

VIBRATING MESH AEROSOL GENERATOR

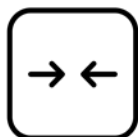


Product Range
2023/2024

Tekceleo's Micronice vibrating Mesh technology provide a unique **modularity and performance for aerosol generation for research and samples tests and analysis uses.**

Our devices can guarantee monodispersed aerosol particles and no alteration of the atomized solutions, which is particularly appreciated in the context of **aerosolization** of pharmaceutical and biologic formulations.

Our capacity provide large range of droplet size, a smooth nebulization (no pressure nor heating) and a very precise control of the flowrate allow to easily use our nozzle for **microbiological studies, in-vitro testing, samples testing or precise coating techniques.**



COMPACT



EFFICIENT



RESISTANT

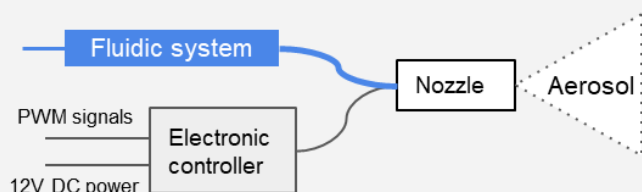


SIMPLE

- ✓ **Very smooth nebulization, without inertia, heat or pressure.**
- ✓ **Full electronic control, plug and play** on AC power supply, adaptable flowrate...
- ✓ **Low footprint and easy to manipulate** : 20mmx46mm.
- ✓ **Material savings** : no dead volume.
- ✓ **Very low electrical consumption (<2W)**, can work on battery.
- ✓ **Quiet operation (<35dB).**

How it works ?

Bring liquid to the nozzle to atomize. Operation controllable with a simple PCB (up to 10 nozzles simultaneously).



Droplet size	Max Flowrate (ml/min)	Max Flowrate (L/h)
05 µm	0,8 ml/min	0,05 L/h
08 µm	2,5 ml/min	0,15 L/h
12 µm	5,5 ml/min	0,33 L/h
20 µm	8 ml/min	0,48 L/h
50 µm	35 ml/min	2,1 L/h

***Other droplet sizes available on demand**

∅ 20



PROTECTIVE CAP

HDPE
Stainless Steel
Easy Mounting tight-fitted or gasket method



VIBRATING MESH

Stainless Steel
5 standard droplet size
Custom-made nozzle

PIEZO TRANSDUCER

Very low power consumption (<4W)
No noise
No heating nor pressure rise



FLUIDIC SYSTEM

Adaptable flowrate
Closed loop operation or with drains
To avoid clogging



HDPE BODY

Support corrosive liquid
Support high temperature of operation (-20° to 80° C)

Aerosol Generation : Compact, Precise, Efficient



Medical Research

Our cutting-edge liquid atomizer technology is at the heart of Tekceleo's aerosol generators.

These generators offer **precise and efficient aerosol generation with monodispersed droplet sizes** ranging from 05 µm to 50 µm.

Our aerosol generators are user-friendly, with simple controls and ease of operation, making them accessible for researchers across a wide range of scientific disciplines. Our generators are also **compact, allowing for easy integration into existing experimental setups**.

Tekceleo's aerosol generators are designed to meet the demanding needs of modern research, providing high-quality aerosols for a variety of applications, **from human health studies to environmental research**. With our innovative technology, researchers can achieve accurate and reliable results, driving scientific progress and discovery forward.

At Tekceleo we designed our Aerosol Generators for **precision and ease of use**, making it the perfect tool for accurate and efficient sample testing. Here are the simple steps to use it :

- **Load your sample** into the tank
- **Connect** your testing device
- **Set your desired parameters**, including flow rate, and time of generation
- **Press start** and let the aerosol generator do the rest.

With our P&S range, you can achieve precise aerosol size distributions, making it ideal for a **wide range of applications**, including drug delivery, environmental testing, HEPA filter testing, Coating testing and more.



Aerosol Sampling

Use cases and applications

Tekceleo's Micronice nebulization technology is commonly used for precise atomization of relatively low viscosity liquids (viscosity < 3mPa.s). Our droplet generators are based on the concept of vibrating mesh nebulization, **which atomizes the liquid without increasing temperature or pressure**. In addition, our simple and modular design, a simple kit, **is perfectly adaptable to any research environment**.

Our devices can guarantee monodispersed aerosol particles and no alteration of the atomized solutions, which is particularly appreciated in the context of aerosolization of pharmaceutical and biologic formulations. Among our customers, the most common laboratory uses for our scientific atomization solution are :

- **Microbiology** (microorganisms, fungi, etc.)
- Medical research (bacteria, viruses, pollen...)
- **In-vitro testing**
- Thermal and material study (Coating, nuclear studies...)
- Study of aerosol behaviour (airflow mapping, etc.).



In-vitro testing

Standard droplet	Max Flowrate	P&S T45 operating time range	P&S 360 operating time range
05 µm	0,8 ml/min	~10-1000 mn	~450 - 45 000 mn
08 µm	2,5 ml/min	~5-500 mn	~225 - 22 500 mn
12 µm	5,5 ml/min	~2,5-250 mn	~110 - 11 000 mn
20 µm	8 ml/min	~0,08 - 125 mn	~55 - 5 500 mn
50 µm	35 ml/min	~0,35 - 30 mn	~11 - 1100 mn

Supported liquid	Temperature	Viscosity
<ul style="list-style-type: none"> • Water-based. Ethanol-based. • Acid-based (Stainless steel range). • PBS (Phosphat Buffered Saline) • Contact us for more supported liquid... 	<ul style="list-style-type: none"> • 0-100°C (standard) • 0-200 °C (high-temperature version) 	<ul style="list-style-type: none"> • Ideal range : 1 cp • Up to 3 cp (for droplet size > 15 µm) • Contact us in case of more viscous liquid...

Possible configurations

From 04 µm to 100 µm, we can customize the membrane of our nozzles to precisely calibrate the aerosol you need. Precise droplet size distribution graph can be added in order to set the particle size and the aerosol generation flowrate as a standard value for you use case.

Droplet size (+/- 10%)*	Flowrate (+/- 10%)*	Status	High temperature version	Electronic control	P&S T45 version	P&S H360 version
5 µm	0,8 ml/min	Standard	On-demand	YES	YES	YES
08 µm	2,5 ml/min	Standard	On-demand	YES	YES	YES
12 µm	4,5 ml/min	Standard	On-demand	YES	YES	YES
20 µm	8 ml/min	On-demand	On-demand	YES	YES	YES
50 µm	35 ml/min	Standard	On-demand	YES	YES	YES

** Tolerance applied linked to manufacturing process. Service of precise characterization is provided on demand to certify droplet size and flowrate of purchased nozzles.*