gekko photonics
Engineering-Driven Analytics

PORTABLE RAMAN ANALYZER

Spectrally™ X1 PORTABLE

- Raw material identification and verification at the warehouse gate or in the field
- PASS/FAIL result in seconds, also through transparent packaging
- Advanced neural-network models in Spectrally™ OS



Parameter	Value
Measurement principle	Raman spectroscopy
Laser wavelength	785 nm (standard); 1064 nm (option)
Laser power	600 mW @ 785 nm; 800 mW @ 1064 nm (maximum)
Spectral range	300–1650 cm^{-1} (standard); 300–3500 cm^{-1} (option)
Acquisition time	5–300 s
Integration time	0.01–300 s
Detector	Back-thinned CCD (785 nm) / InGaAs array (1064 nm), TE-cooled (proprietary TEC driver)
Laser wavelength stability	0.01 nm/°C
Internal reference	Self-diagnostics and measurement validation; integrated in the probe
Laser lifetime	Min. 2 years
Warm-up time	30 min
Operating temperature	0–45 °C
Storage temperature	–15 to +50 °C
Humidity	20–70% RH, non-condensing
Power supply	100–240 V AC, 50/60 Hz, with protective earth (universal power supply)
Power consumption	60 W (mains only, no battery)
Operator panel	Touchscreen HMI
Ingress protection	IP54
Software	Spectrally™ OS (Debian GNU/Linux)

Raman analysis where the sample is

Spectrally™ X1 PORTABLE is a Raman analyzer in a rugged case the size of a suitcase. It takes the measurement to the material: to the warehouse gate for incoming raw materials, to the installation for diagnostics, or into the field. No sample preparation is needed, and the measurement does not damage the sample.

The TE-cooled back-thinned CCD records the spectrum at 785 nm, and the integrated touchscreen runs the analyzer on its own, without a separate computer. The analyzer runs from the mains only. Each result arrives in seconds as a clear PASS/FAIL or a concentration value.

Spectrally™ OS

The software turns each spectrum into a decision: identity of the material, PASS/FAIL against the specification, or the concentration of individual components.

The same models run on X1 LAB, X1 PORTABLE and X1 INLINE, so a method checked at the gate carries over to the lab and to the production line.



MANUFACTURER

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