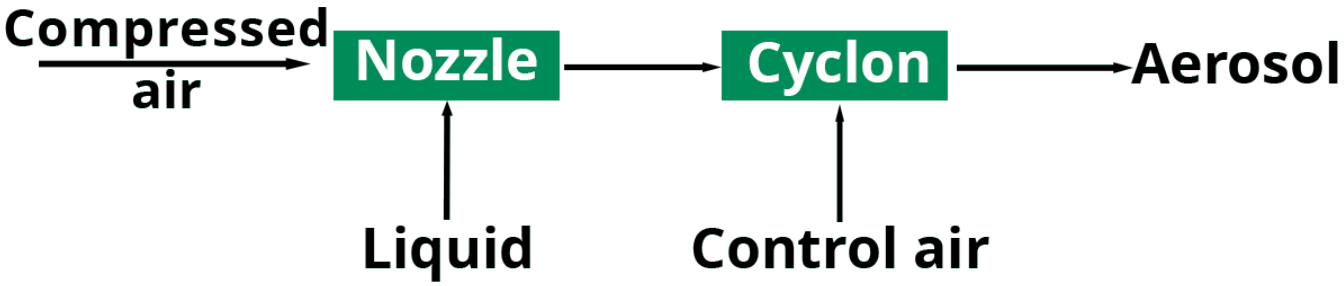
UGF 2000

The UGF 2000 aerosol generator can atomize liquids with a binary nozzle.

The UGF 2000 comprises an adjustable binary nozzle to adjust 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 can 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.

工作原理



]Liquid nebulizer with binary nozzle and cyclone

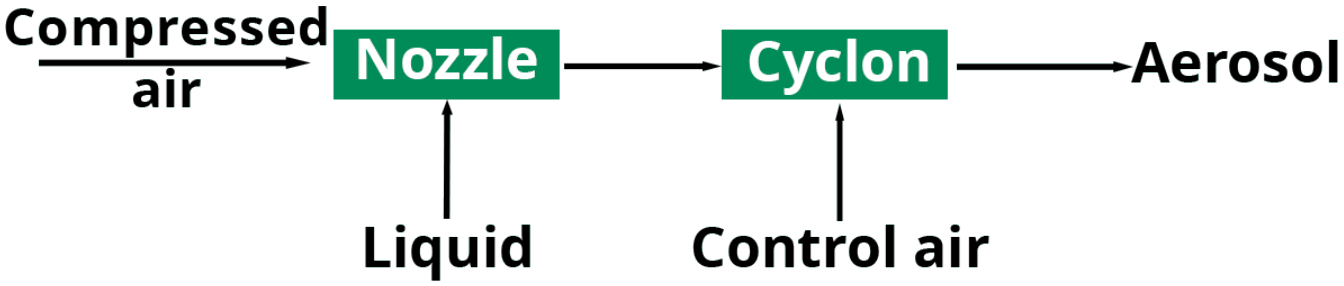


Fig. 1: UGF 2000 functional diagram

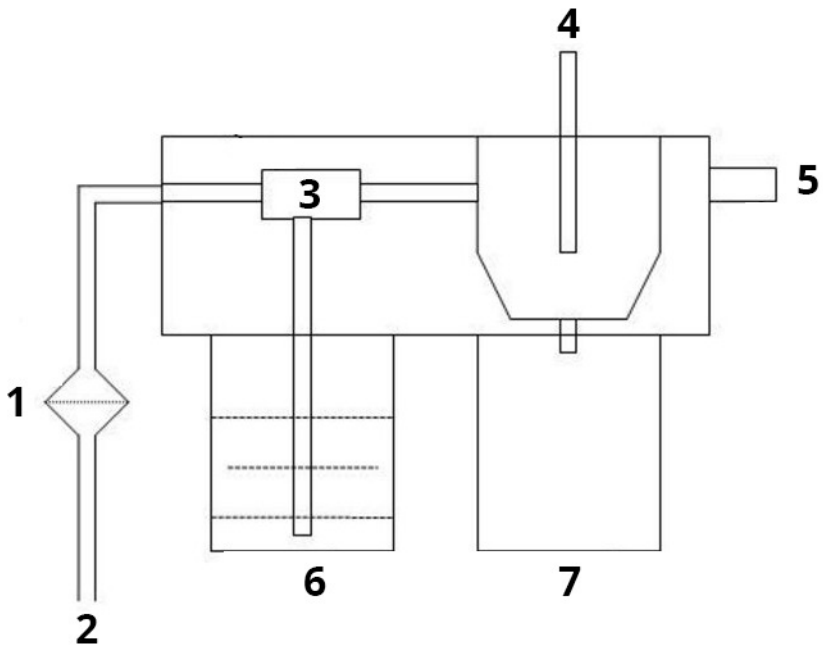


Fig. 2: UGF 2000 schematic diagram

(1) filter, (2) compressed air, (3) two-substance nozzle, (4) aerosol, (5) needle valve for adjusting the control air, (6) liquid container, (7) separator glass.

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 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.

	Maße BxHxT mm	Gewicht Kg	Volumen l/m	m_{max}* g/h	dp_{mean}*** μm	d_{max} μm	115/230 V 50/60 Hz	Druckdicht bis zu 10 bar	Druckluftzufuhr
AGF 2.0	300 x 325 x 175	Ca. 9	6 - 17	4	0,25	2			x
AGF 2.0 iP	300 x 325 x 175	Ca. 15	12 - 14	2	0,25	2	x		
AGF 10.0	Ø240 x 385	Ca. 4	14 - 35	20	0,5	10			x
AGF 2.0 D	Ø200 x 260	Ca. 8	12 - 45	4	0,25	2		x	x
AGF 10.0 D	Ø200 x 300	Ca. 8	14 - 35	20	0,5	10		x	x
UGF 2000	270 x 200 x 175	Ca. 4	Ca. 1 - 13	1,5	0,2	1,5			x

Table 2: Übersicht AGF System

Table 1: Overview of the AGF and UGF systems

- 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

VDI 2083, VDI 3491, ISO 14644

	1 – 13 l/min
Mass flow (particles)	< 1.5 g/h (DEHS)
Filling quantity	70 ml
Particle material	DEHS, DOP, Emery 3004, paraffin oil, other non-resinous oils
Dosing time	> 24 h
Compressed air connection	Quick coupling
Aerosol outlet connection	Øinside= 4 mm, Øoutside = 8 mm
Dimensions	270 • 200 • 175 mm (H • W • D)
	Approx. 4 kg

- 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

Mehr Informationen:
https://www.palas.de/zh/product/ugf2000