AGF 10.0

Liquid nebulizer with binary nozzle and cyclone (cut-off: 10 μm) as per VDI 3491-6

Model Variations

AGF 10.0 D
Pressure-resistant version of the AGF 10.0 series

Version: December 1, 2021

AGF 10.0

Description

The AGF 10.0 is an aerosol generator for the atomization of liquids and latex suspensions with a constant particle rate and defined particle spectrum.

Fig. 1: AGF 10.0

The AGF 10.0 system comprises an adjustable binary nozzle for adjustment of the desired mass flow and a cyclone with a cut-off of 10 μm. The figure below presents a schematic arrangement of the generator components:

AGF 10.0

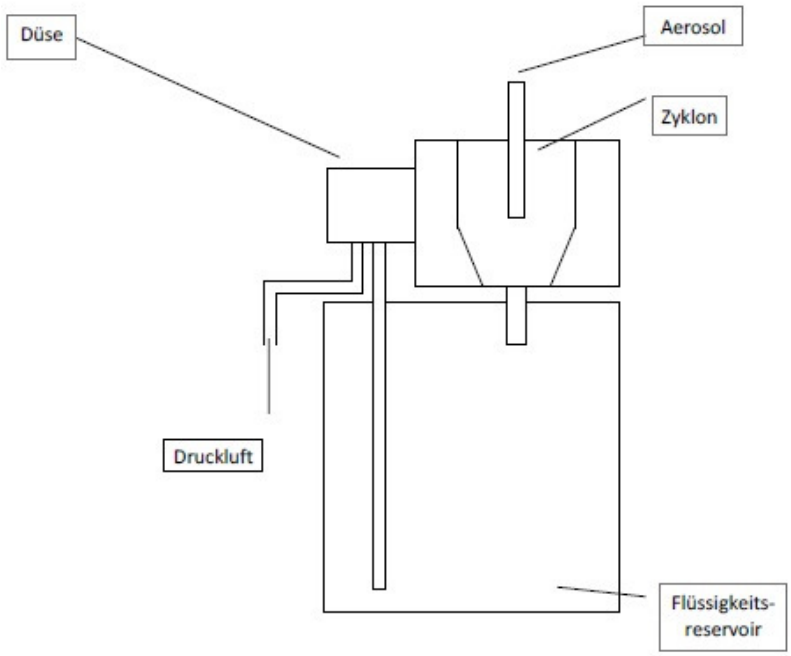

Fig. 2: Schematic diagram of the aerosol generator

Startup

The liquid to be dispersed is filled in the reservoir and the AGF 2.0 is connected to the compressed air connection. A manometer enables the mass flow of the liquid to be continuously adjusted using the primary pressure on the nozzle. The mist of droplets generated by the nozzle flows tangentially into a cyclone. Large particles are separated here by centrifugal force and drip back into the 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.

The separation size is able to be calculated: $d_{aerodyn.max}$ = 10 μm, i.e. regardless of the liquid to be atomized, the max. particle size is $d_{aerodyn}$ 10 μm.

	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

AGF 10.0

	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

AGF 10.0

Benefits

- **Generation of high mass flows of up to approx. 25 g/h**
- **Exact adjustment of the operating parameters**
- **Number concentration (C_N) can be varied by the factor 10**
- **Particle size distribution remains virtually constant, if C_N is modified**
- **Number distribution maximum is within the MPPS range**
- **Virtually no power losses**
- **Optimal concentration, no coagulation losses**
- **Resistant to numerous acids, bases, and solvents**
- **Robust design, stainless steel housing**
- **Easy to operate**
- **Long dosing time**

AGF 10.0

Datasheet

Parameter	*Description*
Volume flow	**14 – 35 l/min**
Dimensions	**240 ● 385 mm (Ø ● L)**
Weight	**Approx. 4 kg**
Particle material	**DEHS, DOP, Emery 3004, paraffin oil, other non-resinous oils**
Dosing time	**> 24 h**
Mass flow (particles)	**< 25 g/h (DEHS)**
Compressed air connection	**Quick coupling**
Aerosol outlet connection	**$Ø_{inside}$ = 20 mm, $Ø_{outside}$ = 30 mm**
Mean particle diameter (number)	**0.5 μm**
Biggest particle diameter	**10 μm**
Filling quantity	**300 ml**

Applications

- Clean room technology
  - Acceptance tests and leak tests as per ISO 14644 and VDI 2083
  - Leak tests, fit testing
  - Recovery tests
- Filter testing, quality control
  - Filter cartridges
  - Car interior filters
  - Filter media, particulate air filters, HEPA/ULPA filters
  - Compressed air filters
- Tracer particles
  - Optical flow measurement procedures with positive pressure values of up to 10 bar (model version AGF 10.0 D)
  - Inhalation experiments
  - LDV
- Calibration of counting particle measurement methods
  - Nebulization of latex suspensions < 5 μm
- Smoke detector tests

Palas GmbH
Partikel- und Lasermesstechnik
Greschbachstrasse 3 b
76229 Karlsruhe
Germany

Managing Partner:
Dr.-Ing. Maximilian Weiß, Udo Fuchslocher
Commercial Register:
register court: Mannheim
company registration number: HRB 103813
USt-Id: DE143585902

Contact: E-Mail: mail@palas.de Internet: www.palas.de Tel: +49 (0)721 96213-0 Fax: +49 (0)721 96213-33