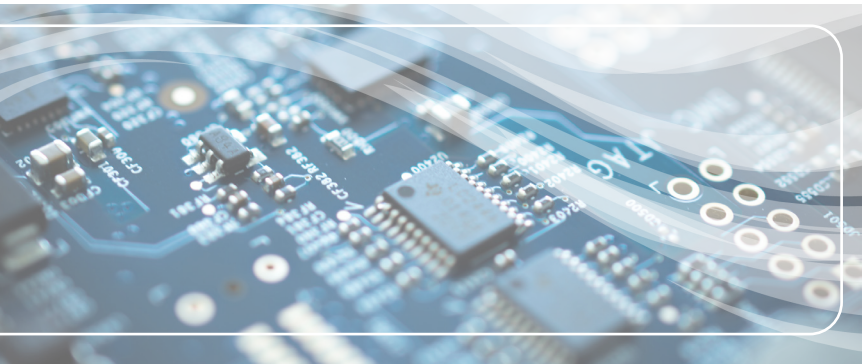


ELECTRONIC  
MANUFACTURING  
HUMIDIFICATION  
BUYER’S GUIDE



WHY HUMIDIFY ELECTRONIC MANUFACTURING FACILITIES?

With the advancements in technology, electronic manufactures face increasing challenges to producing high-quality products to stay competitive.

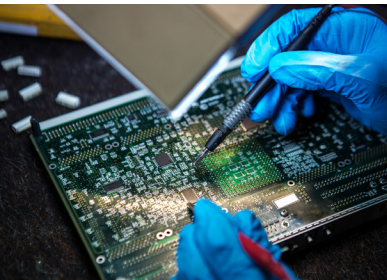
As components and circuit sizes become smaller and more intricate, processes are increasing in complexity — higher component density, multiple layers, delicate parts, and precise placements - while operating margins are shrinking. Maintaining the appropriate humidity level within the facility helps to decrease damage and stress to electronic components, helping to protect your reputation as an industry leader and improve ROI.

In a controlled environment where the relative humidity level is consistent manufacturers experience a reduction of electrostatic discharge (ESD), fewer brittle components, reduced ineffective soldering, and de-soldering occurrences, as well a safer environment for staff.

The use of relative humidity can be an additional layer of protection in ESD Protected Area (EPA) as humidity makes the air more conductive, helping absorb and more evenly distribute excess charges, minimizing static electricity, and protecting staff. While the build-up of electrostatic charge increases at low humidity, high humidity levels pose issues as well. When humidity levels are greater than 70 percent corrosion becomes an issue and has the potential to damage electronic components. Because of this, maintaining relative humidity levels between 30 and 70 percent is recommended.

ISSUES CAUSED BY UNCONTROLLED HUMIDITY LEVELS

- Potential damage to product
  - In an environment with too little humidity the potential of electrostatic discharge (ESD) increases which can damage product and harm staff.
  - With high humidity condensation occurs within the electrical components causing rust and corrosion.



ISSUES CAUSED BY LOW OR FLUCTUATING RELATIVE HUMIDITY

- Unhealthy environment for staff
  - Humidity affects the health and well-being of staff. High humidity creates an uncomfortable environment while a dry environment is created within low humidity which increases static electricity.
  - By controlling the relative humidity within a facility, electronic manufacturers can reduce the airborne transmission of viruses like SARS-CoV-2 and the seasonal flu.



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[www.dristeem.com](http://www.dristeem.com)  
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U.S. Headquarters:  
14949 Technology Drive  
Eden Prairie, MN 55344  
800-328-4447 or 952-949-2415  
952-229-3200 (fax)  
Email: [inquiries@dristeem.com](mailto:inquiries@dristeem.com)

European office:  
Grote Hellekensstraat 54 b  
B-3520 Zonhoven  
Belgium  
+3211823595  
Email: [dristeem-europe@dristeem.com](mailto:dristeem-europe@dristeem.com)

## WHY CHOOSE DRISTEEM HUMIDIFICATION SYSTEMS?

### COMMITTED TO QUALITY

DriSteem has been designing and building world-class humidification business for more than 50 years and is committed to making the best products in the HVAC industry.

DriSteem humidification systems are made to fit each unique application, whether it is ensuring the success of critical industrial processes, preserving fragile and valuable museum artifacts, or protecting the health and well-being of building occupants. DriSteem's mission is to support healthy environments – studies show that when room relative humidity (RH) drops below 40 percent, incidents of respiratory illness increase but by adding proper humidification, student and employee absenteeism can be significantly reduced.

DriSteem U.S. operations are ISO 9001:2015 certified and committed to providing high-quality products, efficient services, on time delivery, and innovative solutions.

### SUPPORT & RELIABILITY

DriSteem sales representatives are the industry experts in humidification systems, and are trained to recommend and specify the best solution for any application. They are willing to go the extra mile to make sure everything runs smoothly at start-up and for the life of the equipment.

DriSteem stands behind their products with a world-class Technical Support team available to troubleshoot any issues that may arise. They can also provide start-up assistance and offer field service visits.

### CASE STUDIES & RESEARCH

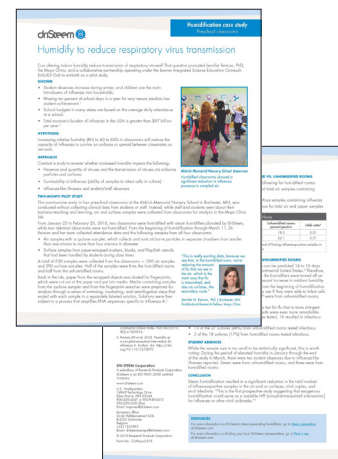
Support your business case with data – DriSteem is continually adding to our collection of white papers and case studies.

Recently, DriSteem partnered with the Mayo Clinic to determine whether low humidity levels during the dry winter months have an effect on the spread of flu virus in a classroom environment. As the study showed, the addition of steam humidification resulted in a significant reduction in the total number of influenza-positive samples in the air and on surfaces.

- See the full case study here: <https://dristeem.azureedge.net/public-documents/docs/default-source/azure-public/case-studies/mayo-clinic-humidification-case-study-0518.pdf?sfvrsn=2>
- And the supporting published study “Humidity as a non-pharmaceutical intervention for influenza A” here: <https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0204337>

Additional health care facilities case studies:

- Unsuitable Substitutions: Learning the Hard Way About Absorption <http://www.dristeem.com/humidity-university/case-studies/case-study-mercy-hospital>
- Ultra-sorb Improves Absorption and Reduces Operating and Maintenance Costs <http://www.dristeem.com/humidity-university/case-studies/case-study-ultra-sorb-improves-absorption>



## DRISTEEM SOLUTIONS

### XT SERIES ELECTRODE HUMIDIFIER

Good choice for single-room humidification. It can mount on a wall and disperse steam directly into a room such as a band or chorus practice space.

- Easy to maintain: No cleaning required. Simply replace the affordable steam cylinder when prompted by the controller display.
- Compact to fit in small spaces.



XT SERIES  
ELECTRODE HUMIDIFIER

### VAPORMIST® HUMIDIFIERS

Disperses steam humidification through ductwork with dispersion panels, or directly in the space.

- Full enclosure suitable for finished spaces
- Can be wall mounted



VAPORMIST HUMIDIFIER

### VAPORSTREAM® HUMIDIFIER

Disperses steam humidification through ductwork with dispersion panels, or directly in the space.

- Industrial-grade unit designed to meet the humidification demands of any building environment
- Mount options: Trapeze hanger, wall brackets, support legs
- Seismic certified option (OSHPD)



VAPORSTREAM HUMIDIFIER

### GTS® HUMIDIFIER LX SERIES

The LX Series is the only gas-fired humidifier that combines the highest efficiency on the market with ultra-low NOx in a single design.

- Condensing design for highest efficiency and PVC venting
- Ultra-low NOx certified to SCAQMD 1146.2 standards
- Smart drain technology adjusts drain intervals automatically based on water quality
- Universal water control for use with any water type, including RO/DI water
- Modulating output with minimum 5:1 turndown for accurate humidity control
- Outdoor and indoor models for application flexibility



GTS HUMIDIFIER LX SERIES

### STEAM DISPERSION

Depending on the application, steam dispersion options may include:

- Ultra-sorb® Model XV steam dispersion panel
- Ultra-sorb® Model LV/LH steam dispersion panel
- Ultra-sorb® Model MP steam dispersion panel
- Multiple-tube humidifier
- Space Distribution Unit (SDU)



STEAM DISPERSION OPTIONS