



Miba Battery Systems

FLEXCOOLER®

by Miba Battery Systems



The world's
lightest, most
efficient and
highest-performing
liquid cooling
component for
batteries.





Miba FLEXCOOLER® – The liquid cooling component

The Miba FLEXCOOLER® is a unique liquid cooling component and the world's first designed specifically for thermal management of EV battery cells.

Compared to conventional solutions the FLEXCOOLER® is a non-rigid component that is flexible in design, size and shape. Its flexibility allows the FLEXCOOLER® to inflate/expand into the defined design space eliminating the need for thermal interface materials (TIMs) and adhesives.

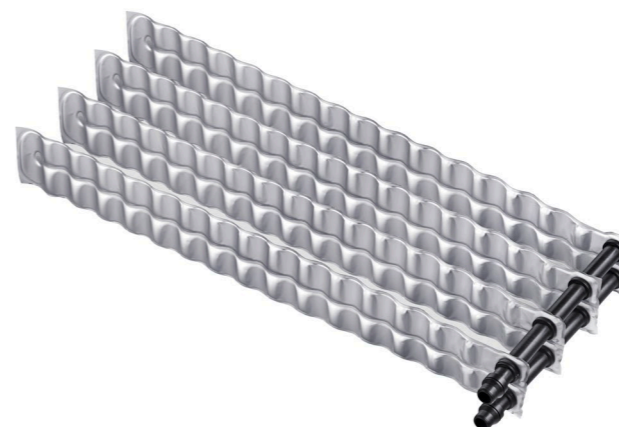
The FLEXCOOLER® is suitable for all cell types and form factors whether for cylindrical, prismatic or pouch cells. It is also suitable for all cooling applications: side/jacket cooling, bottom cooling or top/terminal cooling are viable solutions, all offering the unique benefits of the FLEXCOOLER®.

Unique thermal management component

This advanced thermal management component for EV batteries improves fast charging, range, battery life and cost efficiency to ensure optimum performance and customer satisfaction.

Reduced to the maximum – customized parameters and designs

The FLEXCOOLER® enables battery designs that take thermal management to a new level, surpassing conventional solutions in almost every important way while keeping system complexity low. Irrespective of the cell format and type used, we customize the design and operating parameters of the FLEXCOOLER® to meet the requirements of each customer's battery pack in the most efficient way possible, while simplifying the overall system.



Thermal management of an EV battery with the Miba FLEXCOOLER® goes beyond optimizing heat absorption and dissipation. The FLEXCOOLER® offers additional features such as swelling and compression pad function, continuous tolerance compensation and stop-TP/heat-shield behavior.

FLEXCOOLER® – General specifications

HTC	600 – 1000 W/m ² K, combined value from fluid to contact surface	
Durability	Pressure cycling > 200 000 cycles; 0 – 2.5 bar Accelerated aging > 30 years under typical automotive operating conditions	
Minimum operating pressure	> 100 mbar	
Burst pressure	> 8 bar FLEXCOOLER® requires support structure	
Space requirements	> 1mm FLEXCOOLER® inflates/expands into available design space	
DV-tests	✓ Life cycle tests ✓ Thermal performance validation ✓ Thermal runaway / Stop-TP ✓ Shock & vibration	✓ Technical cleanliness ✓ Tensile strength ✓ Flaming / fire test (UL 94)
Pack assembly / disassembly	No TIMs & no adhesives necessary Enabler for rework & servicing; facilitates recycling of battery packs	

Miba FLEXCOOLER® is suitable for:

- All cell formats
- All cell chemistries
- All cooling applications

Miba FLEXCOOLER® key advantages:

- No Gap Filler/TIM required
- Lightweight & slim
- Tolerance compensation
- Enables easy rework and recycling of battery systems





Miba Battery Systems

ENERGIZE LIFE

Miba Battery Systems is a pioneer in the development and production of battery packs and energy storage systems on the basis of round cells and battery components. We were the first supplier worldwide to develop an innovative contacting process for welding round battery cells efficiently. In addition, our FLEXCOOLER® ideally complements our innovative product range as the lightest battery cooler in the world.

Our claim ENERGIZE LIFE stands for our drive to electrify a wide variety of applications, such as automobile, off-highway working machinery, motorcycles, boats, drones as well as stationary applications.

At Austria's technology-leading battery production site, the VOLTFACTORY®, we are driving forward the electrification of the future.

Miba Group

The Miba Group is a leader in the development and production of functionally critical components along the entire energy value chain. A core area of Miba's product portfolio comprises technologies for the efficient generation, transmission, storage and use of energy. Batteries as energy storage play a crucial role in this. Miba Battery Systems is therefore the ideal addition for future-oriented battery technologies and makes a substantial contribution to implementing Miba's electrification strategy.

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