

Condensed Moisture Airflow Visualizer

User Manual





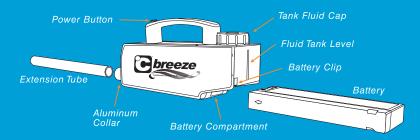
°C Breeze Condensed Moisture Airflow Visualization System

Thank you for choosing Degree Controls' °C Breeze Airflow Visualization system. The °C Breeze is a robust product ideal for tracing air movements in a wide range of laboratory and industrial environments. To ensure optimal performance of your unit, please follow the suggestions in this user manual.

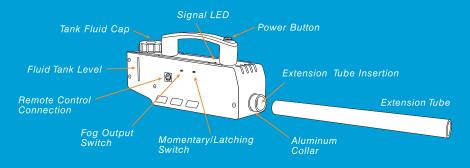
Important Notes & Warnings

- · Keep the unit upright.
- Always remove the battery or unplug the power adapter to your °C Breeze Instrument prior to filling the reservoir.
- Remove the battery or unplug the power adapter when not in use.
- Only use original equipment battery charger and do not overcharge the battery.
 Once charged, remove from charger and store.
- Do not fully discharge the lead acid battery to zero volts as this damages the battery permanently.
- Do not store battery in uncharged state.
- This machine is not water or splash proof, keep the unit dry, and disconnect if water or fog liquid gets inside the housing.
- Never leave the unit running unattended.
- Keep nozzle at least 20" (50 cm) away from contact while in operation, never aim the output nozzle directly at people.
- . The fog vapor at point of release is hot.
- Use in a well ventilated area and do not cover the vents on the front of the °C Breeze.
- Never aim the output nozzle at open flames, and keep output nozzle away from flammable materials.
- Do not exceed 60 minutes continuous use when using the optional dedicated power supply accessory.
- Always allow your °C Breeze to cool down before attempting to clean or service it.
- Do not expose the battery to excessive heat.
- Only use the supplied °C Breeze Fog Fluid.
- The °C Breeze fog fluid's recommended shelf life is 2 years before opening, and 6 months after opening.
- Always monitor the fluid level indicator to ensure there is sufficient liquid in the liquid tank.
- Operating this unit without Fog Fluid will cause damage to the pump and the heater.
- If your °C Breeze fails to work properly, discontinue use immediately. Drain all Fog Fluid from the tank, remove battery, pack the unit securely (preferably in the original packing material) and contact sales@degreeC.com for an RMA.
- Always drain Fog Fluid from tank before shipping or transporting this unit.
- Never drink Fog Fluid, and rinse skin or eyes when they come in contact with Fog Fluid.
 If it is ingested, call a doctor immediately.

°C Breeze



°C Breeze Rightside View



Unpacking & Inspection

Open the shipping carton, open the °C Breeze case and confirm all components are inside and intact. If any of the equipment is damaged or not working properly, contact sales@degreec.com immediately.

Your °C Breeze instrument contains:

- · Carrying case with keys
- °C Breeze Instrument
- Extension tube
- 12V rechargeable battery
- · Battery charger and international plugs
- 500 ml bottle of °C Breeze Fog Fluid
- °C Breeze user manual
- °C Breeze Quick Start Guide

Initial Setup

- Remove reservoir cap and fill the unit with °C Breeze Fog Fluid.
- · Replace reservoir cap and do not overtighten.
- Charge the battery for 8 hours by plugging the adapter onto the battery and into a grounded electrical outlet.
- The green LED on the charger should illuminate during charging.
- Subsequent charge time is 2-3 hours.
- Align the battery's electrical terminals with the receiving terminals inside the Cbreeze, and slide inside, making sure the battery clip latches in place.
- The charge will last approximately 10-15 minutes depending on fog quantity selected.





Operation

The °C Breeze operates with or without the extension tube and requires almost no warm-up time. The user can set the unit's two side-mounted toggle switches in order to adjust to an operational preference.

Momentary vs Latching Mode:

This toggle switch setting determines how the push button will operate. In Momentary Mode (\leftarrow), the fog flow will start when the button is pressed, and stop when the button is released. In Latching Mode (\rightarrow), the fog will flow when the button is pressed and released, and will keep running until the button is pressed a second time. Move the switch as indicated by the label on the °C Breeze.

High vs Low Flow Mode:

This toggle switch sets the fog fluid consumption rate, in order to maximize battery life between charges. In Low Flow Mode (←), the consumption rate is reduced by approximately 50%, and the runtime is extended 30%. In High Flow mode, the unit outputs the maximum fog volume possible.

Begin by pressing the button on the handle, and the green LED will turn on. Fog will be produced within 1 second. When fog is turned off, the green LED will flash for approximately 7 seconds while the unit shuts down.



Operation toggle switches

Battery

When the LED turns Red the battery needs to be charged. The °C Breeze will still be able to produce fog for short period of time after the red LED begins flashing. It is important to then remove and charge the battery; especially should the °C Breeze be stored. To remove the battery, push the battery retaining clip upwards, and pull out the battery out of the back of the °C Breeze.

Fog Dispersion

The machine can be operated at an angle that ensures the fog fluid in the bottle is drawn into the machine. In practice this means that, provided the reservoir is full, the unit can be used to generate fog $\pm 45^{\circ}$ from the horizontal plane. Before using the machine, make sure that the filler cap is tight, but not over tightened.

Fog Dispersion Accessories

Three additional nozzle assemblies are available for the fog visualization professional, design to enhance the delivery in a variety of ways.

FlowBulb, PN 51300AS003:

(i) Designed to absorb the fog momentum, and reduce the volume dramatically. This is useful in settings with very slow flow profiles, where the momentum of the fog as it exits the °C Breeze must be eliminated, and the volume of fog needs to be minimized for proper visualization.

MiniFlow, PN 51300AS004:

Designed to direct the fog through a very small orifice, which is useful in leakage testing and wind profiling.

PlanarFlow, PN: 51300AS005:

- Designed to cast a planar fog flow, useful for broadcasting the fog across a door or window frame, or for testing ante rooms, clean rooms and face areas of critical containment cabinets.
- Always clean the extension tube after use, and do not be concerned about condensation inside the nozzle during operation.
- If you experience low output, pump noise or no output at all, remove the battery immediately.
 Check fluid level and recharge the battery. When the liquid tank is full and the battery is charged, plug the battery in and press the button on the handle to test again.
- If the machine is still not working and you are unable to determine the cause of the problem, do not open the case.

There are no user serviceable parts inside. Contact sales@degreeC.com for support.





Dedicated Power Supply Accessory

When desired, the °C Breeze can be powered by an optional power adapter which plugs into a standard electrical outlet. The adapter connects to a dummy battery which plugs into the battery slot on the °C Breeze. This allows for extended operation of the °C Breeze of up to 60 continuous minutes.



Wireless Remote Control Accessory Operation

An optional Wireless Remote Control is available from Degree Controls, Inc. When using the Wireless Remote Control, always ensure the battery is fully charged, or use the dedicated power supply accessory with dummy battery. Always ensure the °C Breeze has sufficient fog fluid. Using a miniature screw driver, set the °C Breeze into Momentary mode before beginning to use the Wireless Remote Control accessory.

- Preparation:
 - Connect receiver to °C Breeze as shown above.
- To start fog generation:
 - Press the A button on the remote.
- To stop fog generation:

Press the B button on the remote. Fog will stop within 10 seconds. Remove the receiver from the °C Breeze when not in use.

Specifications

• Fog Output:

High Output: 2.8 m³ (100 ft³) per minute Low Output: 1.4 m³ (50 ft³) per minute

• Fluid Consumption:

High Output: 2mL (0.068 oz) per minute Low Output: 1mL (0.033 oz) per minute

• Fluid Tank Capacity: 110mL (3.7 oz)

• Battery (Lead-Acid): 12V DC/2.3Ah

• Optional battery (NiMH): 12V DC/2.4 Ah

• Power Consumption: 65-75 W

 Battery run- time (Lead-Acid / NiMH): High Output: 10 min / 20 min Low Output: 20 min / 40 min

Weight: 2.7 kg (95 oz)

• Dimensions: 227 mm x 66 mm x 81 mm (8.9 in x 2.6 in x 3.1 in)

Charger Input: 100-240V ~2A, 50/60 Hz

• Fog Fluid: Propylene Glycol

• Fog: Condensed Moisture Vapor

 Bottle Volume: 500 ml ~4 hours of continuous operation

· Agency Approvals: CE Compliant

This Product Uses Propylene Glycol

Use only Degree Controls, Inc. °C Breeze Fog Fluid in this device. Propylene Glycol is the main ingredient and can be purchased in many similar forms for a variety of applications, but only the °C Breeze Fog Fluid meets the purity and pharmaceutical grade quality appropriate for the °C Breeze Fogger. The use of other chemicals will invalidate the product warranty and may be dangerous to your health.

Propylene Glycol is an additive used in many consumer and pharmaceutical products including; lipstick, cosmetics, processed baked goods, fruit juices, animal feed and veterinarian products. It also creates the inhaled mist that is found in many e-cigarette devices. When propylene glycol is used in pharmaceutical applications, strict specifications for quality as laid out in the European Pharmacopoeia, have to be followed. This official document of the European Directorate for the Quality of Medicines (EDQM) is used in more than 37 countries in Europe. In the US, propylene glycol is listed as GRAS - Generally Recognized as Safe - for use in food and pharmaceuticals in the US-Pharmacopoeia (Ref21CFR), the official FDA (US Food & Drug Administration) document. It has been extensively studied and its toxicology has been summarized in a SIDS Initial Assessment Report (SIAR) with a recommendation for no additional study.

Derivatives of Propylene Glycol are also used in Automotive Antifreeze, Commercial Cooling Systems, and de-icing of planes in the Aerospace Industry. Be sure to use only Degree Controls, Inc. Fog Fluid in your °C Breeze device. Proper use of the °C Breeze Fog Fluid is safe and harmless to individuals. Refer to the °C Breeze User Manual and MSDS (Material Safety Data Sheet) included in your kit or download it at www.degreeC.com.





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About Us

DegreeC engineers airflow and delivers innovative airflow and thermal solutions for mission-critical applications. We manufacture sensors, alarms, embedded controllers and R&D tools for system performance testing, and control solutions that deliver precise air flow where and when it is needed most. For 20 years, industry leaders from a wide variety of markets turn to us for their airflow and thermal management needs explore the solutions we offer for your industry.



Visualization

The °C Breeze visualization system is used by the Certification industry for critical containment in laboratory, manufacturing, cleanroom, climate and comfort applications. Industrial hygienists, Certifying companies, OSHA accreditors, and Educational institutions around the world come to degreeC for our visualization products.



Airflow & Room Pressure Alarms

The Rooster line of airflow monitors provide airflow safety monitoring, with communication interfaces to products and buildings, and are used in laboratory and manufacturing environments. Chemical fume hood and biosafety cabinet OEM's around the world leverage degreeC for our controls and sensing expertise.



Rooster Alarm & Rooster Monitor100



Air velocity Sensors

Degree Controls' air velocity sensors are used around the world inside products where airflow is critical to function, safety and efficiency. Setting a new standard for design-in flexibility, all degreeC sensors are available in analog and digital outputs, and with configurable alarm points, averaging functions, and in many mechanical packaging styles.

