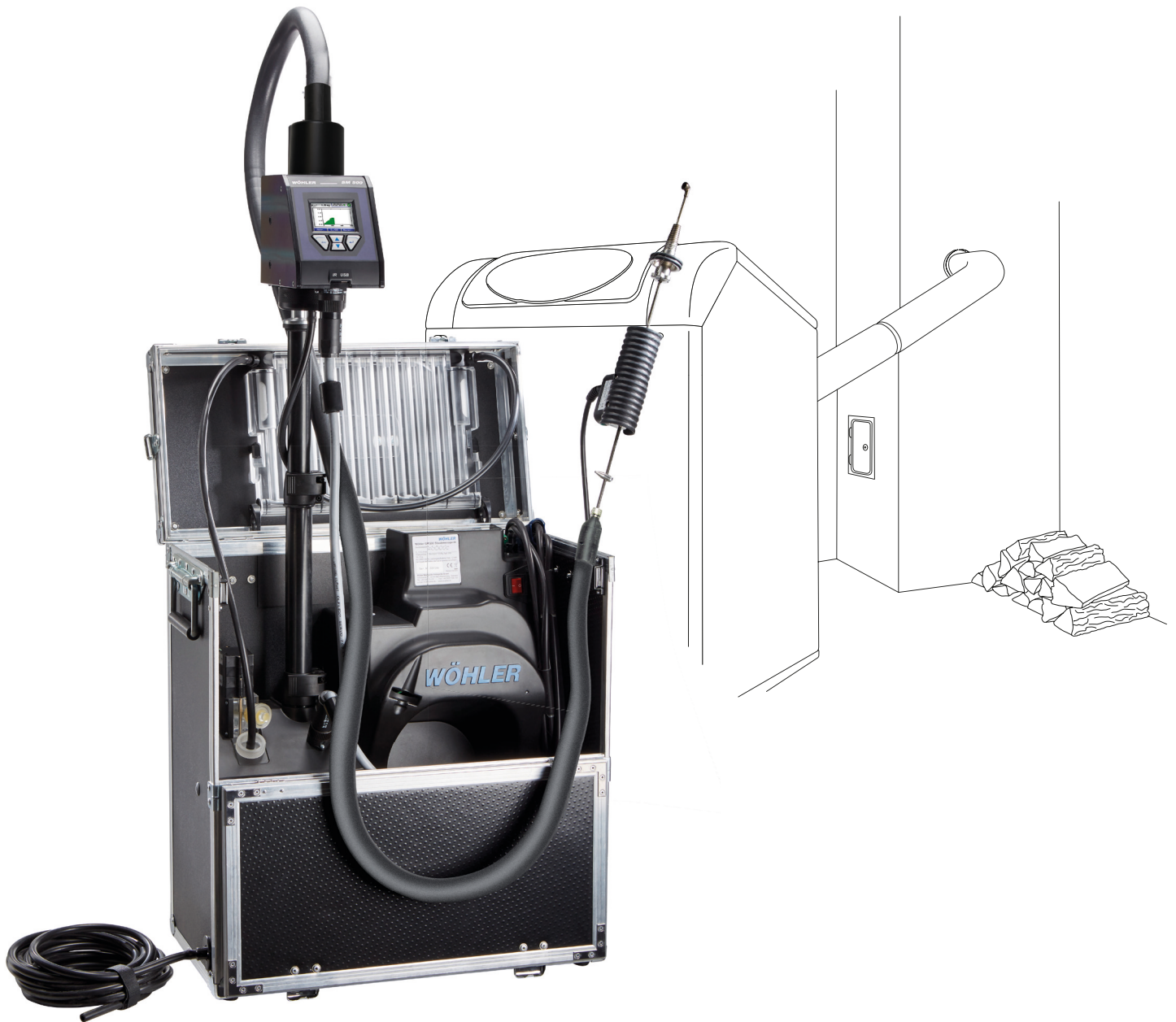


# WÖHLER



**EVEN THE FINEST  
CANNOT ESCAPE.**

## **Wöhler SM 500 Suspended Particulate Analyser**

**The latest innovation in total Suspended Particulate Matter (SPM) measurement**

*The Measure of Technology*



Made in  
Germany



TÜV  
CERTIFIED

ONSITE  
MEASUREMENT  
AND  
VERIFICATION



USB

# Wöhler SM 500 Suspended Particulate Analyser

## The latest innovation in total Suspended Particulate Matter (SPM) measurement

The world's first multi-functional Analyzer for onsite mass concentration measurements of total suspended particulate matter in flue gas, O<sub>2</sub> and CO, draft and stack temperature. The Wöhler SM 500 Analyzer will give you immediate readings. Laboratory based analysis becomes superfluous.

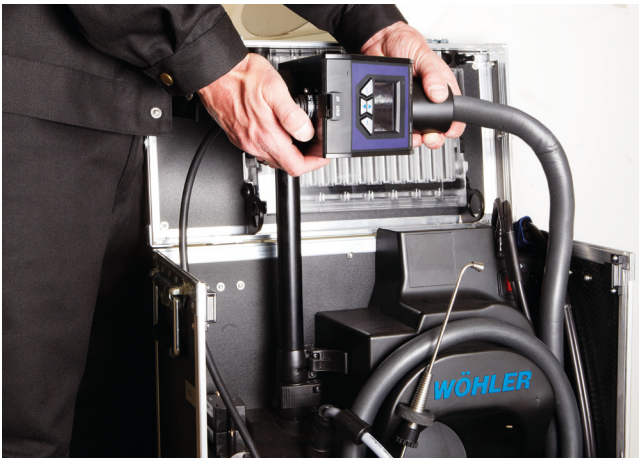
The all new TÜV certified technology allows onsite mass concentration measurements on all wood fired appliances. Mass concentration limits as low as 20 mg/m<sup>3</sup> (maximum emission rate of wood stoves in Germany) can accurately be verified. The simple user interface and the technician-

friendly 4 button key pad make your work fast and accurate. The brilliant full color LED display shows the mass concentration and all combustion values on one screen. After the sampling process the instrument automatically calculates all results to allow compliance testing for solid fuels.



## ADVANTAGES

- The operating unit with display can be set to the personal work height – for the best-possible operating and working conditions
- Precision digital mass scale unit for true gravimetric analysis
- Simple maintenance
- Analyze O<sub>2</sub> and CO concentrations in flue gas
- Graphic display of values during analysis
- USB port to transfer data
- Wöhler SM 500 software for data processing



**Onsite Measurement and verification**

Simple as that: adjust the display unit to your working level, measure, take results. All aspects of the instrument are user friendly designed. The Wöhler SM 500 accomplishes everything for you.



**All in one: O<sub>2</sub>, CO, temperature and draft measurement inclusive**

The basic instrument kit comes with a fully featured, integrated flue gas Analyzer for O<sub>2</sub>, CO, stack temperature and draft to give a complete analysis and verification onsite.



**High precision digital mass scale**

With the Wöhler SM 500 Suspended Particulate Analyzer you can verify for the first time onsite mass concentration limits as low as 20 mg/m<sup>3</sup> according to German environmental protection standards (1. BImSchV). The results of the measurements and verifications can be displayed or printed on the portable Wöhler TD 100 Thermal Fast Printer.



**Real time graphic function display**

The simple menu is intuitive by design. The technician friendly 4 button key pad allows real time graphic function display and user selectable readings. The brilliant full color LED display is even visible in a dark environment.

**!** *The all new TUV certified technology allows onsite mass concentration measurements on all solid fuel fired appliances. Mass concentration limits as low as 20 mg/m<sup>3</sup> (maximum emission rate of wood stoves in Germany) can accurately be verified. The simple user interface and the technician-friendly 4 button key pad make your work fast and accurate. The brilliant full color LED display shows the mass concentration and all combustion values on one screen. After the sampling process the instrument automatically calculates all results to allow compliance testing for solid fuels.*

## ✂ Wide range of applications

- All in one: Particulate matter measurement and flue gas analysis in a single Analyzer
- On-the-spot analysis and evaluation
- Data transfer via USB

## ⚙ Functionality

- Brilliant, high-intensity graphic display – all readings at a glance and easily read – even in dark rooms, zoom function
- Provides graphic display of current values as well as their progression during the analysis
- Simple and intuitive 4-key operation
- Adjustable to individual working height

## 🔒 Safety / reliability

- Precision mass scale unit – facilitates true on-the-spot gravimetric analysis and evaluation
- Simple to clean – no-fuss
- Integrated filter monitoring
- Sensor replacement – user-friendly
- 3-fold device diagnostics

## 📁 Data transfer / management

- USB port to transfer data to PC/notebook etc.
- Software Wöhler SM 500 for data processing and management

## 🚫 TÜV-tested and approved

- Levels I and II to 1st BImSchV
- Incl. all solid fuels
- 20 to 1000 mg/m<sup>3</sup> flue gas

TUV test registered for 1st BImSchV (German Federal Immission Control Act) and KÜO (German sweeping and inspection ordinance), for oil or gas fi ring installations to VDI 4206 Part 1 and DIN EN 50379 Part 2

<sup>1)</sup> Wöhler A 450 L: 24 months; A 450 / A 450 H: 48 month; CO sensors 5,000 ppm: 48 months excludes thermocouples, rechargeable battery and optional NO Sensor. For more information see our Terms and Conditions.

## TECHNICAL DATA

### Suspended Particulate Matter concentration / Filter load (mStF) in 15 min

Reading..... Filter load in mg at 75 °C filter temperature  
Sensor technology..... real time digital mass scale  
Range..... 0,0...45,0 mg (equals 0,0...1.000,0 mg/m<sup>3</sup> in flue gas)  
Accuracy..... ±0,3 mg

### Sample rate (VolS)

Reading..... standard liter per minute (slpm)  
Sensor technology..... Differential pressure  
Range..... 4,5 Li.N./min and 3,0 Li.N./min  
Accuracy..... ±5 %

### Oxygen (O<sub>2</sub>) concentration in flue gas

Reading..... % of flue gas volume (dry conditions)  
Sensor technology..... electrochemical sensor  
Range..... 0,0...21,0 %  
Accuracy..... ±0,3 % according to VDI 4206 Blatt 1

### Carbone monoxide (CO<sub>v</sub>) in flue gas

Reading..... ppm of flue gas volume (dry conditions)  
Sensor technology..... electrochemical sensor  
Range..... 0...100.000 ppm, resolution 1 ppm (< 32.000 ppm),  
10 ppm  
Accuracy..... ±100 ppm (< 1.000 ppm), 10 % of reading according to  
VDI 4206 Blatt 1

### Draft (PD)

Reading..... Pascal  
Sensor technology..... Semiconductor  
Range..... 0,00...±110,00 hPa, resolution 1 Pa  
Accuracy..... 3 Pa (< 100 Pa), 3 % of reading

### Flue gas temperature (TA)

Reading..... °C  
Sensor technology..... Thermocouple (NiCr-Ni)  
Range..... -20,0...800,0 °C, resolution 0,1 °C  
Accuracy..... according to VDI 4206 Blatt 1

### Calculated Values

mSt..... Total suspended particulate matter mass concentration in  
flue gas referred to the adjustable oxygen reference value  
in mg/m<sup>3</sup>  
Vol..... Sample volume in SL  
O<sub>2</sub>..... O<sub>2</sub> concentration in % given as 15 min average value  
CO<sub>v</sub>..... CO concentration in ppm given as 15 min average value  
CO<sub>n</sub>..... CO air free concentration in ppm referred to the adjustable  
oxygen reference value

Power Supply..... 230 V, 50 Hz, max. 1.200 W

Storage temperature..... -20...+50 °C

Work temperature..... +5...40 °C

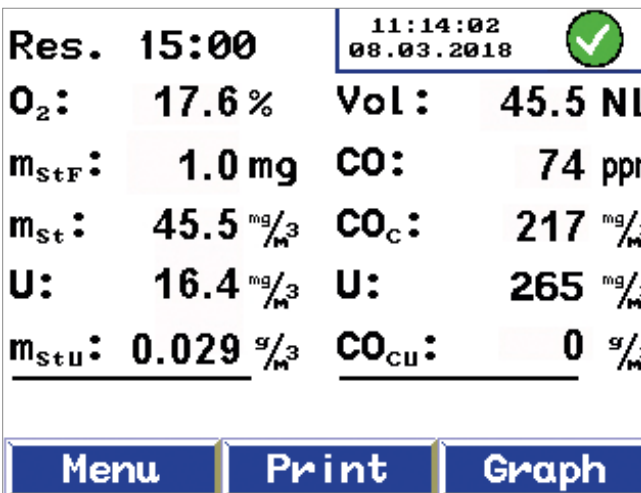
Weight..... approx. 15 kg

Dimensions..... 480 x 240 x 550 mm



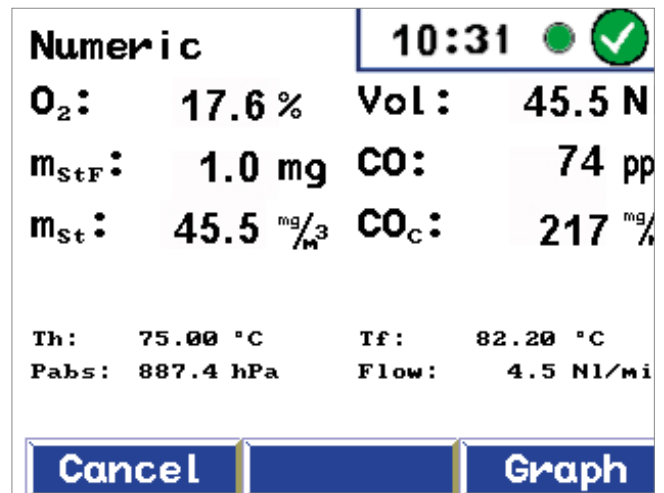
#### Data transfer

All measurement data and online readings can be transferred to a computer by USB connection. The Wöhler SM 500 computer software package allows extensive data analysis and display.



#### Results Display

Numeric representation of mean value throughout the whole measurement process. It is also possible to switch to the graphic display.



#### Display during the analysis

Measurement values are displayed during the TSPM mass concentration measurement. The operator is also able to switch between numeric and graphic representations throughout.

# Wöhler SM 500 Suspended Particulate Analyser

The latest innovation in total Suspended Particulate Matter (SPM) measurement

## 1. Basic set (ready to use)

### Wöhler SM 500

Basic Set

#### Scope of delivery

Wöhler SM 500 suspended particulate analyzer

Auxiliary probe heater






Additionally 450 mm probe











Pack with 10 filter cartridges

Cleaning tools

PC-Software

Article no. 8949 O

Accessories Wöhler SM 500 Suspended Particulate Analyser		Article no.
	<b>Wöhler TD 100 Thermal Fast Printer</b> Infrared printer with 1 roll thermal paper and four batteries	4160 I
	<b>Thermal Paper</b> 57 mm width, 12 m long, 10 rolls for thermal printer Wöhler TD 100	4145 I
	<b>Auxiliary Probe Heater</b> for long term measurement to avoid condensation	23201 J
	<b>Heated Probe Holder</b> to avoid condensate formation with cold probe	8921 J
	<b>Extension Hose</b> 1 m for laboratory measurements	8922 J

Accessories Wöhler SM 500 Suspended Particulate Analyzer		Article no.
	<b>Probe</b> 450 mm to be used with Auxiliary Probe Heater	8951 J
	<b>Tripod Set</b> extended radius up to approx. 4 m With the tripod the Wöhler SM 500 display unit can be placed outside the case during measurements. Necessary for hard to reach measuring openings.	8919 J
	<b>Backpack Carry-On</b>	8911 J
	<b>Air Puffer</b>	8918 J
	<b>Filter Cartridges</b> 10 pcs.	8916 O
	<b>Coarse Filter Vlies</b> 10 pcs. per unit	9503 K
	<b>Wadding Filters</b> 25 g	6052 K
	<b>Spare Parts Kit</b> 2 rubber seals for the sampling probe and 28 O-rings of a different size	8933 K
	<b>Cleaning Tool</b> for probe and mass scale unit	8909 K
	<b>Probe holder</b> stainless steel	23674 J

# Order Form

Article no.	Article description	qty.
8949 O	Wöhler SM 500	

Billing address / customer		Delivery address (if different to billing address)							
Company	_____	Company	_____						
Name	_____	Name	_____						
Street/house no.	_____	Street/house no.	_____						
ZIP code/City	_____	ZIP code/City	_____						
Country	_____	Country	_____						
Telephone	_____	Fax	_____						
Mobile	_____	E-Mail	_____						
Customer number	<table border="1"> <tr> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> </tr> </table>								
Date	_____	Signature or company stamp	_____						

**WÖHLER**

Wöhler Technik GmbH  
Headquarters Germany

Wöhler-Platz 1 · 33181 Bad Wünnenberg  
www.woehler-international.com

Your contact