



# IRRA

## IR Rapid Assessment Tests

Active Space Technologies GmbH, and DLR (Deutsches Zentrum für Luft- und Raumfahrt) offer IRRA, a quick and precise test measuring the IR properties of any kind of surface (materials, coatings, paint samples, other surface treatments).

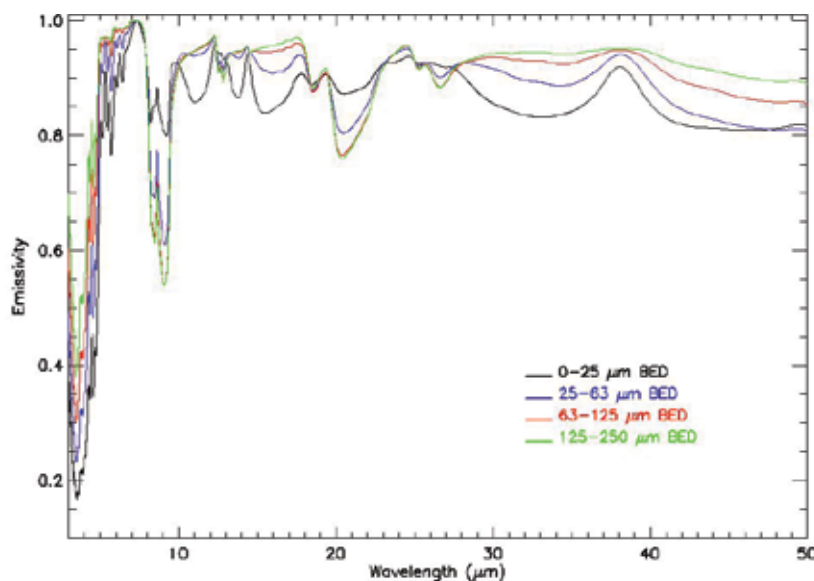
Samples of surface coatings can be tested over a wide range of wavelengths (~2-50 $\mu$ m), for emissivity and transmissivity, at different temperatures (20°C - 800°C), under atmospheric or vacuum conditions.

IRRA is useful for a variety of purposes:

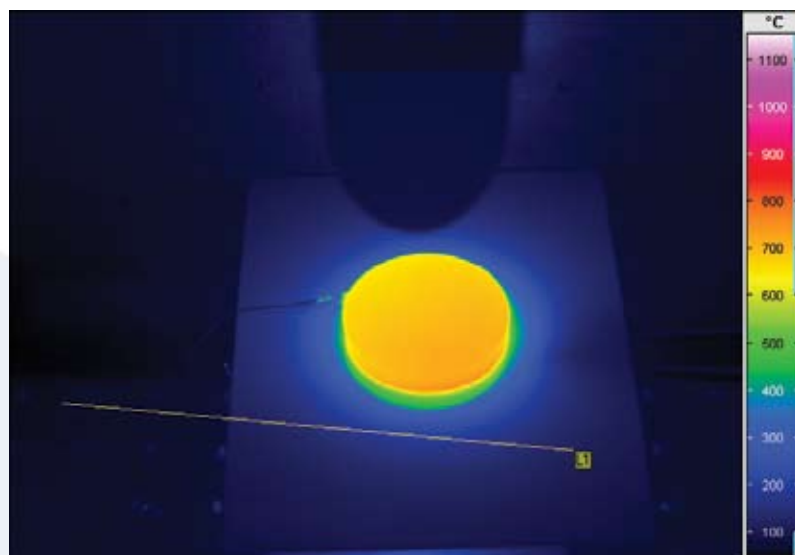
- for the scientific investigations of coatings (e.g to verify variations of thicknesses or substrates)
- for technical development of equipment
- to provide "ground Truth" for optical and thermal modelling
- as a verification tool

The main advantages offered by IRRA are:

- Rapid processing time: as little as one week
- No restrictions on sample properties: as long as it fits (see below)
- Secure and precise handling of samples
- High precision and repeatability thanks to precise procedures
- Delivery of data in electronic format (ASCII and excel) for easy postprocessing
- Affordable costs



Example Spectra of different materials



IR picture of sample being tested at the Planetary Emissivity Laboratory (PEL) at the DLR Institute of Planetary Research



**Technical Information**

Wavelength Test Ranges	2 - 16 $\mu\text{m}$ (Low Range Test)
	16 - 50 $\mu\text{m}$ (High Range Test)
	Combined 2 - 50 $\mu\text{m}$
Measurement Error	< 1% ( $\epsilon > 0.7$ )
Test Temperature range	20°C - 800°C ( $\pm 5^\circ\text{C}$ )
Sample characteristics	Disk of $\varnothing 48$ mm, any material, max thickness: 3 mm  If powdered material, min volume: 6 cm <sup>3</sup>
Test delivery	Within 1 - 3 weeks from sample delivery*
Pressure levels	1-1000mbar
Sample return	Optional

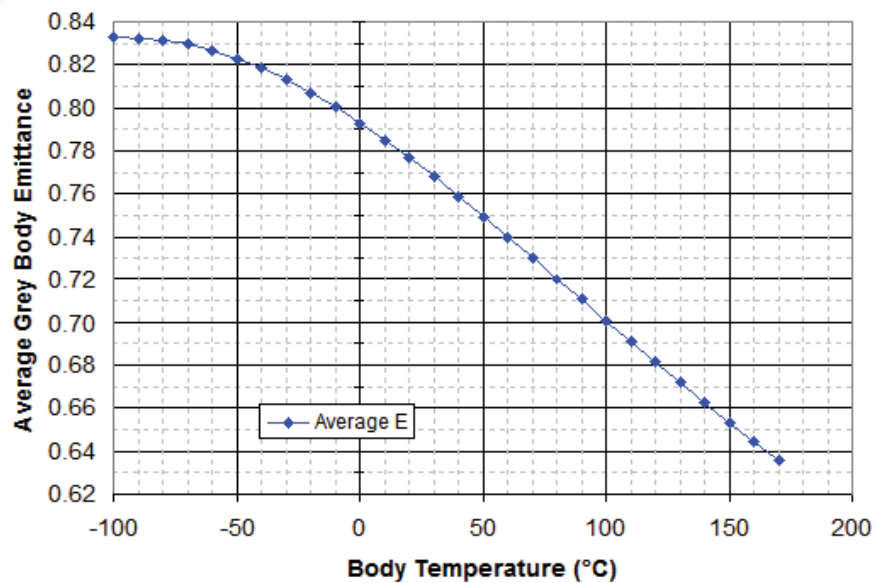
\* Depending on number of samples, temperature steps and availability at time of order.

Transmissivity tests are also available. Blank sample disks can be provided on request.

Contact us for more details!

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Spectral data are Energy-averaged to provide Emittance values over a wide range of temperatures (for thermal modeling)



The test facility