

EMILIE™ DATASHEET

explore new frontiers in nanomaterials analysis

Identify nanomaterials by NEMS-FTIR spectroscopy with unprecedented sensitivity.



SPECIFICATIONS & REQUIREMENTS

Table 1. General specifications

Dimensions (LxWxH)	22x14x28 cm
Weight	7,4 kg
Response time	25 ms
Material of light entrance window	Diamond
Operating wavelength range, cm ⁻¹ :	30 ÷ 11,000

Table 2. Purge gas supply

Purge gas	Dry air or nitrogen gas (use only in well-ventilated environment)		
Gas condition	Dry and clean (oil-free and dust-free)		
Pressure range	max. 2 bar		
Gas flow rate	sustained flow	max.	200 liter/hour

Table 3. Control device specifications

Power supply voltage	PHILL™: 100 - 240 VAC ± 10% 50 - 60 Hz
Power consumption	6,25 W typical, 25W max.
Output signal voltage	± 3 VDC
Input signal voltage	± 5 VDC
Required OS	Windows 10 or higher
Connection to PHILL™	Sub-D 15 cable
Connection to PC	Micro USB 2.0

Table 4. FTIR spectrometer requirements

Compatible with	Bruker Invenio R Bruker Invenio X Bruker Vertex 70/70v Bruker Vertex 80/80v
Required accessory	ASM external Analog-Box Bruker part No: E550/A
Required operating mode	Step scan must be available

Table 5. Vacuum pump requirements*

Type	Turbo or scroll pump (oil free)
Vacuum	<10 ⁻³ mbar achievable
Hose	KF25 flexible hose connection

Table 6. Environmental and operation conditions

Ambient temperature range	5°C to 35°C
Operation pressure range [†]	5x10 ⁻⁶ to 10 ⁻³ mbar
Chip temperature control range [‡]	-10°C to 80°C

* We recommend using EMILIE™ with the HiPace® 10 Neo vacuum turbo pump from Pfeiffer Vacuum GmbH, providing maximal efficiency with minimal footprint.

† EMILIE™ has been tested only at the specified operation pressure range.

‡ The minimum temperature achievable by the Peltier element is dependent on the ambient temperature. At 35°C ambient temperature, a minimum temperature of 5°C can be achieved by the Peltier element reliably.