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Bruker PMA50 Specifications

A.1 PMA50 module

Parameter	PMA50
Dimensions	67cm (w) x 46cm (d) x 27cm (h)
Weight	ca. 35 kg
Angle of incidence for PM-IRRAS experiments	between 70° and 89°
Spectral range	Depends on the spectral range of the FT-IR spectrometer to which the PMA50 module is coupled. Note: The basic spectrometer configuration covers a spectral range of 8000 - 750 cm ⁻¹ which is limited by the PEM and/or the polarizer efficiency only
Spectral resolution	Depends on the spectral resolution of the FT-IR spectrometer to which the PMA50 module is coupled.
Electronics	Especially adapted for double modulation Electronics is integrated into the PMA50 module.
Data acquisition	Parallel dual channel data acquisition technique (DigiTect™) with 24 bit dynamic range provides for the simultaneous acquisition of sum signal and difference signal
Demodulation technique	synchronous demodulator integrated in the electronics unit of the FT-IR spectrometer to which the PMA50 module is coupled.
Focusing optics	ZnSe lens for non-polarizing beam focusing on the detector element
Optical bench	purgeable Purge gas requirements: <ul style="list-style-type: none">• dry air or nitrogen gas (dew point < -40°C corresponds to a degree of dryness of 128ppm humidity)• oil-free and dust-free• max. pressure: 2 bar (29 psi)• Controllable flow rate (Note: When the spectrometer is purged continuously the recommended flow rate is 200 liters/hour. Make sure that the flow rate does not exceed 500 liters/hour.)

A.2 PEM

Parameter	Specification
optical material	ZnSe
nominal frequency	42 kHz
Useful aperture diameter	16.7mm (Note: It is the aperture diameter of which any point in the aperture field has > 90% of the maximum retardation.)
Coating	anti-reflection coating (for enhanced throughput)
Ambient temperature	max. 50 °C (max. 122 °F) > Important note: In case the PEM is operated at ambient temperatures higher than the normal room temperature, a stabilization period between 30 and 45 minutes is highly recommended before the user starts the first measurement.

☞ For more information about the specifications of the PEM and the PEM controller, refer to the PEM-100 Photoelastic Modulator User Manual.

A.3 Polarizer

Parameter	Specification
Optical material	ZnSe
Outer diameter	35mm
Clear aperture	diameter: 25mm
Usable spectral range	5,000 - 250cm ⁻¹
Extinction ratio (typical)	375 @ 1000cm ⁻¹
T _{max}	75%