



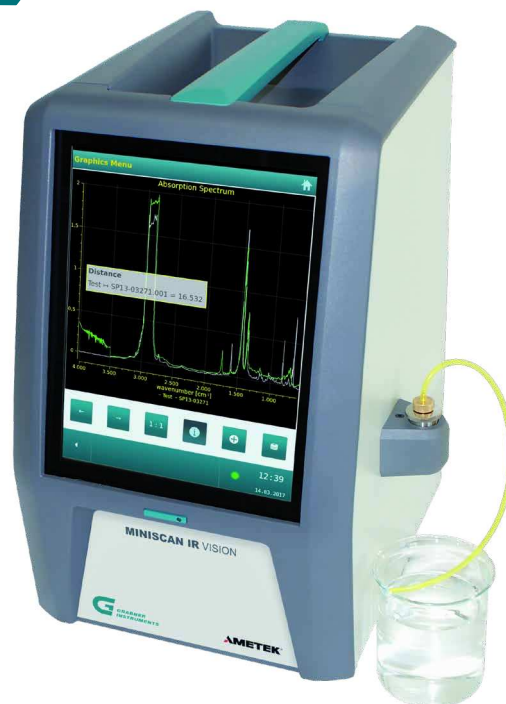
FUEL ANALYSIS



MINISCAN IR VISION

Top Performer in Portable Fuel Analysis

The MINISCAN IR VISION is a high speed, compact and robust FTIR fuel analyzer for the comprehensive and automatic measurement of gasoline, jet and diesel fuels. The analyzer is configured to measure more than 100 fuel parameters and components for fuel blending, for quality inspection and to check compliance with fuel specifications directly at the point of sale.



Data based on real samples collected and analyzed by SGS®!

- **100+ preconfigured parameters**

Compound analysis is performed according to the international standards ASTM D5845 for oxygenates, ASTM D6277 and EN 238 for Benzene and EN 14078 for Biodiesel blends. Octane and Cetane Number, Distillation, Vapor Pressure and other fuel properties are automatically determined from the full IR spectrum using Partial Least Square (PLS) analysis and advanced chemometric models following ASTM E1655. Several thousand data points are used to achieve best prediction accuracy.

- **Fast and User Friendly Measurement**

A high-performance processor allows the user to calculate results within seconds. User friendly menu navigation utilizing a large button touchscreen design ensures immediate instrument response. The instrument facilitates worldwide remote support and service via secure VPN tunnel.

- **High Quality Portable Technology**

MINISCAN IR Vision is unmatched in its class of portable fuel analyzers. The thermoelectric temperature regulation of the instrument's filling system, measuring cells and integrated density meter maximises accuracy in measuring volume and mass percent of fuel compounds.

- **Mechanical Robustness**

Durability makes the instrument ideal for the challenges encountered during field or mobile testing. The MINISCAN IR Vision incorporates Grabner's proven, robust and bubble free metal filling system. The instrument is protected by the shock and vibration tested Vision platform housing. The double interferometer is mounted with a self aligning mirror system, that allows automatic correction of intensity shifts after a rough drive over a bumpy road. A robust, 10" full color industrial

touchscreen guarantees highest visibility and ease of use even under rough environmental conditions.

Key Features

- Portable Fuel Analyzer for Gasoline, Diesel, Jet Fuel and Biofuel Blends
- Full Spectrum PLS Analysis using Superior Processing Power
- Smart 2+1 Cell Design
- Beam Splitter: Ge-Coated KBR
- Bubble Free Metal Filling System
- Thermoelectric Temperature Regulation of Filler, Density Meter and Cells
- 10" Industrial Full Color Touchscreen
- Remote Access. Anywhere. Anytime.

GASOLINE				DIESEL	
PROPERTIES		Range ¹⁾		PROPERTIES	
RON		70 - 110		Cetane Number	
MON		65 - 105		Cetane Index	
AKI		67 - 107		Kinematic Viscosity @40°C	
RVP & DVPE		40 - 105 kPa		Dynamic Viscosity @40°C	
Distillation / Evaporation		IBP, T10, T50, T90, FBP, E70/100/150 (°C), E200/300 (°F)		CFPP	
Density		0 - 3 g/cm ³ (r _{s.d.} = 0.0005 g/cm ³)		Distillation / Recovery	
Driveability Index (DI), VOC emissions, Vapor Lock Index (VLI)				Density	
COMPONENTS				COMPONENTS	
Oxygenates	Range ²⁾	Aromatics	Range ²⁾	Range ²⁾	
MTBE	0 - 20 m%	Benzene	0 - 10 m%	Total Aromatics	
TAME	0 - 20 m%	Toluene	0 - 20 m%	Poly Nuclear Aromatics	
ETBE	0 - 20 m%	o, p, m-Xylene	0 - 20 m%	Cetane Improver: EHN, IPN	
DIPE	0 - 20 m%	Ethylbenzene	0 - 20 m%	Biodiesel: FAME	
Methanol	0 - 15 m%	Propylbenzene	0 - 20 m%		
Ethanol	0 - 40 m%	Mesitylene	0 - 20 m%	JET FUEL	
Isopropanol	0 - 20 m%	Durene	0 - 20 m%	PROPERTIES	
2-Butanol	0 - 25 m%	Naphtalene	0 - 10 m%	Range ¹⁾	
tert-Butanol	0 - 25 m%	Pseudocumene	0 - 20 m%	Flashpoint	
Sec-Butylacetate	0 - 10 m%	2-/3-/4-Ethyltoluene	0 - 20 m%	Freezing Point	
Iso-Butylacetate	0 - 10 m%	Other Aromatics	0 - 20 m%	Kinematic Viscosity @-20°C	
Dimethylcarbonate	0 - 10 m%	Anilines	Range ²⁾	Distillation	
Dimethoxymethane	0 - 10 m%	Aniline	0 - 5 m%	IBP, T10/50/90/95, FBP, E10/50, R200	
Acetone	0 - 25 m%	N-Me-Aniline	0 - 5 m%	Smoke Point	
Other Oxygenates	0 - 20 m%	N,N-Dimethylaniline	0 - 5 m%	Total Aromatics	
Octane Boosters	Range ²⁾	o, p, m-Methylaniline	0 - 5 m%	Naphtalenes	
MMT/CMT (mg/l)	0 - 10000	Total Parameters	Range ¹⁾²⁾	MSEP	
Manganese [MMT]	0 - 2500	Total Oxygen	0 - 12 m%	Density	
Manganese [CMT]	0 - 2500	Total Aromatics	0 - 80 m%	0 - 3 g/cm ³ (r _{s.d.} = 0.0005 g/cm ³)	
DCPD	0 - 15 m%	Total Olefins	0 - 80 m%	COMPONENTS	
Nitromethane	0 - 9 m%	Di-Olefins	0 - 20 m%	Range ²⁾	
Other	Range ²⁾	Total Aniline	0 - 5 m%	Biodiesel [FAME]	
Cyclohexane	0 - 100 m%	Total Esters	0 - 5 m%	0 - 0.12 m%	

TECHNICAL DATA

Standards & Practices	ASTM D5845, D6277, D7777, D7806, E1655, EN 238, EN 14078, ISO 15212
Correlation to	ASTM D86, D323, D445, D1319, D5191, D 6371, D6378, D613, D2699, D2700, D56/3828, D1322, D1840, D2386/D7153, D3948, D6379, ISO 3104, ISO 3405, ISO 5163, ISO 5164, ISO 5165, EN 116, EN 13016
Spectrometer	Temperature and Laser Regulated, 2+1 Cell-FTIR
Density Measurement	Temperature Regulated Oscillating U-Tube Cell
Warm-Up / Scanning Time	<30s / 80s (Multiple Scans)
Units of Measurement	v%, m%
Display	10" full color touch screen
Interfaces	2x USB, 2x LAN
Power Supply	100-264 V AC, 47-63 Hz, 130 W (field application with DC adaptor for 12 V vehicle battery)
Dimensions (WxHxD), Weight	293 x 390 x 280 mm (10.5 x 15.4 x 11 inch), 12 kg (26 lb)

¹⁾ Range and quality of property prediction depends on database used²⁾ The lowest concentration value is the Limit of Detection (LOD)

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