

Operation Manual

Ultra-Mist ST2 Air humidifier



3L, 5L and 8.5 litre humidifiers

(ULM-ST2 3L / ULM-ST2 5L / ULM-ST2 8.5L)



1. Introduction

Thank you for choosing the **Ultra-Mist ST2** unit.

The **Ultra-Mist ST2** unit has been especially developed for the nebulization of Reversed Osmoses Water for use in climate-controlled areas. MicroNevel's many years of experience in the humidification of climate controlled areas, very often under harsh conditions, has led to the development of the new Ultra-Mist ST2 series. The MicroNevel Ultra-Mist ST2 is robust, reliable, versatile and easy to install and operate.

To ensure a safe, correct and economic use of the Ultra-Mist ST2, you have to pay attention to all directions and safety instructions in this manual and ensure yourself these instructions are executed.

Please contact MicroNevel or one of their authorized local representatives, if there are any open questions after you have carefully read this manual.

1.1 Applications for the Ultra-Mist (ST2/ULO/HV series)

- Direct area humidification
- Air treatment plants
- Areas requiring a high relative humidity
- Laboratories
- Museums, Art galleries, etc.
- **Controlled Atmosphere, Ultra Low Oxygen**, storage
- Cold storage areas
- Disinfection

1.2 Set up

The **Ultra-Mist ST2** can be installed inside as well as outside the area that needs to be humidified. When placed outside the space that needs to be humidified, the mist will be distributed by a mist diffusion pipe into the to be humidified space. The exact set up however will vary depending of that space. Regardless what set up is chosen, there will be some condensate formed in the distribution-pipe. For this reason mounting of the distribution-pipe has always has to decline.

When the unit is installed outside the space, both air-intake and mist-output, can be led by pipe and directly being re-inserted in to the space, creating a so called *closed air system*. The air that needs to be humidified is hereby re-circulated in a way the atmosphere in the space it self, is not modified in any other way then the desired additional humidification.

PS: Inside the **Ultra-Mist ST2** the air treatment section is completely separated from the electronics. Therefore the equipment works extremely well to at high humidity. If the required humidity level exceeds 75% it is necessary to install the unit outside the space to be humidified.



2. For your safety

General safety instructions:

The Ultra-Mist ST2 may only be installed, operated, maintained or repaired by persons who fully understand the equipment and are fully qualified to carry out this work. The customer is responsible to ensure himself of the qualifications of his personnel.

If in doubt contact MicroNevel

Warning Be aware to avoid any direct contact with parts inside the unit. The Ultra-Mist ST2 is connected with the mains supply. Before any work, maintenance or repair may proceed, the unit must be disconnected from both mains and water supply and to be protected against unintentional reconnection.

Carefully observe local safety regulations concerning working with electrical or electronic equipment connected to a mains supply as well as safety regulations in regards to water and electrical installations.

Poorly maintained humidifiers will have a negative effect on the achievement of the unit. For this reason it is important to ensure regular maintenance. Contact MicroNevel for the appropriate service intervals suited for your application.

When it has been established a risk-free operation of the Ultra-Mist ST2 is no longer possible, the unit must be immediately taken out of service and protected against unintentional reconnection. Then contact your local MicroNevel distributor.

This can be the case in the next situations:

- The Ultra-Mist ST2 is damaged
- The Ultra-Mist ST2 is not functioning correct
- Connections or tubes are leaking

Without written authorization of MicroNevel, any modification on the Ultra-Mist ST2 is not allowed.

3. Water connection



ATTENTION !

The Ultra-Mist ST2 **must** be supplied with Reversed Osmoses Water of $\leq 50\mu\text{S}/\text{cm}$. When no R.O. Water is supplied, the vibration-elements of the drop-ins will suffer serious damage. Also the live cycle shortens significant. **In this case the guarantee will void for the drop-ins and the valves!**



Product overview

Due to the modular structure the Ultra-Mist ST2 is available in various capacities.

Capacity	Type
3 litre per hour	ULM-ST2 3L
5 litre per hour	ULM-ST2 5L
8.5 litre per hour	ULM-ST2 8.5L

4. Technical specifications of the Ultra-Mist ST2 series

Specifications	ULM-ST2 3L	ULM-ST2 5L	ULM-ST2 8.5L
Dimensions (H x W x D) in mm	340 x 565 x 425	340 x 565 x 425	340 x 565 x 425
Weight "empty"	22,0 kg	22,7 kg	30,9 kg
Weight "in use"	29,1 kg	30,3 kg	36,4 kg
Capacity (litre per hour)	3	5	8,5
Max. Connected Load (exclusive optional tracing)	400 Watt	580 Watt	1120 Watt
Connection Sizes Air in- & outlet PVC (mm)	50 x 3,0 (mm)	50 x 3,0 (mm)	75 x 3,0 (mm)
Air Inlet (number)	1	1	1
Mist Outlet (number)	1	1	2
Mains Voltage	230 VAC 50 Hz		
Inlet water pressure	0,5 to 5 bar		
Droplet size	smaller then 5 μ		
Water Inlet Junction	¼ inch		
Total of Fans	1		
Air-velocity uninhibited	ST2 3L & 5L uninhibited air volume 85 m ³ /h		ST2 8.5L uninhibited air volume 185 m ³ /h
Noise	Less then 35 dB		
Admissible area temperature (outlet)	-10°C to +40°C		
Admissible inlet temperature (inlet)	-2°C to +40°C		
Ambient temperature Ultra-Mist ST2 unit	0,5°C to +55°C		
Control options	N.O. contact (standard) 0-10V / 4-20mA (optional)		

5. Using the appliance

5.1 Check-list

Consult your mechanic to read this check-list together when you consider yourself not qualified.

Check the below items before the appliance is switched on:

- Are the ball valves (when present) of the air-inlet & air-outlet opened?
- Check or the water-inlet hose is connected in the appropriated way.
- Is there sufficient pressure on the water-inlet (0,5 to 5 bar)?
- Is the appropriated R.O. Water installation in place ($\leq 50\mu\text{S}/\text{cm}$)?
- Is the control signal present and connected in the appropriated way?

5.2 Using the appliance



ATTENTION !

Before using the appliance it is very important to flush the water inlet hose, to prevent any waste becoming jammed in the solenoid valve.

1. Turn the control signal off. This can be done by turning the humidistat to 0 or (when using a 0-10V control voltage) set this voltage to 0V.
2. Switch on the Ultra-Mist ST2 with the main switch on the right side of the appliance.
3. The fan will now run for a few seconds.
4. The inlet valve will now open and the appliance will be filled with water up till the "high float switch". Carefully check if the water supply stops at the referred level during the primary filling process. **You will hear the inlet valve switch off.**
5. The appliance is now ready for humidification.
6. Set the humidistat at the preferred level or turn the control voltage up.
7. The fan will now run and the appliance will start humidifying.
8. Check if the unit is humidifying, within seconds there must be a visible mist.
9. The appliance is now operating.

5.3 What to do at a decline of mist-output

At very dry air it can appear there is a decline of mist-output in comparison to humid air. This can happen as dry air will absorb the mist much sooner and faster than humid air. If this is the case let the humidifier run for a couple of hours and then check again. If the visible mist-output is still below "standard output" contact your mechanic.

6. Maintenance



WARNING !

Always first remove the mains plug from the wall socket and disconnect the water supply.

By using R.O. water of $\leq 50\mu\text{Siemens/cm}$, it will be possible to limit the maintenance of the ULM-ST2 unit to a minimum. The minimum maintenance frequency is once a year. When the appliance is used intensively or is situated in dusty area, it is recommended to check the appliance regularly for pollution, also inside the water reservoir, and adjust the maintenance interval to the environment. Please contact MicroNevel for advise and more information on customised maintenance intervals.

6.1 Maintenance preparations before inspection of the water reservoir can begin.

Unlock the 4 clamps, or remove the 4 bolts, of the cover of the water reservoir and remove the cover. Remove the fan by moving it carefully towards the middle of the appliance. You can now lift the partition of the water reservoir and will see the drop-ins with there 6 vibration-elements.

Check the water reservoir on the next 3 points:

1. Is the inside of the water reservoir polluted ?
2. Does the water seems dirty?
3. Is there a thin layer on top of the water ?

If you can answer the above 3 questions with no the water reservoir is okay.
When one the answer is yes, please contact your mechanic.

Be very careful not to scratch or in any other way damage the vibration-elements. Be sure to clean the vibration-elements with a soft brush only by gently brushing the vibration-elements.
If the water is polluted the water reservoir has to be emptied and cleaned.
Replace the partition of the water reservoir and the fan. Put the cover back on the water reservoir and put the clamps or bolts back in position.
The water reservoir will fill by it self when the appliance is switched on.

7. Guarantee

The Ultra Mist ST2 comes with a guarantee period of 12 months after date of purchase, on components and construction faults. The guarantee period will never extend the date of purchase plus 12 months. For the drop-ins the guarantee is limited to maximum 2000 hours and only then when reversed osmoses water has been applied of $\leq 50\mu\text{S/cm}$. Not covered by any guarantee is damage caused by operating and/or installation errors, or a change of the ambient.