



# LaminaHeat

## PRODUCT BROCHURE

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Putting heat where it is needed.

Made in Germany

### CONTACT

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Product Benefits

# CATALOG

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# *Lamina* Heat

Putting heat where it is needed

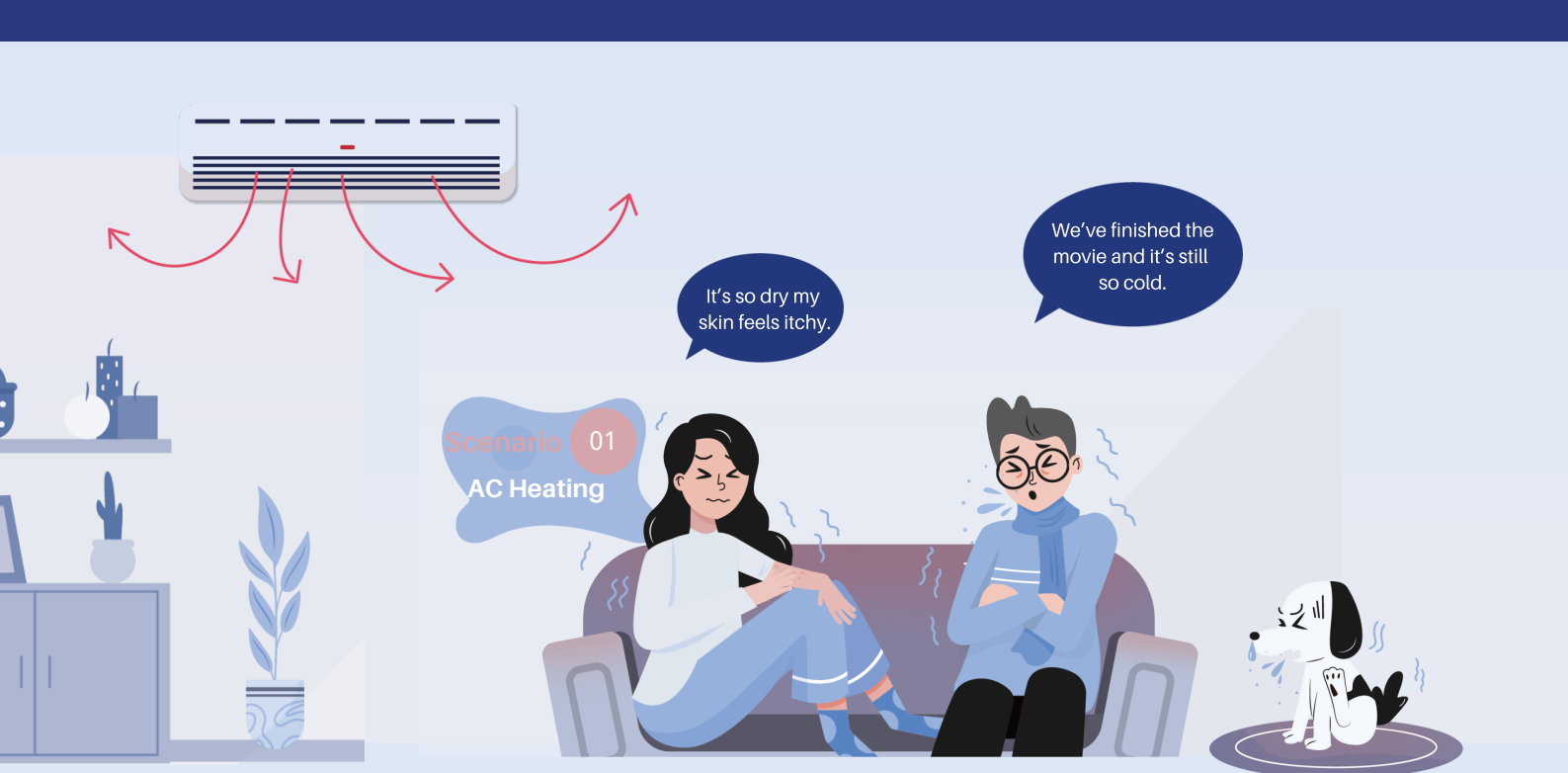
Current heating solutions dry out the air, making you feel uncomfortable and unsatisfied. Our carbon fiber heating elements radiate heat just like the sun, delivering a more comfortable and efficient heat, increasing your quality of life.

- Rainer Duchene



MADE IN GERMANY

Composite materials from the aerospace industry, putting heat where it is needed.



**LaminaHeat**  
Putting heat where it is needed.

## Product Benefits

- ✓ Easy installation
- ✓ Flexible Design
- ✓ Comfortable heat
- ✓ Quick heat-up time



# About LaminaHeat

LaminaHeat was founded in 2015 by three experts from the fields of aerospace and composite materials: Rainer Duchene, PeterSajic and Vincent Moulin. To address the markets need for innovative heating solutions, LaminaHeat provides a high performance and high flexibility carbon fiber composite heating film which can be used in a wide range of industries such as building, automotive, wearables and deicing. To solve any of your heating needs, LaminaHeat is there!

**LaminaHeat, putting heat where it is needed!**

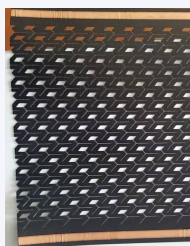


German quality Worthy of your trust for a warm new future.  
High quality High efficiency Long lifespan High-Tech

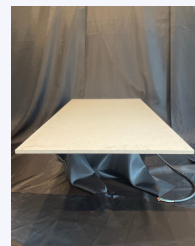
Concepts Innovation R&D intensive  
New technological developments



Second generation  
full-surface low-  
voltage heating film



Standard voltage  
heating film



Discrete EGS heaters

**2015**

**2018**

**2019**

**2020**

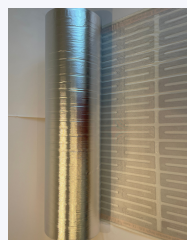
**2020**

**2022**

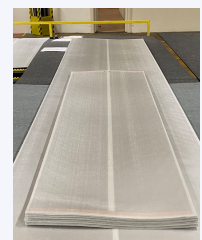
First generation  
low-voltage  
heating film



Elastic heating film



Plug and Play  
PowerBoard







# LaminaHeat

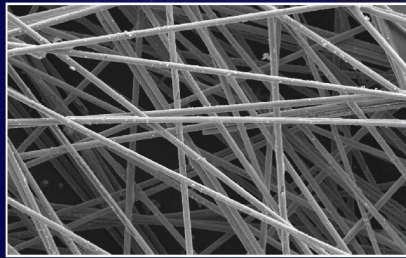
## Carbon Fiber

Carbon fiber materials have excellent mechanical and chemical properties and are widely used in the aerospace industry. They are novel composite materials often called "black gold" for their unique properties.

**01**  **Light Weight Material**  
1/5th the density of steel

**03**  **High Heat Tolerance**  
Can withstand temperatures up to 2000°C

**05**  **Strong Corrosive Resistance**  
Resistant to strong acids such as sulfuric acid



**06**  **Long Service Life**  
50+ years lifespan

**02**  **Incredibly Robust**  
High tensile strength 7-9 X of steel

**04**  **Rapid Heating/  
Cooling Resistance**  
Strong resistance to thermal contraction and expansion

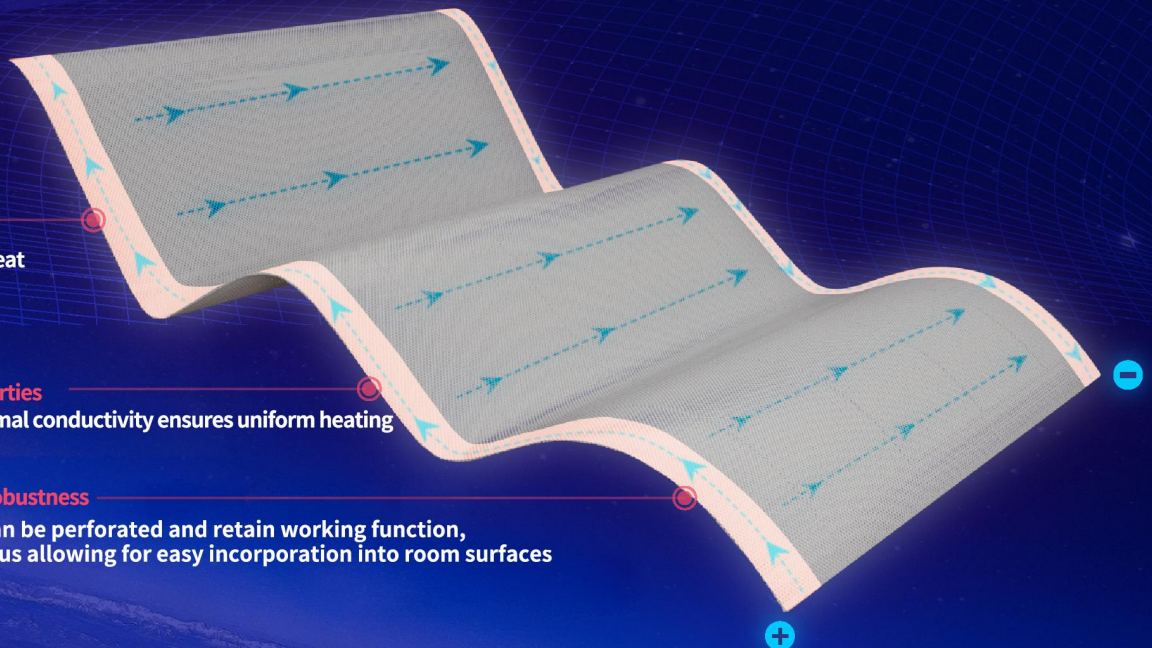
**07**  **Waterproof**  
No moisture absorption, not affected by water

In 2009, while developing advanced thermoplastic composite materials for the aerospace industry, LaminaHeat's chief engineer and R&D expert Peter Sajic had the idea for LaminaHeat. The concept was to take advantage of the superior electrical and thermal properties of carbon fiber, thereby producing a thin electrical heating film/material that could easily be integrated into a wide range of thermoplastic materials. When applied to heating buildings the heating films can greatly reduce energy consumption and deliver a more comfortable and quicker heat than any alternatives!

**1. Electrical/  
Thermal Properties**  
Nearly perfect electricity-heat  
conversion rate 99.7%

**2. Thermal Properties**  
Excellent thermal conductivity ensures uniform heating

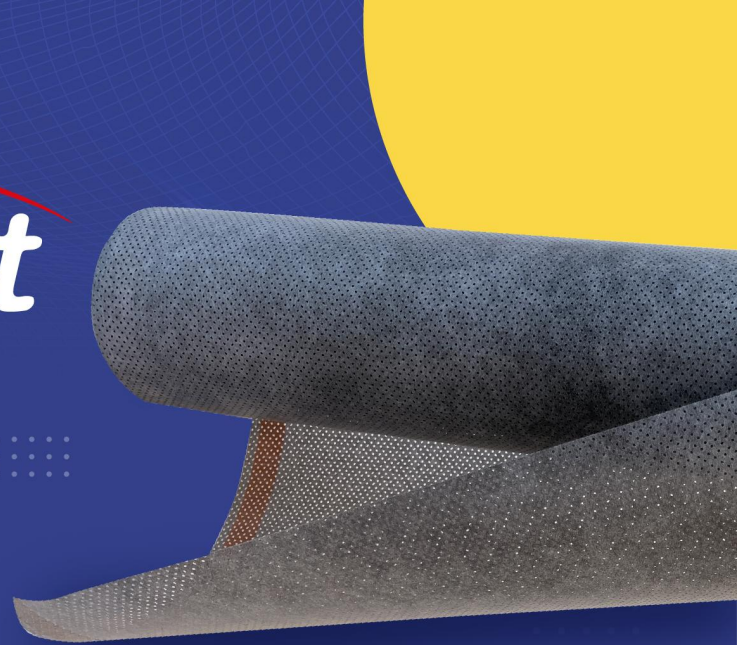
**3. Robustness**  
Can be perforated and retain working function,  
thus allowing for easy incorporation into room surfaces





# LaminaHeat

## Comfort Scrim™



## Product Benefit



### Comfortable Heat

- Radiant heating
- Minimal air circulation
- Suspended pathogens reduced by 60%



### Quick Heat-up Time

- Surface of heating film reaches set temperature within 8 minutes
- 20-30 minutes comfortable indoor environment is attained
- Allows for Zoned heating, high energy savings



### Flexible Design

- Suitable for wall/ceiling/floor heating
- Easy installation for both new houses and retro-fits
- High proximity to surface, takes up minimal surface area
- easily integrated and or embed into building materials



“Spring Sun” like radiant heating effect



Flexibility of installation allows for greater design possibilities



Once installed blends into surfaces seamlessly



24-48v power input with transformer

# LaminaHeat

## PowerBoard

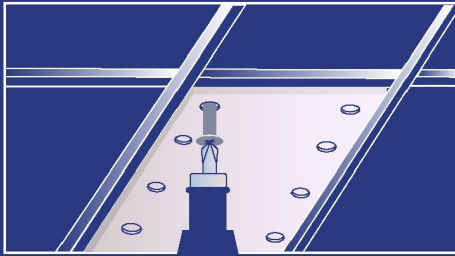
### Product Benefit

-  Easy installation
-  Comfortable heat
-  Quick heat-up time
-  Already insulated

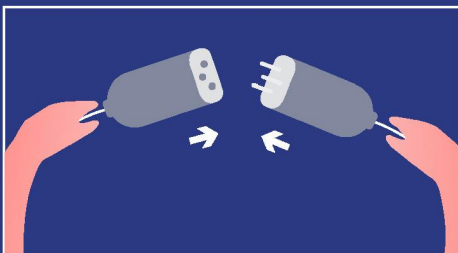
### Four Steps



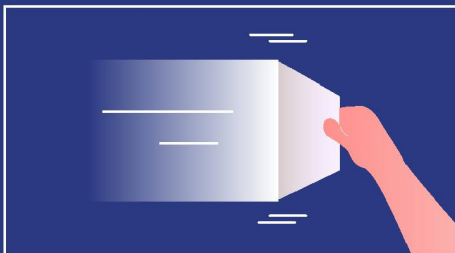
01 Hang the PowerBoard on the suspended ceiling profiles



02 Screw PowerBoard in place

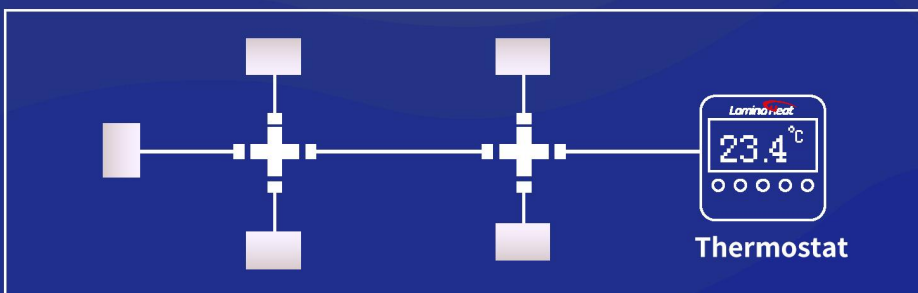


03 Connect the Plug and Play cable tree system



04 Apply plaster on the surface of PowerBoard  
(same as standard ceiling gypsum board)

### Innovative cable tree system, easy Plug-and-Play connections

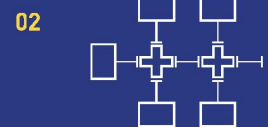


Note: □ represents LaminaHeat PowerBoard

### Four Parts



LaminaHeat  
PowerBoard



Plug and Play cable tree system



Thermostat



Screw



