

# CARSON SOLUTIONS™

*We are passionate about improving the health and wellbeing of students*

## ABOUT QLCI, DESIGNED BY TROX®

With the independent testing of their QLCI, Carson Solutions is the ONLY manufacturer delivering proven year-round displacement induction ventilation.

With displacement induction ventilation, supply air is introduced to the classroom low to the floor. When air contacts students it rises and delivers fresh air directly to the breathing areas; as the air continues upward expelled contaminants are exhausted up and away from occupants.

Unlike traditional mixed air systems, displacement induction ventilation helps mitigate the risk of shared occupant contaminants.

School districts can further increase classroom IAQ with an optional onboard bi-polar ionization generator integrated into the QLCI housing.

- Displacement induction ventilation enhances the removal of space respiratory contaminants
- Low noise levels conform to ANSI Standard S12.60
- Allow the supply of 100% outside air at (or near) the minimum ventilation rate for the classroom
- Minimize DOAS unit sizing and associated ductwork
- Easy installation and operation
- Rugged cabinet design
- Energy efficient operation
- Low maintenance cost with no moving parts
- Ideal for school retrofit applications and new builds

### LEARN MORE:

[carsonsolutions.com](https://carsonsolutions.com)

## PROVEN IMPROVED INDOOR AIR QUALITY

In 2020, Purdue University's research validated the QLCI delivers stratified room conditions in both cooling and heating modes.

## THERMAL COMFORT

The combination of low outlet velocity and moderate supply temperatures delivers improved thermal comfort. Unlike traditional systems there's no noticeable air drafts or wide temperature swings recognized by occupants.

## LOW NOISE LEVELS

With no moving parts within the QLCI, operational sound levels confirm to ANSI 12.60 standards, teachers don't have to talk over noisy classroom equipment!



## BI-POLAR IONIZATION

Improve your IAQ with Carson Solutions patent-pending optional bi-polar ionization (BPI) within the QLCI. The strategic mounting of BPI mechanism within the QLCI provides ions directly into the space.



## HUNDREDS of INSTALLATIONS

The QLCI, designed by TROX, has been available in the U.S. for decades! Carson Solutions is proud to have positively impacted over 1 million students a year through successful QLCI operation.



## CUSTOMIZED CONFIGURATIONS

Pick the room configuration that meets your needs with the flexibility and customization capabilities. Carson Solutions offers a range of bookshelves and organizers to ensure the QLCI integrates into the classroom.

### SOUTH EDUCATION CENTER - Richfield, MN

### PROJECT HIGHLIGHT

One of the most important pieces of equipment in the classrooms at South Education Center are the floor mounted displacement induction ventilation units. These diffusers utilize fresh OA from the DOAS units which induces room air across the hydronic coil and delivers low velocity supply air to the space via a method known as thermal displacement ventilation. This form of air delivery reduces the amount of minimum OA required to the space by increasing the ventilation effectiveness (ASHRAE 62.1) by nearly 50%. This reduction in minimum required OA greatly reduces the cooling and heating energy required to serve the space. By using water in the zone/classroom to condition the air rather than taking the air back to a central station AHU, the amount of heating and cooling required is also greatly reduced. Displacement ventilation also provides fresh clean air directly to the occupied zone, by carrying the contaminants off-gassed from people and objects up to the unoccupied space. Once in the unoccupied space, those contaminants are directly exhausted from the zone.

QLCI displacement induction ventilation diffusers possess a combination cooling and heating coil to condition, and heat or cool the room air in that zone. This provides excellent, independent temperature control of each zone. In addition, there are no moving parts or filters in the unit, which greatly reduces maintenance requirements and costs. QLCI units provide the quietest air delivery method available. With no moving parts or fans placed in the classrooms, they are designed for quiet operation that meets the critical ANSI 12.60 standards (35 dba). These units provide a space with fresh, clean air, low CO<sub>2</sub> levels, and replace traditional noisy mechanical equipment with a quiet and low maintenance alternative. Such benefits result in healthier, distraction free learning environment.



The QLCI provided a single product that is under the control of the mechanical contractor while delivering an effective displacement ventilation solution.

- Paul Dvorak PE, LEED AP,  
Design Engineer

