or stainless steel tubes, as well as extruded or core drilled cooling channels. Liquid heat sinks with a top plate and bottom plate connected by means of friction stir welding, in addition to versions made of high-temperature soldered aluminium, optionally with integrated turbulators, are also available. Die cast heat sinks with embedded or integrated cooling tubes are particularly suitable for the high-volume range.

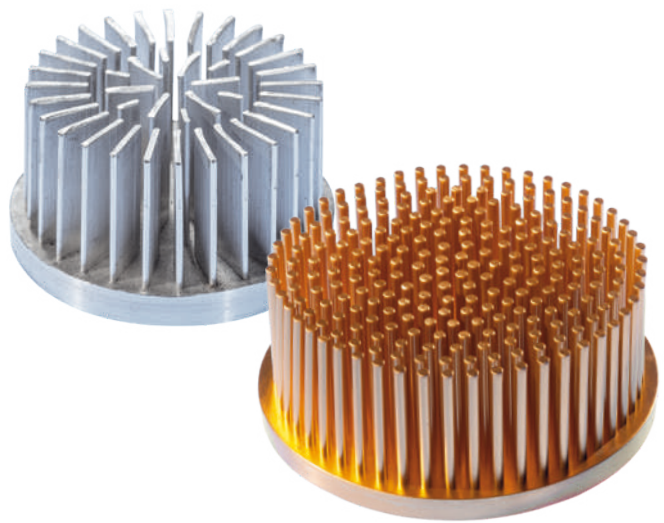
LIQUID HEAT SINKS AND HEAT PIPES

In the age of e-mobility and Industry 4.0, the demand for high-performance batteries and high-power electronics is constantly on the rise. Both of these technologies require very compact and extremely effective cooling solutions. CTX meets this demand with liquid heat sinks and heat pipes – the highest performance class of all heat sinks.

Heat pipes

Heat pipes function on the principle of the phase change of the coolant inside the copper pipes and their outstanding thermal conductivity. In combination with a heat sink, they boost the cooling performance of the latter many times over. Other advantages of heat pipes include freedom of design, small space requirements and versatile installation, as well as low thermal resistance as compared with purely metal heat sinks. They also allow heat dissipation over large distances.



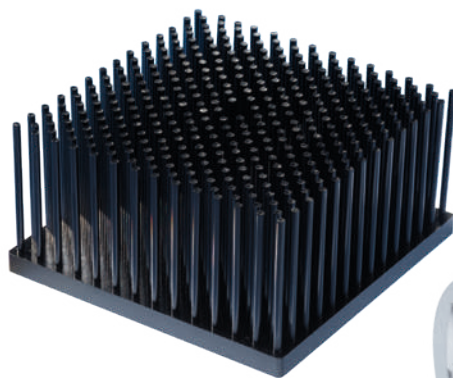


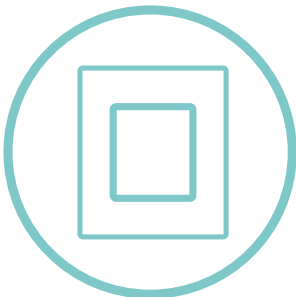


LED heat sinks

Economical and durable high-performance LEDs light up our life – whether in car headlights, stage lights, stadium or store lighting. Since LEDs convert only 15 to 25 percent of the input power into light, however, they require efficient thermal management in order to function properly in the long term.

CTX offers the optimal LED heat sinks for every area of application – from standard solutions to custom tailored cooling concepts, which are often part of the luminaire design.



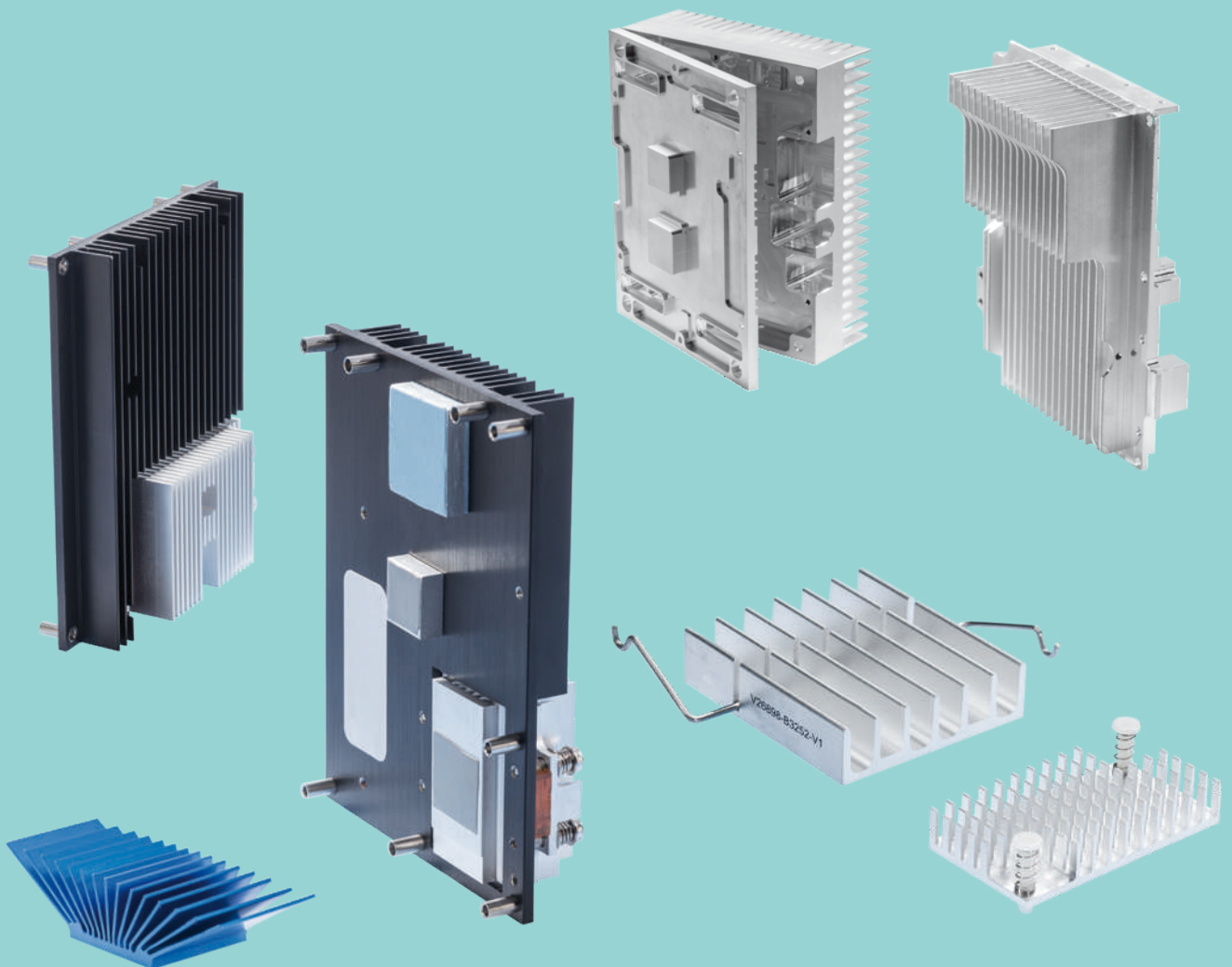


The product range includes:

- Heat sinks with copper inlays
- CPU heat sinks for Intel and AMD processors
- Heat spreaders with heat pipes
- Pin fin, clip-on or screw-on PCB heat sinks for all standard semiconductor housings
- Customized cooled housings
- Complete heat sink sets (with/without copper inlays) including insulation, mounting pins, screws, etc.
- Heat sinks with application-specific insulating surfaces

EMBEDDED COOLING SOLUTIONS

Embedded systems can be found in industrial applications, as well as in railway technology and household appliances. With its line of custom CNC-manufactured embedded heat sinks CTX offers effective thermal management for embedded systems and IPC equipment.





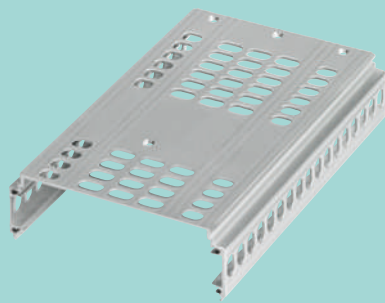
High-performance heat sinks

Modular, high-temperature soldered fin heat sinks of aluminium, copper or a combination of the two metals are characterized by minimal transition resistance. They are 40 percent lighter and more compact than comparable die cast heat sinks.

CTX offers a large selection of application-specific configurable standard modules. Custom solutions – as opposed to die cast heat sinks – can be implemented without tooling costs. This makes it possible to use modular fin heat sinks in virtually all industrial applications. Even the cooling of motors with high vibrations is no problem.

In combination with fans, the dissipation of heat can be increased to boost performance even more.

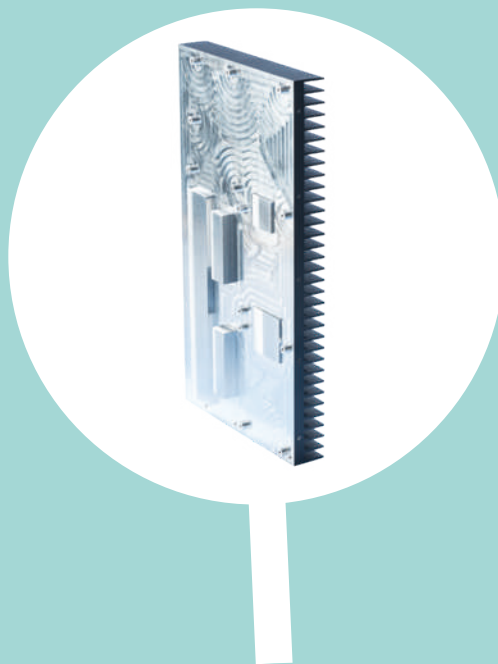




Extruded heat sinks

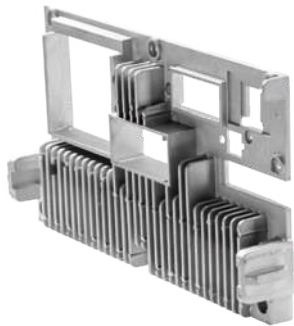
Extruded heat sinks of continuous cast aluminium profiles are a classic electronic cooling solution. They reliably dissipate large amounts of heat, while ensuring stable operation of the electronic components and prolonging their service life.

We offer an exceptionally large range that includes fin, louver, comb profile and pin fin heat sinks for diverse applications. We individually calculate the optimal design and dimensions for the requirements of a particular application and, if desired, we also perform CNC machining and surface finishing by anodising, chromating, powder coating or painting.



PROFILE AND DIE-CAST HEAT SINKS

Whether for large, small or micro series – die cast and profile heat sinks from CTX always provide an economical and high-performance cooling solution.



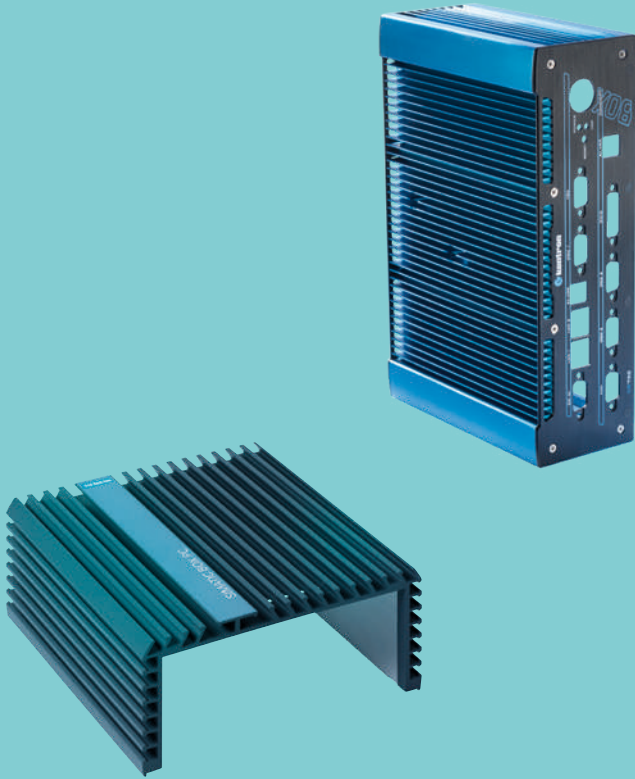
Die cast heat sinks

The die casting process enables the production of heat sinks and housings in diverse customer-specific sizes and shapes, but the tooling costs incurred generally mean that it is suitable for large quantities only.

The CTX portfolio includes die cast heat sinks made of aluminium, zinc or magnesium with moulding weights from 15 g to 15000 g and a mould clamping force of up to 1000 t.

On request, CTX can implement the engineering of the particular cooling solution, including the creation of CAD data and 3D models. The services also include design recommendations for production optimization, short-term production of samples and a fast change service, as well as the complete machining and surface finishing of the die cast parts.





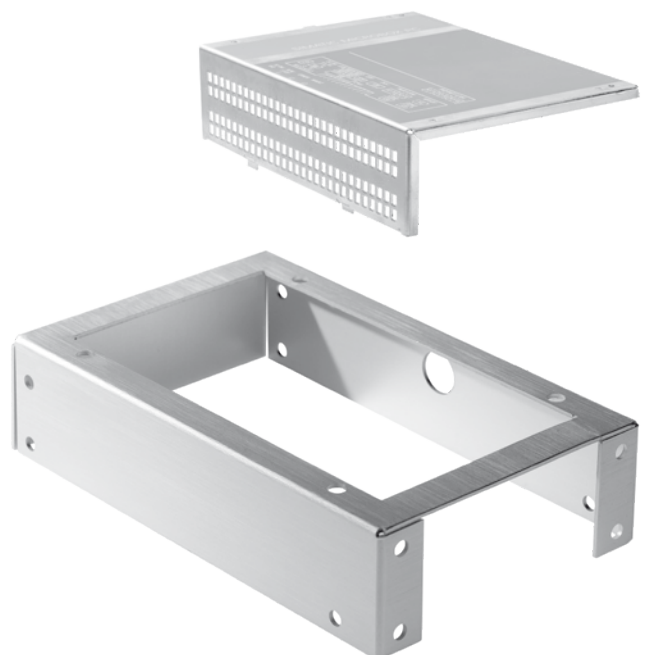
Housing solutions and punched and bent parts

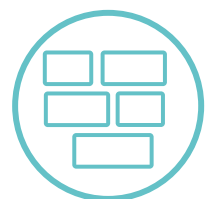
Electronic components often require housings that can do more than just protect them from dust and contact. In order to ensure long-term trouble-free operation, the housings must generally also be able to dissipate heat and provide effective electromagnetic shielding. CTX housing solutions made of extruded aluminium profiles and die cast aluminium meet these requirements.

In addition, we also offer punched and bent housings made of plain or galvanised sheet steel, aluminium or stainless steel, in addition to custom designed front panels including foil printing and label designing.



On request we can treat all housings, front panels and technical aluminium parts with complete CNC machining and professional surface finishing by anodising, painting, chromating, powder coating, sand blasting or glass bead blasting.





ROTARY KNOBS

Rotary knobs are a tried and tested man-machine interface.

In many applications, they serve as the tactile basis for a self-explanatory and intuitive user interface, and are used next to modern touchscreen applications.

CTX has an extensive line of rotary knobs and scrubber knobs, in addition to custom designs and compatible accessories.

Scrubber knobs

- For multi-thread fine adjustments
- For mounting on round shaft of 6 mm or 1/4" in diameter
- Additional colours and designs are available for smaller shafts



Rotary knobs

- Collet fixture
- Push-on knobs
- Soft-touch knobs
- Diameters 8, 10, 13, 15, 21, 28, 36, 45 mm

Custom knobs and plastic housings

- Production according to customer drawing or model
- Project-specific plastic injection moulded parts
- Part weights from 0.3 g
- Parts with complex geometry
- Moulded inserts



Accessories

- Dials for 27°, 30°, 36°, 60° raster
- Colour collets and arrows
- Industrial collets





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