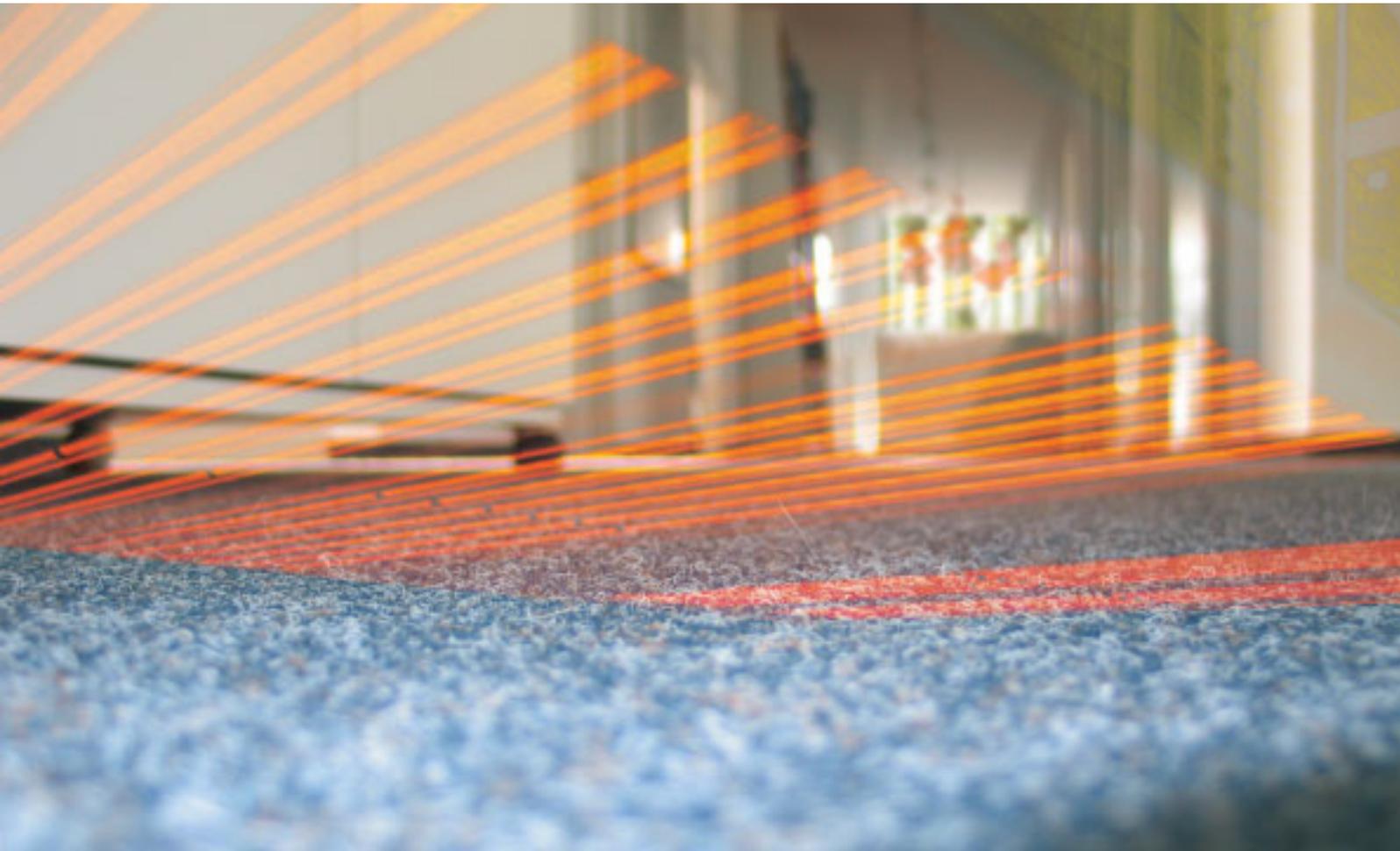


# Heraeus



## **Infrared Heat For The Textiles Industry**

Heraeus Noblelight

# Modern Textiles Need Modern Heat

Many different heating and drying processes are required during the manufacture and processing of textiles. High value, technical textiles must be fixed reliably and qualitatively, coatings on fabrics and materials need to be dried as quickly as possible. The demands on heating systems are continuously increasing and heating processes must keep pace with manufacturing processes. Infrared is a proven source of heat in textile processing, as infrared transfers high heating power in very short times. This helps to reduce energy consumption, to increase production speeds and to lower production costs.



## Heating

Infrared emitters can be individually controlled and respond within seconds, so that precise temperature profiles can be achieved.



## Laminating

Infrared emitters transfer heat directly before lamination.



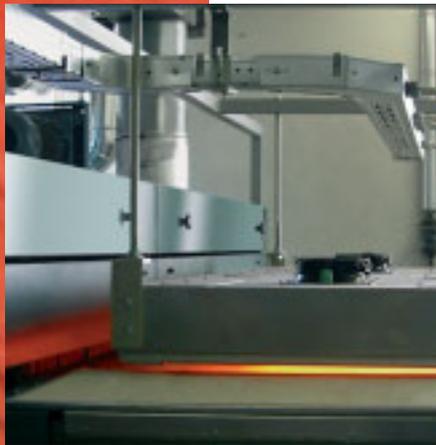
**Activation of adhesives**  
Infrared heat ensures that adhesives are activated precisely where required.



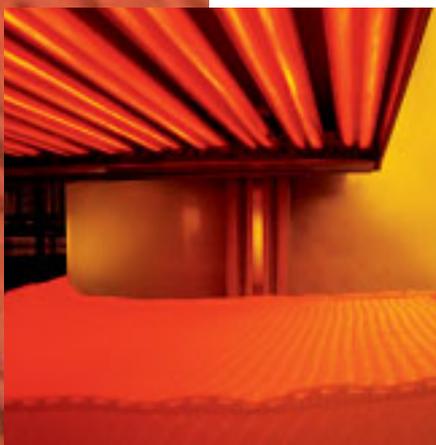
**Embossing**  
Infrared provides fast and targeted surface heating before embossing.



**Coating**  
Choice of the correct infrared wavelength ensures effective drying of coatings.



**Drying**  
Pre-heating prior to stenter speeds up production.



**Thermofixing**  
Carbon infrared heats the material evenly and shortens the fixing section so that there is enough room for space-consuming High Distance Materials.

# A Versatile Partner For Home Textiles

Fibres and yarns are dyed, carpets are coated on their reverse side, curtains or blinds are printed – and infrared technology is always there to help ensure that the required heating process is carried out quickly and effectively. There is a broad spectrum of wavelengths, shapes and power outputs to choose from, the heating can be perfectly matched to product and process. That saves on time, effort and operating costs!



**Fabric webs**  
Heating before embossing



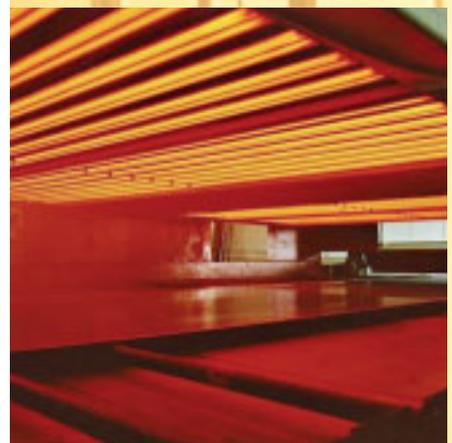
**Needle-punched materials**  
Powder coating



**Polypropylene fibres**  
Heating for melting/fusion



**Thread and yarn**  
drying of water-soluble inks



**Cloth**  
Coating with neoprene and silicon



**Blinds**  
Pre-heating prior to stenter



**Thread and yarn**  
Drying with a slot emitter

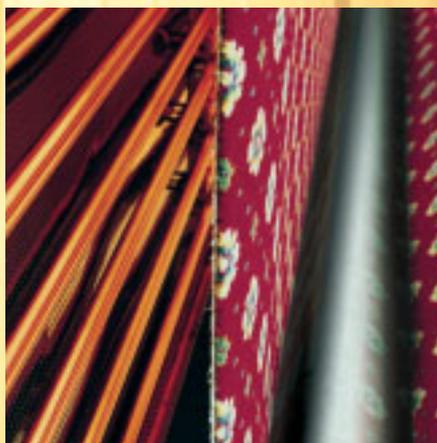
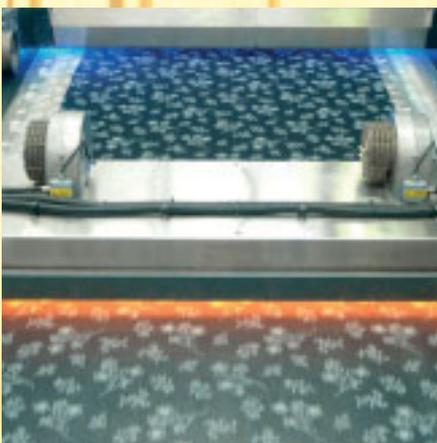


**Adhesives on carpets**  
activation before lamination



**Screen printing**  
drying on textiles

**Carpets**  
are heated  
and then brushed



**Reverse sides of carpets**  
are heated to seal the latex  
backing

# Infrared – When We're Talking About Cars

Heating stages should not constrict the manufacturing process. Infrared heating technology helps to modernise production and improve quality. Infrared emitters ensure that car seat covers are crease-free, that interior carpets fit perfectly – and that airbags deploy rapidly in an emergency. It pays to think infrared when we're talking about cars.



## Vehicle Interiors

Infrared eliminates the need for pre-heating of car interior cladding and so saves significant costs and time.

## Airbags

deploy much better when they have a silicon coating. Infrared is used to provide reliable, fast and efficient drying.



## Covers

Infrared makes car seat covers and similar parts crease-free.





# Infrared Emitters from Heraeus Noblelight – Know How Is Involved In The Detail

- Wavelengths optimally matched to the properties of your material.
- Power, length and shape of the emitter perfectly matched to the product and process
- Heat only where it is needed and for only as long as it is needed.

As a result, energy is applied efficiently to speed up your manufacturing process and improve product quality.

## Carbon Infrared Emitters CIR®

CIR emitters combine a medium wave spectrum with fast response times and high power outputs. These emitters are produced as round tube- or twin tube emitters, in lengths up to 3m, with maximum power outputs of 100 kW/m<sup>2</sup> for round tube or 150 kW/m<sup>2</sup> for twin tube emitters.

## Medium Wave Infrared Emitters

Standard emitters with a medium wave spectrum, solid, flexible in construction, lengths (up to 6.5m) and power output (max. 60 kW/m<sup>2</sup>), especially suitable for continuous processes.

## Fast Response, Medium Wave Infrared Emitters

Emitters, with an improved output in the medium wave (2-4micron). Response times as fast as short wave, with a maximum power output of 150 kW/m<sup>2</sup> and lengths up to 6.4m.

## Short Wave Infrared Emitters

Infrared emitters in the short wave region. Twin tubes with lengths of up to 6.4m and high maximum power output of 200 kW/m<sup>2</sup>.

## Infrared Halogen Emitters NIR

Halogen infrared emitters with a spectrum in the near-infrared region, a maximum power output of 1000 kW/m<sup>2</sup> and very fast response times.

## Modules

Infrared modules are built in the sizes to suit customer systems, with the optimum infrared emitters and with the power output necessary for the process.

## Emitters for Targeted Heat

meet all requirements in finishing processes, where only very small or curved faces, edges, borders or defined contours of the product need heating. For this Heraeus has developed purpose built products such as contoured emitters, small surface emitters, Omega emitters and emitters for heating hot rivets.

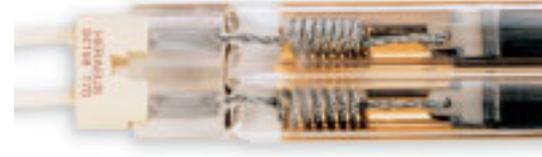
Common to all of these emitters is their focus in shape, size and spectrum to the desired process. Heat is produced in a targeted fashion exactly where it is needed. Consequently energy losses to the surrounding area are very small.

Infrared emitters are produced as round tube or twin tube. **Twin Tube Infrared Emitters** have a high mechanical stability and can be produced in every required length up to 6.3m

A **Gold Reflector** on the IR emitters reflects the IR radiation; the effective radiation onto the object is therefore roughly doubled.

**Infrared radiation transfers heat directly and at high efficiency. Heraeus Noblelight infrared heating technology means heat only where it is needed, at the optimum wavelength for the material and in line with the process.**

**Heraeus Noblelight is a specialist in customer-specific infrared emitters and helps in the selection of the optimum emitter.**



Carbon Twin Infrared Emitters CIR



Carbon Round Tube Infrared Emitters CIR



Medium Wave Infrared Emitters



Fast Response, Medium Wave Infrared Emitters



Short Wave Infrared Emitters



Infrared Halogen Emitters NIR



Infrared Halogen Emitters NIR

# Tested, Checked and Proven

## Know-how with tradition

Heraeus Noblelight has many years' experience in infrared heating technology and provides individual advice and service. Heraeus Noblelight offers its customers the capability for proving trials in its in-house Applications Center or on-site with experienced technical assistance. In Application Centers all over the world you can examine the effects of infrared and the different infrared spectral radiation on your product as well as measure the temperature distribution during the heating process. From these results Heraeus engineers can calculate the required power output and other parameters needed for your new thermal process. In addition we offer a range of portable test equipment which can be used for an online appraisal of the benefits of infrared.

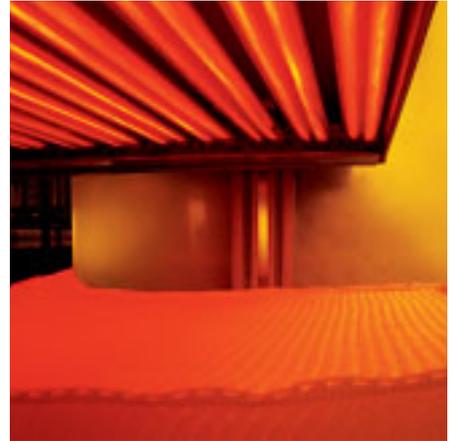
## Areas of Application

- Heating
- Drying
- Coating
- Laminating
- Annealing

Find nearly all about infrared on our CD.  
Order free of charge!



Tests in the Application Center



Tests with customer materials

## Heraeus Noblelight is your partner for industrial heating processes in

- Textiles
- Glass
- Plastics
- Automotive
- Semi-conductor Manufacture
- Food Processing
- Print and Paper
- Electronics
- Metals

Heraeus sales engineers use 30 years of company experience from all major industries to give you expert guidance during the initial stages of your thermal process design.



Drying trials on-site with portable test equipment

We reserve the right to change the pictures and technical data of this brochure.

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