

# INFRA·SOLID<sup>®</sup>



Data Sheet

**HISpower series**

Thermal Infrared Emitters

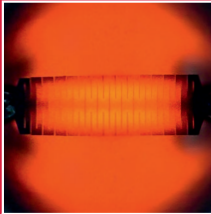
# HISpower series

## Thermal Infrared Emitters

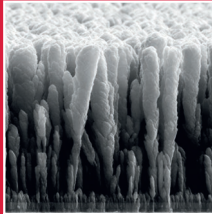
Infrasolid's infrared radiation sources are pulsable thermal emitters with a near black-body emittance. Based on a patented nanotechnology and a patented emitter set-up made of a high-melting metal, the free-standing monolithic radiating element and the nanostructured emitter surface offer numerous advantages in many applications.

**HISpower series** emitters have an integrated reflector that directs the radiation emitted from the rear to the front through the housing window in order to achieve maximum efficiency. Infrasolid's advanced packaging technology allows soldered sapphire,  $\text{CaF}_2$  and  $\text{BaF}_2$  windows for use in a wide temperature range of  $-25^\circ\text{C}$  up to  $+85^\circ\text{C}$ .

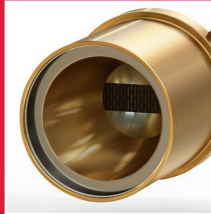
### Key features



**High radiant power**



**High efficiency**



**Hermetic housing**

- ✓ Pulsable thermal black-body infrared source mounted in an industry standard TO-8 package.
- ✓ Patented nanostructured radiating element achieves up to 500% more detection signal!
- ✓ Lower radiating element temperature of  $630^\circ\text{C}$  increases lifetime!
- ✓ Soldered, high-quality filter windows guarantee considerably less drift. Leakage tested!
- ✓ Wide wavelength range enables a broad range of applications.

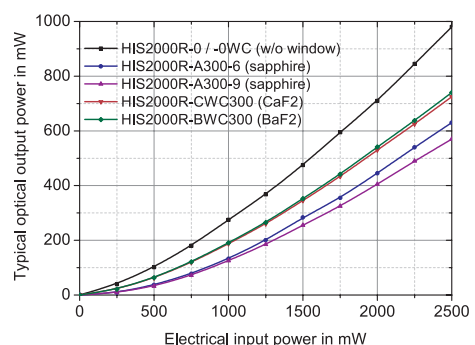
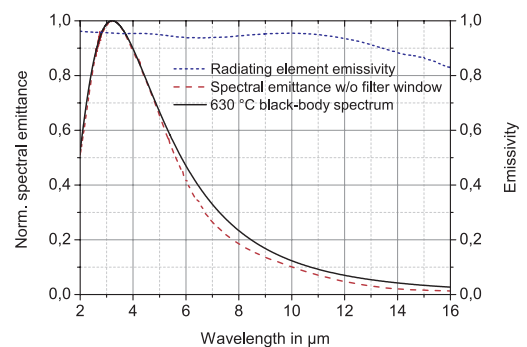
*innovative infrared sources for  
gas detection & spectroscopy*

### Main specifications

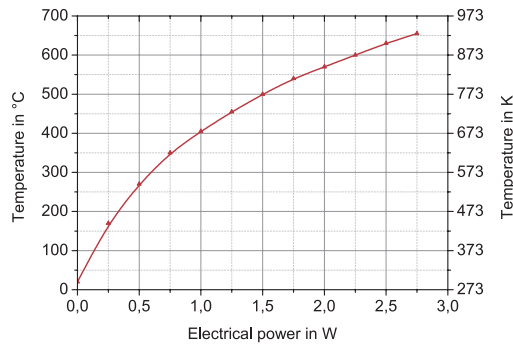
Parameter	HISpower series
Package	TO-8
Radiating element area	$40\text{ mm}^2$
Radiating element emissivity	$> 0.9$
Radiating element temperature	$630^\circ\text{C}$ at 2.5 W
Optical output power**	up to 1 W
Max. electrical power (DC)	2.5 W
Max. electrical voltage	3.8 V
Max. electrical current	660 mA
Electrical resistance	5...6 $\Omega$
Modulation frequency*	4 Hz
Filter (soldered window)	Sapphire, $\text{CaF}_2$ , $\text{BaF}_2$
Wavelength range**	2 to $16\text{ }\mu\text{m}$

\* 50 % modulation depth, square wave signal, 50 % duty cycle  
\*\* depending on filter transmissivity

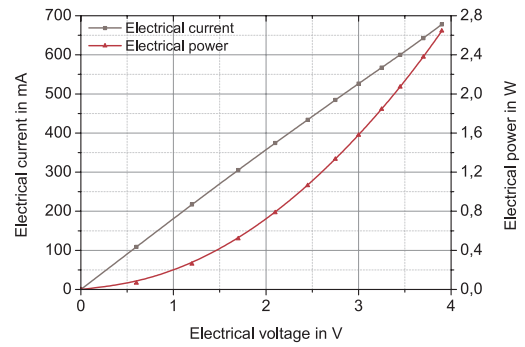
### Optical specifications



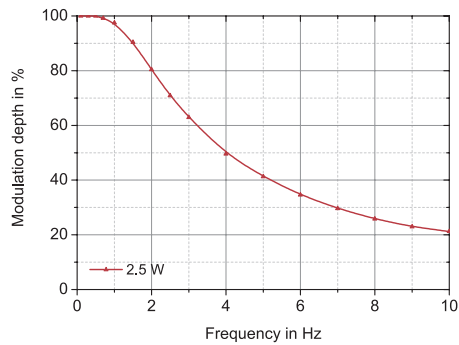
### Radiating element temperature



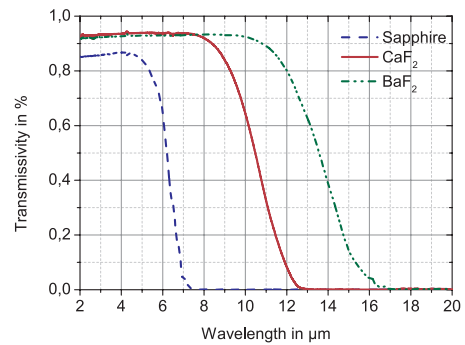
### Electrical specifications






### Modulation depth



### Window material transmissivity



HIS2000R-0 / -A300-6		HIS2000R-A300-9	HIS2000R-0WC / -BWC300 / -CWC300	
				
<b>HIS2000R-0</b> Without window (open version)	<b>HIS2000R-A300-6</b> Soldered sapphire window	<b>HIS2000R-A300-9</b> Soldered sapphire window	<b>HIS2000R-0WC</b> Without window (open version)	<b>HIS2000R-BWC300 / -CWC300</b> Soldered BaF <sub>2</sub> / CaF <sub>2</sub>
No collimator	No collimator	No collimator	Winston cone collimator	
No gas filling	N <sub>2</sub> gas filling (other gases possible)	N <sub>2</sub> gas filling (other gases possible)	No gas filling	N <sub>2</sub> gas filling (other gases possible)
