

**Individual quartz glass IR emitters for
highest process stability**

Quartz glass IR emitters

Since 2002, UV-Technik Speziallampen GmbH has been developing, producing and selling infrared emitters world-wide for all possible requirements. In doing so, we precisely address customer requirements and optimally adapt our emitters to the respective heat process by using different spectra. Highest precision and reliability are our objective.

Our infrared emitters with an **emission maximum between 1.2 µm and 3.2 µm** are made of high-purity quartz glass according to precisely specified production processes - always with outstanding design and quality. They are characterized by the best properties. The optional use of **gold reflectors on the back** guarantees ideal reflection and maximum radiation energy in smallest installation spaces, by minimizing lateral radiation, and maximizing radiation efficiency. In addition, the irradiance to the substrate is improved.

The **twin-tube cross-section** ensures a high insensitivity to temperature changes and is therefore stable in terms of linear expansion and deflection.

Compared to conventional heat sources, such as hot air blowers or gas radiators, quartz glass emitters produce a much higher area output.



Source: Toray

Advantages

- ✓ Maximum production speeds thanks to ideal wavelength adjustment
- ✓ Optimal radiation power on smallest spaces
- ✓ Very high radiation efficiency
- ✓ Highest energy savings and short process times thanks to rapid warm-up
- ✓ Favorable energy distribution/ radiation due to twin-tube shape
- ✓ Particularly good irradiance through integrated reflection coating
- ✓ Good mechanical stability thanks to double tube geometry

Spectra and designs

Our infrared emitters are available in different versions and wavelength ranges. This allows them to be precisely tailored to the product and the manufacturing process.

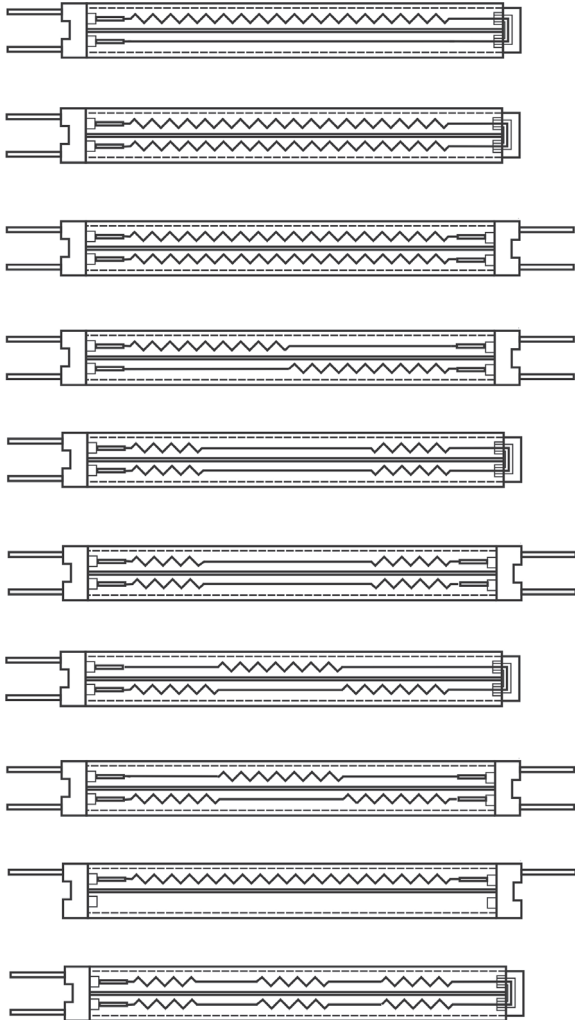
This high level of flexibility makes it possible to work to special customer requirements. Thereby, our emitters are suitable for **all industrial applications where heating processes must run reliably.**

Our IR emitters are available as twin-tube emitters with one or two-sided connection. As required, the lamps are specified for vertical mounting positions.

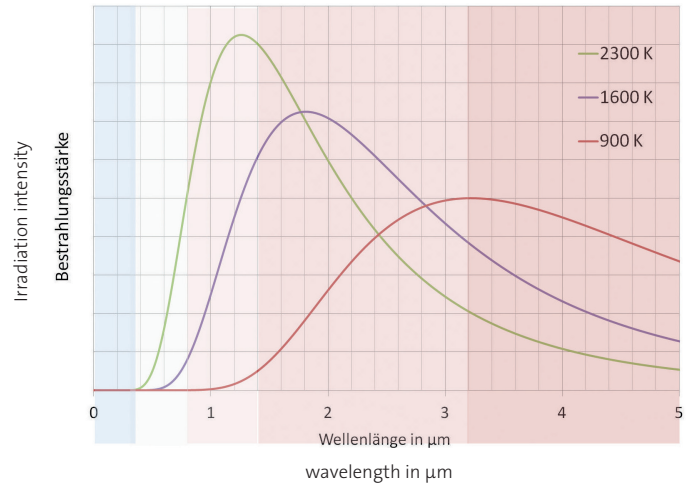
Available standard lengths:

Short-wave	2.300 mm
Fast medium-wave	2.300 mm
Medium-wave	3.000 mm

Possible designs:



The following graphic shows the different radiation spectra and shows the respective maximum emission.



Product features

All infrared lamps made by UV-Technik Speziallampen GmbH are developed to ensure **maximum lifetime**. The lifetime depends on the process, and is significantly influenced not only by the operating time, but also by the coil temperature and the degree of contamination of the glass surface.

We use silicone-free, glass-fiber-insulated nickel cords with a continuous temperature resistance of 350 °C as standard for the insulation of the connecting strands. Upon request, we supply PTFE-insulated nickel cords with a long-term thermal stability of 220 °C at no extra charge.

The continuous temperature resistance indicates the maximum ambient temperature of the pigtail without the effect of thermal radiation.

The infrared emitters of UV-Technik Speziallampen GmbH consist of a quartz glass tube with an internal heating coil. Depending on the selected heating coil, various infrared radiation ranges can be set and thus perfectly adapted to the heating process. Depending on the application, materials can be heated or warmed up in various ways or water can be evaporated from paints and varnishes.

While short-wave radiation helps to heat thick layers or materials, medium-wave infrared radiation only heats surfaces.

Emission maxima:

Medium-wave	3,0-3,2 µm
Short-wave	1,2-1,4 µm
Fast medium-wave	1,4-1,7 µm

The cross-section of the pigtail depends on the current load and ambient temperature of the connection cable during operation.

If no ambient temperature is specified in the order, the fiberglass-insulated nickel-braided connecting leads are designed for an ambient temperature of up to 350° C and for a PTFE stranded wire up to 220°C.

Upon request, the emitters can be supplied with other cross- sections or bare nickel braids with an additional charge.

In the case of glass fiber-insulated nickel braids, the insulation discolors above 250 °C, but at temperatures below 400 °C it has no effect on the insulation effect and the mechanical stability.

Application areas

Today, almost every product undergoes at least one thermal step during its manufacturing process. In heat treatment, energy efficiency, short heat-up times and a compact design play an important role. Our IR emitters support technical drying or warm-up processes through efficient material pro-cessing.

Typical applications:

- Drying of paints, varnishes and wood paints
- Preheating of components in the automotive sector
- Heating processes for powder coatings
- Solar cell and semiconductor manufacturing
- Plastic processing and treatment
- Treatment of textiles
- Keeping food warm
- Heating and coating of glass



Process-optimized infrared emitters

The infrared emitters of UV-Technik Speziallampen GmbH are precisely adapted to the needs of our customers and their process requirements and thus offer maximum reliability and process stability.



We would be glad to specify our products according to your requirements. For this purpose we have the opportunity to carry out preliminary tests in our technical center.

Depending on the overall length and shape, different retaining clips are used. Information and installation instructions are available on request.