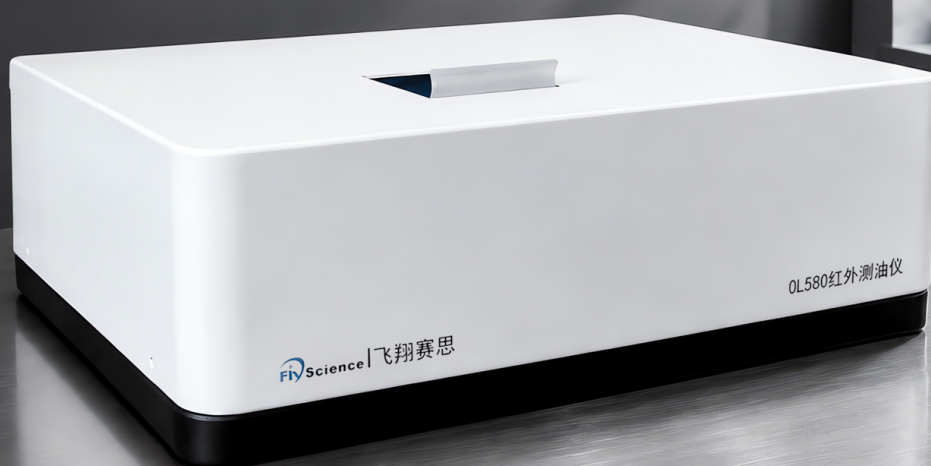


PRECISION IN EVERY DETAIL

OL580

Infrared oil analyser

Observe oil by spectroscopy and document the results.



Three
wavenumbers

2930 / 2960 / 3030 cm^{-1}

0.5–5 cm

Cuvette compatibility

11 kg

Main-unit weight

From specialist instruments to complete laboratory solutions.

Product brochure · V0.0.7

01

PRODUCT ADVANTAGES

Optics, control and analysis software work together.

01

Integrated optical path

A high-throughput optical system uses a short, high-energy path, dispersing light before absorption. The compact, lightweight instrument balances stability and signal-to-noise performance.

02

Electronically modulated source

Reduced source heating assists thermal management. The source literature specifies a life of 5000 hours or more. Eliminating mechanical light-chopping parts simplifies the structure.

03

Wavelength control

A precision stepper motor controls the grating, with wavelength correction to support accuracy and repeatability.

04

Cuvette compartment

Compatible with 0.5–5 cm cuvettes.

05

Continuous spectral scanning

Full infrared scans reveal oil characteristics and interfering substances and help assess whether extraction-solvent purity meets measurement requirements.

06

Three-wavenumber positioning

Absorbance can be positioned manually at 2930, 2960 and 3030 cm^{-1} for three-wavenumber measurement.

07

Analysis and reporting

The software directly reports oil in water, oil fumes/mist in exhaust gas and petroleum hydrocarbons in soil. It automatically produces reports containing measurements, sample spectra, calibration curves, conditions and customer information.

08

Extraction-solvent compatibility

The original literature specifies infrared spectrophotometric methods using tetrachloroethylene or carbon tetrachloride as the extraction solvent.

02

APPLICATIONS & PRINCIPLE

Oil analysis in water, exhaust gas and soil.

Industrial wastewater

Domestic sewage

Oil fumes in exhaust gas

Oil mist in exhaust gas

Petroleum hydrocarbons in soil

Method standards cited in the source	Analytes
HJ637-2018	Water: petroleum hydrocarbons and animal/vegetable oils by infrared spectrophotometry
HJ1077-2019	Stationary-source exhaust gas: oil fumes and oil mist by infrared spectrophotometry
HJ1051-2019	Soil: petroleum hydrocarbons by infrared spectrophotometry

Technical principle

Oil is measured after extracting the water sample with tetrachloroethylene at $\text{pH} \leq 2$. Magnesium silicate adsorption removes polar substances, including animal and vegetable oils, before petroleum hydrocarbons are measured.

Three-wavenumber calculation

Absorbances A_{2930} , A_{2960} and A_{3030} at 2930 cm^{-1} (CH_2 groups), 2960 cm^{-1} (CH_3 groups) and 3030 cm^{-1} (aromatic rings), corresponding to C—H stretching vibrations, are combined with correction coefficients. Animal/vegetable oil content is the difference between total oil and petroleum hydrocarbons.

The method description is transcribed from the source. Verify test conditions and operating requirements against the relevant method and laboratory procedures.

03

FULL SPECIFICATIONS

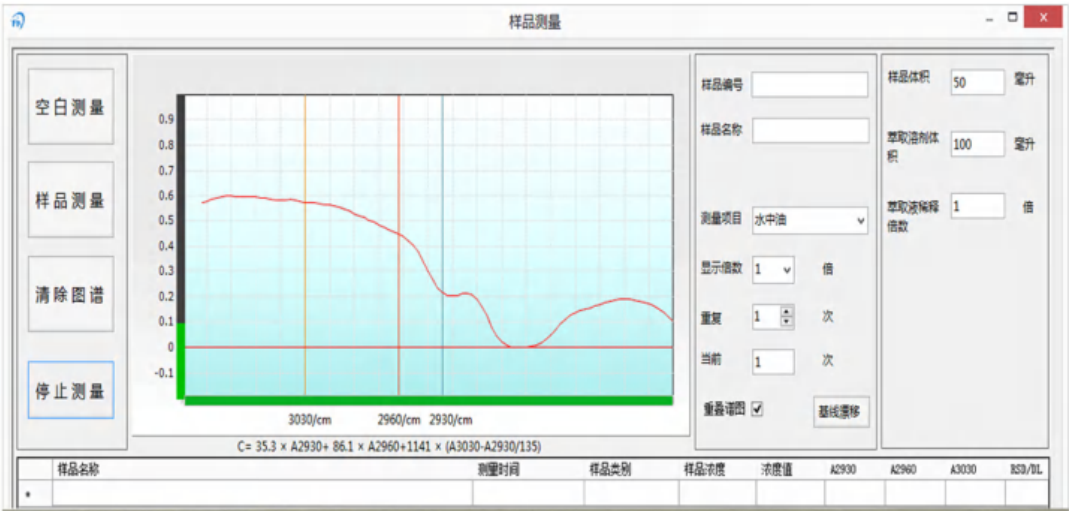
Measurement range, spectral and environmental specifications.

Item	Values and conditions
Baseline stability	Software-controlled automatic real-time zero adjustment; no manual zeroing
Method detection limit	0.04 mg/L with a 500 ml water sample and 50 ml extract
Instrument detection limit	$DL \leq 0.03$ mg/L; 3 times the SD of 11 tetrachloroethylene blank measurements
Accuracy error	$\leq \pm 2\%$
Repeatability	$RSD \leq 0.5\%$ for a 30–60 mg/L oil standard measured 11 times; $RSD \leq 5\%$ for a 0.2 mg/L water sample
Basic measurement range	0.0–800.0 mg/L
Minimum detectable concentration	0.004 mg/L, oil concentration in the water sample
Maximum measurable concentration	800000 mg/L, oil concentration in the water sample
Absorbance range	0.0000–2.0000 AU, corresponding to transmittance 100–1% T
Scanning wavenumber range	3400–2400 cm^{-1} (2941–4167 nm)
Measurement wavelength range	3200–3600 nm
Wavenumber accuracy and repeatability	$\pm 1 \text{ cm}^{-1}$
Wavelength repeatability	± 1 nm
Linear correlation coefficient	$R > 0.9992$
Wavelength scanning speed	Full-spectrum scan from 3200–3600 nm, 35 s/sample
Main-unit dimensions	450 × 310 × 155 mm
Main-unit weight	11 kg
Environment	–5–45°C; relative humidity 20–80%
Power supply / consumption	220 $\pm$ 10% V; 50 Hz; 50 W

04

SOFTWARE & QUALIFICATION

Software spectra and original metrology documentation.



Original analysis-software and scanning-spectrum image



Measuring-instrument type-approval certificate shown in the source

The certificate retains its original holder, name, model and date. Verify scope and current status against the original and project requirements.

05

REFERENCE STANDARDS

Industry standards listed in the original literature.

Standard number	Standard title
GB8978-1996	Integrated wastewater discharge standard
GB18918-2002	Discharge standard for pollutants from municipal wastewater treatment plants
GB18466-2005	Water-pollutant discharge standard for medical institutions
GB21900-2008	Electroplating pollutant discharge standard
GB20426-2006	Coal-industry pollutant discharge standard
GB21907-2008	Water-pollutant discharge standard for the bioengineering pharmaceutical industry
GB31570-2015	Water-pollutant discharge standard for the petroleum refining industry
GB13456-2012	Water-pollutant discharge standard for the iron and steel industry
GB21906-2008	Water-pollutant discharge standard for the traditional Chinese medicine pharmaceutical industry

05

REFERENCE STANDARDS

Industry standards listed in the original literature.



Environmental application image from the original brochure

This page retains the standard editions cited in the original brochure; it does not identify them as the latest editions required for a current project.