

# JSIR 350-4 HermeSEAL® technology

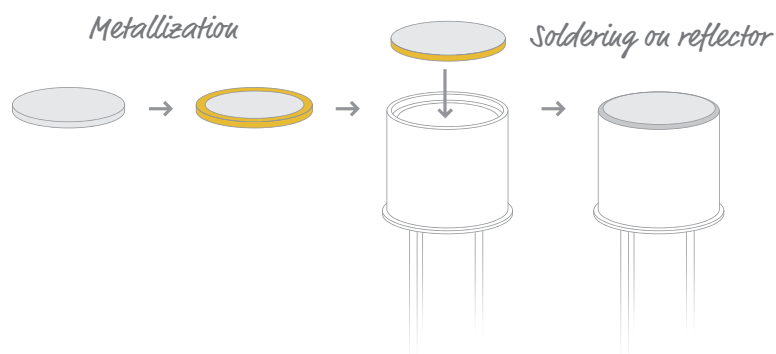
The hermetic cap allows new applications in harsh environments – such as high temperature, high partial gas pressure and high humidity.



In cooperation with JENOPTIK Optical Systems GmbH our R&D engineers developed a method to hermetically seal IR sources.

By soldering a metalized filter on the reflector or cap Micro-Hybrid's infrared sources perform high efficient\* and long term stable. This new technology effects IR components to be impenetrable to gases. The components do not show any permeation of water vapor or (environmental) gases compared to glued elements.

The input power of IR emitters is variable while maintaining membrane temperature. To modify the modulation frequency the emitters can be filled with different gases. The innovative filter and window elements can be customized in size and optical coating according to customer specifications. This innovation represents a huge potential of improvement in the field of NDIR gas analysis.



## FEATURES

- Increased lifetime by reduction of oxidation processes
- Backfilling with different gases for variation of radiation output corresponding to electrical input and time
- High safety level for explosion proof applications
- Ideal for battery or stand alone applications with low power supplies\*
- Long-term stable

\*by using thermal insulating backfill gases or variation of modulation frequency

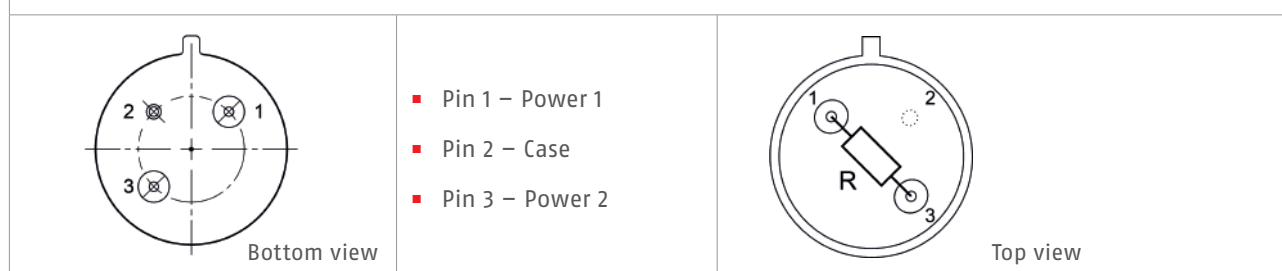
Visit us at [www.microhybrid.com](http://www.microhybrid.com) or call us at +49 36601 5920

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## Technical data

Technical parameter	Window N <sub>2</sub>	Window Kr	Unit
Spectral output range	2 ... 15	2 ... 15	μm
Active area	2.2 x 2.2	2.2 x 2.2	mm <sup>2</sup>
Hot resistant <sup>1</sup>	40 ± 20	40 ± 20	Ω
Temperature coefficient <sup>2</sup>	typ. 500	typ. 500	ppm/K
Time constant <sub>0-63 %</sub>	typ. 17	typ. 30	ms
Nominal power consumption <sup>3</sup>	650	400	mW
Operation voltage <sup>4</sup>	4.9	4.0	V
Operation current <sup>4</sup>	132	100	mA
Recommended driving mode	Power mode	Power mode	
Active area temperature <sup>1,5</sup>	610 ± 30	610 ± 30	°C
Window / filter	Si ARC, Sapphire	Si ARC, Sapphire	
Housing	T039 (modified)	T039 (modified)	
Estimated lifetime <sup>5,6</sup>	> 5000 h at 740 °C	> 5000 h at 740 °C	
	> 100000 h at 610 °C	> 100000 h at 610 °C	
<b>Absolute max. ratings</b>			
Input power	1200	700	mW
Housing temperature	120	120	°C
Active area temperature	850	850	°C

### Pin out



<sup>1</sup> at T<sub>amb</sub> = DC power (nominal power)

<sup>2</sup> 0 °C bis 800 °C

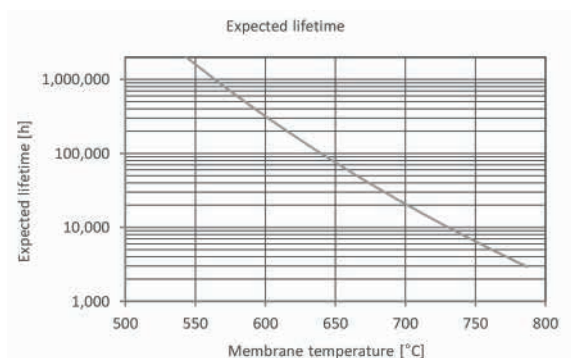
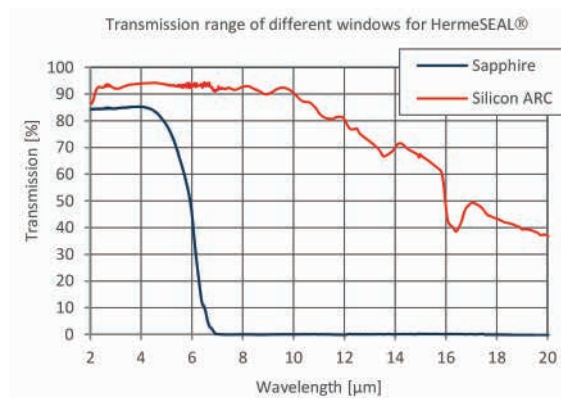
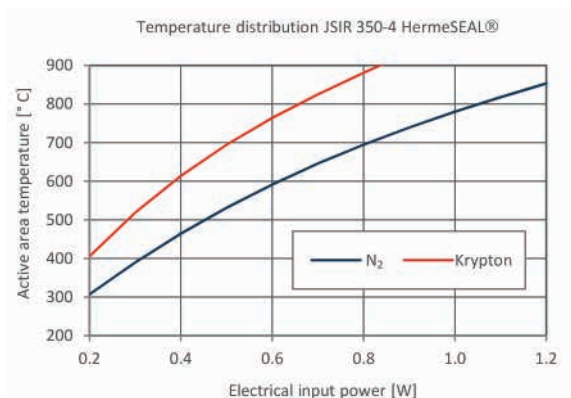
<sup>3</sup> at power on-state

<sup>4</sup> with 40 Ω

<sup>5</sup> at T<sub>amb</sub> = 25 °C

<sup>6</sup> at 1 Hz, 50 % duty cycle, MTF 63 % (membrane fracture, preliminary results)

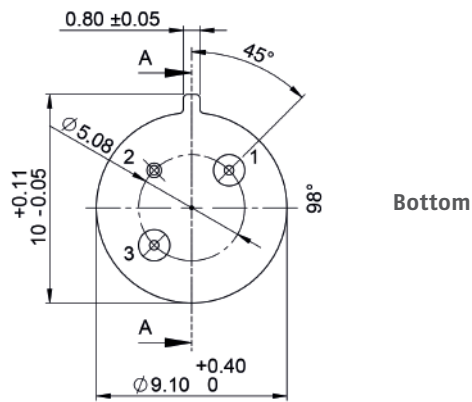
## Typical operating characteristics of IR sources > JSIR 350-4 HermeSEAL®



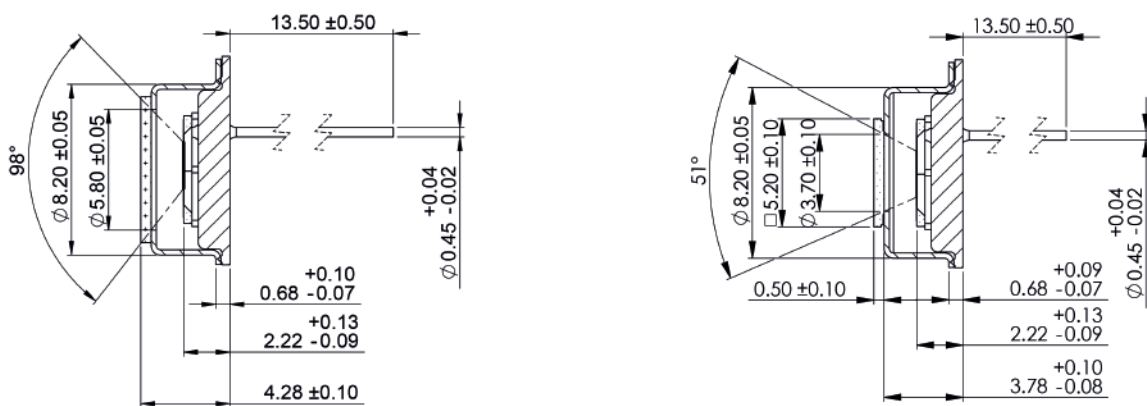
### Basic emitter specifications

For basic emitter specifications please refer to product **data sheet > JSIR 350-4**

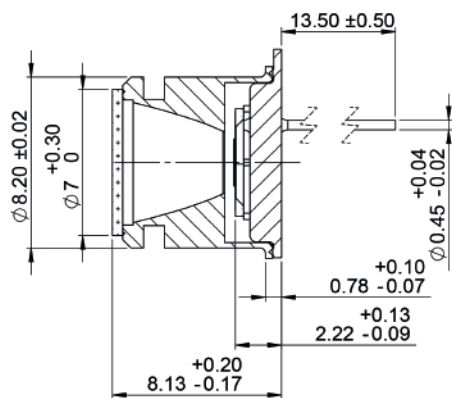
## Mechanical drawings



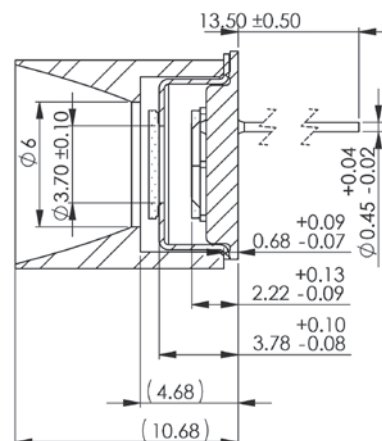
AA - JSIR 350 cap with filter



AA - JSIR 350 reflector with filter



AA - JSIR 350 cap and add-on reflector



## Product overview

Article		Type	Filling gas	Temp. min	Temp. max	Aperture	Filter	Active area
JSIR350-4-AL-C-D3.7-2-A7-I	<b>s</b>	T039 with cap	Kr	-20 °C	125 °C	5.8 mm	Silicon	2.2 x 2.2 mm <sup>2</sup>
JSIR350-4-AL-C-D5.8-2-A1-I	<b>d</b>	T039 with cap	Kr	-20 °C	185 °C	5.8 mm	Sapphire	2.2 x 2.2 mm <sup>2</sup>
JSIR350-4-AL-R-D6.0-2-A7-I	<b>d</b>	T039 with reflector	Kr	-20 °C	125 °C	6.0 mm	Silicon	2.2 x 2.2 mm <sup>2</sup>
JSIR350-4-AL-R-D6.0-2-A1-I	<b>d</b>	T039 with reflector	Kr	-20 °C	185 °C	6.0 mm	Sapphire	2.2 x 2.2 mm <sup>2</sup>

**s** in stock

**d** on demand

Micro-Hybrid's offer includes IR emitter of our subsidiaries **NOVA IR** and **CMOSIR**. All IR emitters are supplied in a TO or SMD housing. We ship from stock and on demand.

### Micro-Hybrid-Shop

Micro-Hybrid products available at [www.microhybrid.com/shop](http://www.microhybrid.com/shop). Filter products simply by selecting the desired properties and request your quotation.

**NOVA IR** and **CMOSIR** are companies of Micro-Hybrid Electronic GmbH. For more information go to [www.microhybrid.com](http://www.microhybrid.com).