

ISSUES CAUSED BY LOW OR FLUCTUATING RELATIVE HUMIDITY

- Illness and Discomfort:
 - Dry indoor air has a negative impact on the overall health of incarcerated people and staff because it makes it easier for infections to spread.
 - There are real costs associated with health-related issues caused by dry air, including a higher occurrence of infections requiring increased medical attention for incarcerated people and higher absentee rates of staff.

SOURCES

1. “Covid-19’s Impact on People in Prison,” Equal Justice Initiative, August 2020, <https://eji.org/news/covid-19s-impact-on-people-in-prison/>

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CORRECTIONAL FACILITIES
HUMIDIFICATION
BUYER’S GUIDE



WHY HUMIDIFY CORRECTIONAL FACILITIES?

Even with preventive measures and mitigation strategies in place, correctional facilities face an extraordinary challenge protecting incarcerated people and staff from airborne viruses. Overcrowded facilities, close-contact settings, and poor ventilation create an ideal environment for the spread of viruses like SARS-CoV-2. Inmates are infected with the coronavirus at a rate more than five times higher than the national overall rate.¹ With the installment of a humidification system, correctional facilities can reduce the transmission, infectivity, and severity of COVID-19 and other viruses to better protect the inmates, staff and the community at large.

Humidification is a critical component of the HVAC system for reducing the spread of airborne illnesses. Dry air allows infectious particles, such as bacteria and viruses, to survive longer in the air and on surfaces which increases cold or flu transmission between people. Keeping the relative humidity (RH) levels within a range of 40 to 60 percent decreases the spread of viruses by shortening the amount of time that particles are airborne and improves the overall health of staff and incarcerated people.

Correctional facilities are navigating seemingly endless challenges – from enforcing “Stay With Unit” plans that prevent inmates from intermingling with others in different units to preemptive releases to ensuring an adequate supply of personal protective equipment (PPE) is available. Humidification is a critical component of the HVAC system for the protection of staff, inmates, visitors, and the surrounding community.

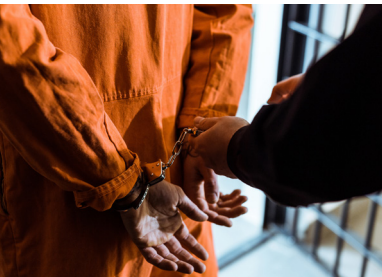
CHALLENGES DURING THE COVID-19 PANDEMIC:

- COVID-19 behaves as an aerosol virus, comparable to SARS, MERS and H1N1, and is spread through breathing, speaking, coughing, and sneezing which causes it to transmit more effectively to those in close quarters.
- COVID-19 has been reported even when adhering to the 6-foot social distancing recommendation which is nearly impossible for inmates and staff to abide by.
- Lack of or limited on-site medical support means that the staff can be quickly overwhelmed by COVID-19 cases making it necessary to transport inmates to medical facilities or another correctional facility to receive medical attention.
- Limited space within correctional facilities creates challenges to properly isolate individuals with laboratory-confirmed COVID-19, potentially infecting others.
- Some public health experts predict that, like the flu, the COVID-19 coronavirus will return each winter.



HUMIDITY CAN LESSEN THE SPREAD OF COVID-19:

- Humidity weighs down viruses and shortens the travel distance, rendering them inactive
 - Low ambient humidity reduces droplet size which allows for a prolonged airborne period which in turn allows for further travel distance - the low weight due to loss of water prevents the virus from being ‘knocked down’ and then cleaned up with usual surface cleaning/hygiene.
 - Extended airborne time may be as much as 36 to 72 hours and allows for significant travel of the virus. In addition, low humidity and low ‘droplet weight’ may allow viruses to become airborne again after settling.
 - The addition of humidity to an indoor space can render viruses inactive and less infectious quickly, ultimately reducing the spread of viruses that cause respiratory illnesses.



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

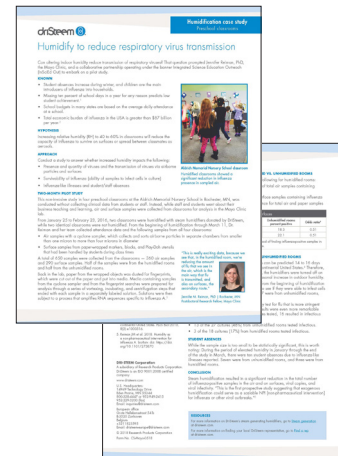
Support your business case with data – DriSteem is continually adding to our collection of white papers and case studies.

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