

ELECTRONIC SPRAY HEAD FOR HUMIDIFICATION



Product Range
2023/2024

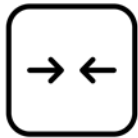
MICRONICE©

P&S T45 / P&S 360

Tekceleo's Micronice vibrating Membrane technology provide a unique misting technology **that allows modularity and performances for humidification processes.**

Our humidification range **is specifically made only in stainless steel and HDPE components for very long lifespan.** With its very little footprint, its "plug and play" and modular design, our technology is very **well suited for direct integration in equipment or humidification devices.**

Our capacity to adapt the droplet size, a smooth nebulization (no pressure nor heating) and a very precise control of the flowrate allow our customer to easily integrate our nozzle to each of their specific situation and environment. Moreover, the product is silent and is usable directly on tap water.



COMPACT



EFFICIENT



RESISTANT

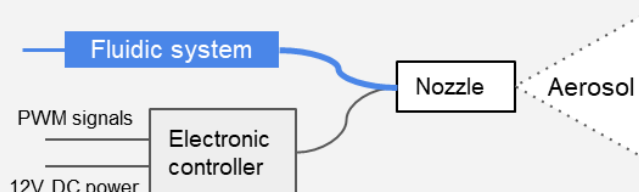


SIMPLE

- ✓ **Very smooth nebulization, without inertia, heat or pressure.**
- ✓ **No hygiene problems** : can work on circulating water/directly on city water.
- ✓ **Full electronic control, plug and play** on AC power supply, adaptable flowrate...
- ✓ **Low footprint** : 20mmx46mm.
- ✓ **No conduit to disperse the fog** : no condensation, no bacteria in the tubing.
- ✓ **Very low electrical consumption (<2W)** and low voltage : increase of safety.
- ✓ **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**

MICRONICE©

P&S T45 / P&S 360

∅ 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)

Smart Choice for Humidification : Accuracy, Reliability, Simplicity



*Controlled Environment
Agriculture*

At Tekceleo, we offer **a modular humidification system** that is fully customizable to fit your specific needs. Our nebulizer is just one component of this system, which can be configured to provide precise and reliable humidity control in a variety of settings.

Whether you need to **maintain optimal humidity levels in a laboratory equipment, manufacturing facility, or other controlled environment**, our humidification system provides a flexible and reliable solution. Our ultrasonic humidifier technology is virtually noise-free and requires minimal maintenance, ensuring ease of use and long-term performance.

Tekceleo's modular humidification system is not a final product, but a technical solution that can be tailored to your unique requirements. Choose Tekceleo for the ultimate in flexibility, reliability, and precision humidity control.



Industrial Process Humidification



Room Humidification

Tekceleo's Plug & Spray humidification products can be used as humidifiers for various processes :

- **Food processing applications.** It can preserve food over time by humidifying it without wetting surfaces.
- **Aeroponics controlled environments.** P&S 360 can either maintain the right relative humidity or be used as a sprayer for feeding roots of the plants.
- **Automated and localized humidification for processes.** For example, adhesive activation, or treatment of surfaces.
- **Controlled environment humidifiers,** with their very precise and easily controlled flowrate our nozzle can control relative humidity for special processes in food, pharma or chemical industries.



Post-Harvest preservation

Use of Tekceleo's nebulizers for precise humidification allows to save space, consumables and energy. The very short fluidic response time of our nozzle couple to a very controlled flowrate and droplet size makes it a solution for a wide variety of humidification use case.

Main characteristics :

- Dimension : 20mmx46mm
- **Very high lifespan : tested for more than 20 000 hours with filtered water.**
- Energy Consumption : <2W/nozzle
- Quiet operation (<35dB)
- Very low response time (<1ms)
- Operation for liquid below 3 cp viscosity
- Adaptable flowrate : possibility of very low volume atomization (<0,01ml/mn) to large volume (>10 L/h) depending on the configuration

Use case	Estimated Lifespan
Post-Harvest Preservation	> 3 years
Controlled Environment Agriculture	> 3 years (humi) > 10 000 h (roots)
Industrial Process Humidification	> 10 000 hours of operation
Room Humidification	> 3 years

Features and advantages

Main problem	Micronice feature to solve it	Micronice advantages
Product loss	Very precise nebulization, allows relative humidity control up to 99%. High humidity reduce moisture loss and regulate temperature.	Unique electronic control that can loop with a humidity sensor. Allows real time operation or memorized cycles.
Difficult to integrate a misting system	Very compact : nozzle size of 20 mm per 40 mm. No need for centralized and voluminous systems.	No need for pressure, tank of water or ventilation systems. Only technology that directly nebulize from the nozzle.
Implies high maintenance cost	Very high resistance design with top tier materials. Average lifespan of 3 years of operation without maintenance. No need for contamination control (no stagnating water).	Unique design with stainless steel and HDPE materials coupled with a very low energy electronics that is very robust.
Increase in energy and water consumption	Very efficient : 2W/nozzle, all the volume can be nebulized (no dead volume).	The patented amplified mesh nebulizer technology allows for very low energy operation (2W compared to 64W on average).
Wet the surfaces, not comfortable for customers	Adaptable droplet size with option for 04 um to 12 um drop that generate "dry fog", i.e. aerosol that doesn't wet the surfaces.	Unique capacity of adaptation regarding droplet size. The same design drop size can be adapted according to the use.

Technical Requirements & Specifications

What makes it different ?
- No pressure, no heating : smooth and consistent fog generated.
- No centralized system, no compressor, etc.
- No sound on operation : perfectly quiet technology.
- Electronically controlled : easily control and maintain high level of humidity.
- Adaptable droplet size from 04 µm to 50 µm.
- Easy to set up : plug and play nozzle with very low footprint.
- No management or maintenance : set and forget automatized system.

Electric	Water	Drain
Compatible 110 and 220 V power supply Consumption : 0,15 Wh per nozzle.	Work on filtered water to avoid clogging (filtration of calcareous and large particles recommended).	0 to 200 ml/min drain depending on the set up. Very efficient regarding water consumption.

Water control	System tubing	Electronics
Electronic valves recommended.	Ø 3mmx5mm nozzle feeding silicone tubes.	1 electronic controller for up to 10 nozzles.

Materials used	Cleaning	Pressure regulation
SS 304, SS 316L and HDPE.	Food grade cleaning solution sufficient to prevent clogging.	Pressure applied to the mesh to be below 0,15 bar.