



High-Concentration Nanoparticle Emission Tester

Model 3795-HC



Accurate high-concentration solid particle counting in real-world emissions

Building on the proven, regulatory-compliant Nanoparticle Emission Tester (NPET 3795), the High-Concentration NPET is designed to measure total solid particle number concentrations directly from the tailpipe — whether in the field or during in-use testing.

The instrument supports a wide range of emission sources, including internal combustion engines, gasoline- and diesel-powered vehicles, and biomass power plants. Its robust, user-friendly design makes it ideal for use by researchers, regulatory inspectors, and maintenance personnel.

Equipped with a built-in catalytic stripper that removes volatile particles, the High-Concentration NPET enables accurate measurement of solid particle emissions only. Based on the same unique design principles as certification-grade instruments, it delivers laboratory-quality particle counting in real-world environments — and is capable of handling emission levels beyond certification limits, such as those upstream of after-treatment systems, upstream and downstream of Diesel or Gasoline Particle Filters, cold start emissions or biomass combustion emissions.

Features and Benefits

- Direct measurement of particle number concentration using proven Condensation Particle Counter (CPC) technology
- Sampling probe with integrated dilution to measure concentration up to 100,000,000 particles/cm³
- Selectable measurement modes:
 - Real-time data logging for research
 - User-defined protocols for reporting test cycle results

Applications

- In-use diesel machinery compliance certification
- Exhaust after treatment inspection and maintenance programs
- Diesel Particulate Filter (DPF) retrofit programs
- Gasoline Particle Filter (GPF) characterization
- Fleet emissions profiling
- DPF/GPF regeneration studies
- Cold start emission measurements
- Combustion emissions research (biomass, wood burning)



Specifications

High-Concentration Nanoparticle Emission Tester

Model 3795-HC

Differences Between the NPET Models

| | 3795 | 3795-HC |
|---------------------|--|--|
| Application | Standard tailpipe measurements or certification according to Swiss Regulation for non-road mobile machinery SR 941.242 | High concentrations such as upstream of DPF/GPF, cold start or biomass burning |
| Concentration Range | 1,000 to 5×10^6 particles/cm ³ | 2,000 to 1×10^8 particles/cm ³ |

Specifications

| Particle Size Range | <50% at 23 nm >50% at 41 nm Solid particles from 23 nm to 1 μ m |
|------------------------------------|---|
| Concentration Accuracy | $\pm 10\%$ |
| Response Time | 2.5 +/- 0.5 seconds |
| Sampling Flow | 0.7 L/min (nominal) |
| Working Fluid | 99.5%+ reagent-grade isopropyl alcohol; one charge lasts up to 4 hours |
| Catalytic Stripper | Removes >99% of volatile particles (equivalent 30 nm Count Median Diameter (CMD), Polydisperse $C_{40}H_{82}$) |
| Environmental Operating Conditions | -10 °C to 40 °C 75 kPa to 106 kPa |
| Power Requirement | 100 to 240 VAC, 50/60 Hz, 100 W nominal, 200 W peak |
| Communications | Ethernet, 8-wire RJ-45 jack, 10/100 BASE-T, TCP/IP |
| Dimensions (H x W x D) | 10.2" x 13" x 22.4" (26 cm x 33 cm x 57 cm) |
| Weight | 13.1 kg (28.9 lbs.) |

Optional Accessories

| 3795-TAB | 10.5" Windows® tablet with Ethernet dongle and drop resistant case |
|--------------|--|
| 3795100 | Hose and probe assembly for 3795 |
| 3795-HCPROBE | Hose and probe assembly for 3795-HC |
| 803120 | Pre-soaked alcohol wicks (50 ea.) |
| 801624 | Replacement wick assembly to load wicks into NPET |
| 8016 | 30 mL isopropyl alcohol bottles (16) |



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Specifications are subject to change without notice.

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