A Bruker INVENIO R Specifications

A.1 Spectrometer

Parameter	Specification
Weight	*Basic spectrometer configuration: approx. 65 kg* (Note: The exact weight depends on the individual instrument configuration.)
Dimensions	footprint: 68 cm (w) x 76 cm (d) height without panel PC and touch screen: 32 cm height with panel PC and touch screen: 50 cm height with open sample compartment cover: 62 cm
Spectral range	**standard:** With the standard optical components (KBr beamsplitter, DLaTGS detector and MIR source) the following spectral range is achieved: MIR: 8,000 to 350 cm^{-1} **optional:** With the corresponding optional optical components, the following spectral ranges can be achieved: Far IR: 680 to 15 cm^{-1} Near IR: 15,500 to 4,000 cm^{-1} Visible/UV: 28,000 to 9,000 cm^{-1}
Spectral resolution	better than 0.16 cm^{-1}
Wavenumber accuracy	better than 0.005 cm^{-1} @ 1,554 cm^{-1}
Photometric accuracy	better than 0.1% T
Scan speed	**standard:** 8 velocities from 1.6 to 80 kHz (1.0 to 50 mm/sec opd[a]) **optional:** 12 velocities from 1.6 to 160 kHz (1.0 to 100 mm/sec opd)
Source	**standard:** MIR source (globar, electronically stabilized, air-cooled) **optional:** various sources for measurements in the NIR, MIR, FIR, UV and VIS region (See also section 4.5.2.)
Beamsplitter	**standard:** KBr beamsplitter **optional:** various beamsplitters for measurements in the NIR, MIR, FIR, UV and VIS region (See also section 4.5.4.)
Detector	**standard:** High sensitivity DTGS detector with KBr window **optional:** various detectors for measurements in the NIR, MIR, FIR, UV and VIS region (See also section 4.5.3.)

Parameter	Specification
Sample compartment window	**standard:** KBr window **optional:** various window materials for measurements in the NIR, MIR, FIR, UV and VIS region (See also section 4.5.5.)
Laser	INVENIO R is a laser class 1 product containing a laser class 2 laser according to EN 60825-1:2007. The laser emits red light with a wavelength of 633 nm. The rated power output is 0.8 mW.
Interferometer	ROCKSOLID permanently aligned, wear-free and high stability interferometer
Sample compartment (large-sized)	Dimensions: 25.5cm (W) x 27.0cm (D) x 22.5 cm (H) The purgeable sample compartment is separated from the optical bench by windows or automatic shutters.
Electronics	Microprocessor-controlled optics bench with digital speed control, system diagnostics, advanced system check, 96 kHz A/D converter with 24 bit dynamic range.
Communication interface	Industry standard Ethernet connection, TCPIP protocol

a. opd - optical phase difference

A.2 Power supply

Parameter	Specification
Voltage	Spectrometer: 100 - 240 V AC, 47 - 63 Hz
Power consumption (basic spectrometer configuration without data system)	typical: 70 W maximum: 120 W
Overvoltage category	II according to EN 61010-1 or IEC 60664-1
Pollution degree	2 according to EN 61010-1 or IEC 60664-1
Protection class	I according to IEC 61140

➢ For the power supply specifications of the data system, see the corresponding user manual.

A.3 Purge gas supply

Parameter	Specification
Purge gas properties	air or nitrogen gas dry (dew point below -40°C) and clean (oil-free and dust-free) Recommendation: Use of DIN purity class 1-1-1 (dryness - residual oil - particles)
Pressure	max. 0.5 bar (7.25 psi) overpressure
Flow rate (controllable)	Recommended flow rate: 200 l/h. Flow rate must not exceed 500 l/h.

A.4 Environmental conditions

Parameter	Specification
Ambient temperature range	for spectrometer operation: 18°C to 35°C
Ambient temperature variations in case of long-term measure-ments	max. 1°C per hour and max. 2°C per day
Humidity (non-condensing)	≤ 80% (relative humidity)
Installation site	in a closed room, max. 2000 m above sea level