



# cedrion

## SUSTAINABLE TECH FOR VENTILATION & COOLING

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# PROBLEM | ELECTRIC VEHICLES



Low driving range: **few kilometers per charge.**



Need for more **sustainable** new materials.

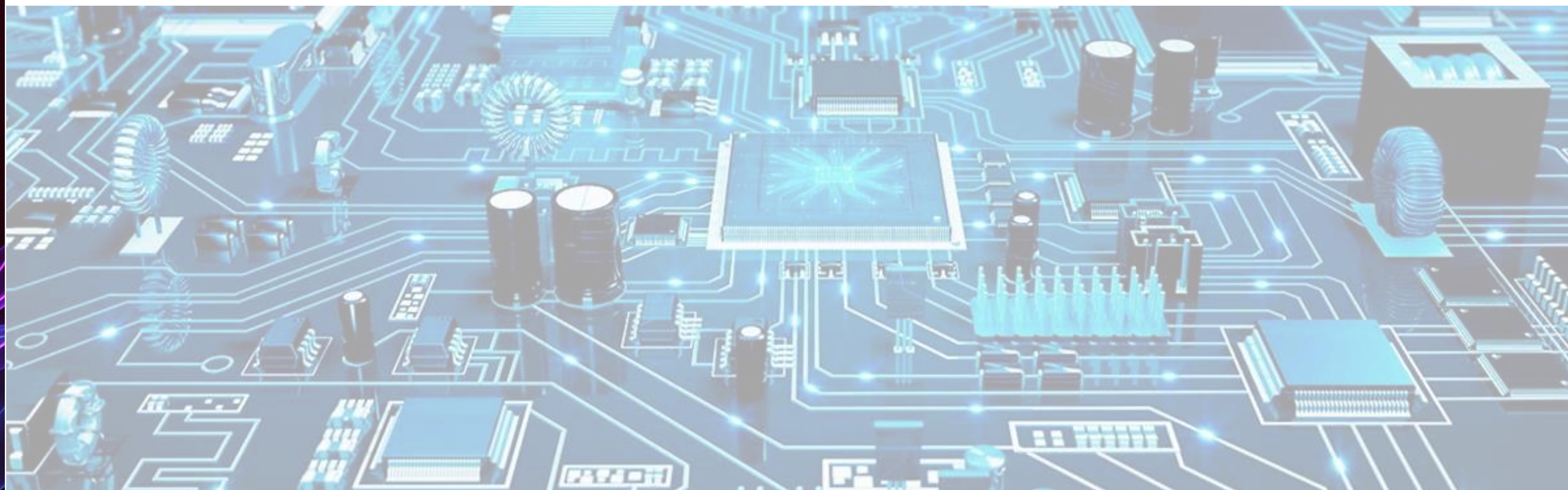






# PROBLEM | ELECTRONICS

More smaller and powerful **electronic components** imply more **thermal management issues**.





# PROBLEM | COOLING

Cooling systems are **heavy** and **bulky components** that increases its **inertia** of the vehicle and its **drag**.



Current solutions



Heavy



Bulky





# PROBLEM | COOLING

To increase cooling systems performance, usually increase the airflow thorough **noisy** active systems.



## Current solutions



Heavy



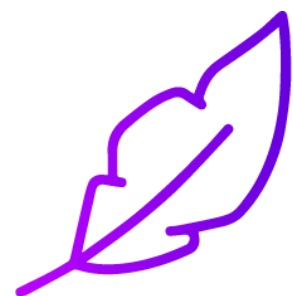
Bulky



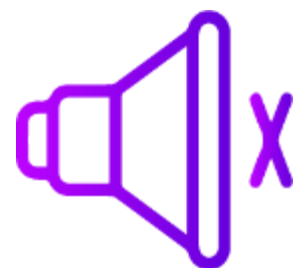
Noisy



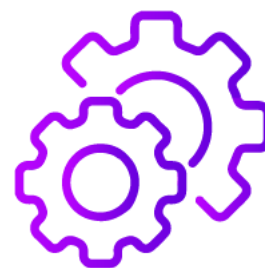
# SOLUTION



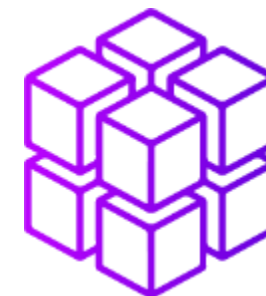
LIGHTWEIGHT



SILENT



NO MOVING  
PARTS



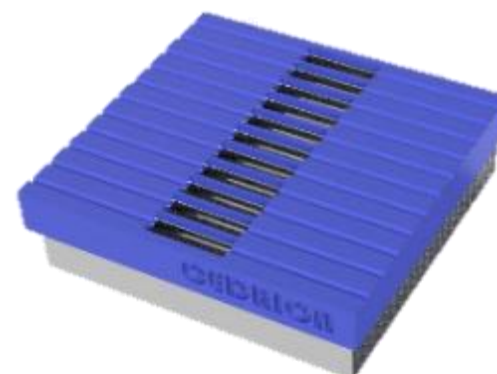
ADAPTABLE



LOW ELECTRIC  
CONSUMPTION



*Fan*



*CEDRION system*

## CEDRION

*Reduces more than*

**50% of weight**

**50% of size**

**50% of energy  
consumption**



# PATENTED TECH

***Magic*** happens when we apply high voltage to 2 electrodes.

**Electrons** collide with surrounding particles, giving rise to ionized molecules.

They are accelerated and move the air back and forth, producing the ***ionic wind***.

**ES2726228**

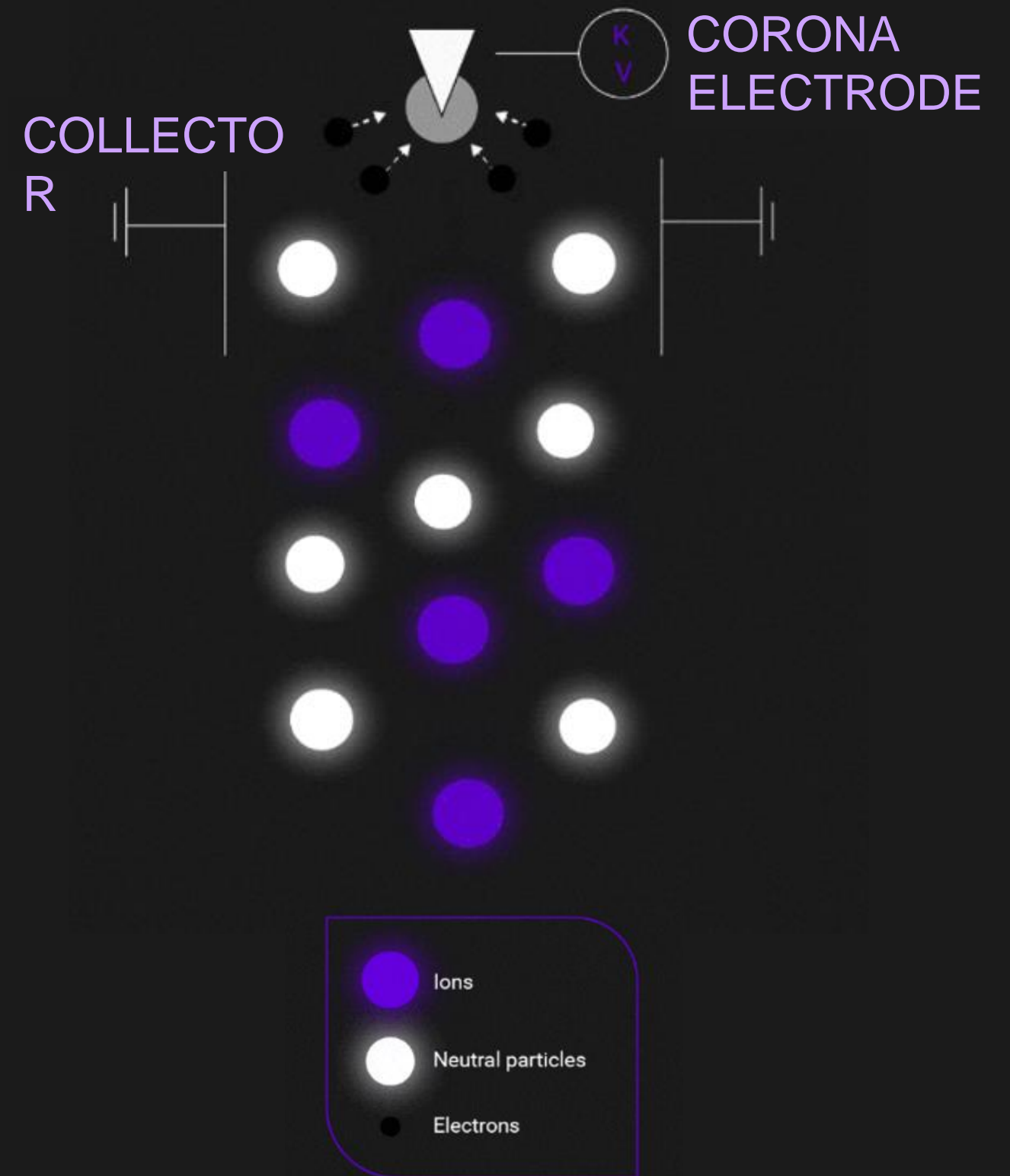
*Electro-hydro-Dynamic heat sink*

**WO/20227175572**

*Electrohydrodynamic ventilation device*

**Pending**

*Electrohydrodynamic radiator*

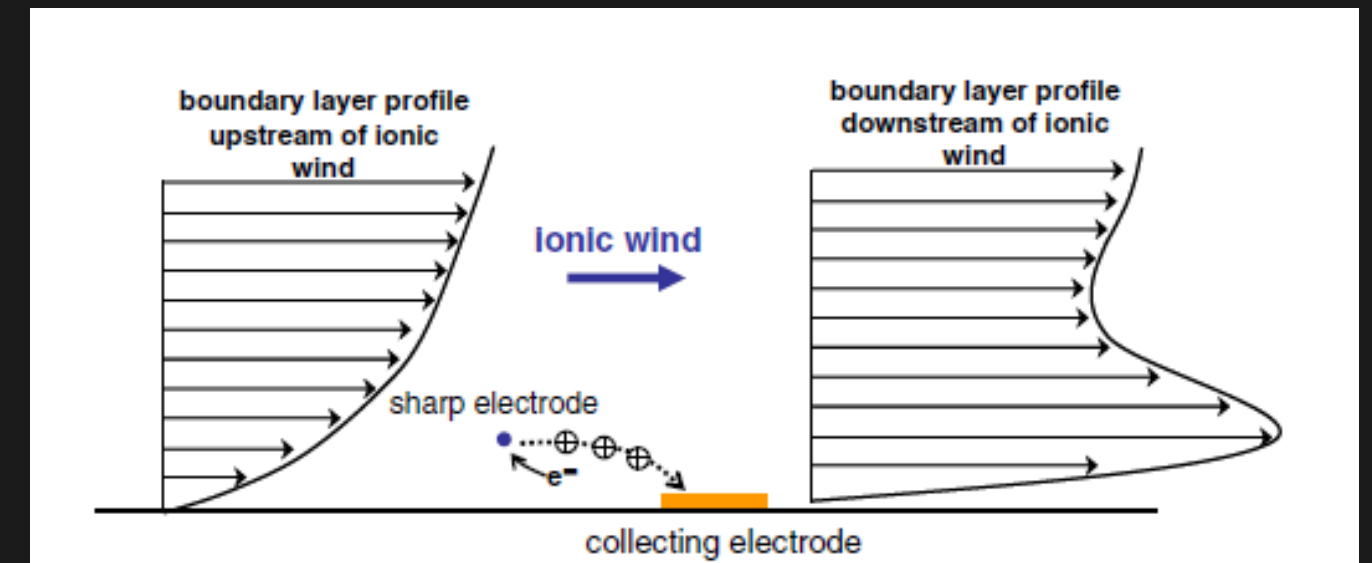


# PATENTED TECH

It is an *air circuit system* powered by ionic wind that drives air in its interior and *optimizes* its heat absorption.

The system is placed in contact with the heat source (an electronic component, for instance) and the air flowing inside will absorb its heat to the environment.

*Without requiring additional components* like air pumps or fans.



D.B. Go et al. / International Journal of Heat and Mass Transfer 51 (2008)

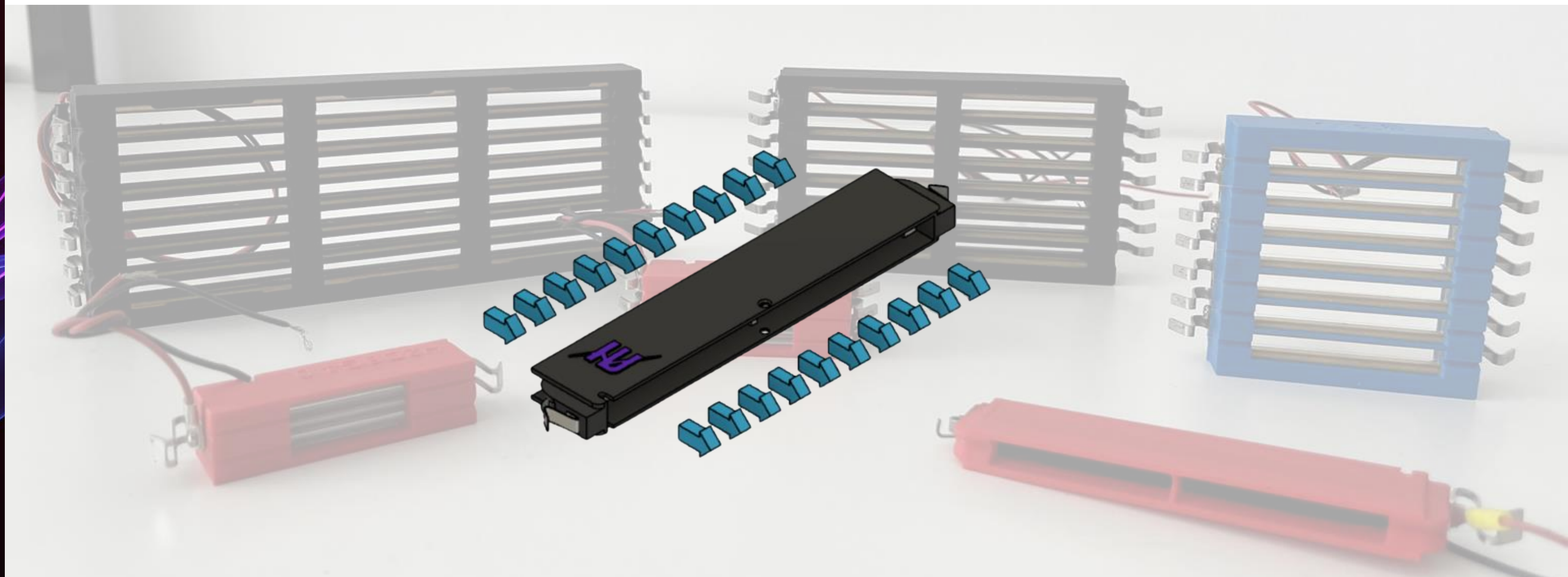




# NOTU S

NOTUS is the perfect solution for **silent ventilation**.

The **multiple design possibilities** make it ideal when the **geometry is a real constraint**.

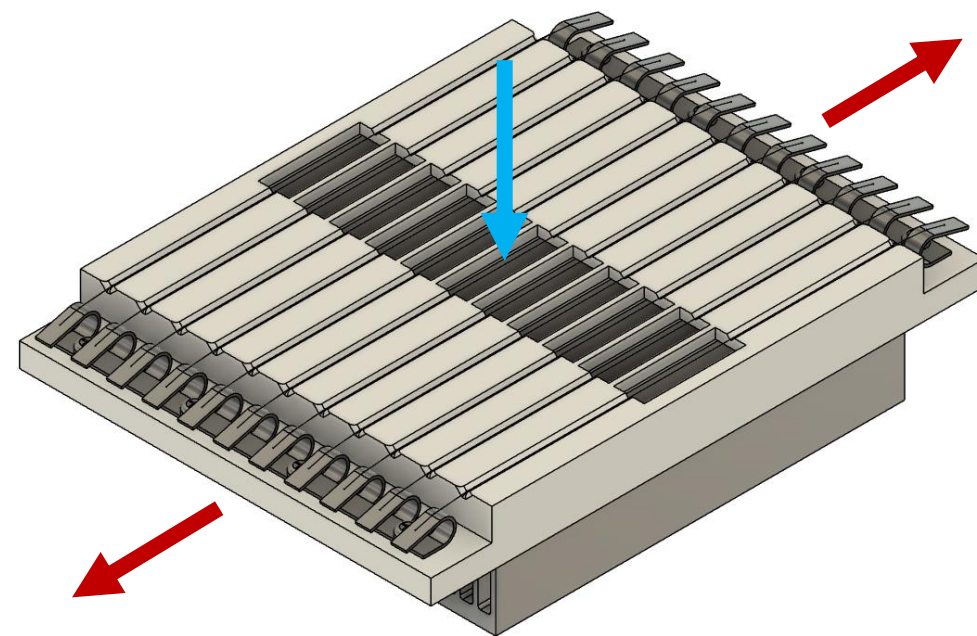


# BOREAS

BOREAS is the perfect solution for cooling **PCBs** and **electronic components**.

By placing BOREAS on a hot surface, it can effectively dissipate the heat produced by other devices.

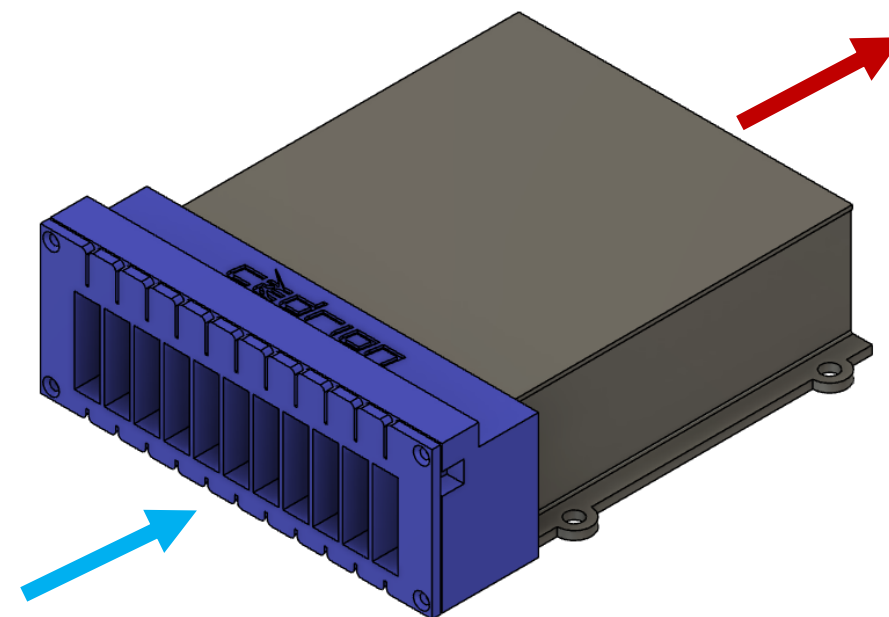
The airflow with BOREAS enters from the top and comes out from the sides to evacuate heat to the outside.



# AIROX

**AIROX** is the perfect solution for **cooling electronic boxes**, obtaining better heat transfer performances than traditional solutions with less consumption, weight and size and without noise.

With **AIROX** , the airflow is unidirectional, that is, the air moves from one side to the other.





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