

## Evaporative Humidifier/Cooler



**MH**  
SERIES

 **nortec**  
humidity.com





data centers  
laboratories  
manufacturing  
institutional  
research facilities  
commercial  
automotive

## **The Nortec MH humidifier is the most cost-effective humidifier/cooler available today.**

Productivity and quality of life are directly affected by the indoor environment. People work better and feel better in favorable surroundings. So do products and machines! They all respond in various ways to changes in air quality, temperature and humidity. All three elements must be just right to maximize performance and reliability, both in humans and equipment. Correct humidity is critical, since too much humidity can be as destructive as too little.

Nortec is a world leader in state-of-the-art humidification technology. Our focus is concentrated exclusively on designing and building better humidification systems. Every Nortec MH model has been engineered to meet the highest standards of cost-effective efficient performance. They are designed for ease of installation, adaptability, simplicity of operation, ease of maintenance and servicing, energy efficiency, cleanliness and long-term reliability.

Nortec MH evaporative humidifiers offer complete application flexibility to systems engineers, contractors and customers. They can be integrated into central air handling units or ventilation ducts.

With its stingy energy consumption the MH Series is a perfect compliment towards Green/LEED building design.

- ▶ Complete packaged system includes all components required for operation
- ▶ Evaporation process provides both humidity and sensible cooling simultaneously
- ▶ Efficient polyester media with industry leading fire rating
- ▶ Durable stainless steel construction
- ▶ Flow through and recirculation models available to meet the needs of any project

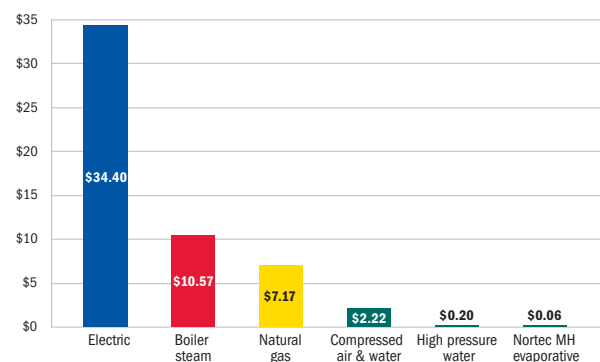


### Economy

The V-Profile polyester media improves the evaporation process by providing exceptionally high performance and efficiency. The large surface of the evaporation media results in a high evaporation rate with low energy consumption. The MH Series offers humidification efficiencies of up to 95%. The MH Series is suitable for high duty applications and when applying the REflow model, the system captures the non-evaporated water and returns it to the water circulation system for reuse. The increased water efficiency has a very quick payback for building owners.

Saving water and energy as well as reducing operating costs is an important challenge in today's world. The Nortec MH Series not only humidifies but can cool the air by up to 22°F (12.5°C) at high humidification efficiency and at a low cost.

**Energy Cost for 1000 lbs./hr based on technology**



### V-Profile Media

The unique V-Profile polyester media is the core of the MH series. As dry air passes through the wetted media, it evaporates water and picks up moisture. Since the energy required for evaporation comes from the air itself, the air downstream of the humidifier is both cooler and more humid. The V-Profile of the media intensifies this process by directing air through formed channels in the media, greatly increasing the available surface for evaporation. Polyester media is free of harmful glass fibers and the ideal material for evaporative media.

- ▶ Hygroscopic Coating
- ▶ High Velocity Performance
- ▶ Low Pressure Losses
- ▶ UL 900 Class 1 Rating (USA)
- ▶ ULC-S111-07 Class 2 Rating (Canada)
- ▶ Suitable for all water types including potable, RO and DI
- ▶ No Droplets, Free of Aerosols



### Total Control (TC) System

The TC system offers the most complete control of any evaporative humidifier/cooler on the market today! The advanced microprocessor controller controls the air humidity, smart water management featuring UV treatment and conductivity monitoring, plus advanced hygiene cycles and staging operations.

- ▶ Smart Water Management
- ▶ Advanced Hygiene Control
- ▶ Modbus interface standard
- ▶ Intuitive menu system
- ▶ Simple operation
- ▶ Available BACnet, LonWorks, N2 gateways
- ▶ NRTL-C Approved



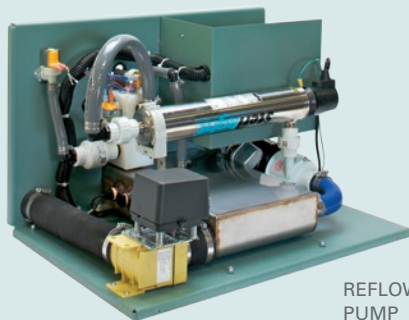


## Models

The MH Series is available in two configurations:

The **FLOW** model directs excess water to the drain and is excellent for locations with hard water.

The highly efficient **REflow** model captures and reuses excess water in the humidifier. It features a unique hydraulic module that contains the recirculation pump, water reservoir, sensors and an optional UV water treatment package. It is installed external to the plenum, keeping these components more accessible for servicing and removing the need to run wires into the plenum. This allows for better fire ratings on the humidifier since only media and metal are placed into the plenum.



REFLOW HYDRAULIC PUMP

| Features Comparison                                       | MHB Flow | MHTC Flow | MHTC REflow |
|---|----------|-----------|-------------|
| Operates on DI/RO, Potable, Soften Water                  | ●        | ●         | ●           |
| Recirculation Water System                                |          |           | ●           |
| Flow through Water System                                 | ●        | ●         |             |
| Total Control (TC) System with Full Backlit Display       |          | ●         | ●           |
| Basic Control Panel                                       | ●        |           |             |
| Smart Water Management System                             |          |           | ●           |
| Adjustable Flush Cycles                                   |          | ●         | ●           |
| Pre-cleaning Sequence                                     |          | ●         | ●           |
| Smart Media Box Drying                                    | ●        | ●         | ●           |
| Modbus protocol standard                                  |          | ●         | ●           |
| Programmable Maintenance Settings                         |          | ●         | ●           |
| Step-Control 1, 2 or 3 Stage                              | ●        | ●         | ●           |
| Multi-Unit Networking                                     |          | ●         | ●           |
| Display and Control of RH                                 |          | ●         | ●           |
| Multiple Control Signal Acceptance                        | ●        | ●         | ●           |
| Operation History Log                                     |          | ●         | ●           |
| Remote Fault Indication                                   |          | ●         | ●           |
| Stainless Steel Reservoir                                 | ●        | ●         | ●           |
| Stainless Side frames                                     | ●        | ●         | ●           |
| V-Profile Polyester Media                                 | ●        | ●         | ●           |
| Mist Eliminator V-Profile Polyester Media (above 750 fpm) | ●        | ●         | ●           |
| 2 Year Limited Warranty *Excluding Media                  | ●        | ●         | ●           |
| Conductivity Smart Monitoring                             |          |           | ○           |
| Ultra Violet Water Treatment                              | ○        | ○         | ●           |
| Nortec LINKS XPS BMS gateways – BACnet, LonTalk, N2       |          | ○         | ○           |

● = standard ○ = optional

## Ultra Violet Sterilization

For applications where higher hygienic requirements must be met an UV water treatment package is available for all models. The ultra violet radiation from the discharge lamp sterilizes the water and controls potential microbial growth. This option is standard on REflow models.

## Conductivity Monitoring

Conductivity monitoring will continuously check the Total Dissolved Solid (TDS) content inside the water tank. The adjustable conductivity sensor then initiates drains accordingly. This feature is available for the REflow models only.

## Controls

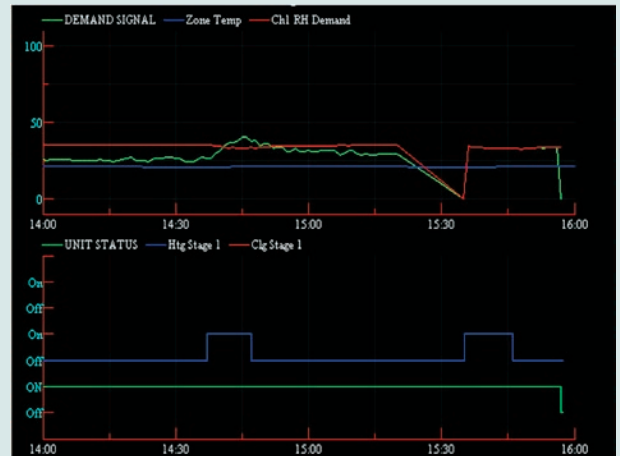
Nortec offers a wide range of digital controls when selecting the MH product. The total controller allows easy integration into any local building management system with it's host protocol modbus. See Nortec LINKS XPS for other communication options.

## options




NORTEC  
LINKS

**Nortec LINKS XPS** offers monitoring and control allowing humidifier(s) to communicate to your Building Management System (BMS). The controller is factory installed and is located internally to the humidifier. Simply specify at time of order what operating protocol you are using – BACnet IP, BACnet MSTP, LonWorks or Johnson N2.



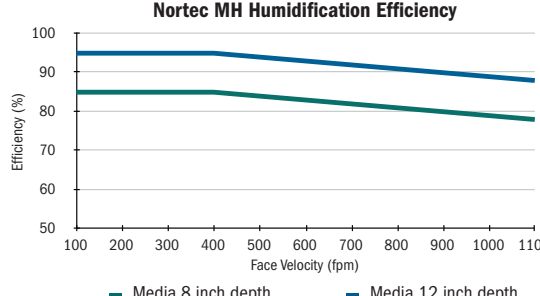


| SPECIFICATION                                       |  |
|---|--|
| Media Box Efficiency max.                           | 85% and 95%  |
| Maximum Face Velocity over Media                    | 750 fpm (3.8 m/s)                                  |
| Maximum Face Velocity with Integral Mist Eliminator | 1080 fpm (5.5 m/s)                                 |
| Pressure Drop at 500 fpm                            | 0.25 IWC (62 Pa)                                   |
| Fire Protection Rating                              | UL 900 Class I (USA), ULC-S111-07 Class 2 (Canada) |
| Power supply pump                                   | 120 VAC/1, 50 and 60 Hz                            |
| Power consumption                                   | 0.20 - 0.70 kw                                     |
| Water supply pressure                               | 30 - 145 psi                                       |
| Unit Height   | 26" (650mm) - 130" (3300mm)                        |
| Unit Width  | 24" (610mm) - 130" (3300mm)                        |
| Unit Depth  | 30" (575mm)  |
| Standards and guidelines                            | NRTL Approval, UL-900, ULC-S111-07                 |

| INSTALLATION FEATURES & REQUIREMENTS                             |   |
|--|---|
| Pre-assembled hydraulic package for quick installation           |  |
| Only three connections to be made – water, drain and electrical  |   |
| Powered by a 120 V 1phase 60Hz connection                        |   |
| Stainless steel water tank and lateral supports                  |   |
| Tool free media box replacement                                  |   |
| External hydraulic package for easy installation (REflow models) |   |

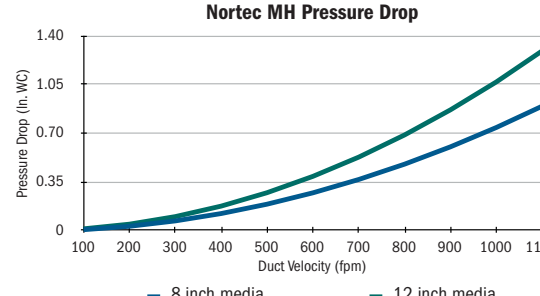
# PERFORMANCE

## Nortec MH Humidification Efficiency



| Face Velocity (fpm) | Media 8 inch depth (%) | Media 12 inch depth (%) |
|---------------------|------------------------|-------------------------|
| 100                 | 85                     | 90                      |
| 200                 | 85                     | 90                      |
| 300                 | 85                     | 90                      |
| 400                 | 85                     | 90                      |
| 500                 | 84                     | 89                      |
| 600                 | 83                     | 88                      |
| 700                 | 82                     | 87                      |
| 800                 | 81                     | 86                      |
| 900                 | 80                     | 85                      |
| 1000                | 79                     | 84                      |
| 1100                | 78                     | 83                      |

## Nortec MH Pressure Drop



| Duct Velocity (fpm) | 8 inch media (in. WC) | 12 inch media (in. WC) |
|---------------------|-----------------------|------------------------|
| 100                 | 0.05                  | 0.05                   |
| 200                 | 0.10                  | 0.10                   |
| 300                 | 0.15                  | 0.15                   |
| 400                 | 0.20                  | 0.20                   |
| 500                 | 0.25                  | 0.30                   |
| 600                 | 0.30                  | 0.40                   |
| 700                 | 0.35                  | 0.50                   |
| 800                 | 0.40                  | 0.60                   |
| 900                 | 0.45                  | 0.70                   |
| 1000                | 0.50                  | 0.80                   |
| 1100                | 0.55                  | 0.90                   |



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