



AURORA Evaluation Kit



Based on the patented **NEOcore**
– the most efficient air-cooling
technology on the market.

CooliBlade AURORA is a powerful heat sink platform for high-power applications. It is designed to give design freedom with its customizable size and installation angles.

Read the AURORA simulation results and evaluation kit information on the following pages.

AURORA is now available as a pre-order evaluation kit. Deliveries start on **15.01.2024**.

Start with ready-to-go evaluation kits or ask for a rapid prototype development service.



High-performance

The NEOcore evaporator and the optimized fin structure together guarantee optimal efficiency for IGBTs and SiCs.



Small footprint

AURORA is an ideal solution for vertical installation with only a narrow space available.



Cost-efficient

AURORA can be produced by an aluminum extrusion process, to which NEOcore is smoothly integrated.



Installation freedom

ULTIMA allows engineers to innovate in product design due to its versatile installation capabilities.

AURORA Evaluation Kit

Version 1 (For 1 IGBT):

Dimensions: 72 x 61.2 x 350 mm

Design Power: 0.8 kW

Thermal Resistance: 68.5 K/kW @ 0.8 kW

- Flow rate (m³/min): 2.5
- Component surface area (cm²): 75

Version 2 (For 3 IGBTs):

Dimensions: 216x 61.2 x 350 mm

Design Power: 2.4 kW

Thermal Resistance: 22.8 K/kW @ 2.4 kW

- Flow rate (m³/min): 7.5
- Component surface area (cm²): 225

Fin aspect ratio:

13.5 : 1

Use case:

IGBT and SiC

(See the available IGBT models on page 3)

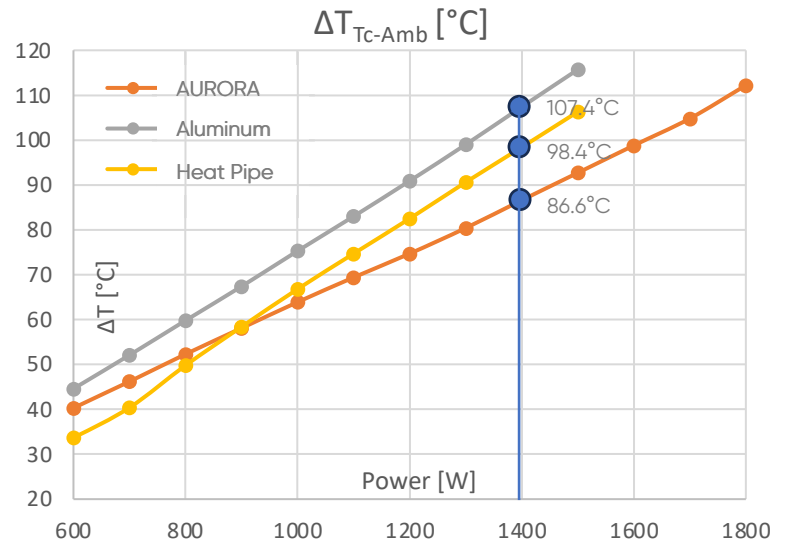


AURORA Test Results

AURORA performance was compared with an aluminum reference and state-of-the-art heat pipe heat sink. All the heat sinks shared the same form factor.

RESULTS:

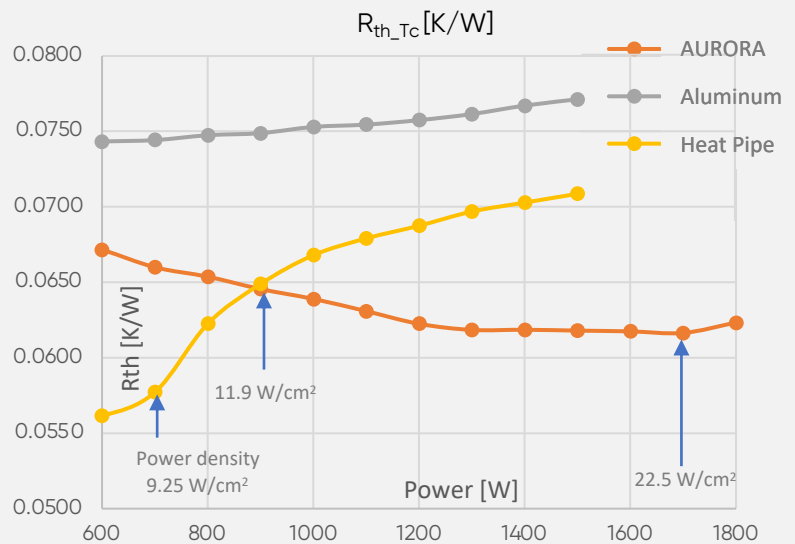
- AURORA offers dramatic improvements in thermal performance at high heat flux.
- AURORA enables the use of semiconductor modules with higher power levels and densities than the other technologies.



The thermal resistance of AURORA drops as power density increases. The aluminum heat sink and heat pipe performance decrease as the power levels increase, whereas the AURORA performance improves as the power levels increase.

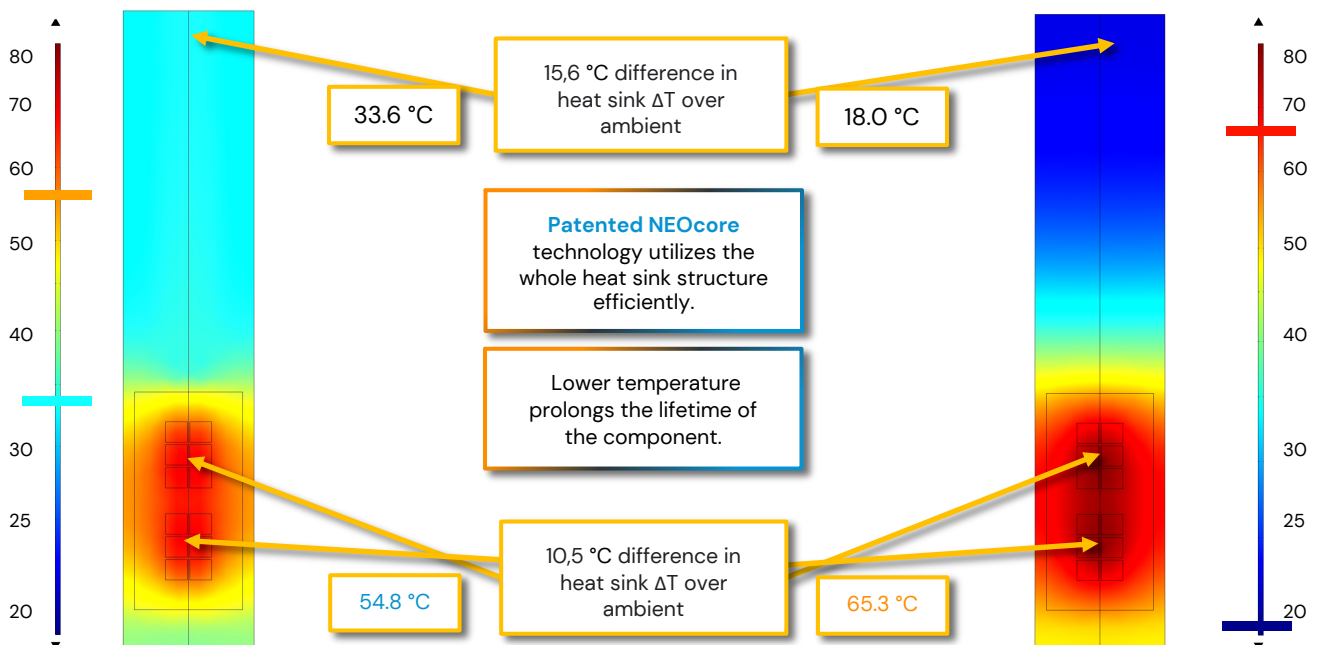
RESULTS:

- Heat pipe performance decreases significantly when power density is higher than 9.25 W/cm²
- AURORA increases the performance significantly at power levels above 1000 W
- AURORA thrives at higher power densities. When the heat pipe starts to dry, AURORA's performance keeps improving.



AURORA 800 W

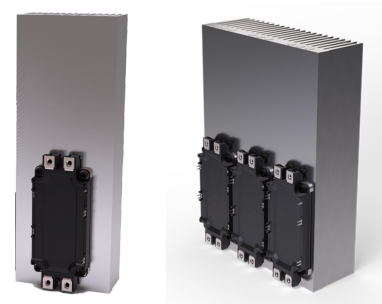
Aluminum reference 800 W



AURORA EvKit – order and product options

For IGBT modules:

E3-Pack	EconoDUAL
SimBus F	SEMiX 3
EconoPACK 3	POWEREX NX-M
EconoPIM 3	FUJI 122x62



Version 1.

Version 2.

1. Length

Standard

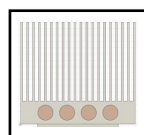
350 mm

Custom

200 – 600 mm

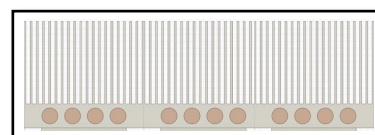
Available upon request

2. Width



Version 1

Width: 72 mm



3 pieces

Width: 216 mm in parallel
3 x 72 mm pieces are attached side by side to form a larger heat sink.

3. Base plate layouts

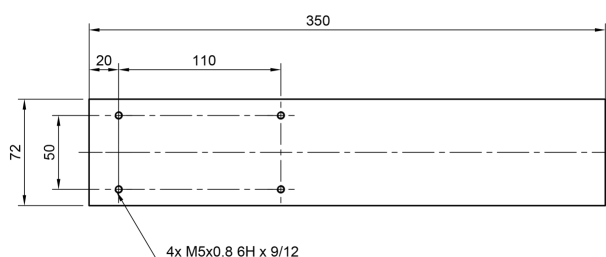
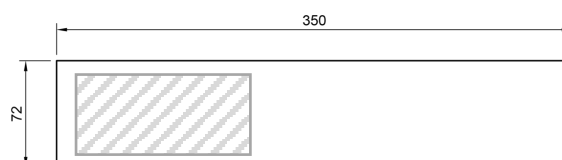


Plate 350x72 mm

Mounting holes:
110x50 mm



Customer's own layout

Upon request

4. Order

The AURORA Evaluation Kit is easy to order simply by contacting our sales department at [sales@cooliblade.com]. If you want your evaluation kit with a custom length or layout, put in the information in the email.

Evaluation Kits with standard layouts are in stock and ready to be shipped within two working days. Custom lengths and baseplates with custom drilling layouts are shipped in 10 working days.