



Mi3
pegasor[®]

**Turnkey solution for modern
automotive emission measurements**

**PM & PN.
Test cell & PEMS.**



Pegasor Mi3[™] is a unique turnkey solution for professional emission testing. It has been designed especially for particulate mass and number emission monitoring on board vehicle and at engine test bench sites.

Pegasor Mi3 is powered by the Pegasor M[™]-sensor - the most advanced particle monitoring sensor in the market. In Mi3 all necessary auxiliary components are integrated to secure proper operation of the sensor in all conditions. For on board use, Pegasor product line includes a mobile Air Supply unit .



- Particle mass & number
- Superior response time
- Wide dynamic range and high sensitivity
- Sensor equipped with internal heater to secure non-condensing measurement conditions
- Comprehensive sensor self diagnostics
- Automated sensor zeroing and periodic flow check by internal mass flow controller

PPS-M

Mi3

Operation & control

PPS Plotter Software (PC)

Push buttons - *measure* - *standby* - *stop*

AK -protocol

6 channel 3-30V digital inputs



Connections

Power:

ON/OFF switch

DC24V / AC100-240V

Data:

Plotter Software, USB

4-channel analog output (4-20mA / 0-10V)
via 6 x BNC connectors

AK -protocol for data
communication over Ethernet

CAN-bus (D9 connector)

Air:

Sheath air in

Zero air / dilution air to sample line
(one touch fittings for 6mm tube)



When compressed air is not available, Mi3 can be equipped with Pegasor Air Supply unit that provides clean and dry air for the system. Sold separately.

Sample

Automated inlet & outlet valves protecting sensor from contamination while not in measuring mode

Sample inlet: flexible antistatic plastic tube with quick lock connector, heated @ 200°C, length 2 m (*)

Optional sample dilution

Sample outlet: flexible stainless steel tube with quick lock connector, length 2m (*)

(* Other lengths on request. Sample inlet & outlet lines are sold separately)



SYSTEM DESCRIPTION

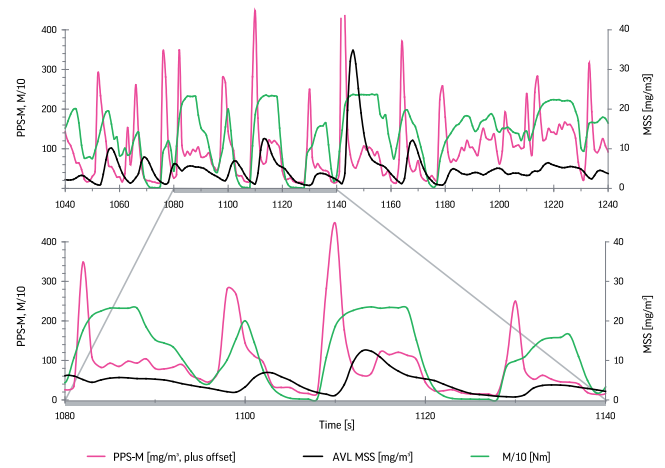
Powered by Pegasor M -sensor (PPS-M), Pegasor Mi3 monitors fine particles for extended periods without costly user maintenance or expensive consumables. It operates by electrostatic charging the particles passing through the sensor and then measuring the current caused by the charged particles leaving the sensor. The flow-through design keeps the sensor clean for extended operation time and low maintenance.

Pegasor Mi3 offers superior time resolution and sensitivity compared to any other existing instrument. It is the world's fastest particle sensor, giving you accurate information about your measurement tasks - in real time.

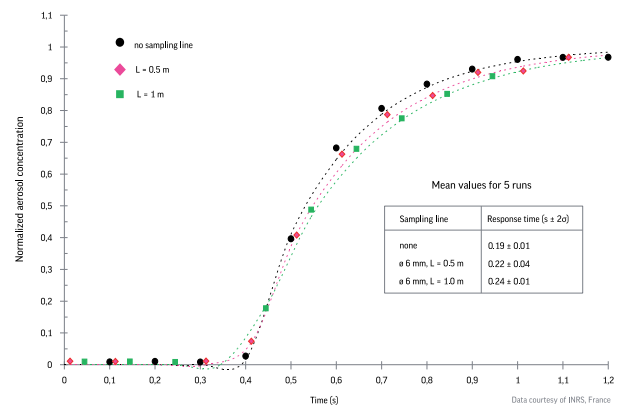
Its wide dynamic range means only one setting is needed to measure both small and large concentrations. To take full advantage of these features, measurements can be done directly from raw exhaust, before or after the diesel particle filter (DPF).

Along with the user friendliness, Pegasor Mi3 is the most powerful tool for automotive emission monitoring in real world conditions. It can be easily integrated to existing engine test bench infrastructure and data collection.

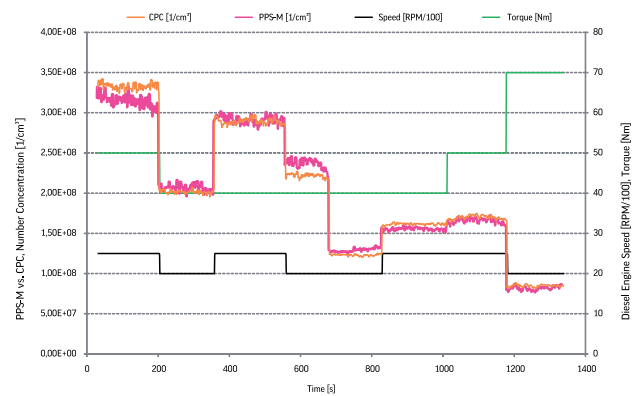
Pegasor products are widely used especially within automotive sector customers. Data examples (right column) demonstrate unique benefits provided by Pegasor M -sensor compared to other widely used conventional products.



Pegasor M -sensor comparisons to AVL Micro Soot Sensor (MSS) revealing true benefits of real time monitoring



Pegasor M -sensor response time



PPS-M number count comparison with CPC. Data courtesy of LAT (Laboratory of Applied Thermodynamics, Aristotle University)

TECHNICAL SPECIFICATIONS

Sampling frequency:	24-bit, 100 Hz sample rate. SNR=100dB. Measured sensor response time 0,2s.		
Detectable particle size range:	Minimum a few nm, up to 23 nm (dependent on selected trap voltage) Maximum 2.5 μm (dependent on measured particle size distribution)		
Particle concentration range (°):	Mass concentration [mg/m ³]:	Max 300	Min 0.001
	Number concentration [# /cm ³]:	1.3*10e9	600
Operating requirements:			
Operation temperature:	0°C - +55°C (at Mi3 cabin placement)		
Sample temperature:	Up to 850°C (sample conditioned to 200°C in sample inlet)		
Air intake:	Dry and particle free pressurized air @ 3-10 bar (gauge pressure).		
Air consumption:	20 litres / min in normal mode 10 litres / min in mobile mode with Pegasor Air Supply -unit. Compressed air or nitrogen should meet the quality of Class 3 of ANSI/ISA-7.0.01-1996 standard.		
Power requirements:	Mi3: DC 24V 20A, 500W at start-up, 200W steady state Sample inlet heater: 230Vac, 100W / meter		
Dimensions:	L720 x W495 x H240	Weight ~30kg	

Mi3 KEY BENEFITS

Nanoparticles detected from a few nanometer up to 2.5 microns.

Measures both particle number and mass.

The world's fastest particle sensor enables real time operation.

No complex sampling systems required.

Wide dynamic measurement range.

Continuous operation means less downtime.





Pegasor provides unique fine particle sensor technology and products that offer a competitive edge to its customers operating in vehicle emissions, stack emissions and air quality monitoring.

Our technology and sensors are the result of acknowledged and solid scientific research, as well as an extensive track record of industrial fine particle measurements.

Our products are available throughout Asia, Europe and North America via comprehensive network of local distributors and leading manufacturing partners.

pegasor

Headquarters

Hatanpään valtatie 34 C
FI - 33100 Tampere
Finland

Tel. + 358 (0)10 423 7370

E-mail: info@pegasor.fi

See www.pegasor.com for your local distributor