



MAHA Emission Tester

Model: MET 6.1 / 6.2 / 6.2.1 / 6.3 / 6.3.1

Emission tester for gasoline, gas and diesel engines



Dynamometer /
Diagnostic / Emission Tester



- ▶ **MET 6.1:** Measurement of HC, CO, CO₂, O₂, NO_x(option)
- ▶ **MET 6.2:** Measurement of K value (m⁻¹), turbidity (%), derived: particle mass concentration (mg/m³)
- ▶ **MET 6.2.1:** Measurement of particle mass concentration (mg/m³), derived: K value (m⁻¹), turbidity (%), particle filter diagnostics
- ▶ **MET 6.3:** Measurement of HC, CO, CO₂, O₂, NO_x(option), K value (m⁻¹), turbidity (%), derived: particle mass concentration (mg/m³)
- ▶ **MET 6.3.1:** Measurement of HC, CO, CO₂, O₂, NO_x(option), measurement of particle mass concentration (mg/m³), derived: K value (m⁻¹), turbidity (%), particle filter diagnostics

Used in: Emission Check 2010, UBA study, EU TEDDIE study

Premium Workshop
Equipment

MET 6 series

Emission tester for gasoline, gas and diesel engines

- ▶ MET 6 series is available as a gasoline/gas (MET 6.1), diesel (MET 6.2/6.2.1) and a patented combination unit (MET 6.3/6.3.1)
- ▶ Small, light (approximately 5 kg as a combination unit), practical and durable
- ▶ Ideal device for mobile use: small, light, power supply from the vehicle, wireless connections to OBD and exhaust emission tester (option), mobile case (option)
- ▶ Menu-driven operation and easy-to-use test procedure (PC)
- ▶ Only one probe with patented quick-clamping for all engine types
- ▶ Large, easily accessible panels for easy maintenance
- ▶ MET 6.2.1/6.3.1 – Second generation opacimeters with particle measurement for exhaust gas cleaning and handling systems
- ▶ MAHA Wireless OBD: wireless, lightweight and easy operation
- ▶ Wireless device communication (option)
- ▶ Power can be supplied either via the grid or the vehicle electrical system
- ▶ Patented innovative water separator
- ▶ Low power consumption thanks to intelligent energy management
- ▶ Exhaust gas diagnostics (e.g. on MAHA dynamometer under load)
- ▶ "MAHA green line" certified as being environmentally safe



MET 6.1

4/5 Gas tester for gasoline and gas engines

- ▶ Analysis of the gas components HC, CO, CO₂, O₂, with lambda calculation, NO_x (option)
- ▶ Emission gas testing on gasoline, LPG, CNG, and ethanol engines (e.g. E85)
- ▶ Approval pursuant to the European MID Directive
- ▶ For cars and motorcycles
- ▶ Available with two-point calibration (MET 6.1/2)



MET 6.2

Opacimeter for diesel engines

- ▶ Opacimeter with high measurement resolution for measuring the K value (m⁻¹) and turbidity (%), particle mass concentration (mg/m³) derived from opacity
- ▶ Very short heating time of the optimized measuring chamber
- ▶ Low power consumption through innovative measurement chamber heating
- ▶ Gas pump ensures constant exhaust gas flow in the measuring chamber
- ▶ Only one probe is required (cars/trucks)
- ▶ Small gas emission limits can be measured reliably (sticker value)





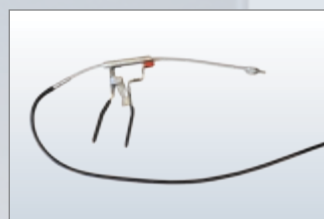
W-LAN PC interface (option)



MAHA wireless OBD (option)



DISPEED 492 (option)



Patented gas probe with quick clamping



Mobility kit (optional)



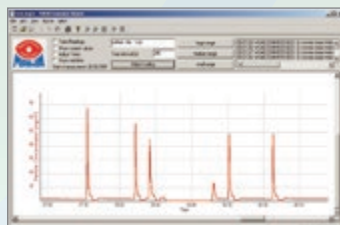
Trolley for single/combined unit or printer (optional)



MET 6.2.1

Second generation opacimeter for diesel engines

- ▶ Second generation opacimeter that uses laser light scattering measurement technique to measure particle mass concentration (mg/m^3) and derived K values (m^{-1}) and turbidity (%)
- ▶ Ready for use immediately after it is switched on
- ▶ The laser light scattering measurement system has a low energy requirement
- ▶ High-resolution measurement of particle mass concentration enables particle filters and exhaust after-treatment systems to be diagnosed



MET 6.3

Exhaust gas combitester

- ▶ Combination of MET 6.1 (gasoline/gas) and MET 6.2 (opacimeter) in a compact housing
- ▶ Measurement of HC, CO, CO_2 , O_2 , NO_x (option), K value, turbidity, particle mass concentration
- ▶ Available with two-point calibration (MET6.3/2)

MET 6.3.1

Patented exhaust gas combitester

- ▶ Combination of MET 6.1 (gasoline/gas) and MET 6.2 (second-generation opacimeter) in a compact housing (patented)
- ▶ Measurement of HC, CO, CO_2 , O_2 , NO_x (option), particle mass concentration, K value, turbidity, particle filter diagnostics
- ▶ Available with two-point calibration (MET6.3.1/2)

Technical data					
MET (complete series)	Weight approx.	5 kg (11 lbs)			
	Dimensions (L x W x H)	406 x 225 x 160 mm			
	Voltage supply	10 – 30 V (DC) / 60 W 110 – 240 V (AC) / 50 – 60 Hz / 60 W			
	Direct connection Plug-in power supply unit				
	Operating temperature	0 °C – +50 °C			
	Storage temperature	-10 °C – +60 °C			
	Interfaces	LAN, OBD Bluetooth, optional W-LAN, RS 232			
	Speed input	100 – 10 000 rpm / resolution ww. 1, 5, 10, 50 rpm / various recording sensors			
	Oil thermometer input	0 °C – +150 °C / resolution 1 °C			
	Flow rate	3.5 l/min			
MET 6.1 / 6.3	Measurable gases	CO	CO ₂	HC	O ₂
	Measurement range	0 – 15.0 Vol %	0 – 20.0 Vol %	0 – 2000 ppm Vol (hexane) 0 – 4000 ppm Vol (propane)	0 – 25.0 Vol %
	Measurement accuracy *	0.03 Vol %	0.5 Vol %	10 ppm vol	0.1 Vol %
	Measurement value resolution (max.)	0.001 Vol %	0.01 Vol %	0.1 ppm vol	0.01 Vol %
	Measurement principle	infrared	infrared	infrared	electrochemical
	Lambda value	Display range: 0.500 – 9.999 / resolution: 0.001 / calculation based on Brettschneider			
	Warm-up phase	min. 30 s, max. 10 minute on average 2.5 minute / temperature-controlled			
	Working pressure	750 – 1100 hPa			
	Leakage test	Menu-guided / once daily			
	HC-residue test	Automatic			
	Zero point adjustment	Automatic / via active charcoal filter			
	Calibration	Annually / menu-guided via PC / special calibration gas necessary (country-specific)			
	Approval	PTB in accordance with MID Directive 2004/22/EG			
	Accuracy class	PTB: class 1 / OIML: class 0			
MET 6.2 / 6.3	Turbidity measuring range	0 – 100 %			
	Measuring range K value	0 – 9.99 m ⁻¹			
	Particle mass	0 – 1100 mg/m ³			
	Measurement procedure	Opacimeter			
MET 6.2.1 / 6.3.1	Measurement range opacity	0.001 – 3.000 m ⁻¹			
	particle mass concentration	0.01 – 700 mg/m ³			
	Measurement procedure	Scattered light procedure (LLSP)			
	Display accuracy opacity	0.001 m ⁻¹			
	Particle mass concentration	0.01 mg/m ³			
MET 6.2.1 / 6.3.1	Average particle size (Mode)	40 nm – 400 nm			

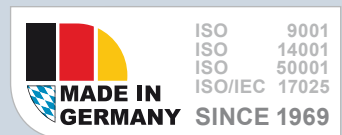
* Absolute, or 5 % of measurement value; the larger value is valid ** dependent upon measurement range

GLOBAL PLAYER

... in more than 150 countries worldwide

Subsidiaries

01 - Australia	05 - France	09 - New Zealand	12 - Serbia	15 - South Africa
02 - Brazil	06 - India	10 - Poland	13 - Singapore	16 - UK
03 - Chile	07 - Ireland	11 - Russian	14 - Spain	17 - USA
04 - China	08 - Japan			



- MAHA Maschinenbau Haldenwang GmbH & Co. KG
Hoyen 20 · 87490 Haldenwang · Germany

Tel.: +49 (0)8374-585-0 · Fax: +49 (0)8374-585-497
Internet: www.maha.de · E-Mail: sales@maha.de