

AEROSOL DILUTERS

1159-10 | 1159-100 | 7951

EMISSION SAMPLING SYSTEM ESS 7917

CAPILLARY DILUTER (1:10) 1159-10 **CAPILLARY DILUTER (1:100) 1159-100**

The 1159 -10 / - 100 is a diluter with a fix dilution ratio for a defined sample flow rate. It can be easily connected to any portable GRIMM aerosol spectrometer.

The aerosol flow is split by a precision capillary into a sample and bypass flow. In the bypass flow all particles are removed by the built-in high-efficiency HEPA filter capsule. Downstream, both flows are mixed again. The actual dilution ratio is monitored by measuring the differential pressure over the capillary.

No compressed air is needed.



VARIABLE DILUTER "VKL-MINI" 7951

The VKL-mini is a diluter with two cascadeable, variable dilution modules. The system needs an external compressed air supply (8 bar max.). Due to the modular set-up with the connector block and the dilution modules, a wide range of dilution ratios can be covered.

To install and operate the 7951 VKL-mini no additional tools are required. All connections are easy to lock or unlock. This enables an easy installation and fast change of dilution ratios. Due to the operating principle no sampling in under or over pressure conditions is possible. Aerosol in, aerosol out, and exhaust air out have to be operated under the same atmospheric pressure.

No power supply is needed.



EMISSION SAMPLING SYSTEM (ESS) 7917

The Emission Sampling System (ESS) combines a heated sampler and diluter for direct sampling in hot emissions up to 500°C.

The variable two-stage diluter is operated with recirculated conditioned air. All process air is generated by the ESS. No compressed air supply is required.

The ESS is suitable for all GRIMM SMPS systems or CPCs.



TECHNICAL DATA

CAPILLARY DILUTER (1:10) 1159-10 CAPILLARY DILUTER (1:100) 1159-100

principle	capillary diluter		
dilution media	internal HEPA filtered air		
sample flow rate	1.2 L/min		
flow control	differential pressure sensor, manually set		
dilution ratio	depending on capillary flow		
	dilution ratio	capillary flow	sample flow rate
	1:10	0.12 L/min	1.2 L/min
	1:100	0.012 L/min	1.2 L/min
temperature range	0 to +40 °C (32 to 104 °F)		
pressure range	± 50 mbar		
power supply	in: 110 – 220 VAC, 50 – 60 Hz, out: 9 – 12 VDC		

VARIABLE DILUTER "VKL-MINI" 7951

principle	injector nozzle		
dilution media	external compressed air		
sample flow rate	variable		
flow control	circular orifice, with defined upstream-pressure (200 mbar), manually set		
inlet nozzles	variable, 1:10 or 1:31.6		
	dilution ratio modules		
	1:10	one (1:10)	
	1: 31.6	one (1:31.6)	
	1:100	two (1:10 x 1:10)	
	1: 316	two (1:10 x 1:31.6)	
	1:1.000	two (1:31.6 x 1:31.6)	
temperature range	0 to +40 °C (32 to 104 °F)		
pressure range	$P_{in} = P_{out}$ (for atmospheric pressure only!)		

EMISSION SAMPLING SYSTEM (ESS) 7917

principle	injector nozzle		
dilution media	internal conditioned air		
sample flow rate	variable		
flow control	heated critical orifices		
dilution ratio	variable with two-stage diluter depending on sample flow rate, e.g.		
	dilution ratio	nozzles	sample flow rate
	1:10	one (1:10)	1 L/min
	1:100	two (1:10 x 1:10)	1 L/min
	1: 31	one (1:31)	0.3 L/min
	1: 961	two (1:31 x 1:31)	0.3 L/min
temperature range	up to 500°C		
pressure difference	± 100 mbar		
power supply	230 VAC, 50 Hz or 115 VAC, 60 Hz		