

COMFORT SOLUTIONS FOR K-12 SCHOOLS



ENERGY-INTELLIGENT™ HEATING AND COOLING SYSTEMS

1.15



COMPREHENSIVE
COMFORT SOLUTIONS
FOR
K-12 SCHOOLS



A+

LARGEST
MANUFACTURER 
OF HVAC PRODUCTS IN THE WORLD

 **FOUNDED**
1 9 2 4

OVER 9,000 DAIKIN VRV SYSTEMS
 **OPERATING IN**
K-12 SCHOOLS
THROUGHOUT NORTH AMERICA

RESEARCH 
DEVELOPMENT
OVER \$300 MILLION

#1 RANKING IN
GLOBAL AIR
CONDITIONING SALES

Why Schools Choose Daikin

A History of Indoor Comfort Solutions for Schools

Becoming a global leader in any industry takes more than just time. For over 90 years, Daikin has shown that it takes industry-leading product innovation and a commitment to excellence in order to climb to the top. This commitment led Daikin to develop the first Variable Refrigerant Volume (VRV) system in 1982 and has been used in the education community since the 1990s.

Daikin's 3 Core Technologies

Daikin is an industry-leading, heating, ventilation and air conditioning (HVAC) technology company. We develop state-of-the-art technology that provides indoor comfort solutions for our customers. We do this by focusing on three core technologies. Our refrigerant control technology provides an efficient and effective way to transport heat. Daikin inverter technology allows us to maximize energy efficiency and our heat pump technology provides an effective method for moving refrigerant.

Refrigerant Control

Efficient heat transport



Inverter

Contributes to greater energy savings and comfort

Heat Pump

Absorbs or removes heat from the air

Lessons Learned: Daikin's Development of VRV Systems

Recognizing the challenges of chiller systems and other legacy HVAC technology traditionally used in education venues, Daikin pioneered to offer a high grade solution regarding flexibility, control, performance and efficiency. These attributes dovetail with the demands of K-12 schools well. Consisting of multiple, indoor, low-operating-sound fan-coil units connected to one outdoor condensing unit with a single refrigerant piping circuit and simple daisy-chain control wiring, our VRV systems control the amount of refrigerant directed to each indoor unit based on its individual demand for cooling or heat. The result is improved energy-efficiency compared to older, one-size-fits-all HVAC systems, greater temperature control in zones or classrooms independent of one another, and more unobtrusive operation.



Research & Development



Manufacturing



Total School Solutions



Classrooms



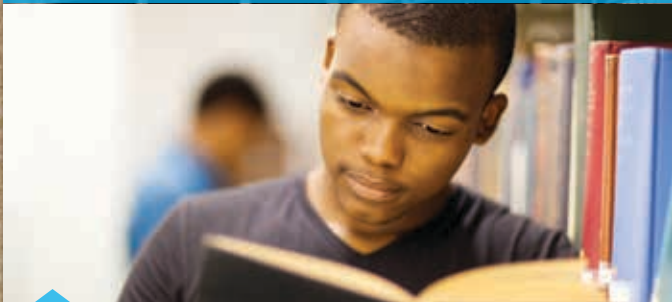
Common Areas



Administrative Offices



Auditoriums



Libraries

Experience, Knowledge and Innovation

At Daikin, we are committed to helping educational facilities create and maintain a quiet, comfortable environment that is conducive to learning. Working closely with school administrators, boards of education, engineers, architects and school patrons, it's clear to us that a setting free of indoor climate concerns and noise distractions is a key component of an ideal K-12 school experience. These insights along with our philosophy of continual improvement push us to enhance our products and processes, as well as strengthen our relationships within the scholastic community. In short, we understand what is required to be successful in the K-12 school market.

Daikin Comprehensive and Optimal Solution

As a company, we pride ourselves on our commitment to excellence in schools. To us that means a total comfort solution from reliable, efficient equipment to effective and intuitive controls to the quietness of our products throughout a campus environment.

Daikin's Energy-Intelligent™ Heating and Cooling Systems are designed to provide a flexible, scalable, total solution for HVAC in schools. We are dedicated to supporting our customers at every phase of the project to ensure that the highest quality and most cost-effective solutions are implemented. From project conception throughout the life cycle of an HVAC system, Daikin provides world-class products and support—a single-source for your HVAC requirements.

"There are times of the year where we have a high heat load on the inside of the building which requires air conditioning while other spaces need heating. The heat recovery technology addresses this situation and let us do both simultaneously."

ROBERT FRICK
Image Engineering

Comfort Solutions for: Principals, Teachers and Students

“When the projector fan is louder than the AC unit, you know you are doing something right.”

MIKE STACY
Principal

Not Too Hot or Too Cool for School

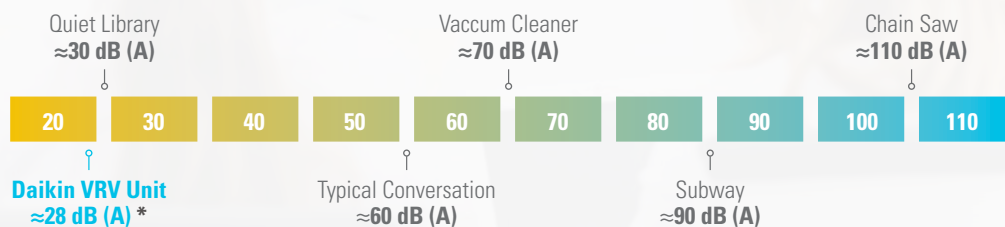
Daikin Variable Refrigerant Volume (VRV) systems help maintain constant, optimal room temperatures and avoid indoor climate variations that can disturb a learning-conducive atmosphere. Our VRV technology allows for easy, independent temperature control in each classroom or common area. This simple, occupant-controlled functionality with intuitive zone controllers helps to answer an age-old comfort complaint from teachers and students alike. Further, integrated system sensors in each classroom make the system automatically adjust to compensate for increased or decreased class size, while maintaining the desired comfort level.

Whisper-Quiet Operation

Even librarians can approve of the low operating sound produced by Daikin VRV systems’ indoor fan coil units. No more loud, disruptive noises when the HVAC system cycles on or off. In turn, there’s one less distraction to adversely impact learning behavior and work productivity.

Daikin systems help ensure that teachers and students experience the highest possible levels of indoor comfort.

1. Simple, intuitive controls.
2. Discrete and quiet indoor unit has sound levels as low as ≈ 28 dB(A), lower than the average noise level in a library.
3. Occupancy sensors along with variable setback capabilities ensure enhanced levels of comfort and energy efficient operation.



* Based on FXFQ24TVJU operating on low fan speed



Comfort Solutions for: Superintendent and Finance Department

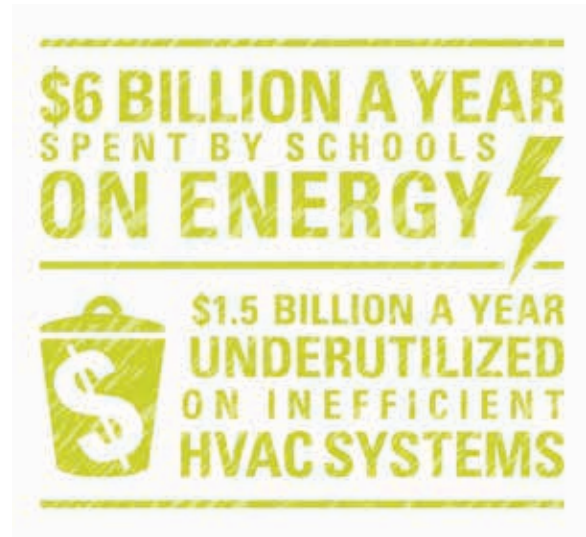
Energy-Efficient VRV Systems Deliver an Excellent ROI

Featuring the ability to vary capacity and to simultaneously heat and cool, Daikin Variable Refrigerant Volume (VRV) systems can reduce energy consumption by as much as 63% compared to conventional HVAC systems. A lower total cost of ownership realized through reduced maintenance, improved management of fixed costs and utility expenses, also maximizes your return on investment.

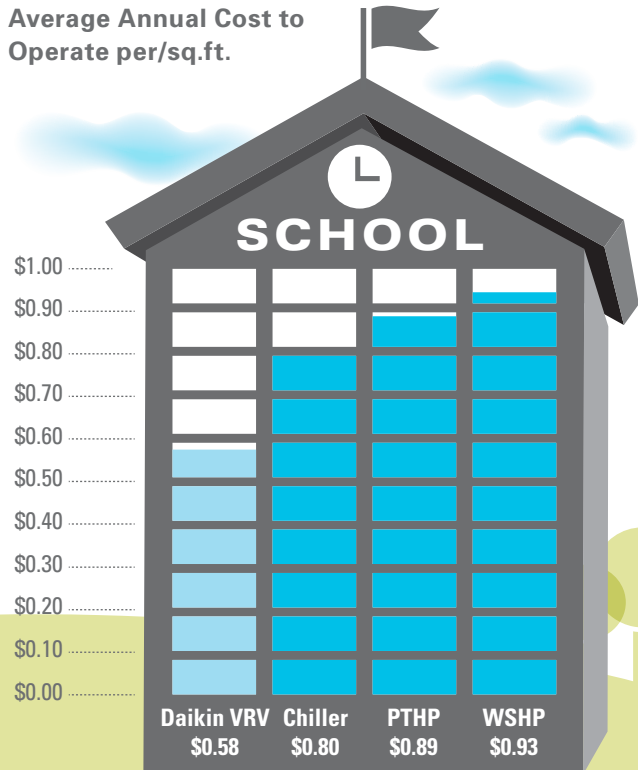
With one of the highest efficiency ratings in the industry, a Daikin VRV system provides a significant advantage when Leadership in Energy and Environmental Design (LEED) points and energy-related tax credits or subsidies are a priority to the project.

Installation Advantages

Ideal for complete installation or partial-system retrofitting, Daikin VRV systems' modular design facilitates expedited installation time frames that fit within restricted school schedules. Savings may also be realized in the reduction of electrical service requirements. What's more, installation costs for integrated equipment and controls meet the typical \$200 per-square-foot total construction cost benchmarks for newly built K-12 school infrastructure.



Average Annual Cost to Operate per/sq.ft.



Comfort Solutions for: Superintendent and Finance Department

**COMFORTABLE
LIMITED WARRANTY*
PROTECTION**

Purchase Peace-of-Mind

An industry-leading, factory-standard 10-Year Limited Warranty* on all of our VRV equipment parts demonstrates Daikin's commitment to schools and our confidence in our equipment. This warranty is fully supported by a market-leading replacement parts operation plant in Houston, Texas.



*Complete warranty details available from your local Daikin manufacturer's representative or distributor or online at www.daikincomfort.com.



"Given the physical and fiscal restraints of the project, our team determined that a VRV system in conjunction with a dedicated ventilation system represented the best life cycle choice."

JEFF LOWE
Principal with Facility Solution Group



Comfort Solutions for: Facility Directors

Flexibility and Efficiency by Design

A Daikin VRV system is a highly reliable and long-service-life HVAC solution for K-12 schools. In contrast to conventional systems, its variable-speed inverter compressors allow it to operate at maximum efficiency with a minimal use of power. Our VRV systems may be configured as a heat pump that heats or cools your facility or as a heat recovery unit to simultaneously heat and cool different zones. Its quiet, indoor fan-coil units evaluate individual room occupancy, engage temperature setback and can even clean the filters on a daily basis.

Other VRV system features that impact its usability include centralized management and monitoring of individual classrooms and entire campuses. Our VRV system may be integrated to function with an existing Building Management System or use Daikin's proprietary controls. It's easy to set routine and custom maintenance schedules that do not require specialized maintenance staff, and an advanced error notification and troubleshooting system continually monitors system performance.

For New Builds or Retrofit Projects – Less Is More.

Modular in design and application, Daikin VRV systems are an ideal and affordable option for new construction jobs as well as to adjunct or update an existing HVAC system. Not only boasting a smaller footprint and a lower structural load requirement than conventional HVAC systems, a VRV system even allows for the reduction or elimination of ductwork, as well as related system components like air-distribution fans and water pumps.

World-Class Support Team

Our team of expert associates have collaborated on thousands of projects in K-12 schools and understand the inherent challenges. Likewise, our support team of trained application engineers is ready to assist you with any questions you may have.

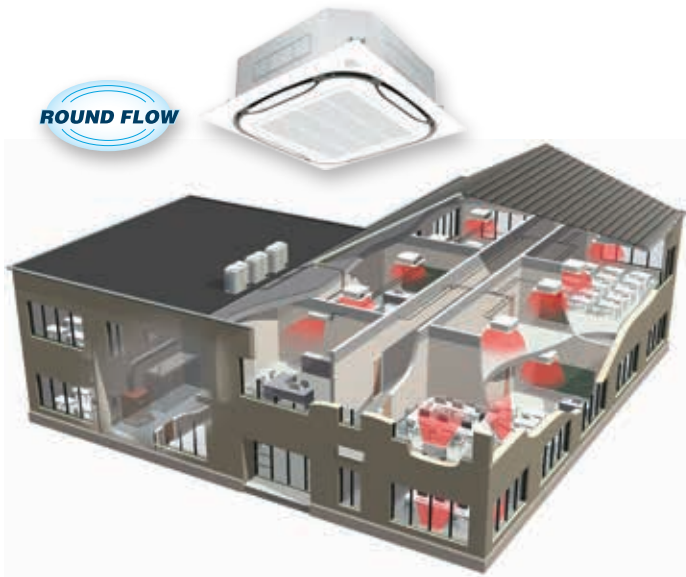


“The energy efficiency of this VRV system, from our point of view, is just phenomenal.”

THOMAS MANGOGNA
Facility Director, Hazelwood School District
Florissant, MO



Classroom Solutions Round Flow Sensing Cassette



A Classroom Solution with Maximum Performance and Minimum Maintenance

The Daikin Round Flow cassette is ideal for open plan applications such as classrooms and offices where variances in temperature and airflow can cause discomfort. With 23 configurable airflow distribution patterns, it can also be effective in smaller, more intricate spaces.

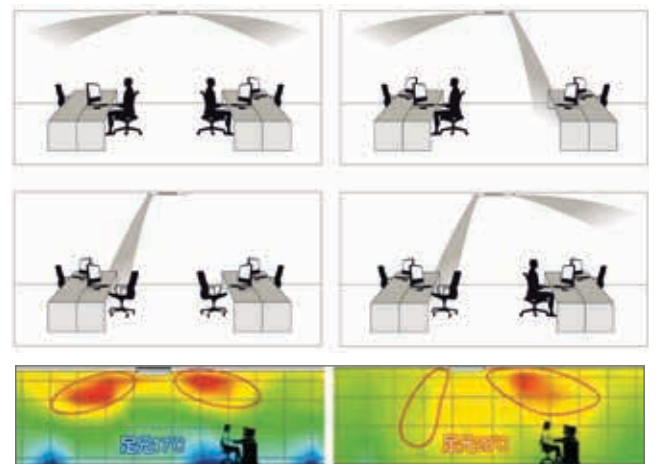
Optimized Comfort



360° Airflow Design
reduces hot and cold spots



Integrated Presence and Floor Sensors

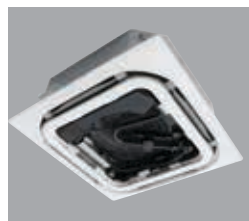
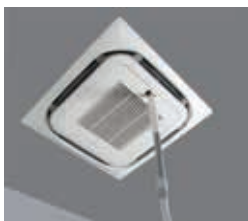


Prevent cold/hot drafts where areas are occupied. Maximize uniform floor to ceiling temperatures and enable temperature setback when zones become unoccupied.

Maintenance Friendly

Self-Cleaning Filter Panel (optional)

The Daikin cassette unit has an optional self-cleaning filter mechanism to clean the filters daily and prevent increased energy consumption caused by filter loading. The mechanism comes complete with a vacuum cleaner connection to allow for periodical emptying of the integrated dust collection box.



"It's almost as if we'd built a new building. It's fantastic!"

MAUREEN CLANCY-MAY
Bayless High School
Superintendent

Controls and Monitoring Solutions

Controls

Simple To Use Intuitive Zone Control

Daikin provides scalable options for room control that are incredibly easy to use, yet powerful in terms of administrative oversight and assignment of individual zone control privileges. Our VRV systems can be seamlessly integrated with third-party or stand-alone BMS systems, such as BACnet™ and LonWorks™, to monitor all of your mechanical equipment.



Comprehensive Control for Building or Campus



The Daikin iTouch Manager provides facility managers a central control platform with simple display, easy programming and Internet accessibility. With four different screen views, including a floor plan layout, the iTM controller gives you instant access to the information you need.

Remote Monitoring

Peace-of-Mind Monitoring

Performance monitoring with D-Net delivers a 24/7/365 remote monitoring service that optimizes system performance. D-Net uses system and weather data to ensure that your VRV system is operating efficiently and will anticipate and warn of potential system problems reducing down time and saving money.

Total Control Solutions

The Daikin control system provides a flexible solution at every level of user interface. From the classroom experience to a seamless integration with the Building Energy Management System, Daikin provides a scalable, Web-enabled solution that is simple and optimized for efficiency.



Total Control Solutions

■ The Daikin VRV control system provides a flexible solution at every level of user interface. From the classroom experience to a seamless integration with

the Building Energy Management System, Daikin provides a scalable, Web-enabled solution that is simple and optimized for efficiency.

Customized Support Before, During and After the Project



Online Training



Classroom Training



Hands-On Training

Daikin University



Daikin understands that highly trained and qualified installers and technicians are a critical component of the VRV life cycle. That is why

we have developed a comprehensive training program that addresses every stage of the VRV life cycle. We provide online, classroom and hands on training to ensure that our systems are installed and maintained correctly so that every Daikin system can work as designed for years to come.

Support from World Class Experts

Every project has its own unique set of challenges that must be addressed. In order to ensure that you have the highest level of support throughout the entire process, we have a team of highly trained application engineers and manufacturer's representatives that are ready to assist with expert advice.

Daikin City

Learn more about Daikin's products and technology and gain access to a vast variety of information, tools and resources with the Daikin City portal at www.daikincity.com.



Daikin: The Premium Brand industry leader

DAIKIN Daikin Industries, Ltd. (DIL) is a global Fortune 1,000 company which celebrated its 90th anniversary in May 2014. The company is recognized as the largest HVAC (Heating, Ventilating, Air Conditioning) manufacturer in the world. DIL is primarily engaged in developing indoor comfort products, systems and refrigeration products for residential, commercial and industrial applications. Its consistent success is derived, in part, from a focus on innovative, energy-efficient and premium quality indoor climate and comfort management solutions.

Before purchasing this appliance, read important information about its estimated annual energy consumption, yearly operating cost, or energy efficiency rating that is available from your retailer.

**Contact your local Daikin
manufacturers representative or
distributor for more information.**