

INFRASOLID®



Data Sheet HISpower

HIS2000R-C300-9

TO-8 Thermal Infrared Emitter

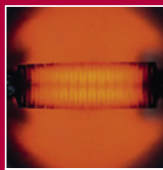
HIS2000R-C300-9

Thermal infrared emitter with CaF_2 window, hermetically sealed

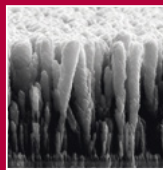
Our HIS2000R-C300-9 is a NiCr filament based thermal emitter in a standard TO-8 package with a glued CaF_2 window. It is characterized by a very low temperature coefficient of electrical resistance which eases the electrical control. Excellent long-term stability of the electrical and optical properties is achieved by the hermetic package sealing with the glued CaF_2 window, even in harsh environments.

HISpower series emitters have an integrated gold plated reflector that directs the radiation emitted from the filament back-side to the front. This almost doubles the optical output power and achieves maximum efficiency. INFRASOLID's advanced packaging technology SOLIDSEAL® allows emitters with soldered Sapphire, CaF_2 and BaF_2 windows for use in harsh environments and a wide temperature range of -25°C up to $+85^\circ\text{C}$.

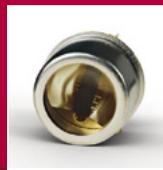
Key features



**High radiant
power**



**High
efficiency**



**Hermetic
housing**

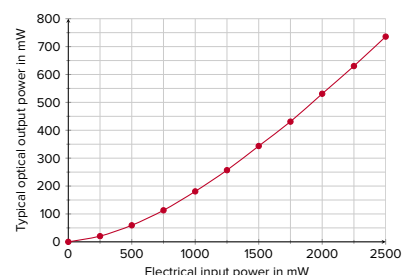
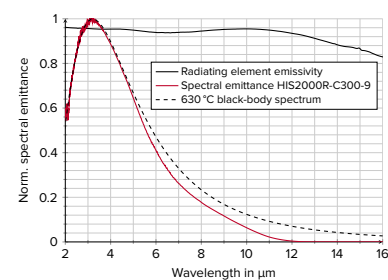
- ✓ Pulsable thermal black-body infrared source mounted in an industry standard TO-8 package.
- ✓ Patented nanostructured radiating element achieves up to 500% more detection signal!
- ✓ Lower radiating element temperature of 630°C increases lifetime!
- ✓ High-quality filter windows guarantee considerably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

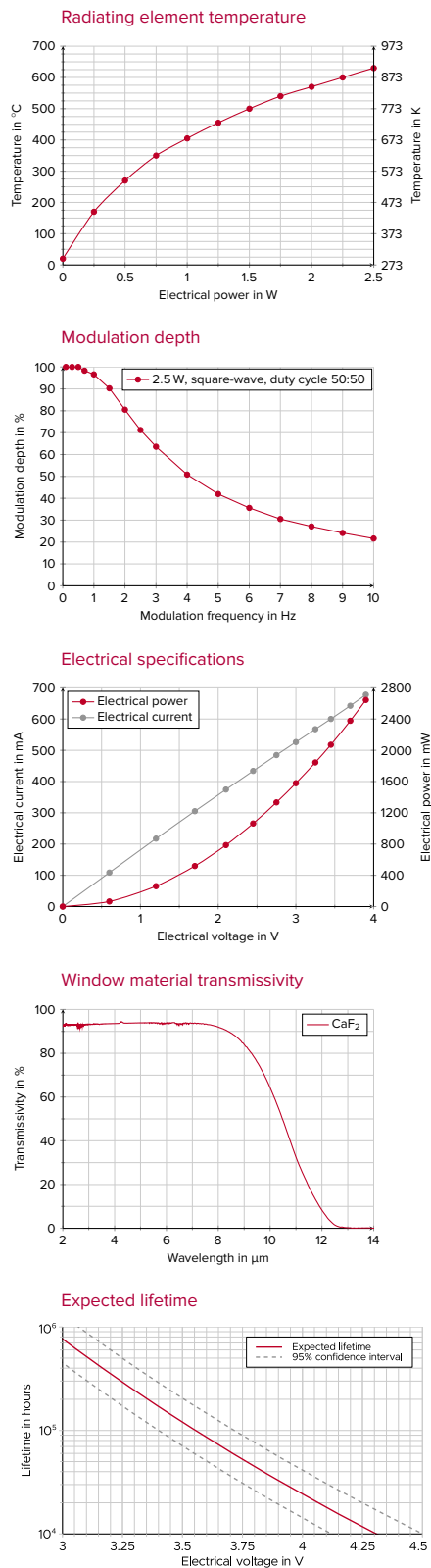
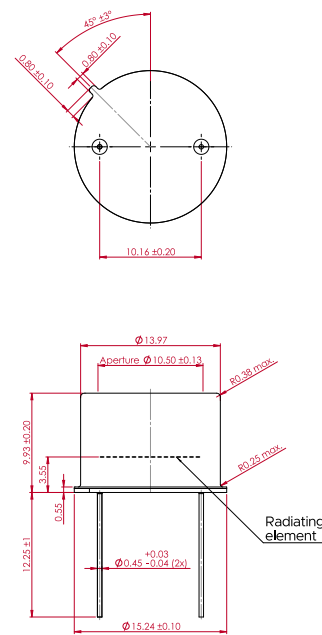
*innovative infrared sources for
gas detection & spectroscopy*

Main specifications

Parameter	HIS2000R-C300-9
Package	TO-8
Radiating element area	40 mm^2
Radiating element emissivity	> 0.9
Radiating element temperature	630°C at 2.5 W
Optical output power	up to 730 mW
Max. electrical power (DC)	2.5 W
Max. electrical voltage	3.8 V
Max. electrical current	660 mA
Electrical cold resistance	$5.5 \pm 1\ \Omega$
Electrical hot resistance	$5.5 \pm 1\ \Omega$
Filter/Window	CaF_2 (glued)
Wavelength range	2 to $11\ \mu\text{m}$
Filling gas	Nitrogen

Optical specifications




HIS2000R-C300-9


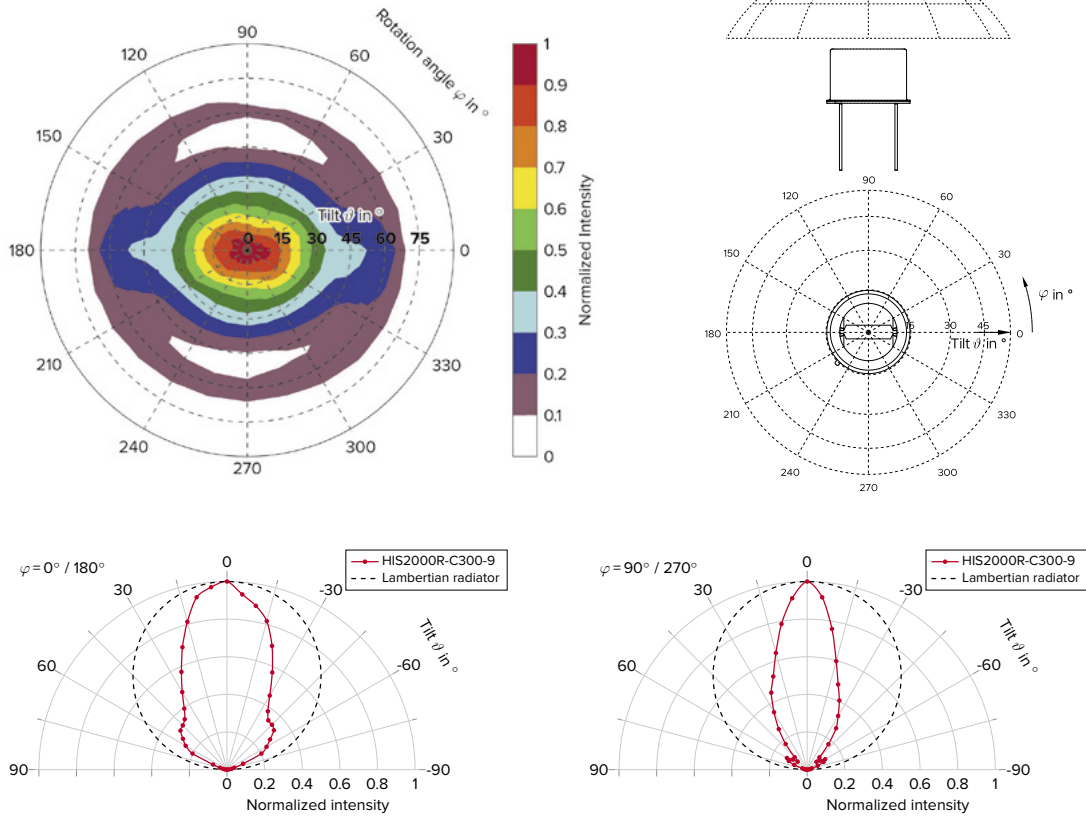
Maximum housing temperatures
without heat sink (at $T_{amb} = 20\text{ °C}$):

HIS2000R-C300-9 @2500 mW	Operation mode	
	DC	Pulsed (1 Hz square wave)
T_{max}	135 °C	90 °C

All our emitters comply with the following
JEDEC-standards:

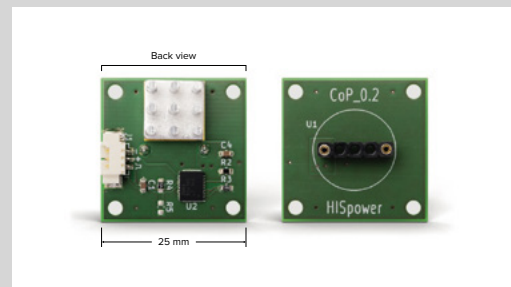
- ⊗ JESD22-A104
(temperature cycling and shock test: -45 °C / + 90 °C, 100 cycles)
- ⊗ JESD22-B103
(vibration test: log. sweep 20 Hz...2000 Hz, peak 20 g, X/Y/Z direction)
- ⊗ JESD22-B110
(drop test: 5000 m/s², 6 directions)

Angular radiation distribution



Driver Circuit Board (DCB):

We provide several Driver Circuit Boards (DCBs) for our HIS sm d, HIS $basic$ and HIS $power$ series emitters to support a quick evaluation in your applications. All DCBs are small and use a low-cost driving circuit with a maximum stability close to a power regulated mode. Only a supply voltage and a pulse signal have to be applied. For more information about its function, see our technical notes.



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HIS2000R-C300-9 BN
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