

Scale

PKS100E

Mobile Particle Calibration System



Calibration, simplified.

The **particle-calibration-system PKS100E** is a mobile particle generator with an internal reference detector. As the particle number measurement became mandatory in Germany in 2023 for periodical technical inspections, we developed the PKS100E for the calibration of those new particle number testers. It enables the calibration with an all-in-one solution in the workshop environment in the most time-saving and reliable manner possible.

This convincing combination of robust design and easy-to-use technology has made the PKS100E the German and Belgium market leader in the newly emerged segment of PN calibration systems.

System components

NaCl particle generator
Modified Laskin nozzle + diffusion dryer

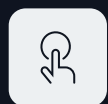
Variable dilution stage
20.000 to 1.5 million #/cm³ output

Reference sensor
Dekati ePNC diffusion charging sensor

Key Benefits



All-in-one mobile calibration in workshop environment



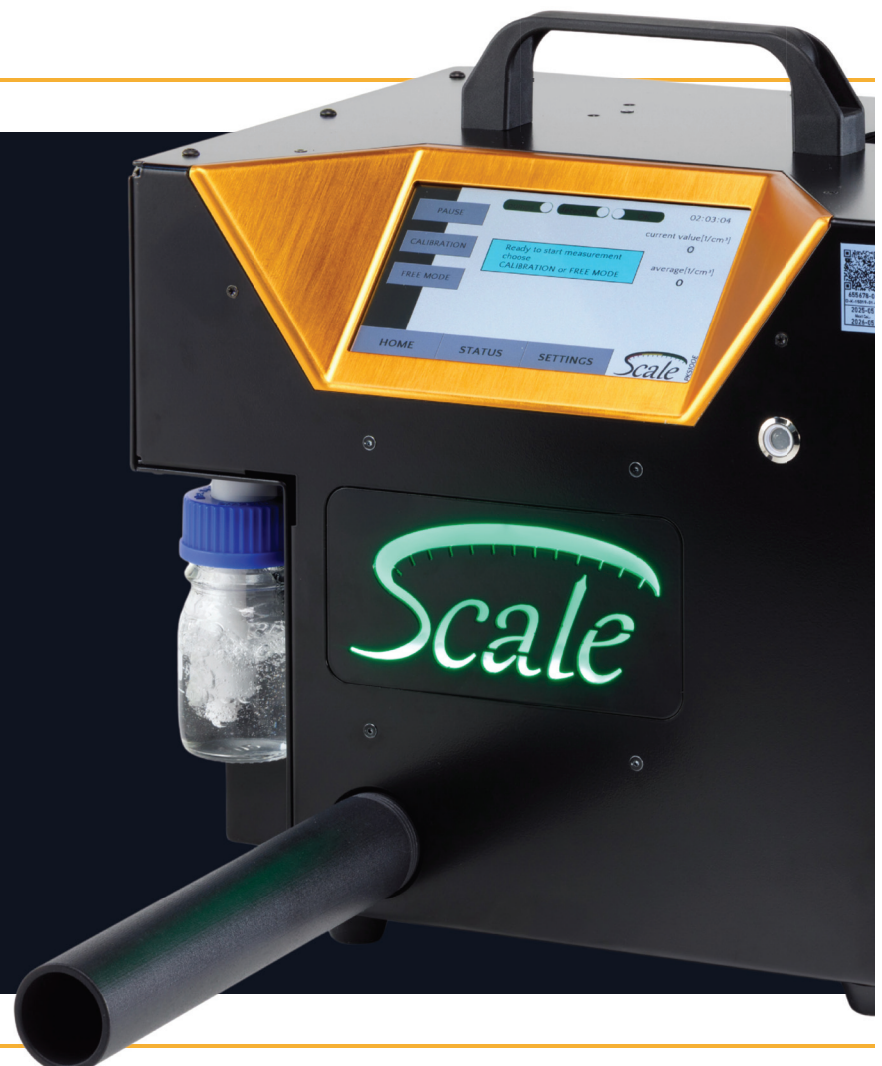
Preset concentrations or free adjustment via touchscreen control



Harmless NaCl aerosol



Warm-up in 30 seconds



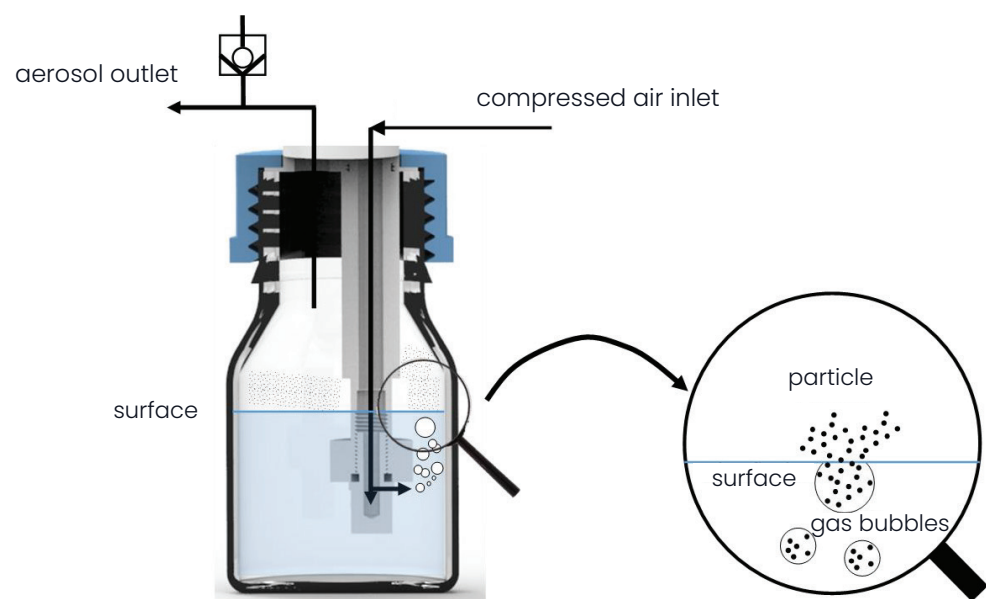
Thermally stable NaCl particles – Workshop-friendly by design.

The generator is a **salt particle generator** (designed for 0.9% NaCl solution) that produces salt particles using a modified form of the **Laskin nozzle**. A compressor generates a pre-pressure of 3 bar, creating an aerosol containing salt particles and water droplets after the nozzle.

The PKS100E calibration system from Scale ATS GmbH consists of an NaCl generator with diffusion dryer, a variable dilution stage and a diffusion charging sensor as a reference device.



Particle formation (modified Laskin nozzle)



Example size distribution: median 70nm ± 5 nm.

Reliable calibration through controlled aerosol drying.

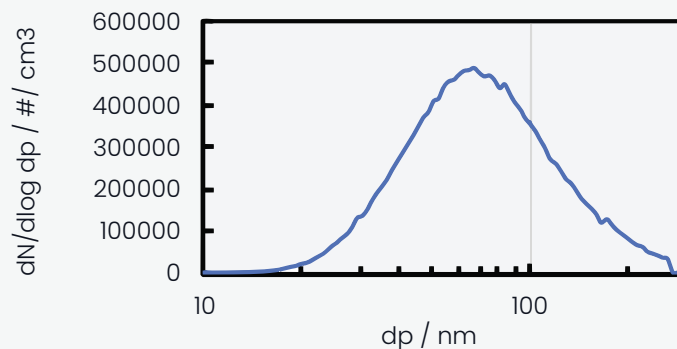
The moisture is removed by a **diffusion dryer** in which the aerosol is passed through a tube containing silica gel. This leaves only thermally stable NaCl particles that are not decomposed by an evaporation tube.



The **silica gel** must be replaced at longer intervals; a refill is also included.

Salt particles are harmless to health and do not need to be extracted. The aerosol produced has a median of $70 \text{ nm} \pm 5 \text{ nm}$ and meets the calibration guideline requirement for a geometric standard deviation of 1.5 to 2.1.

The 0.9% NaCl solution required for operation is included and can be repurchased from pharmacies, for example.



Example of the size distribution of the NaCl generator.

Set the concentration you need precisely and repeatably.

A **variable dilution** stage generates any output concentration between approx. 20,000 #/cm³ and 1.5 million #/cm³ from the raw emissions of the particle generator (the particle generator generates approx. 15 million #/cm³ at an output flow of 1.2 l/min). The **dilution stage** is electronically controlled and can be operated via touchscreens. Preset concentrations can be automatically approached, or any concentrations can be set in free mode.

20k - 1.5M #/cm³
Output range

Touchscreen
Preset + free mode

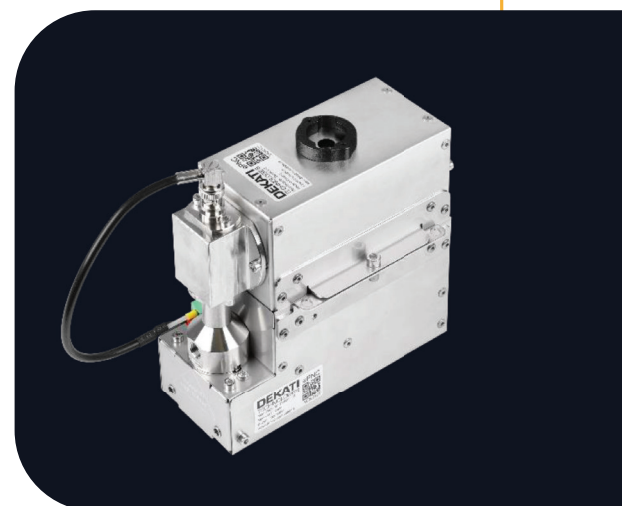
Workshop ready
Robust mobile design



Dekati® ePNC

The **Dekati® ePNC™** is an innovative particle sensor designed specifically for periodic technical inspection (PTI) devices.

The sensor fulfils the metrological requirements of Real Driving Emission (RDE) Regulation (EU) 2017/1154, and is thus fully in line with the upcoming requirements for PTI testing in various European countries.



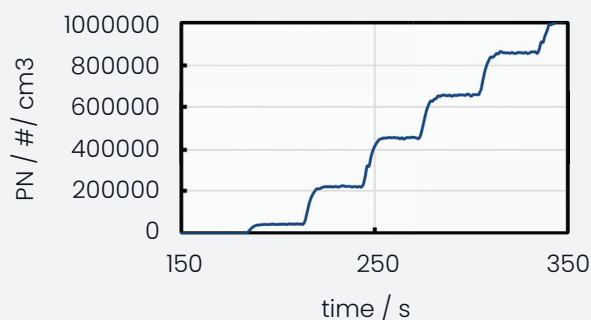
Particle Calibration System PKS 100 E (2nd Generation)

Mobile calibration for particle counter



Specification

Parameter	Value
Aerosol material:	NaCl
Salt concentration used:	0.9 Vol.%
Filling volume:	100 ml
min. filling volume:	40 ml
max. filling volume:	80 ml
Nozzle pressure:	3 bar (Germany); 3.2 bar (Netherlands)
Minimum volume flow:	10 l/min
Warm-up time:	30 s
Aerosol Outlet:	Aerosol pipe (5/4")
Particle Number:	At least 1.500.000 #/cm ³
Particle Size Distribution	
• Median:	DE: 70 nm ± 5 nm BE/NL: 80 nm ± 5 %
• GSD:	≈ 1.7 ± 0.1
Permissible ambient conditions	
• temperature:	5°C – 40 °C
• pressure:	860mbar – 1060 mbar
• humidity:	5 %rel.hum – 95 % rel.hum
Power supply:	12 V (DC)
Dimensions in mm (WxDxH):	302x300x350
Weight:	11,5 kg



Your technical Partners



Our experienced technical team supports customers in **all aspects of aerosol calibration and particle measurement technology** — from initial consultation and system setup to validation and long-term operation.

We work closely with **workshops, laboratories, and inspection organizations** to ensure reliable calibration results, practical workflows, and robust implementation in real operating environments.

If you have questions about **configuration, calibration procedures, or system integration**, our specialists are available to provide direct and competent support.

Scale

Scale ATS GmbH

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