# PMPD 100


The PMPD 100 dilution system is according to the ejector principle specially developed for the PMP application or the PMP measurement chain.

In the PMPD 100, volatile particles are vaporized using a thermodilution up to 200 °C. The dilution factor is 1:100 (see Figure 1). A dilution factor 1:100 (see Figure 1) is achieved by cascading 2 x dilution factor 10.

## OPERATION PRINCIPLE

## DILUTION SYSTEM EJECTOR WITH DILUTION FACTOR 1:100

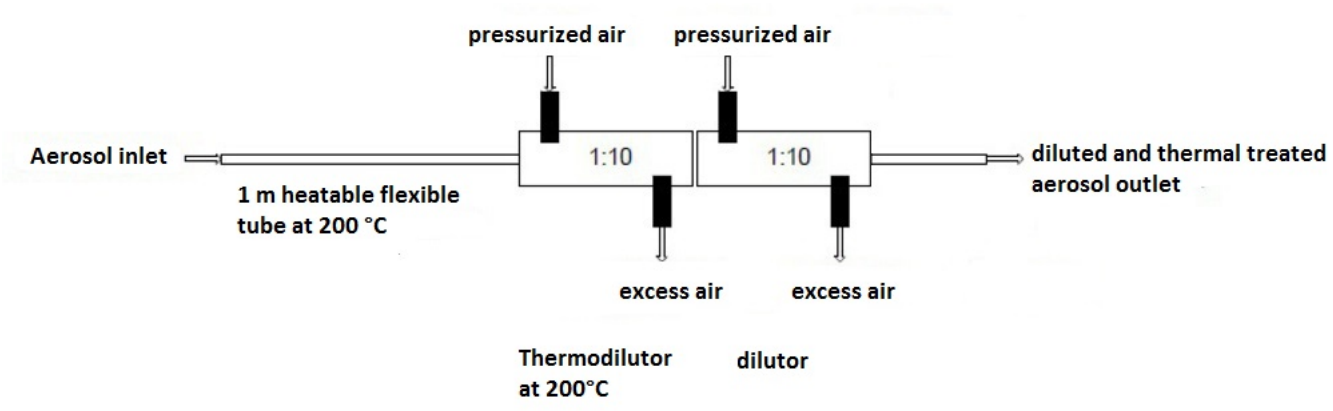


Fig. 1: PMPD 100

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[1] ).

**Representative dilution of the particle size distribution of the Palas® dilution systems by cascading**

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 $\mu$m | 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 | |

Tabelle 2: Characteristics dilution systems

Table 1: Technical characteristics of Palas® dilution systems

[1] measurement report no. 235-10383: http://www.palas.de//file/1j1381/application/pdf/Measurement+Report+No+235-10383+PMPD+100.pdf

## Benefits

- The dilution systems from Palas® are characterized unambiguously. This is documented with a calibration certificate for each individual device
- The dilution steps for the PMPD series deliver a temporally constant, representative dilution with the factors 100 and 1000
- Low compressed air consumption (e.g., just 96 l/min. for a dilution factor of 1000 with four VKL 10 systems)
- The dilution steps are combinable with all common particle counters

## DATASHEET

| | |
|---|---|
| Volume flow (clean air) | 36 – 90 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 $\mu$m |
| Thermodynamic conditions for dilution | 400°C |
| Compressed air supply | 4 – 8 bar |
| Dilution factor | 1 : 100 |
| 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/product/pmpd100