gekko photonics
Engineering-Driven Analytics

BENCHTOP RAMAN ANALYZER

Spectrally™ X1 LAB



- Chemical identification and material characterization, also through transparent packaging
- Automated sample carousel with up to 25 positions, or an external Raman probe in its place
- Chemometric models built here carry over to X1 INLINE on the production line

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)
Spectral resolution	8 cm^{-1}
Acquisition / integration time	5–300 s / 0.01–300 s
Detector	Back-thinned CCD (785 nm) / InGaAs array (1064 nm), TE-cooled (proprietary TEC driver)
Laser lifetime	Min. 2 years
Internal reference	Self-diagnostics and measurement validation
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
Power consumption	200 W
Operator panel	Touchscreen HMI
Connectivity	Ethernet (LAN)
Ingress protection	IP20
Sample container	Glass vials, quartz cuvettes, any transparent vials
Sample feed	Carousel for up to 25 positions or external probe (interchangeable)
Software	Spectrally™ OS (Debian GNU/Linux)

Raman precision for the laboratory

Spectrally™ X1 LAB is a benchtop Raman analyzer for rapid chemical identification and material characterization in QC and R&D laboratories. It measures samples in vials and cuvettes, and through transparent packaging, with little or no sample preparation.

The automated carousel takes up to 25 samples in one run. As an alternative, an external Raman probe replaces the carousel and extends measurement beyond the sample chamber. Spectra are recorded at 8 cm^{-1} resolution on a cooled array detector matched to the laser: a back-thinned CCD for 785 nm, an InGaAs array for 1064 nm.

Spectrally™ OS

Guided workflows support operators in routine measurements, and analytical teams get tools for building and validating chemometric models. Results export as CSV or PDF.

The same models run on X1 LAB, X1 PORTABLE and X1 INLINE, so a method developed in the lab moves to the production line without starting over.



MANUFACTURER

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