

# SAMPLING SYSTEM FOR ATMOSPHERIC AEROSOL MODEL 3772200

CEN/TS 16976 COMPLIANT SAMPLING SYSTEM FOR REPRESENTATIVE AND ACCURATE SAMPLING AND CONDITIONING OF ATMOSPHERIC AEROSOL

The Model 3772200 sampling system for atmospheric aerosol is designed to match the requirements of CEN/TS 16976 thus enabling a standardized measurement of sub-micrometer airborne particles. Its careful design with proven components such as the EPA approved PM<sub>10</sub> inlet for representative sampling and the effective and low maintenance Nafion® dryer ensure reproducible and comparable measurement data.



## Application

- + The Technical Specification CEN/TS 16976 aims at harmonizing the continuous measurement of particle number concentration in ambient air. It describes a standardized method by defining a set of requirements not only for the Condensation Particle Counter (CPC), but also for its sampling and conditioning system, the measurement procedure and the reporting of measurement results.
- + Sampling from ambient air is not trivial. Conditions such as temperature, humidity, wind speeds and wind direction are variable. Furthermore, diffusion losses particularly from the smallest particles can significantly change measurement results.
- + The Model 3772200 sampling system is assembled from proven components based on decades of experience measuring sub-micrometer particles:
  - + The EPA approved PM<sub>10</sub> inlet avoids soiling of the sampling line by particles larger than 10 µm and performs representative sampling regardless of wind direction for a broad range of wind velocities.
  - + The high inlet flow allows to add up to 4 m of sampling tube for different setup requirements.
  - + The Nafion® dryer ensures the relative humidity (RH) of the aerosol at the inlet of the CPC to be less than 40%. In addition, this relative humidity and temperature are logged effortlessly with the CPC.
  - + The integrated dilution extends the single particle count concentration range to 150,000/cm<sup>3</sup> for the Model 3772-CEN CPC, thus covering a wide range of particle number concentrations of atmospheric aerosol.

## Features and Benefits

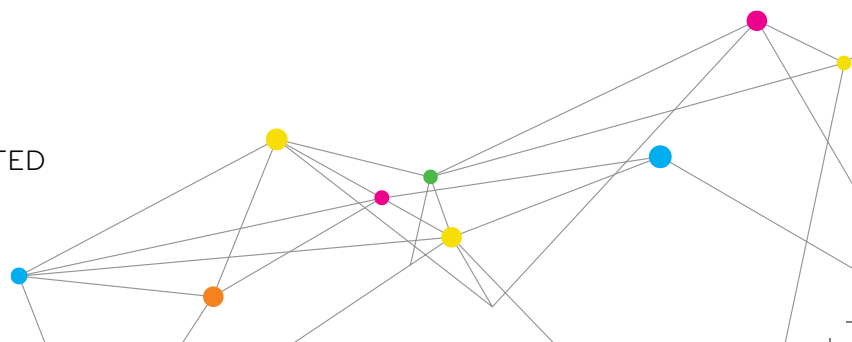
- + CEN/TS 16976 compliant
- + Sampling and conditioning in one system
- + Less than 30% diffusion losses for 7 nm particles
- + Efficient & low maintenance aerosol drying
- + Built-in dilution
- + Fast setup
- + Adds temperature and relative humidity logging to 3772-CEN CPC

CEN stands for European Committee for Standardization. CEN is an association - officially recognized by the European Union and by the European Free Trade Association - that brings together the National Standardization Bodies of 33 European countries. CEN is committed to develop European Standards for various kinds of products, materials, services and processes.

EPA stands for the US Environmental Protection Agency



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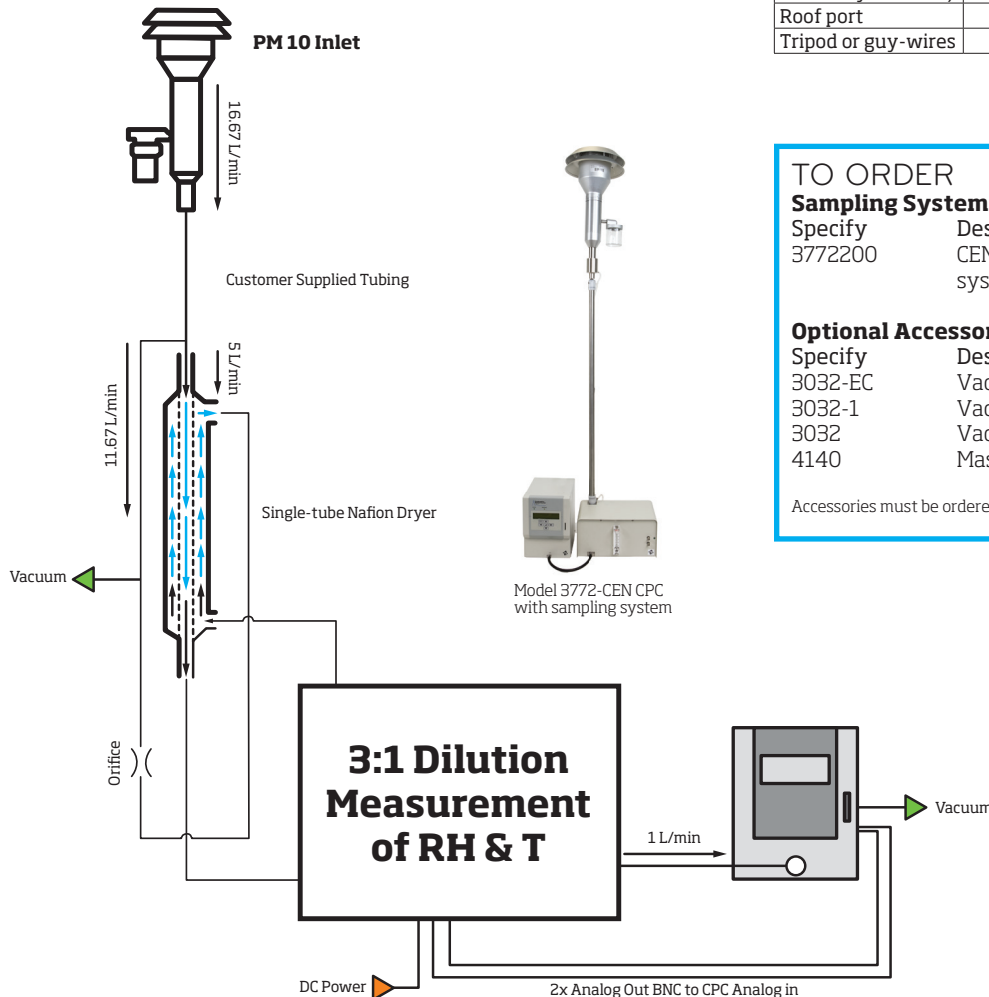
# SPECIFICATIONS

## SAMPLING SYSTEM FOR ATMOSPHERIC AEROSOL MODEL 3772200

Particle Size Range	7 nm to 10 µm
Flow Rate	16.7 L/min at inlet 1.0 L/min at sampling port
Temperature	0 - 40 °C
Humidity Reduction	Aerosol reduced to less than 40% RH at sampling port using Nafion® dryer
Particle Transmission Efficiency*	>75% for 7 nm size particles >80% for 10 nm size particles >90% for 15 nm size particles

\* without additional transport tubing

Description	Quantity	TSI Supplied	User Supplied
US-EPA approved PM <sub>10</sub> inlet	1	+	
Nafion® dryer	1	+	
Dryer to inlet fitting	1	+	
3:1 aerosol diluter	1	+	
Temperature & RH sensor Note: pressure provided by 3772-CEN CPC	1 each	+	
Coaxial Cable	2	+	
12 VDC power supply	1	+	
Conductive tubing	10 inch	+	
Stainless steel sampling tube 1.25" OD x 0.062"	as needed	sample	+
Vacuum pump (available accessory from TSI)	1		+
Flowmeter (available accessory from TSI)	optional		+
Roof port	optional		+
Tripod or guy-wires	optional		+



### TO ORDER

**Specify Description**  
**3772200** CEN/TS 16976 compliant sampling system for atmospheric aerosol

### Optional Accessories

**Specify Description**  
 3032-EC Vacuum Pump, 230 V (Europe only)  
 3032-1 Vacuum Pump, 230 V/50 Hz  
 3032 Vacuum Pump, 115 V  
 4140 Mass Flowmeter

Accessories must be ordered separately

Specifications are subject to change without notice.

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