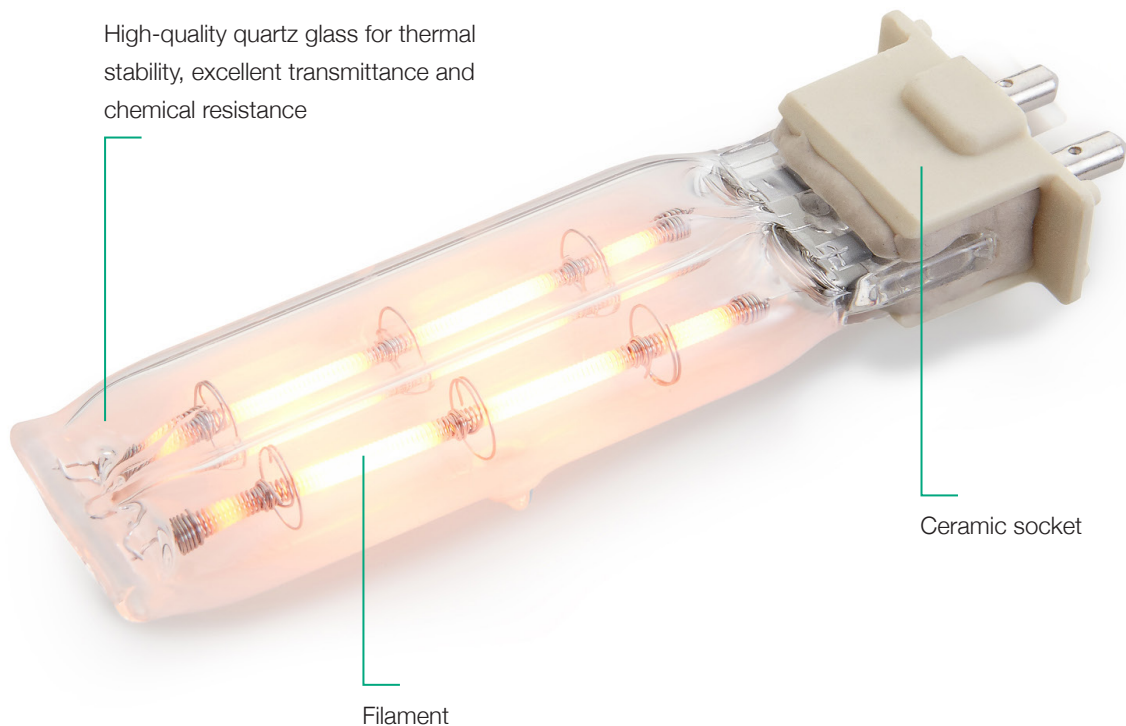


Twin Tube Lamps for High-Power Infrared Irradiation

High power density, increased mechanical stability and flexible filament and connection options.



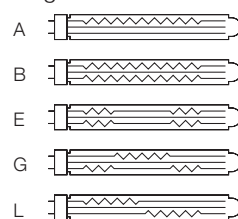
Twin tube lamps can be single or double ended and are special IR emitters consisting of two quartz tubes, that have been fused together. Due to this design these lamps have an improved mechanical robustness and stability, and offer the possibility to enhance the applied power density. They are available from short (SWIR) to medium-wave infrared (MWIR) emitters.

Different filaments for bespoke solutions

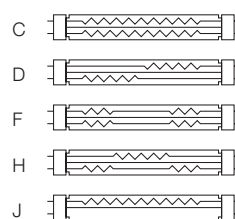
In addition, our twin-tube lamps offer special customisation options: Each tube can contain a different filament, which determines colour temperature, heating length and segmentation, among other things, and can be tailored precisely to customer needs and process requirements in combination with a reflective coating.

Twin-Tube Lamps

Single-ended



Double-ended



Performance across lengths of up to five metres

As process widths increase, maintaining a homogeneous temperature profile across the entire surface becomes increasingly demanding. Every transition between heating zones can introduce thermal variations that may affect downstream operations such as coating, laminating or thermal conditioning.

Ushio offers twin-tube lamps in lengths of up to five metres. These lamps provide high power density, flexible connection and control options and reduced installation effort. Thanks to the temperature-sensitive pinch area being positioned outside the heating zone, they are particularly well-suited to applications involving the uniform heating of super wide surfaces or webs.

IR Twin Tube Lamp Features

- ◆ Short or medium wavelength radiation
- ◆ Single or double-ended electric outlet
- ◆ Various filament designs
- ◆ Burning position: horizontal and arbitrary
- ◆ Coatings: ceramic or gold
- ◆ Heating length (mm): 50 - 5000
- ◆ Cross section (mm): 22x11, 23x11, 30x15, 33x15 and others
- ◆ Colour temperature (K): 1000 - 3200
- ◆ Power (kW): 0.25 - 20
- ◆ Power density (W/cm): 12 - 240
- ◆ Power on response: <1s
- ◆ Average lifetime (h): typically 5000 and more
- ◆ Dimmable
- ◆ On request available with:
 - an integrated reflector made from alumina ceramic or gold
 - a universal burning position
 - a waterproofed connection

Benefits

- ◆ Improved mechanical robustness and stability
- ◆ Compact bridge design for maximised heating length
- ◆ Fast heat-up and cool-down times for improved productivity
- ◆ Precise thermal control tailored to individual materials and applications
- ◆ Contactless heating for continuous production processes
- ◆ Straightforward integration into existing production equipment



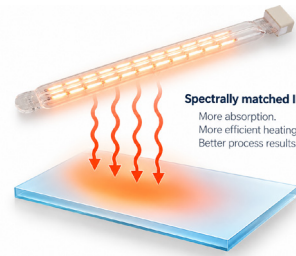
From an engineer's perspective

In infrared heating, efficiency starts with wavelength — not power

When an IR process underperforms, increasing power is not always the answer. The issue may be a spectral mismatch.

The filament of an IR emitter determines its colour temperature and, with it, the distribution of wavelengths it emits. Materials, in turn, absorb different wavelengths with different efficiency. The better the emitter spectrum matches the material's absorption characteristics, the more effectively radiant energy can be converted into process heat.

Match the spectrum for maximum efficiency



By selecting an emitter with a spectrum that matches the material's absorption characteristics, more radiant energy is converted into useful process heat.

This is particularly relevant for glass processing, where absorption and transmission can vary significantly with wavelength, glass composition, thickness and coatings. Selecting the appropriate IR emitter therefore helps deliver the required heat where and how it is needed in the process. The same principle applies to coatings, polymers, adhesives and water-based systems.

At Ushio, we go beyond supplying IR emitters but solutions beyond standard. Our engineers provide in-depth application expertise and work closely with customers to identify the right combination of emitter temperature, spectral output and power density for their material and process. For new or demanding applications, we offer test-runs in our in-house application laboratory to identify the optimal solution for your bespoke process.

Applications

- ◆ Adhesive activation
- ◆ Drying of coatings on facade elements, tiles, and slabs
- ◆ Drying of varnishes and paper
- ◆ Heating and fusing of plastic and synthetic material
- ◆ Heating of composite materials
- ◆ Heating of separation foil before cutting
- ◆ Lamination and shrinking of foils
- ◆ Preheating or tempering of large-format glass panes
- ◆ Semiconductor
- ◆ Lamination and coating of wood
- ◆ Additive manufacturing
- ◆ Printing

Golden Coated Lamps

Lamps with gold coating on the outside of the quartz glass optimise power density through maximum reflectivity and direct the emission precisely onto the target material. Various circumferences and coverings are likewise possible. Golden coated lamps are a perfect alternative to temperature-stable white coating for application areas where energy saving, optimisation and efficiency are the goals.



Examples of Twin Tube Lamps

Twin tube lamps: single-ended, with and without coating, with and without segmented filament



Twin tube lamps: double-ended, with and without coating, with and without segmented filament



IR lamp holder: to ensure safe handling of your infrared lamps.



Developing Solutions Together

Ushio is a partner that listens to your ideas and requirements. Let us optimise your processes according to your specifications and expectations. Use our expertise to develop a tailor-made solution that matches your needs.

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Intended use: Specifically designed and exclusively approved for use in industrial or professional electrical heating equipment only.

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