PMPD 1000



The PMPD 1000 dilution system is according to the ejector principle specially developed for the PMP application or the PMP measurement chain. In the PMPD 1000, volatile particles are evaporated up to 200 °C using a thermodiluter. A dilution factor 1:1000 (see Figure 1) is achieved by cascading 3 x dilution factor 10.

OPERATION PRINCIPLE

DILUTION SYSTEM EJECTOR WITH DILUTION FACTOR 1:1000

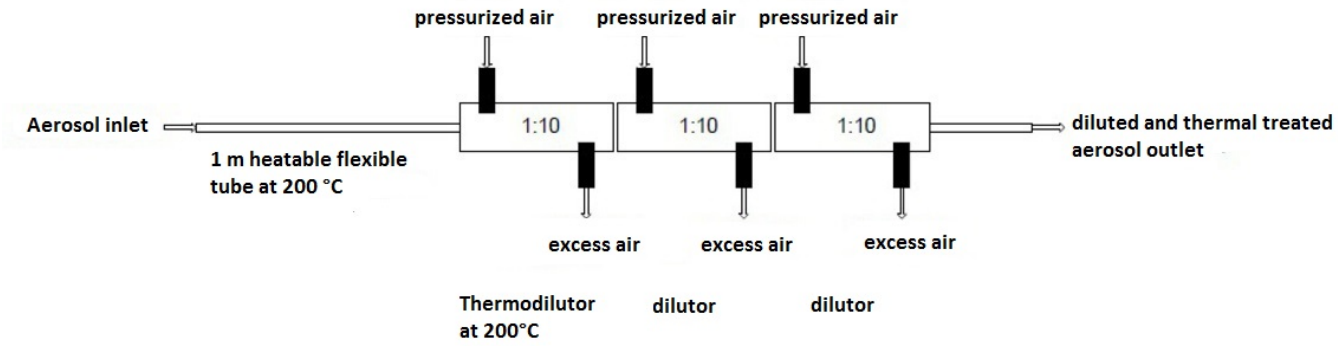


Fig. 1: PMPD 1000

The PMPD dilution systems offer all the advantages of the other Palas® product series of ejector diluters, e.g., a temporally constant dilution factor.

The suitability of the PMPD 100 for the PMP measurement chain was confirmed at the METAS Institute in Switzerland (see measurement report no. 235-10383). The PMPD 1000 cascades a further dilution step as compared with PMPD 100.

VDI report no. 1973 from 2007 proved metrologically that a reproducible aerosol dilution is possible with the Palas® dilution systems down to V_F 100,000.

Type	Dilution factor* V_F	Pressure - resistant up to 10 bar	Chemically resistant	Heatable up to ... °C	dp_{max} in μm	Compressed air 4 - 8 bar	Cascadable	Voltage
DC 100	10, 100				< 5			115 V / 230 V
DC 1000	10, 100, 1000				< 5			115 V / 230 V
DC 10000	10, 100, 1000, 10000				< 5			115 V / 230 V
KHG 10	10		x	150	< 20	x	x	115 V / 230 V
KHG 10 D	10	x	x	150	< 20	x	x	115 V / 230 V
PMPD 100	100		x	200	< 5	x		115 V / 230 V
PMPD 1000	1000		x	200	< 5	x		115 V / 230 V
VDD 10	1 - 10				< 10	x		115 V / 230 V
VKL 10	10				< 20	x	x	
VKL 10 E	10		x		< 20	x	x	
VKL 10 ED	10	x	x		< 20	x	x	
VKL 10 V	10				< 20	x	x	
VKL 27	27				< 10	x	x	
VKL 100	100				< 2	x	x	

Table 2: Characteristics dilution systems

Table 1: Technical characteristics of Palas® dilution systems

BENEFITS

- The dilution systems from Palas® are clearly characterized. This is proven by means of a calibration certificate for each individual device
- The dilution steps of the PMPD series produce a temporally constant, representative dilution with factor 100 / 1000
- Low compressed air consumption (e.g. only 96 L/min. for a dilution factor of 1000 with four VKL 10 systems)
- The dilution steps can be combined with all common particle counters

DATASHEET

Volume flow (clean air)	54 – 135 l/min (heated to 200 °C)
Volume flow (suction flow)	2 – 5 l/min
Power supply	115 – 230 V, 50/60 Hz
Isokinetic suction nozzles	2 – 5 l/min
Maximum particle size	< 10 μm
Thermodynamic conditions for dilution	400°C
Compressed air supply	4 – 8 bar
Dilution factor	1 : 1,000
Special features	Evaporation of volatile elements for exhaust emission measurements according to VPR Calibration Procedure AEA/ED 47382/Issue 5 (Volatile Particle Removal Efficiency), chemical resistant, heated to 200 °C

Applications

- Dilution system for PMP measurement chain

Mehr Informationen:
https://www.palas.de/en/product/pmpd1000