TCR TECORA
POLLUTION CHECK

LABORATORY

Compliant:
UNI 11254, UNI EN 149, UNI EN 143, EN 1822, EN13274-7, GB-2626

Aerosol Generators

Laskin AeroX

Laskin type: AeroX

Laskin nozzles have been used for years as aerosol generators for filters test systems (e.g. **HEPA – ULPA**) and in aerosol research.

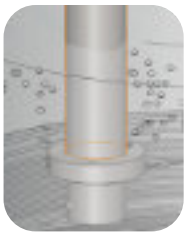
Due to the sensitive nature of aerosol generation, Laskin nozzles are also used to produce "aerosol test" to study the effects of bioaerosols.

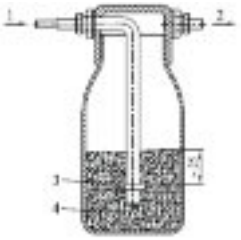
TCR TECORA® has developed a new series of Laskin generators, called **AERO-X** capable of being used for most applications.

NOZZLE DESCRIPTION

A Laskin nozzle consist of a steel tube (ptfe – titanium as an option) with four holes (1 mm diameter) arranged symmetrically radial and perpendicular to the axis of the nozzle tube. Close to the holes from which the pressurized air comes out, there is a "collar" disc with a larger dimeter in which there are 4 precision holes (2 mm diameter) arranged along the axis of the nozzles itself.

The nozzle in the container is fully immersed in the solution to be sprayed. Different solutions and suspensions such as **DEHS** (DiEthylHexySebacate1) **DOP** (Dioctyl Phthalate), **EMERY 3004**, **NaCl** (Sodium chloride), **PSL** (Latex Sphere), **Methylene Blue**, **Silicon oil**… can be inserted.





Single Nozzle Version
Particles: range 0.5 - 5 µm
Aerosol concentration: $>10^7$ p/cm^3
Flow: 1 - 100 l/min
Pressure: 0.1 - 4 bar

NOZZLE OPERATION

Compressed air is applied to the top end of the nozzle tube. Air escapes at high velocity from the radial holes and then pulls the liquid with it through the holes in the collar ring. As a result, the liquid is finely atomized into the resulting gas bubbles. The bubbles than grow and move toward the liquid surface, where they burst creating small particles that are transferred into the outgoing air stream of the container.

Containers capable of using a single Laskin nozzle are available, or if highly concentrated aerosols need to be generated, systems with 3 or 6 nozzles in parallel are available (e.g. as required in EN149).

Note:

DiEthylHexySebacate1 (DEHS): non-soluble liquid, colorless and odorless, suitable to produce stable aerosols. (MPPS 0,2…0,3 µm).
The long droplet life also allows the generated aerosol to be used for flow visualization in different environments to track the flow, e. g. wind tunnel tests. DEHS evaporates completely after a long time. A drop with a diameter of 0,3 µm has a duration of about 4 hours. The optical properties are well known, and the particles are spherical and thus easily measured by OPC optical particles counters.

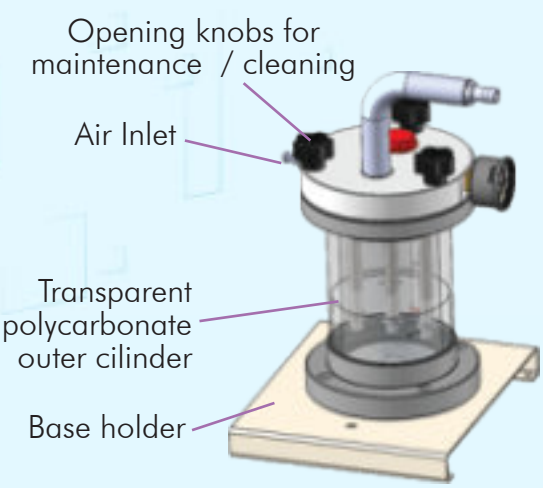
MADE IN ITALY

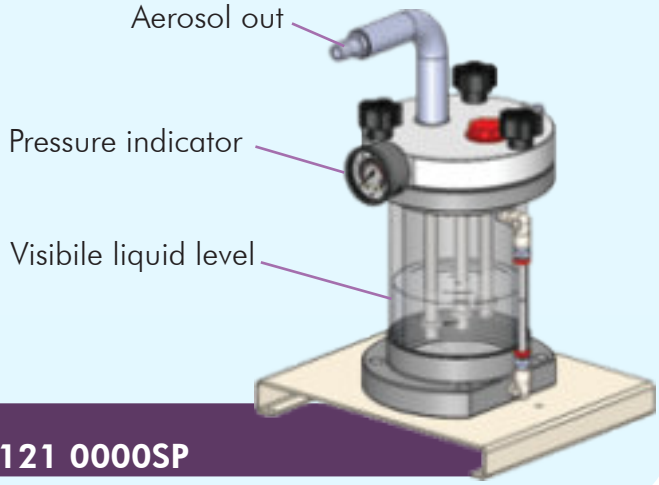
TCR TECORA
POLLUTION CHECK

External compressed air supply required (dry, particles and oil free)

Laskin Aero-3
3 nozzles version

Aerosol Generator 1,1L





Code
AC99 121 0000SP

Laskin Aero-1
1 nozzle version

Aerosol Generator 0,5L

Code
AC99 121 0001SP

Aerosol Generator 0,25L

Laskin Aero -1S
1 nozzle version

Smaller containers available for handling smaller amount of solution

Code
AC99 121 0002SP

INTERNAL Air Generator

DDS Laskin-1
Internal air generator

Aerosol Generator DDS Laskin-1

Code
AC99 121 0003SP

Aerosol Generator DDS Laskin-3

DDS Laskin-3
Internal air generator

Automatic portable system* with internal pump and Laskin chamber

*(available 230Vac or battery, 1, 3 or 6 nozzle version)

Code
AC99 121 0004SP

TCR TECORA®
POLLUTION CHECK

MAIN FEATURES

- **TCR TECORA® AERO-X Laskin** generators model are designed to maintain a consistent, repeatable output over time.
- **Laskin Aero-X** is made in laboratory version complete of 1, 3 or 6 nozzles for a greater quantity of aerosol generated.
- The realization in inert material **guarantees high quality of delivery and easy cleaning/maintenance** of the system.
- The **possibility to vary working pressure allows to regulate the size distribution of particles** and the quantity of aerosol dispensed.
- The **Laskin DDS** version is a complete solution and requires 230 Vac power supply (internal battery option for applications in area without power supply) to manage the internal air delivery system. **The system manages 2 spray chambers** (which can be use individually) **with 1, 3 or up to 6 Laskin nozzles.**

APPLICATIONS

- Bioaerosol generation;
- PFE – materials filtration efficiency;
- Biological – medical research;
- Instrument calibration;
- Fluid dynamic experiments in wind tunnel.

- HEPA – ULPA filter test according to EN1822 as cold aerosol generation system;
- Peaks monodisperse aerosol generation with DEHA at 0,65 μm with minimum 0,25 μm delivery;
- Concentrations greater than 10^7 particles/cm^3 per single Laskin nozzle;
- Generation of polydisperse aerosol in high concentrations;
- Wide range of flow adjustment possibilities, typical 5-10 l/min applications;
- Laskin systems allow you to generate aerosol with a variety of liquids, solutions, and suspensions.

TECHNICAL SPECIFICATIONS

Aerosol Generators	Aero-3	Aero-1	Aero-1S
Tank volume (other sizes on request)	**1,1 L**	**0,5 L**	**0,25 L**
Flowrate (indicative max with dilution system)	1 ÷ 100* l/min	1 ÷ 100* l/min	1 ÷ 100* l/min
Particles / Volume	>10^7 particles/cm^3	>10^7 particles/cm^3	>10^7 particles/cm^3
Chambers Materials	Polycarbonate (PTFE*)	Pyrex Glass	Pyrex Glass
Solution duration (max dispensing)	> 10 h	> 5 h	> 2 h
Nozzle pressure	0.1 ÷ 4 Bar	0.1 ÷ 4 Bar	0.1 ÷ 4 Bar

Aerosol Generators	DDS Laskin-1	DDS Laskin-3
Dimensions (mm)	250 x 250 x 260 mm (b x p x h)	250 x 250 x 260 mm (b x p x h)
Weight KG	6 Kg	6.5 Kg
Main power supply	220 / 240 Volt 50 ÷ 60 Hz	220 / 240 Volt 50 ÷ 60 Hz
Secondary power supply (option)	Internal Battery 12 Vdc	Internal Battery 12 Vdc
Aerosol flow	0.4 ÷ 20 l/min	0.4 ÷ 40 l/min
Nozzle pressure	0.1 ÷ 3 Bar	0.1 ÷ 3 Bar
Solution duration (max dispensing)	> 10h	> 5h

**Optional.*

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