UGF 2000

Liquid nebulizer with binary nozzle and cyclone (dp_max = 2 µm) as per VDI 3491-1 and -2

Description

The UGF 2000 aerosol generator is able to atomize liquids with a binary nozzle. The UGF 2000 comprises an adjustable binary nozzle for adjustment of the desired mass flow and a cyclone. Unlike the AGF series, UGF 2000 has a cyclone with built-in control air. The control air is adjusted using a micrometer screw on a needle valve. By opening this valve, the aerosol concentration is able to be reduced by a factor of approx. 500 through the addition of control air. As a result, the generator is ideally suited for testing laminar flow boxes and clean rooms with low volume flow.

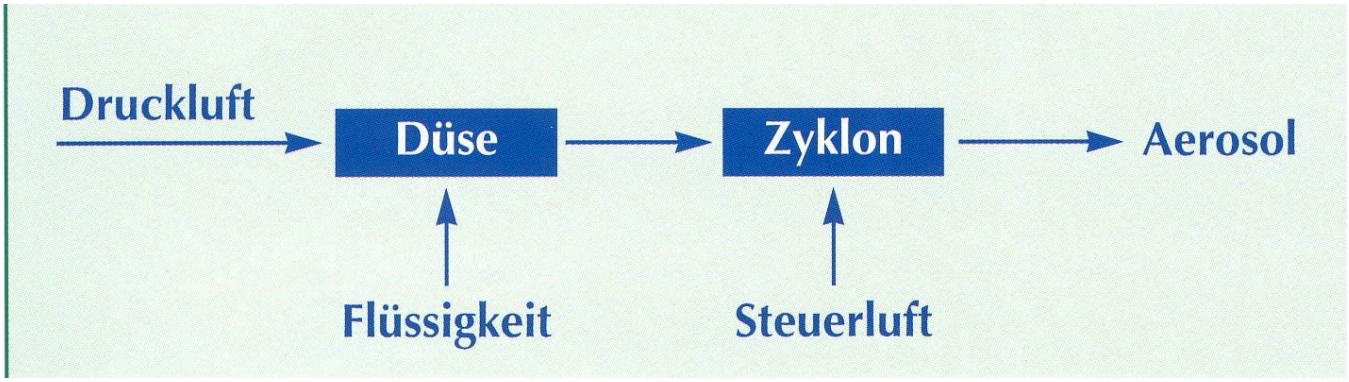

Fig. 1: UGF 2000 functional diagram

UGF 2000

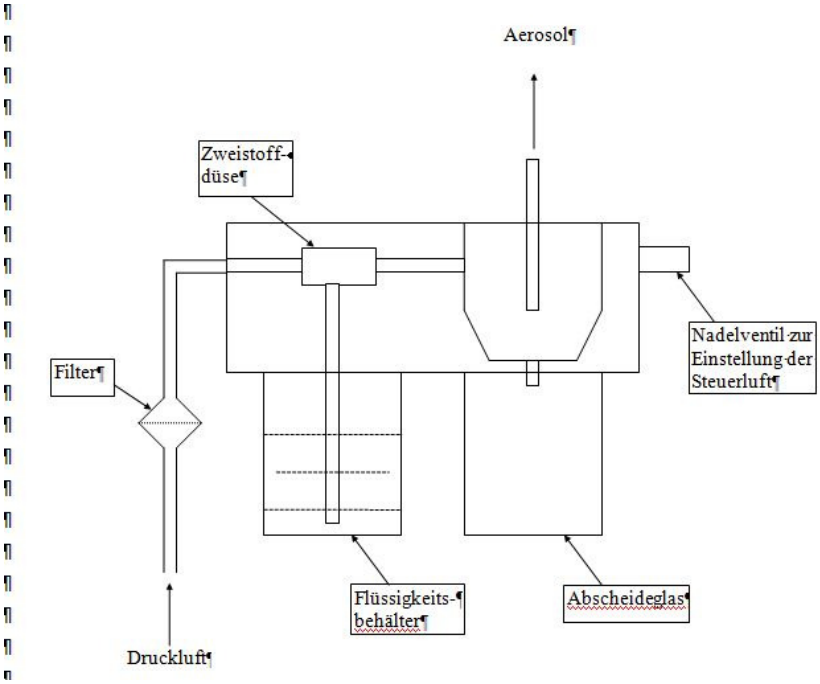

Fig. 2: UGF 2000 schematic diagram **Startup** The compressed air is supplied to a binary nozzle via a pneumatic on/off switch and an adjustable pressure regulator. The mist of droplets generated by the nozzle flows tangentially into a cyclone. Large particles are separated here by centrifugal force and drip into a separate reservoir. The remaining droplets leave the cyclone via the so-called "immersion tube". The size spectrum of these droplets is determined on the one hand by the primary droplet spectrum generated by the nozzle, but especially by the separation characteristics of the cyclone on the other hand.

	Dimensions WxHxD mm	Weight kg	$\dot{V}$ l/min	$\dot{m}_{max}$* g/h	dp_{mean}*** µm	d_{max} µm	115/230V 50/60 Hz	Pressure-tight up to 10 bar	Compressed air supply
AGF 2.0	300x330x240	ca. 9	6-17	4	0,25	2			x
AGF 2.0 iP	300x330x240	ca. 15	16-18	2	0,25	2	x		
AGF 10.0	Ø240x385	ca. 4	12-45	20	0,5	10			x
AGF 2.0 D	Ø200x260	ca. 8	12-45	4	0,25	2		x	x
AGF 10.0 D	Ø200x300	ca. 8	12-45	20	0,5	10		x	x
AGF 2.0 B**	Ø210x300	ca. 4	6 -25	4	0,25	2			x
UGF 2000	270x200x175	ca. 4	ca. 1 -13	1,5	0,2	1,5			x

*applied for DEHS **test rig version ***average number diameter

Table 1: Overview of the AGF and UGF systems

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Benefits

- dp_{max} in MPPS-range = 0.1 – 0.3 µm
- Known and reproducible particle size distribution using a cyclone
- Constant particle rate
- Low particle concentration
- Long dosing time
- Variable particle concentration by a factor of 500 through adjustment of the primary pressure and control air
- Compact, light, portable
- Easy handling and solid construction

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Datasheet

Parameter	*Description*
Volume flow	1 – 13 l/min
Dimensions	270 • 200 • 175 mm
Weight	approx. 4 kg
Particle material	DEHS, DOP, Emery 3004, paraffin oil, other non-resinous oils
Dosing time	> 24 h
Mass flow (particles)	< 1.5 g/h (DEHS)
Compressed air connection	Quick coupling
Aerosol outlet connection	$Ø_{inside}$ = 4 mm, $Ø_{outside}$ = 8 mm
Filling quantity	70 ml

UGF 2000

Applications

- Clean room technology:
  - HEPA/ULPA filter test
  - Acceptance tests and leak tests as per ISO 14644 and VDI 2083
  - Laminar flow boxes
  - Recovery tests
- Filter testing, quality control:
  - Filter cartridges, filter media, particulate air filters for low volume flows and small filter surfaces
- Smoke detector tests

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