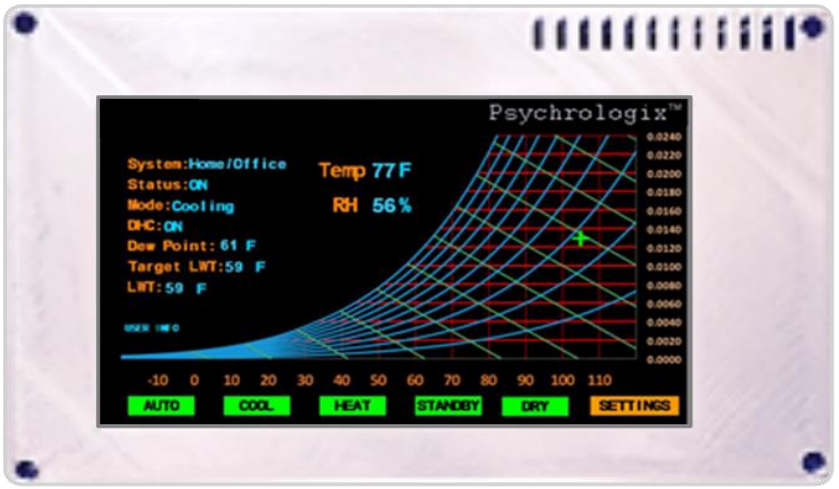
OMNI AIR

Precision Humidity Control
Mold Remediation

Psychrologix™ Advanced Chiller Controller
Programmable Chiller Automation w/ DHC (Dynamic Humidity Control) Psychrometric Controller

The Psychrologix™ chiller controller is ideal for homes, small business, or server-room cooling applications where tight humidity control and increased efficiency is required. The controller manages humidity, efficiency optimization, alarms, automatic switchover from cooling to heating, summer and winter vacation modes, and more. Controls up to three chillers either in lead-lag or combined as a single larger chiller.



Psychrologix™ Psychrometric Controller with DHC

Chiltrix small air-cooled chillers with Psychrologix™ control use a unique psychrometric controls approach coupled with variable speed compressors, variable speed pumps, variable speed fans, etc. The Chiltrix chillers match their capacity to the load so precisely that often buffer tanks are not needed. Not only is capacity matched in real time, but the parameters are continuously adjusted in response to conditions. For example, when more dehumidification is needed, the Psychrologix™ DHC controller lowers the indoor unit coil temperature to remove more humidity. When humidity is under control, the system raises the coil temperature to a more energy efficient temperature that still provides the needed cooling, but does not remove as much humidity, or may at times remove no humidity at all if humidity is already low enough.

NO MOLD OR BACTERIA — **Humidity Control**

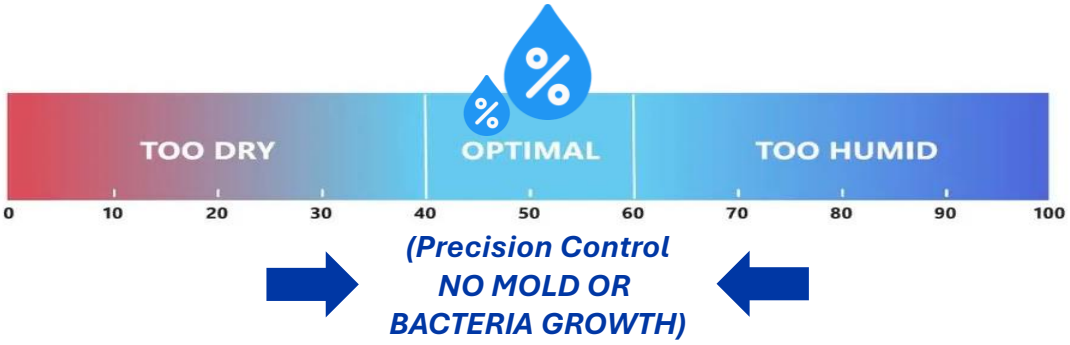
YEAR-ROUND COMFORT — **Temperature Control**

MAXIMIZING SAVINGS — **Efficiency Control**

Humidity removal (dehumidification, or latent heat removal) is very energy intensive and consumes a large part of the total energy used by an air conditioner. When needed, dehumidification is a good thing, and the Chiltrix chillers do an outstanding job of humidity removal. Chiltrix chillers with psychrometric controls can also automatically perform hyper-dehumidification by increasing humidity removal to levels that surpass those of a normal chiller or air conditioner, if needed, to deal with extra high humidity.

Advanced Dehumidification and Cooling

Humidity does not pass through walls like heat, it requires an air flow from a more humid area, like for example, a door opening to the outside on a humid day, or an internal source such as a steamy hot shower or people exercising, etc. Once indoor humidity is under control and within the user-defined range, humidity should remain low for extended periods without additional dehumidification unless additional humidity is introduced into the space. During periods when humidity is in range, the Psychrologix™ DHC controller will automatically adjust the chiller parameters to provide thermostat cooling, but not provide dehumidification. Turning off dehumidification saves a very large amount of energy when conditions allow.



Simplified Efficiency & Humidity Example:

The CX34 IPLV EER, at the industry standard chiller loop temperature of 44F, is around EER 22, exceptionally high when compared to standard systems. However, when humidity is under the set limit, there is no need to operate the loop at 44F when at 55F, thermostat temperature settings can still be maintained, and average efficiency rises to ~EER 30 or higher. So, when indoor humidity is under the user-defined limit, the Psychrologix™ controller allows the system to run at a more efficient temperature. In some cases, the loop may be adjusted as high as 62F producing average EER as high as EER 34. And likewise, if humidity is particularly high, the system loop may be dropped as low as 40F to perform hyper-dehumidification. In this manner, both system efficiency and humidity are dynamically controlled.

IPLV: What it is and why it's important

Bottom Line - The Chiltrix chiller is the most energy efficient heating and cooling option you will find, with the highest IPLV rating in the market, even without the Psychrologix™/DHC. But with DHC running, efficiency can at times be more than 47% higher than the IPLV rating.
Note - the Psychrologix™ controller is not a thermostat - it is a programmable psychrometric chiller controller. Thermostat settings are still made in the usual way, either set individually at each room fan coil unit, or in the case of a ducted system, by a standard central thermostat.