INFRARED

MEDIUM WAVE INFRARED EMITTERS
Efficient and economical

Infrared heating technology
transfers large amounts of energy in a short time and heats quickly in a targeted fashion. Because infrared emitters can be individually geometrically matched to a particular application, heating and drying processes can be seamlessly integrated within manufacturing operations. With modern infrared technology, large surface areas as well as small three dimensional work pieces can be heated.

Infrared emitters allow optimum matching
Infrared emitters are matched to different requirements by the correct selection of wavelength. Short wave emitters offer excellent depth of penetration while medium wave emitters rapidly heat the surface and thin layers and feature very high absorption by water films. Medium wave emitters are particularly suitable for drying processes. They can show energy savings of over 50 % when compared with short wave emitters.

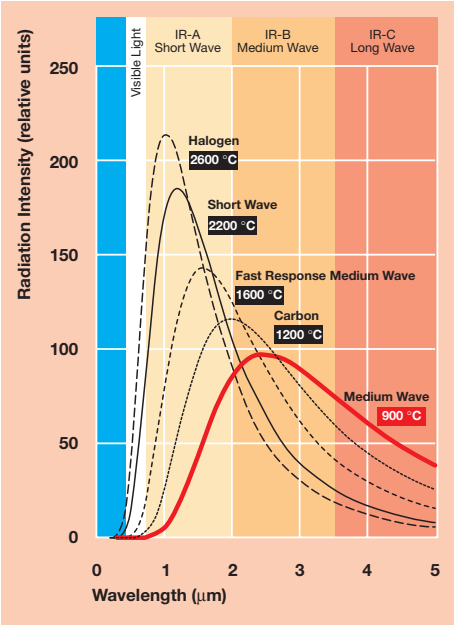
Medium wave infrared emitters – efficient and economical
Plastics, water and other solvents absorb medium wave radiation especially well. The use of medium wave infrared emitters helps in the effective drying of paints and lacquers and in the economical processing of plastic foils and sheet. Because of their long life, these emitters are best suited for continuous processes. Surface films and very thin materials are heated up extremely efficiently. Medium wave infrared emitters are manufactured as twin tubes in three different tube formats and in any required length up to 6 m. Twin tube emitters distinguish themselves by their high stability and power density. In addition, because of a gold coating, the radiation is precisely directed and the efficiency significantly increased. The emitters can be manufactured in various designs and dimensions to suit all geometrical requirements.

Heraeus
has many years experience in infrared heating technology, provides advice and individual attention and offers the resources of an applications center for testing. Heraeus has the optimum spectrum for each application.

- InfraLight – Halogen infrared emitters
- Twin tube infrared emitters in all conventional wavelengths
- MagicHeat Carbon emitters
- IR modules and control systems for industrial applications
- Emitters for targeted heating in finishing processes and for complex surface geometry

Infrared heating technology offers important advantages:
Heating only where it is required, with the optimum wavelength for the product to be heated and in harmony with the process.

INFRARED – FOR INNOVATIVE SOLUTIONS



Spectrum of the medium wave infrared emitter compared with other Heraeus infrared emitters – taken at the same electrical power for all emitter types.

MEDIUM WAVE INFRARED EMITTER

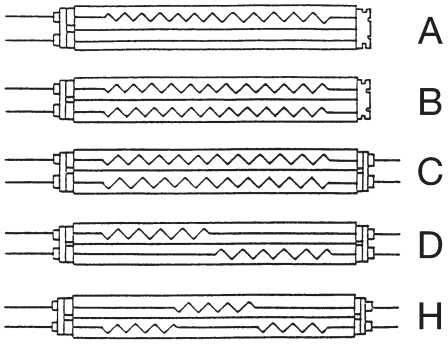
- Twin tube emitters of various tube format 18x8 mm, 22x10 mm, 33x15 mm
- Filament temperature 800 – 950 °C
- Peak wavelength 2.4 – 2.7 µm
- Maximum current 8/10/20/A, according to tube format
- Mean power density 16/20/25 W/cm according to tube format
- Maximum surface power 50 kW/m^2
- Standard emitters are designed for horizontal operation. The emitters are modified for vertical operation.
- Emitters are available in various designs and can be one-side or two-side connected.
- A gold coating of the emitter ensures that the effective radiation is virtually doubled.

MEDIUM WAVE IR EMITTER PRODUCT RANGE

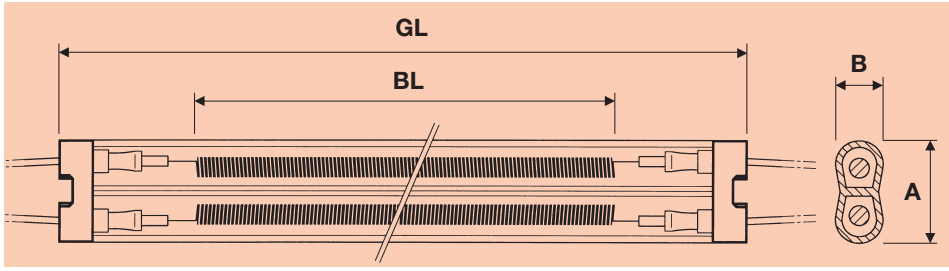
for standard designs A – H *

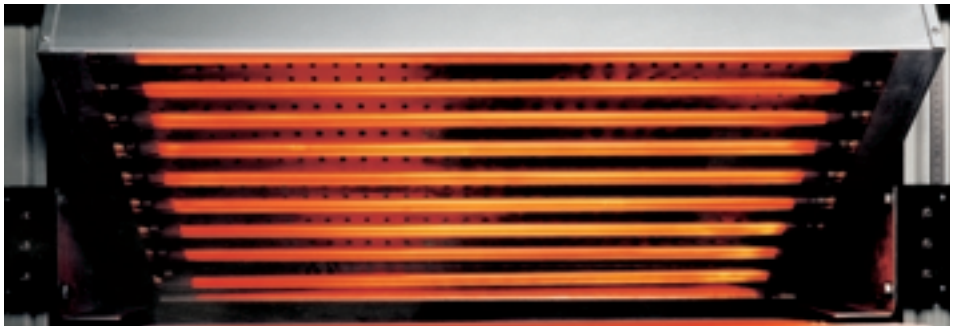
Tube format A x B [mm]	Total Length GL [mm]	Heated Length BL [mm]	Voltage [V]	Mean power density [W/cm]	Power output at max. current [W]	Max. surface power [kW/m^2]
18 x 8	150 – 1050	100 – 1000	230/400	16	180 – 2000	50
22 x 10	160 – 1660	100 – 1600	230/400	20	200 – 4800	50
33 x 15	170 – 4970	100 – 4900	230/400	25	250 – 14700	50

Heraeus manufactures medium wave emitters in other designs, lengths, voltages and power intensities to meet the individual requirements of your manufacturing process.
* Not every data in this table is valid for every emitter design



Standard designs for infrared twin tube emitters, with one-side (A,B) or two-side (C,D,H) connections.





Radiation field of medium wave infrared emitters. As well as emitters and emitter fields, Heraeus also offers SYS series electronic controllers and Heratron power controllers.

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