



# Heraeus

## Short wave infrared emitters High speed and high power

### Infrared heating technology

transfers large amounts of energy in a short time. Emitters are available for large surfaces, for three dimensional shapes and for small work pieces. By matching infrared emitters to individual applications, heating and drying processes can be integrated seamlessly into processing operations. In addition, infrared technology can be fitted with little expenditure into existing manufacturing lines.

### Infrared emitters allow optimum matching

There are infrared emitters with various spectra. Short wave infrared radiation penetrates more deeply into materials, medium wave radiation is absorbed more strongly at the surface and into thin films. The wavelength at which infrared is emitted significantly influences the efficiency of the heating process. Perfectly matched infrared emitters can allow energy savings of up to 50 %.

### Short wave infrared emitters

Short wave infrared radiation has high heating power. Short wave emitters are particularly suited for processes which need to be stopped and started very quickly, as they achieve their full operating efficiency within seconds. Infrared emitters are produced in proven and especially stable twin tube format. Twin tube emitters distinguish themselves with high radiation density and high power intensity. A gold reflector, fitted directly to the emitter, directs the infrared radiation onto the object to be heated. The efficiency compared with plate reflectors is significantly improved.

### Heraeus Noblelight

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

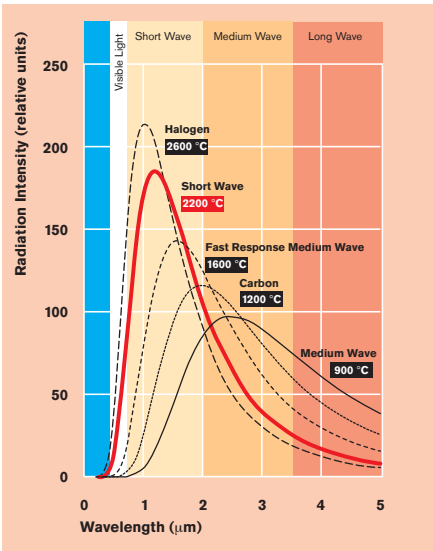
- NIR InfraLight – Halogen infrared emitters
- Twin tube infrared emitters in all conventional wavelengths
- CIR® Carbon emitters
- IR modules and control systems for industrial applications
- Emitters for targeted heating in manufacturing processes and for complex surface geometry

**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.**

Heraeus Noblelight

[www.heraeus-noblelight.com](http://www.heraeus-noblelight.com)





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

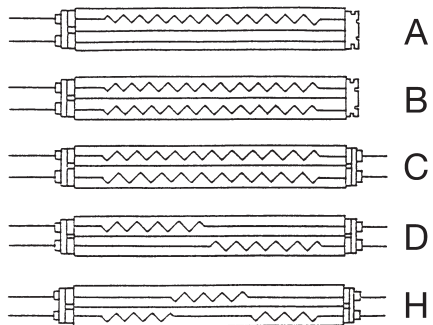
### Short wave infrared emitters

- Twin tube emitters, tube format 23 x 11 mm
- Filament temperature 1800 – 2400 °C
- Peak wavelengths 1.2 – 1.4 µm
- Mean power density 70 W/cm
- Maximum surface power approx. 200 kW/m<sup>2</sup>
- Standard emitters are designed for horizontal operation. The emitters are modified for vertical operation.
- Emitters are available in different designs and can be one-side or two-side connected.
- A gold coating of the emitter ensures that the effective radiation is virtually doubled.



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

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



### Short Wave Standard Emitters

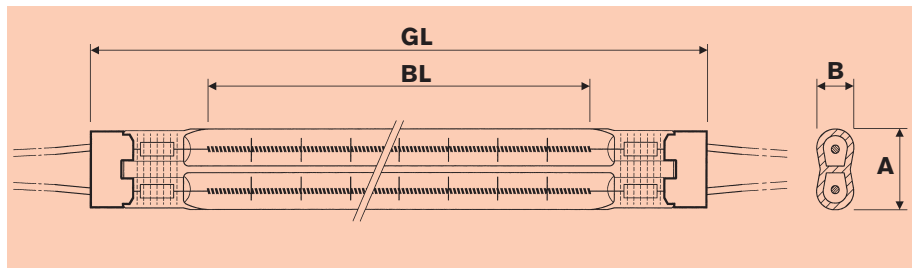
#### Emitter one-side connection, design B

Total Length GL [mm]	Heated Length BL [mm]	Voltage [V]	Power [W]
145 – 285	80 – 220	115	400 – 1400
165 – 465	100 – 400	230	900 – 3000
265 – 765	200 – 700	400	1400 – 5100
265 – 965	200 – 900	480	1400 – 6100

#### Emitter two-side connection, design C

Total Length GL [mm]	Heated Length BL [mm]	Voltage [V]	Power [W]
170 – 480	90 – 400	115	700 – 3000
280 – 880	200 – 800	230	1400 – 6000
480 – 1580	400 – 1500	400	2400 – 10400
480 – 1880	400 – 1800	480	2900 – 12500

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



We reserve the right to change the pictures and technical data of this brochure.

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**Heraeus Noblelight GmbH**  
 Reinhard-Heraeus-Ring 7  
 D-63801 Kleinostheim  
 Germany  
 Phone +49 (6181) 35-8545  
 Telefax +49 (6181) 35-168410  
 hng-infrared@heraeus.com  
 www.heraeus-noblelight.com

**Heraeus Noblelight Ltd.**  
 Unit 1 Millennium Court  
 Clayhill Industrial Estate  
 Buildwas Road  
 GB-Neston, Cheshire CH64 3UZ  
 Phone +44 (151) 353 2710  
 Telefax +44 (151) 353 2719  
 hnl-neston@heraeus.com  
 www.heraeus-noblelight.com

**Heraeus Noblelight, Inc.**  
 2150 Northmont Parkway, Suite L  
 Duluth, GA 30096  
 USA  
 Phone +1 (770) 418-0707  
 Telefax +1 (770) 418-0688  
 info@noblelight.net  
 www.noblelight.net



Reg. No. 39254