

# DNP DIGITAL 3000



Particle measurement devices should be calibrated using particles with characteristics, e.g., shape, size, density, surface condition, and refractive index, similar to those of the actual aerosol to be tested, e.g., diesel soot.

The new DNP digital 3000 generates a condensation aerosol from monolithic graphite. The resulting carbon agglomerates are similar to diesel soot concerning particle size distribution.

Due to the new digital regulation, the generator enables an enhanced setting range and an even higher constancy of the generated particle size and concentration.

The particle measurement program (PMP) recommends that the particle size be adjusted to 30 nm, 50 nm, and 100 nm for calibration of the complete measurement chain. The 30 nm, 50 nm, and 100 nm particle fractions can be classified with a DEMC (differential electro-mobility classifier) based on the particle ...

## BENEFITS

- Fast adjustable particle size distribution
- Very precise adjustment of volume flow via MassFlowController
- Excellent short-term and long-term particle size and concentration constancy
- Particle structure similar to that of diesel soot at graphite electrodes
- Apart from graphite electrodes, copper, silver or other electroconductive electrodes can be used as well
- For PMP-measuring section easy connectable to CVS systems in combination with RAS 3000 (accessories)
- No volatile parts in the aerosol
- Aerosol is temperature-resistant to 400 °C
- AK interface protocol for Ethernet via UDP protocol
- Easy to operate by touch display
- Highest reproducibility by saving the operation settings
- Best reproducibility

## APPLICATIONS

- Calibration of PMP measurement chain
- Calibration of particle measurement devices
- Calibration of sampling lines
- Production of nano particles
- Inhalation exploration
- Toxicology

## DATASHEET

Particle size range	0.02 – 0.35 $\mu\text{m}$
Volume flow	4 – 70 $\text{NL}/\text{min}$
Volume flow (accessories)	0 – 450 $\text{l}/\text{min}$ (REF 3000)
Volume flow (carrier/dispersion gas)	4 – 20 $\text{l}/\text{min}$
Volume flow (dilution gas)	0 – 50 $\text{l}/\text{min}$
Mass flow (particles)	0.1 – 25 $\text{mg}/\text{h}$ (for carbon)
Particle material	Carbon, copper, silver, gold and other metals
Dosing time	Several hours nonstop
Pre-pressure	4 – 8 bar
Carrier/dispersion gas	Nitrogen, argon
Compressed air connection	Quick coupling
Aerosol outlet connection	$\varnothing_{\text{inside}} = 6 \text{ mm}$ , $\varnothing_{\text{outside}} = 8 \text{ mm}$
Particle size range (primary particles)	3 – 10 $\text{nm}$
Dilution gas	Particle-free and dry compressed air
Dimensions	185 • 445 • 380 $\text{mm}$ (H • W • D)
Weight	23 $\text{kg}$