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## Infrared Spectrometer

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### HIGHLIGHTS

- Online measurement of emissivity
- Beam diameter            25 mm
- Power                        11 W
- Spectral range            1.3 – 12.2  $\mu\text{m}$
- Duration of measurement    1 s – 4 s

### FIELDS OF APPLICATION

- Quality control
- Production control
- Thin film technology
- Surface technology

### MEASUREMENT PRINCIPLE

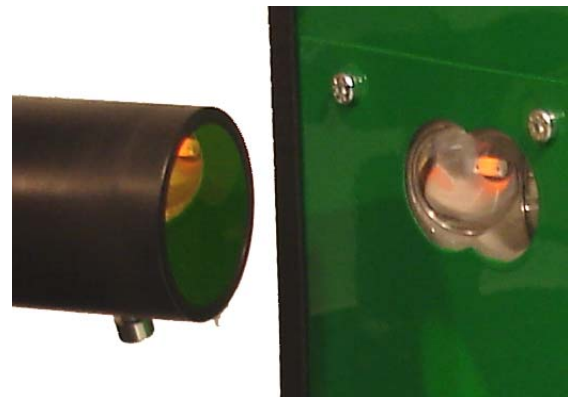
The IRS-E series of infrared spectrometers employ a CW infrared emitter and a pyroelectric detector array in order to achieve fast measurements of complete IR spectra. The optical module is designed for measurements on specular to slightly diffuse reflecting surfaces. A reference unit is delivered with the spectrometer for calibration purposes.

### FIELDS OF APPLICATION

This spectrometer is especially designed for the measurement of the emissivity of surfaces. The compact geometry and short measurement period make these units particularly useful for online measurements in industrial situations such as production lines.

The enclosure provides adequate protection for applications in internal industrial environments.

Typical applications are in quality control and production control in the fields of thin film and surface technology. Analysis of coated window glass and plastic sheets as well as coated metal surfaces for the solar industry are typical applications for these units.

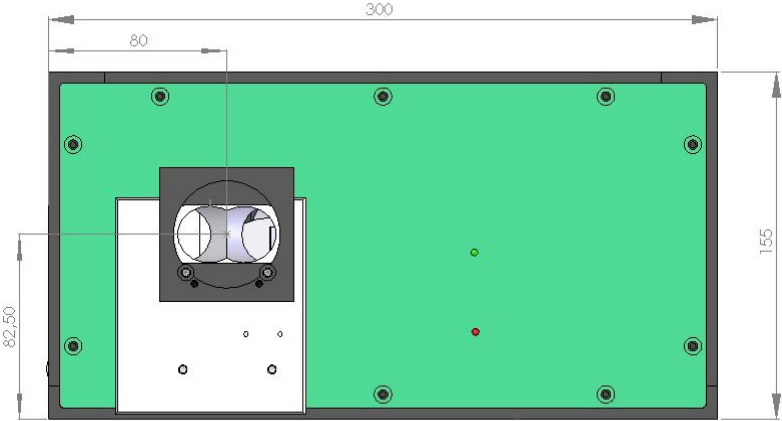


## SPECIFICATIONS

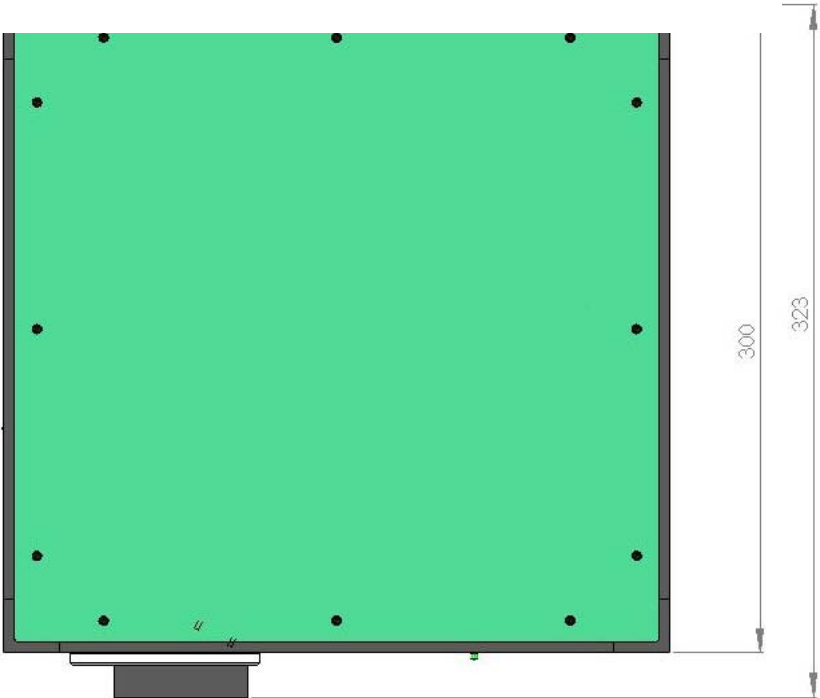
Parameter	Conditions	Min	Typ	Max	Units
<b>Optical</b>					
Spectral Range		1.3		12.2	μm
Infrared Power			11		W
Beam diameter	13 mm distance from optical head		15		mm
<b>Measurement</b>					
Detector	Pyroelectric Array		64		Pixel
Duration of Measurement		1		4	s
Reproducibility	R > 40%			±2	%
Resolution	at 1.5 μm wavelength at 5.4 μm wavelength	0.1		1.0	μm μm
Signal-to-Noise Ratio (SNR)	at 1.5 μm wavelength, R = 100% at 12 μm wavelength, R = 100%		700 15		
<b>Electrical</b>					
Power Requirement	230 VAC, 50 Hz		25		W
<b>Interface</b>					
Type	RS-232				
Transmission Rate			9600		Baud
<b>Dimensions</b>					
		300 x 300 x 155 mm (Depth x Length x Height)			mm

**ENCLOSURE**

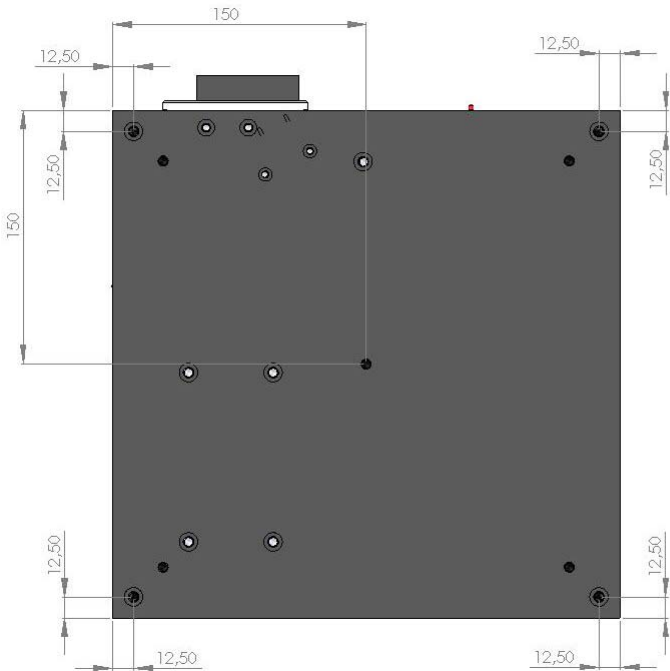
Front view



Top view



Bottom view

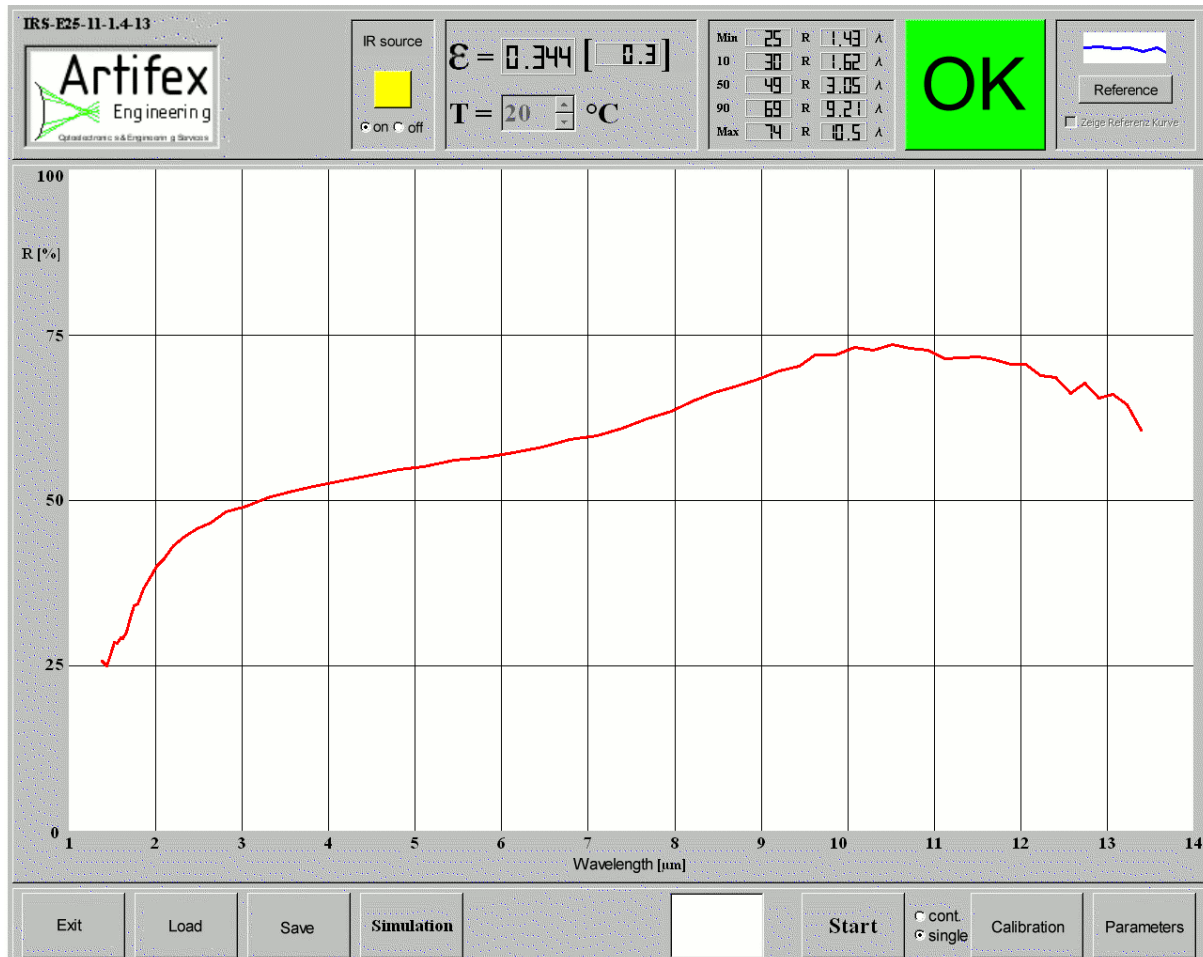


## SOFTWARE

The spectrometer is controlled via a graphical user interface delivered with the unit. The instrument is connected to the PC through the RS-232 interface.

The graphical interface is arranged in three main areas:

1. A header with the results of the measurement
2. The main window with the reflection spectrum and an optional reference spectrum
3. A trailer with the control buttons



## INTERFACE

Transmission rate	9600 baud
Data bits	8
Parity	none
Flow control	off
Stop bits	1

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