

Heraeus

INFRARED

THE CARBON HIGH POWER EMITTER Greatest Power Output in the Medium Wave Range

Infrared Heat

Infrared radiation transfers large amounts of energy in a short time. The wavelength of the infrared radiation has a significant influence on the efficiency of the heating process. Infrared emitters which are perfectly matched to the material to be heated, optimise the efficiency, accelerate the process and save energy and operating costs.

MagicHeat Infrared Emitters provide

- Maximum efficiency in heating and drying processes, rapid drying, minimum material stress and high energy saving
- Instant response of infrared radiation for the heating process.

The MagicHeat Technology is unique, as it offers medium wave radiation at high power with rapid response times. Medium wave radiation is highly efficient for drying processes and, with MagicHeat emitters, energy savings of up to 50 % can be achieved compared with short wave emitters.

The first medium wave carbon high power emitter in the world

The Heraeus carbon high power emitter is a new development in the range of MagicHeat emitters – especially for high power. It achieves a maximum power density of 190 kW/m², the highest power ever applied with medium wave Quartz emitters in industrial processes.

A particular large portion of medium wave radiation is absorbed in water, solvents and plastics and converted into heat. This allows significant benefits: MagicHeat emitters dry printing inks, with less stress for the paper because the radiation acts more intensively on the ink. The high power emitter increases print drying speed and reduces drying time. It also heats plastics in a targeted manner, with less heating of the surrounding environment.

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 and for complex surface geometry

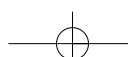
**Heraeus infrared heating technology offers important advantages:
Heating only where it is required, with the optimum wavelength
for the product to be heated and in harmony with the process.**

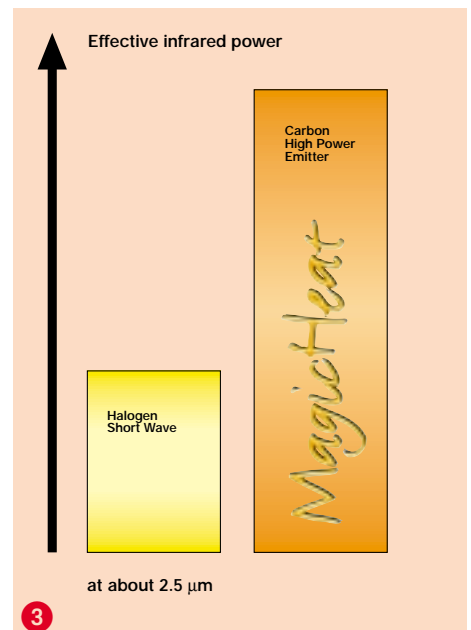
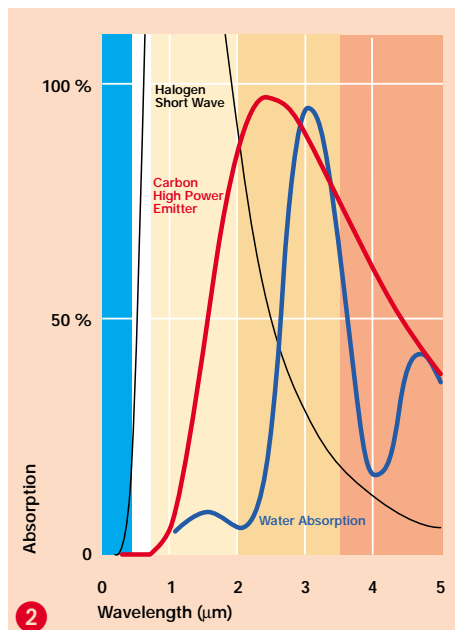
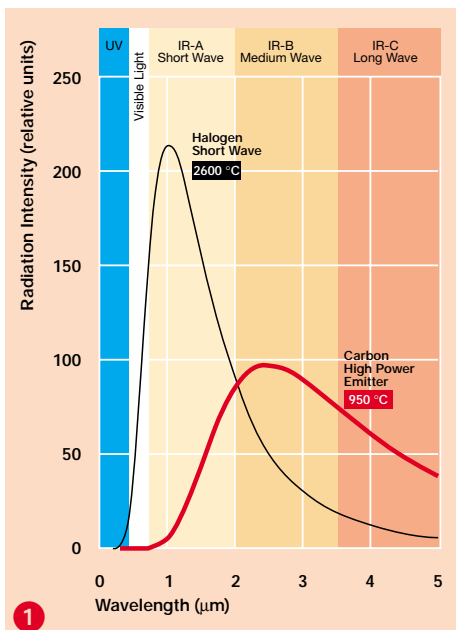


INNOVATIVE SOLUTIONS FOR INFRARED

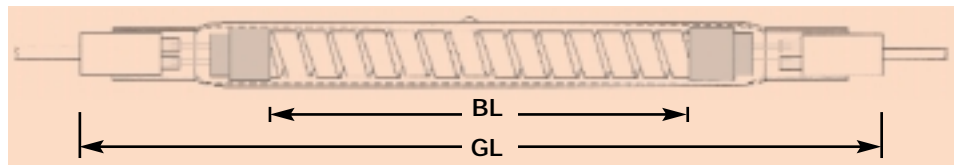
MagicHeat

Heraeus Noblelight GmbH





(1) Various types of infrared emitters have their maximum output at different wavelengths – Halogen IR emitters at 1 µm, Carbon that part of about 2.5 µm. At 3 µm the MagicHeat Carbon emitter provides effective power density of a halogen emitter.
(2) Only that part of the spectrum at which covers the absorption curve of water is effective for the drying process – not the infrared radiation. The infrared radiation of the Carbon emitter is almost ideally matched to the absorption spectrum of water. In comparison, only a small fraction of short wave radiation covers the absorption curve. In other words, the greater part of the energy of the short wave infrared radiation is wasted. **(3)** The result is: A short wave emitter at the same power density supplies less than 50 % of the power of a MagicHeat emitter in drying processes. For example, at an irradiation of 190 kW/m², the effective power density of a MagicHeat emitter is around 44 kW/m²; that of a short wave emitter is around 20 kW/m².



TECHNICAL DATA

- Peak wavelength 2.4 µm
- Filament temperature about 950°C
- Round tube diameter 12 mm/19 mm
- Max. linear power density 42 W/cm
- Max. power density 190 kW/m²
- Gold reflector possible
- Optional vertical position

HIGH POWER EMITTERS IN 19 mm TUBE FORMAT

Total Length GL [mm]	Heated Length BL [mm]	Voltage [V]	Power [W]	Max. linear power density [W/cm]	Max. power density [kW/m ²]
440	300	115	1250	42	190
740	600	230	2500	42	190
1140	1000	400	4200	42	190
1390	1250	480	5250	42	190
1640	1500	600	6300	42	190

Heraeus manufactures medium wave emitters in other designs, lengths, voltages and power densities to meet the individual requirements of your manufacturing process.