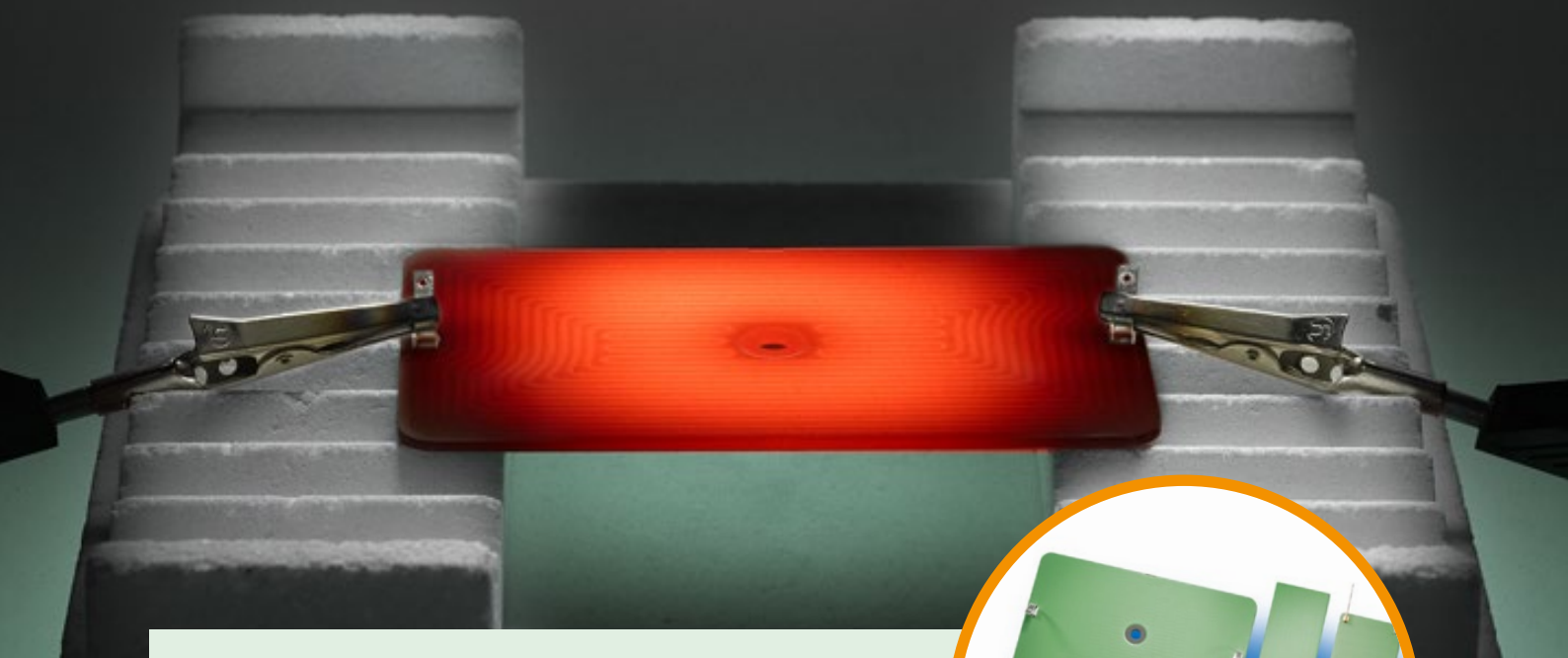
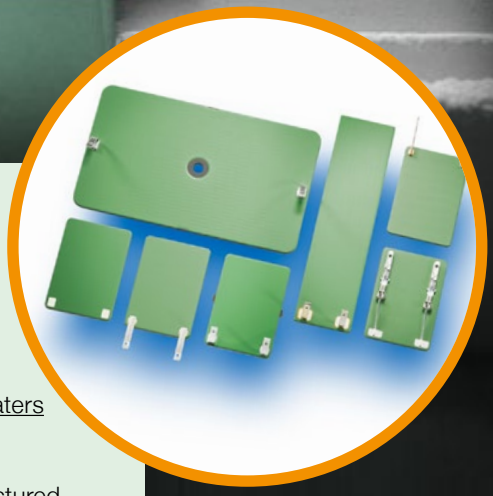
Rauschert metal flat heater

Right where they are needed





Metal flat heaters, a hybrid of metal, ceramic and glass are used in applications where rapid localized or uniform heating, a robust design with high heating and cooling rates and excellent cost-performance ratio are required. Application areas include the packaging industry, the automotive sector, industrial forming technology, analytics, and more.

Metal flat heaters, designed for use in the temperature range up to 500 °C, can be rapidly heated up and cooled down nearly as quickly as desired due to their robust construction and resistance to *thermal shock**, without suffering any damage.

For higher temperatures of up to 1100 °C our high-temperature ceramic heaters are used.

Metal flat heaters are manufactured using the so-called thick-film process. Multiple layers with various functions are applied to a metallic substrate using screen printing.

* *Thermal shock refers to the destruction of a solid object due to rapid heating or cooling, as the resulting stresses in the material cannot be absorbed or dissipated quickly enough. The result is the failure of the component through fracture or bursting.*

- High temperatures
- Highest quality
- up to 500 °C, permanently
- manufactured and tested in Germany

TRADITION
PROGRESS
INNOVATION

Rauschert

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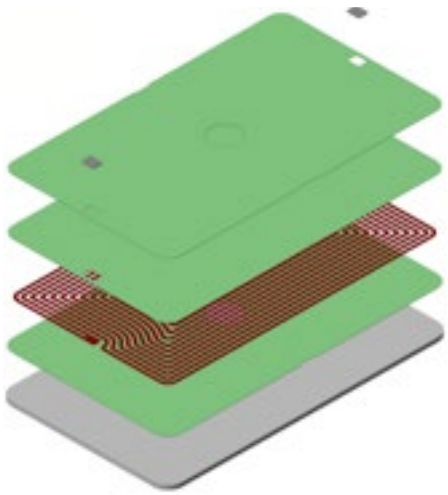
Rauschert metal flat heater

Basic structure of a metal flat heater

In addition to standardized solutions, our stainless steel substrates can also be custom-made and printed according to individual customer specifications. The conductive path is designed by our highly motivated team based on the desired performance data and tailored to the heater's geometry. Custom solutions such as the precise integration of sensors are faithfully implemented from single pieces to large-scale production.

Cleanroom manufacturing, from substrate preparation to soldering the contacts, ensures the highest quality standards. The result is a durable and light-weight resistance heater with high energy efficiency. Our commitment to quality is completed by a functional test.



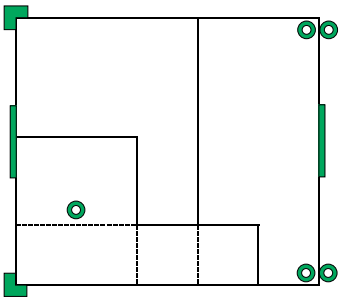
Overview of technical features

Component / Feature	Specification
Substrat	Stainless steel 1.4016
Substrate Thickness	1-1.5 mm, higher layer thickness possible
Dimensions	Up to 150 x 150 mm
Power	25-800 Watts (free in still air)
Operating voltage	24-230 V
Temperature range	450 °C – 500 °C continuous; 550 °C, short-term
Continuous operation lifespan	> 8000 hours (20 °C; 50 % relative humidity; clean room)
Resistance-temperature behavior	Almost linear PTC behavior (positive temperature coefficient)*
Temperature control	Voltage
Contacting methods	Soldering pads, tabs, wire and other methods possible
Contacting material	Silver
Mounting Fastening	Screws, laser welding, soldering

*PTC: positive temperature coefficient. As the temperature increases, the resistance also increases, thus regulating the flow of current. The heater's temperature is autonomously regulated by this effect.

Mounting options

Securing the heaters with screws carries the risk of mechanical damage to the functional layers of the heater. To evenly distribute the forces occurring during the screwing and to prevent a short circuit from the fastening to the heater, a micanite mica sheet is commonly used as a standard. This serves as mechanical protection and simultaneously guards against one-sided radiation from the side facing away from the body to be heated.



Fastening points through solder joints, weld joints, and eyelets (examples)

Contact

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