

The Wavelength Converter

Infrared radiation transfers large amounts of energy in a short time. The effectiveness of the heating or drying of different materials depends on how well the material can absorb the radiation. Especially with thin materials, a large fraction of the radiation is lost as this fraction passes through the material without any heating effect.

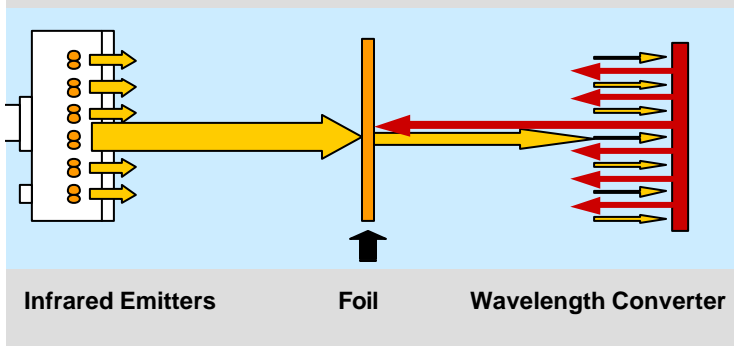
Heraeus has found an ingeniously simple solution to this problem: a wavelength converter, consisting of a plate with mineral fibers, absorbs the radiation which has passed through the material and radiates it back into the material at a different wavelength.

The wavelength converter absorbs transmitted infrared radiation, heats up to 500 - 600°C and then radiates back medium- and long wave radiation.

Consequently, the fraction of infrared radiation which has passed through the material is captured by the converter and absorbed in the material with high efficiency.

The wavelength converter can be tailored to the size of the IR module and the finishing plant where it is used.

An IR wavelength converter requires only a small capital investment and significantly increases energy utilization.



The Benefits

- Energy saving
- Fast heating
- Shorter heating area
- Low investment cost
- Easy installation

The Patent

The concept of using wavelength converters for foil heating is patented in Germany by Heraeus Noblelight since 1992 under DE P 42 02 944.9, and in Europe since 1998 under EP 0 554 538 B1.

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