

INFRASOLID®



Data Sheet HISpower

HIS2000R-A300-9

TO-8 Thermal Infrared Emitter

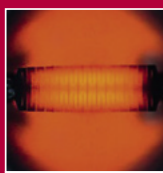
HIS2000R-A300-9

Thermal infrared emitter with sapphire window, hermetically sealed

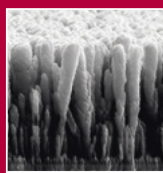
Our HIS2000R-A300-9 is a NiCr filament based thermal emitter in a standard TO-8 package with a soldered Sapphire window. It is characterized by a very low temperature coefficient of electrical resistance which eases the electrical control. Excellent long-term stability of the electrical and optical properties is achieved by the hermetic package sealing with the soldered sapphire 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, CaF₂ and BaF₂ windows for use in harsh environments and a wide temperature range of -25 °C up to +85 °C.

Key features



**High radiant
power**



**High
efficiency**



**Hermetic
housing**

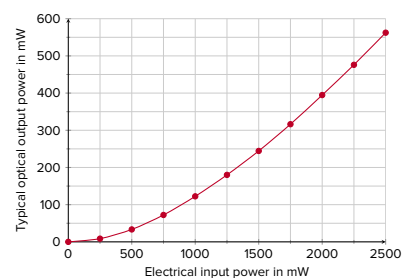
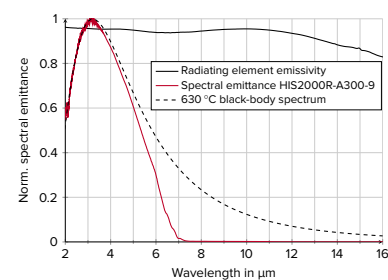
- ✓ Pulsable thermal black-body infrared source mounted in an industry standard TO-8 package.
- ✓ Patented nanostructured radiating element achieves up to 500% more detection signal!
- ✓ Lower radiating element temperature of 630 °C increases lifetime!
- ✓ Soldered, high-quality filter windows guarantee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

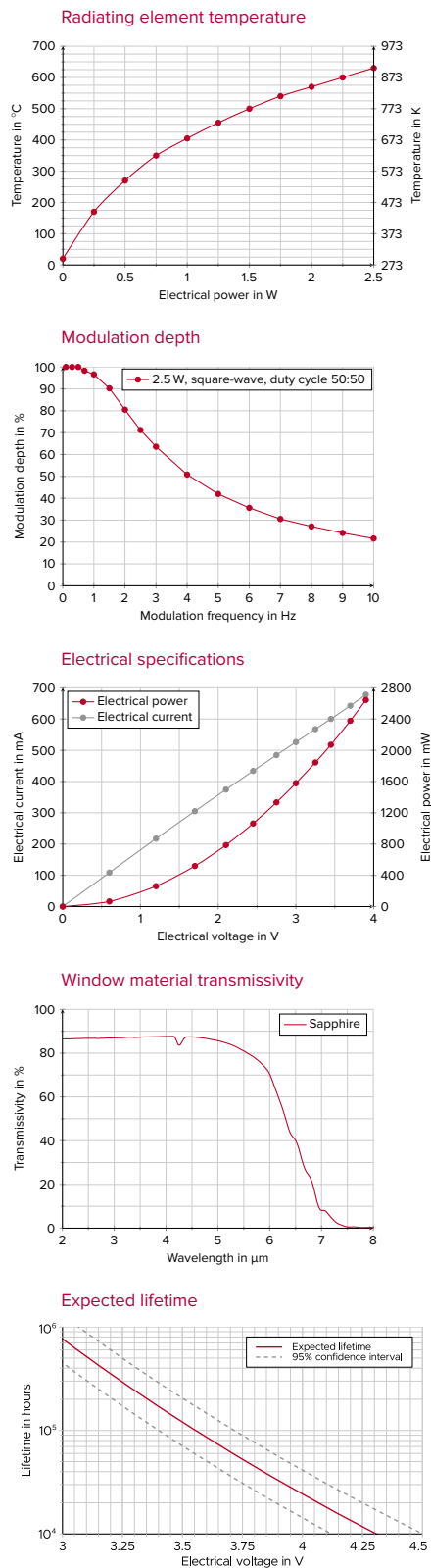
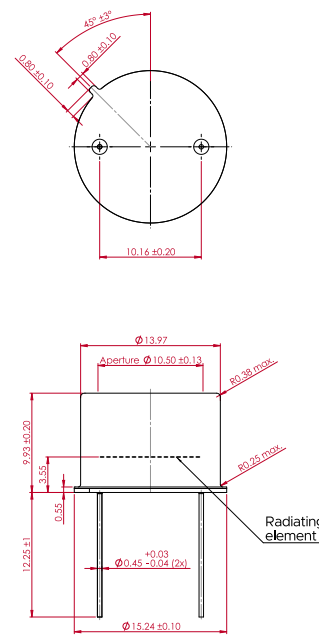
*innovative infrared sources for
gas detection & spectroscopy*

Main specifications

Parameter	HIS2000R-A300-9
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 560 mW
Max. electrical power (DC)	2.5 W
Max. electrical voltage	3.8 V
Max. electrical current	660 mA
Electrical cold resistance	5.5 +/- 1 Ω
Electrical hot resistance	5.5 +/- 1 Ω
Filter/Window	Sapphire (soldered)
Wavelength range	2 to 6 μm
Filling gas	Nitrogen

Optical specifications




HIS2000R-A300-9


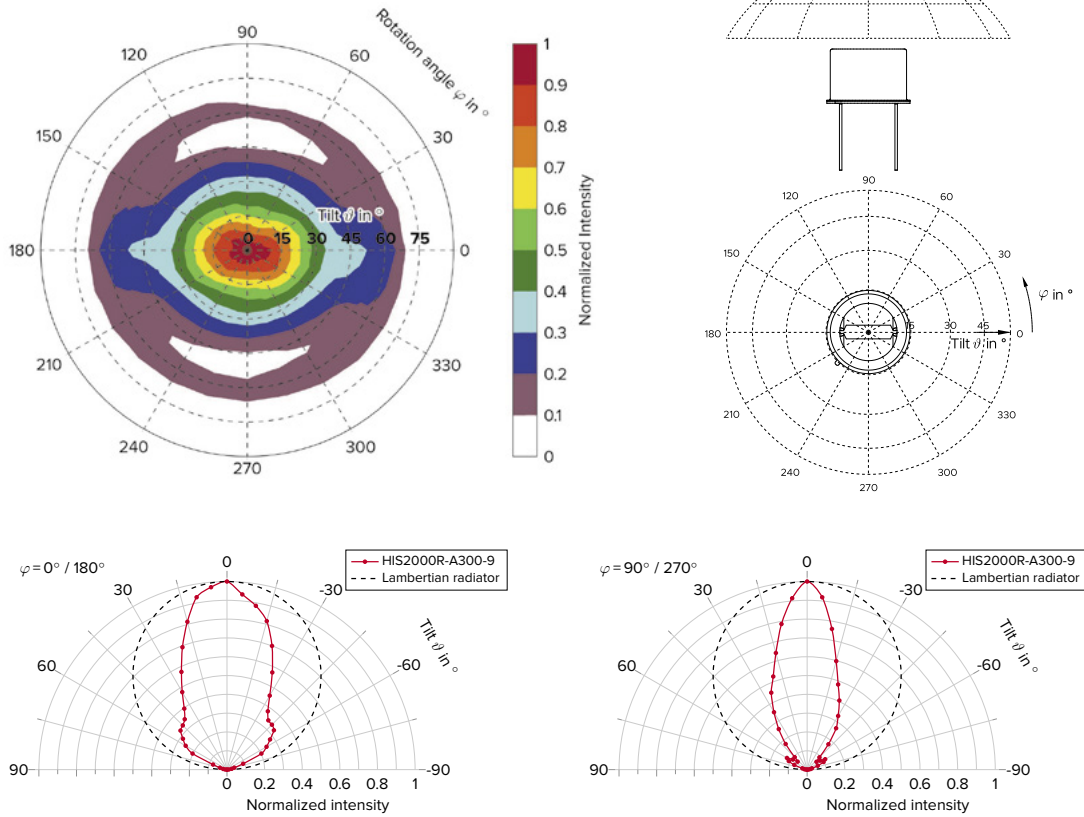
Maximum housing temperatures
without heat sink (at $T_{\text{amb}} = 20^\circ\text{C}$):

HIS2000R-A300-9 @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:

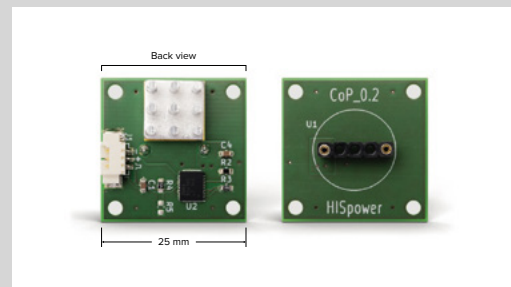
- ⊗ JESD22-A104
(temperature cycling and shock test: $-45^\circ\text{C} / +90^\circ\text{C}$, 100 cycles)
- ⊗ JESD22-B103
(vibration test: log. sweep 20 Hz...2000 Hz, peak 20 g, X/Y/Z direction)
- ⊗ JESD22-B110
(drop test: 5000 m/s², 6 directions)

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.



INFRASOLID®

HIS2000R-A300-9 EN
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