

INFRA·SOLID[®]

Highest efficiency · Most powerful · Nanostructured NiCr emitters

Thermal Infrared Emitters

Performance comparison of TO-39/TO-5 IR emitters



HISbasic series

- ✓ Wide wavelength range from 2 μm up to 20 μm enables a broad range of applications
- ✓ Pulsable thermal black-body infrared source in an industry standard or customized TO-39 package
- ✓ Patented nanostructured radiating element generates black-body spectrum with up to 1000 % more detection signal compared to competitors
- ✓ Highest optical output power of up to 215 mW for most accurate measurements
- ✓ Soldered, high-quality filter windows guarantee long-term stable operation. Leakage tested!

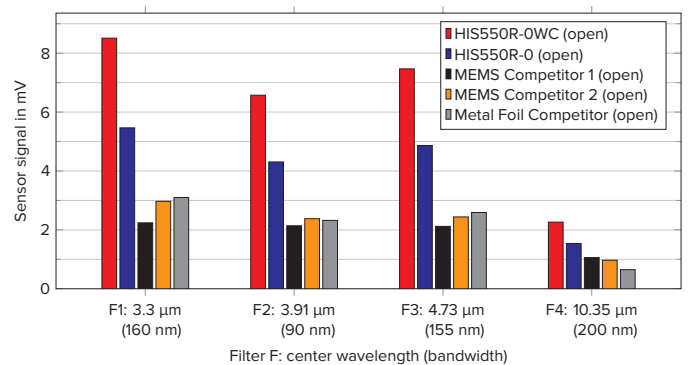


Fig. 1: Performance comparison of TO-39 IR emitters in a typical NDIR gas sensor set-up (4-channel detector, 200 mm optical path length, 5 Hz modulation frequency)

Wide application range



SAFETY
ENGINEERING



EMISSION
MONITORING



INDUSTRIAL GAS
ANALYSIS



WATER
ANALYSIS

Highest optical power in hermetically-sealed TO-39 packages

Parameter	Standard cap		Winston cone collimator cap
	6.48 mm	5.98 mm	9.72 mm
Housing height	6.48 mm	5.98 mm	9.72 mm
			
Package	TO-39 / TO-5	TO-39 / TO-5	TO-39 / TO-5
Radiating element area	11 mm ²	11 mm ²	11 mm ²
Radiating element emissivity	> 0.9	> 0.9	> 0.9
Radiating element temperature	600 °C at 650 mW	600 °C at 650 mW	600 °C at 650 mW
Optical output power	up to 195 mW	up to 220 mW	up to 215 mW
Max. electrical power (DC)	700 mW	700 mW	700 mW
Max. voltage	4.0 V	4.0 V	4.0 V
Max. electrical current	175 mA	175 mA	175 mA
Modulation frequency*	6 Hz	6 Hz	6 Hz
Wavelength range**	2 to 20 μm		
Filling gas	None (open) / Nitrogen (with window)		
Product name / window options	HIS550R-0 (open) HIS550R-A (soldered sapphire)	HIS550R-B (glued BaF ₂) HIS550R-C (glued CaF ₂)	HIS550R-OWC (open)
			

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

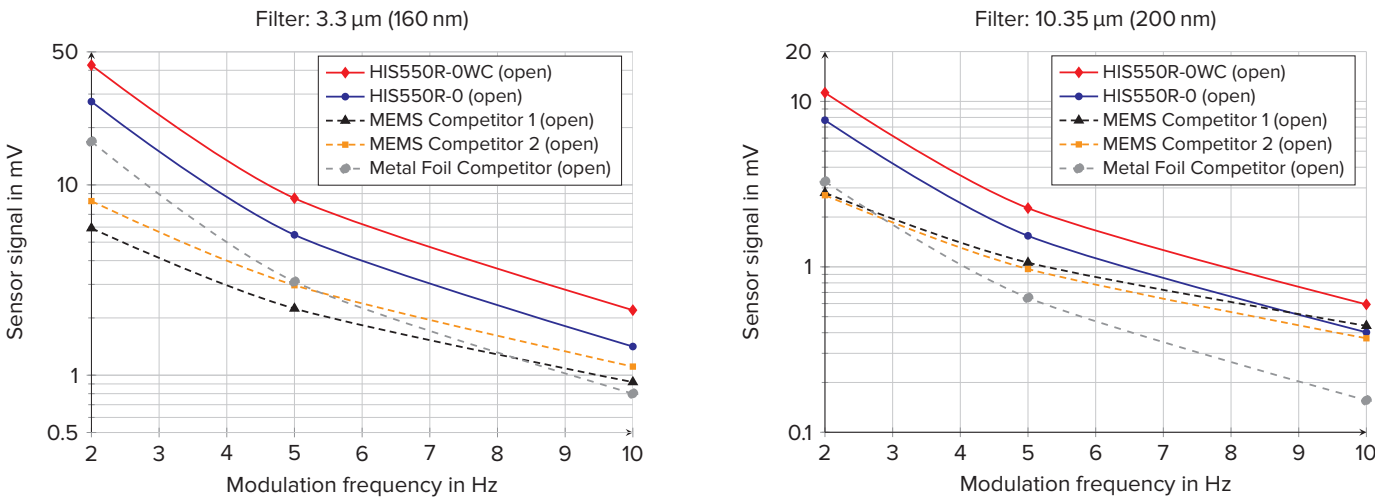


Fig. 2: Sensor signal vs. modulation frequency of TO-39 IR emitters in a typical NDIR gas sensor set-up (4-channel detector, 200 mm optical path length).
 Left: filter with center wavelength of 3.3 μm and bandwidth of 160 nm; right: filter with center wavelength of 10.35 μm and bandwidth of 200 nm

Are you looking for further emitters, detailed technical specifications or would you like to have an individual development?
 Visit our website and feel free to contact us!

www.infrasolid.com