



MULTI-FAMILY VENTILATION



MULTI-FAMILY VENTILATION

SOLUTIONS FOR BUILDINGS WITH
MULTIPLE LIVING SPACES

SOLUTION BROCHURE

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We're a proud member of the US Green Building Council, the Home Ventilating Institute and are an ENERGY STAR® partner. We are committed to ensuring all Aldes products are durable and efficient.



MULTI-FAMILY PRODUCTS QUICK-REFERENCE CHART

3

ACCESSORY		LOW-RISE (3 STORIES OR LESS)	HIGH-RISE (4 STORIES OR MORE)	
CENTRALIZED SOLUTIONS		Constant Airflow Regulators (CAR3®)	✓✓✓	✓✓✓
		Constant Exhaust/Supply Registers (CER & CSR)	✓✓✓	✓✓✓
		Constant Exhaust/Supply with Fire Dampers (CER3-S-F & CSR3-S-F)	✓✓✓	✓✓✓
		Occupancy-Sensing Grilles (OSG)	✓✓✓	✓✓✓
		Zoned Ventilation for Exhaust and Supply Applications (ZRT)	✓✓✓	✓✓✓
		Parallel Damper In-Line Zone Register Terminals (ZRT-PDIL)	✓	✓✓✓
UNITIZED SOLUTIONS		Multi-family heat and energy recovery (InspirAIR® Compact and InspirAIR® FRESH)	✓✓✓	✓✓✓
		Vertical Fan Coil Unit with HRV/ERV (IQ-VFC) USA only.	✓	✓✓✓
		ENERGY STAR® Rated Single Port Fans (Ventergy® Series)	✓	✓
		Multi-Port Fans (Ventergy® Series)	✓	✓

✓ = Sometimes used

✓✓✓ = Commonly used

UNIQUE CHALLENGES TO VENTILATING MULTI- FAMILY DWELLINGS

At Aldes North America, we understand the challenges engineers face when designing multi-family dwellings. You have a myriad of elements to consider. We live and breathe these challenges every day and have designed solutions to satisfy all of those involved from planners, installers, inspectors, and building owners to residents and building managers.

SHARED WALLS

What we think of as a multi-family building, is home to the people who will walk through the door at the end of the day. It's where families gather for meals, it's where kids play, it's where memories are made. Residents may not notice when indoor air quality is healthy, but they certainly will if it's not. Shared walls, floors, and ceilings make proper ventilation especially critical in preventing unpleasant next-door odors from seeping into adjacent spaces.

AIR BALANCING

Air balancing can be complex. Centralized ventilation means there's just one unit to maintain. Balancing airflow can be challenging, and airflow needs fluctuate constantly. Some dwellings may be occupied and full of activity while others are empty for weeks or months at a time. Activity in shared spaces—fitness rooms, lounge areas, laundry centers—may fluctuate throughout the day.

ENERGY EFFICIENCY AND COSTS

The intent for some multi-family buildings is for residents to own their own space, while in others, the intent is for occupants to rent, whether long term or short term. Both instances come with decisions to be made about how energy will be metered and billed. All occupants can share the costs associated with one central unit, or each can be responsible for the cost to run their own unit. There are benefits of each method and what's right for one building may not be the right solution for the next.

LIMITED SPACE

Space is at a premium, and every inch devoted to equipment is an inch that's not counted as living space. We've worked through the challenges of limited space for ducts and equipment and the need to ensure that ventilation equipment is compact yet powerful.

BUILDING ENVELOPE PENETRATION

We understand the importance of each building's curb appeal. In some cases, clean lines along outside walls are important, with as few duct penetrations as possible. Other buildings are designed with features, such as balconies or columns, that make duct penetrations naturally less noticeable. Our research and development engineers have taken this into consideration when designing ventilation solutions.

MAINTENANCE

We understand that there are maintenance issues to be considered. Do the units need to be easy to access? Via the rooftop? A mechanical room? In the ceiling of each dwelling? How frequently will they need maintenance? Will maintenance generally be done by a professional or are occupants expected to maintain the units? All of these are factors to consider.

Don't worry, whatever your ventilation needs, we've got you covered.



ALDES NORTH AMERICA EXPERIENCE AND EXPERTISE

For over 35 years Aldes North America has been providing ventilation solutions for residential, commercial, and multi-family buildings. Our multi-family ventilation products in particular have been installed in thousands of apartment buildings, senior living facilities, dormitories, military barracks, and condominiums across the nation and continue to be a key driver of our business.

We do more than provide systems for new construction; we work with engineers on renovation projects, providing custom retrofit solutions tailored to each project's unique situation. We are proud members of the US Green Building Council, the Home Ventilating Institute and are an ENERGY STAR® partner.

Aldes North America takes a proactive approach to multi-family ventilation. By working with Aldes North America, building designers can prevent the detriments of stack effect, minimize envelope vent penetrations, and balance exhaust ventilation systems. American Aldes products can be used for centralized or compartmentalized solutions in high-rise or low-rise buildings.

MULTI-FAMILY CODES AND REGULATIONS

Our engineers provide solutions for senior living facilities, college dorms, apartments, condos, military barracks and more. We understand the difficulty of complying with many levels of regulations, therefore, we work with engineers and architects to ensure all requirements are met.

Multi-family dwellings have tailored regulations because of the challenges related to variable occupancy rates. We've been involved in ASHRAE since our inception and have kept at the forefront of updates and changes. Energy efficiency can be difficult to achieve in multi-family dwellings. Consequently, we've met these challenges. We are LEED and ENERGY STAR® partners, providing a lineup of products that will help you achieve energy efficiency and code compliance.

RESOURCES AT YOUR FINGERTIPS



Have a question about airflow rates? Energy recovery? Setpoint adjustments in the field? Our experts are on hand to answer your questions and help you select the right products for the job.



We're committed to providing you with the tools and information you need. From brochures, spec sheets and installation manuals to warranties and replacement parts, we stand behind our products from specification to installation and beyond.



All of our product literature and downloads are available on our website at www.aldes-na.com.



Looking for specific examples of similar projects that use Aldes North America products, visit our [Featured Projects Map](#) on our website. It's a clickable map that you can filter by state, product, sales representative, or project type. Simply select "Multi-Family Apartments" under the product category filter to see a sampling of recent projects across the nation.

CENTRALIZED VS. UNITIZED SOLUTIONS

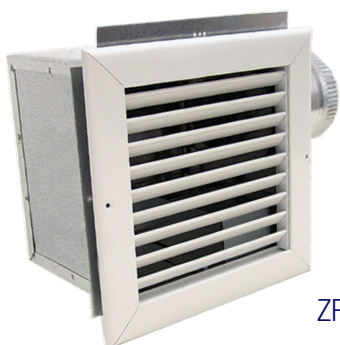
Apartments. Condos. Dorms. Senior Living. Military Barracks.

All of these have compartmentalized living spaces within a larger building. Ventilation can either be centralized with all airflow controlled by one large unit, or unitized so the airflow can be controlled separately in each individual living space.

CENTRALIZED SYSTEMS: AIRFLOW CONTROL

Centralized systems come with their own set of challenges. If not designed correctly, these rooftop systems will have poor overall performance. Some portions of the building can be easily over-ventilated, which uses more energy than necessary, while at the same time other portions of the building can be under-ventilated, causing poor indoor air quality. Balancing these systems can be difficult and costly. Aldes has solutions.

ZRT® WITH CONSTANT AIRFLOW REGULATOR (CAR3®)



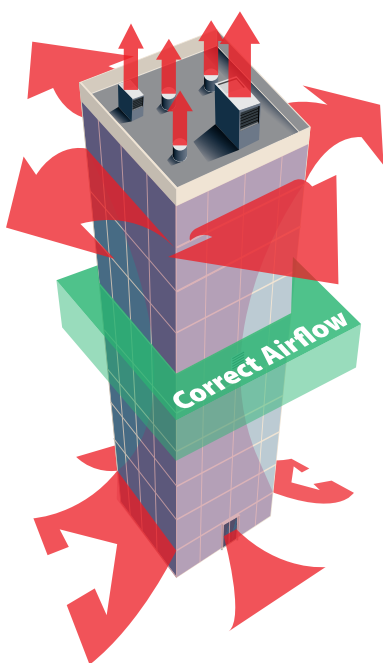
ZRT®



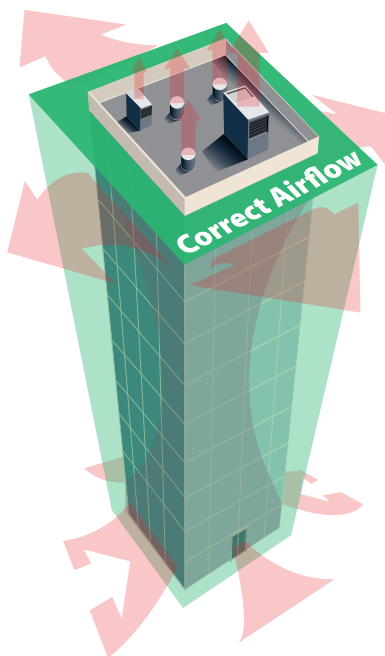
CAR3®

Supply and return/exhaust airflow for each area is automatically balanced by installing the ZRT® with CAR3® in the branch ducts or terminal device locations.

Stack effect occurs when air is heated and rises in the shaft forcing more air in the lower floors and out the top floors. This results in pressure variation to vertically ducted central ventilation systems, causing over-ventilation at some levels that wastes energy, and under-ventilation at other levels which prevents proper contaminant removal. These pressure imbalances can also cause cross-contamination or force unwanted air from one compartment to the next. Cross-contamination is often the cause of many poor indoor air quality issues.



Before CAR3® Installation

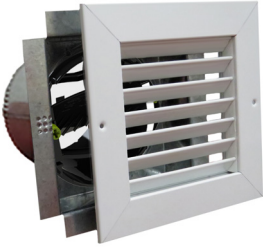


After CAR3® Installation

ENGINEERED SOLUTION:

Energy and Cost Savings

CONSTANT EXHAUST OR SUPPLY REGISTER (CER3 OR CSR3)



CER3-R

This model combines the Constant Airflow Regulator with an exhaust or supply grille/boot for new construction and retrofit applications. The grilles are constructed of heavy-gauge extruded aluminum to prevent rust in moist environments. The regulating element (CAR3®) is integral to the boot. The entire assembly is designed to be attached directly to the duct (available for square or round duct).

CONSTANT EXHAUST OR SUPPLY REGISTER WITH FIRE DAMPER (CER3-S-F OR CSR3-S-F)

Have the added feature incorporating a fire damper/radiant damper. CER-S-F or CSR-S-F combine the Constant Airflow Regulator with a grille, steel sleeve and fire damper. The fire damper is tested and listed per UL555 for use in a wall or shaft application and is rated for two-hour protection. Three-hour fire dampers can also be used. Each sleeve is welded to provide durability. The assembly is sized to fit inside standard duct riser openings and chases.



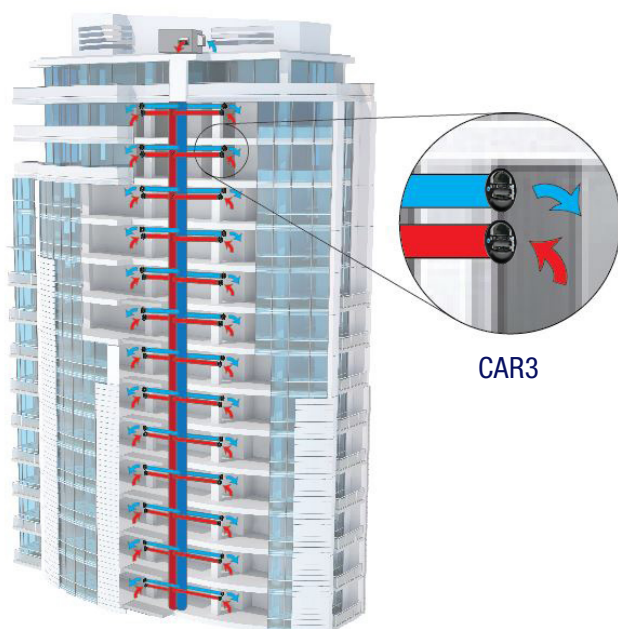
CER3-S-F

CONSTANT EXHAUST OR SUPPLY REGISTER BOX (CEB3 OR CSB3)

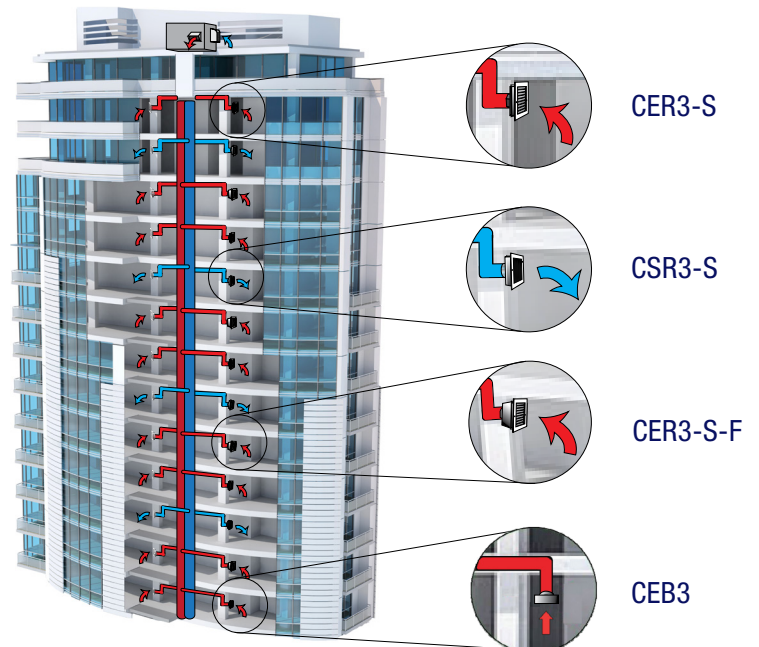


CEB3

The register box incorporates a Constant Airflow Regulator (CAR3®) that automatically regulates airflows in duct systems to constant levels. This unit type accommodates specialty grilles, required to match other architectural grilles.



CAR3



CER3-S

CSR3-S

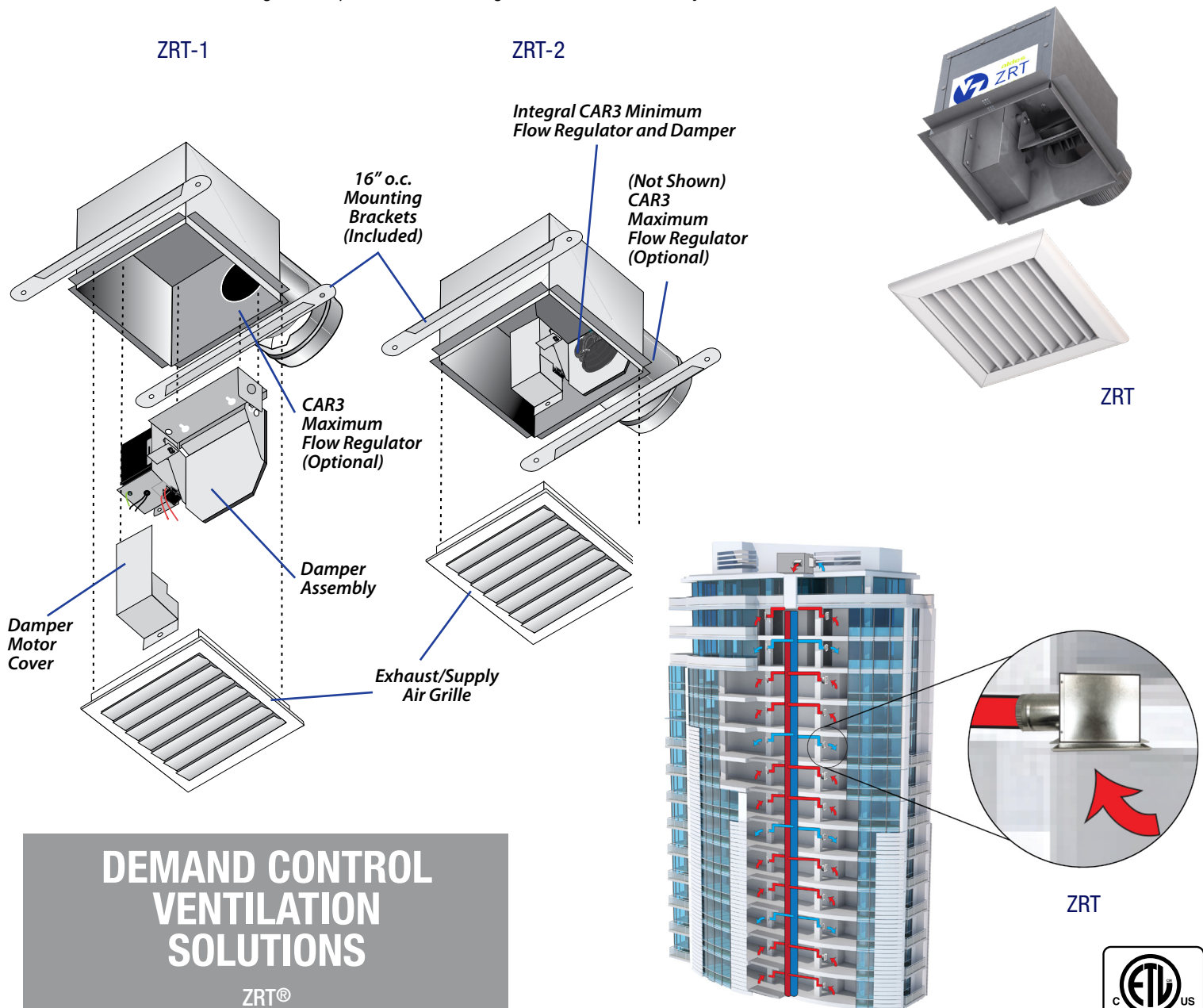
CER3-S-F

CEB3

ZONE REGISTER TERMINALS® (ZRT) AVAILABLE IN EXHAUST OR SUPPLY MODELS

Zone Register Terminals (ZRT®)* are designed to introduce flexibility and demand control to central ventilation systems. Each ZRT® is a combination with grille, register box, control damper, and CAR3®. This unique combination provides up to four different control schemes without the need for expensive pneumatic, electronic, or DDC control systems.

The ZRT-1 model provides on-off control for on-demand ventilation. This allows fan downsizing and promotes energy savings by minimizing necessary fan horsepower and ventilation-induced heating and cooling loads on the building. The Constant Airflow Regulator (CAR3®) provides precise balancing to each terminal on demand. The ZRT-2 model is used for combination low-flow continuous indoor air quality ventilation and on-demand high-flow spot ventilation using the same central fan system.



**DEMAND CONTROL
VENTILATION
SOLUTIONS**

ZRT®

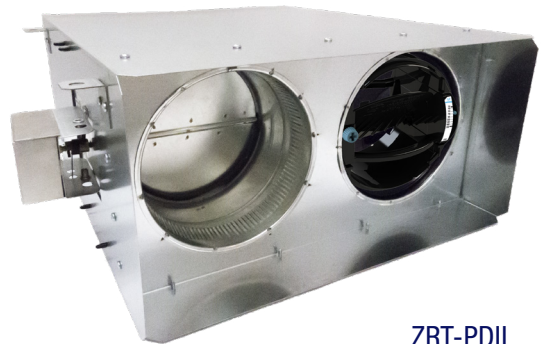


PARALLEL DAMPER IN-LINE ZONE REGISTER TERMINALS® (ZRT-PDIL)

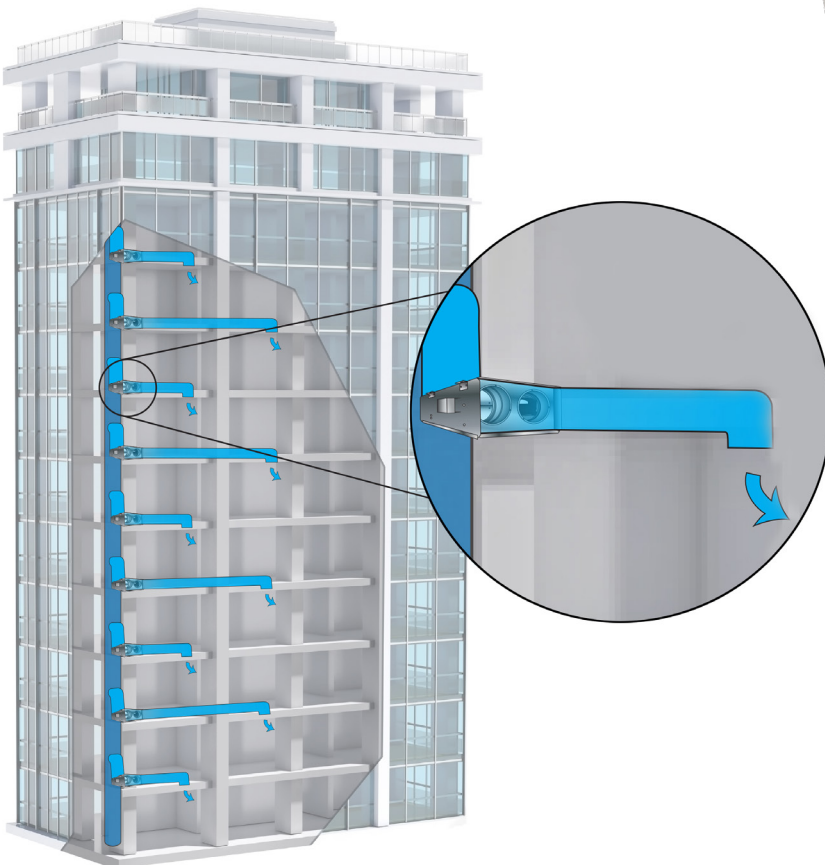
ZRT-PDILs are designed to introduce flexibility and dynamic control to central **supply** or **exhaust** ventilation systems. Used in both large and small systems, the ZRT-PDIL regulates ventilation in place of traditional VAV terminal units.

Each ZRT-PDIL is a multi-position, pressure-independent terminal with control dampers to regulate on-demand airflow controls. This unique combination provides flexible control schemes without the need for expensive pneumatic, electronic, or DDC control systems.

The ZRT-PDIL is primarily used for combination low-flow indoor air quality ventilation or make-up air, and on demand high-flow spot ventilation using the same central exhaust or supply fan system. This is achieved by integrating a minimum Constant Airflow Regulator (CAR3®) in the terminal end panel and in-line with the branch duct. The maximum airflow is controlled by a series of 24V, 120V, or 230V powered motorized damper(s) and a secondary CAR3® airflow controller. With the maximum-air motorized control damper completely closed, the continuous CAR3® allows steady, low-volume airflow control.



ZRT-PDIL



HEAT AND ENERGY RECOVERY VENTILATORS (HRV/ERV)

HRVs and ERVs maximize energy efficiency. Bringing in fresh air and then heating or cooling that air to make it comfortable for occupants. Our line of HRV/ERVs reduce the costs of heating ventilated air in the winter by transferring heat from the warm inside air being exhausted to the fresh (but cold) supply air. In the summer, the inside air cools the warmer supply air to reduce ventilation cooling costs. Aldes wide range of HRV/ERV solutions makes it easy to align the scope of your project with the perfect unit.



In the heating season, Heat Recovery Ventilators (HRV) and Energy Recovery Ventilators (ERV) draw in fresh air from outside. This air is distributed by a dedicated-duct system or through the forced-air heating / air conditioning system. At the same time, vents located in moisture-and pollutant-producing rooms exhaust an equal amount of stale, humid air to the outside. Sometimes air is drawn directly from the return air of a forced-air heating/air conditioning system.

As the two airstreams pass each other in the unit's core, the fresh air is tempered with heat recovered from the exhaust air. An ERV will also transfer moisture to the fresh air if this air is drier than the exhaust air.

In the cooling season, the reverse occurs. Fresh outdoor air is cooled by the air-conditioned exhaust air. If the outgoing air is drier than the fresh air, the ERV will transfer moisture to the outgoing air. This process reduces the humidity load on the air conditioning system.

CONSTANT EXHAUST GRILLE (CEG-II)

CEGs combines an airflow control element that automatically regulates airflow in exhaust duct systems to constant levels. It responds to duct pressure and requires no electric or pneumatic sensors or controls. Similar to the CAR-II, it provides a low-cost solution to balancing airflows in multiple-point exhaust systems by eliminating the need for on-site damper adjustment. The airflow element is housed in a decorative white molded cover suitable for almost any architectural or design style. The unit can be adjusted to distinct pre-calibrated airflow settings, making it easy for a contractor or end-user to make on-site adjustments if ventilation demand changes.



OCCUPANCY-SENSING GRILLE (OSG)

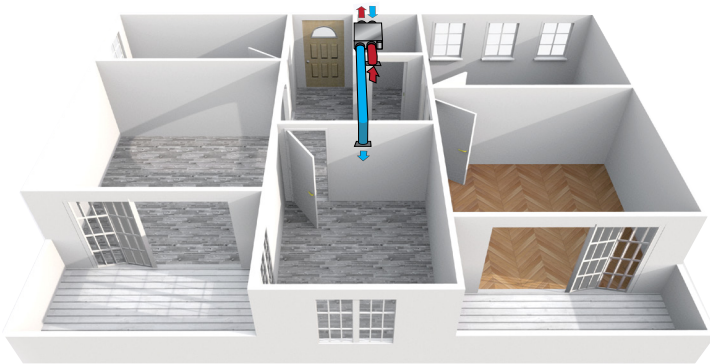


OSGs are stand-alone terminals that automatically boosts the exhaust airflow when a room is occupied. A lens detects movement and triggers circuit opening (instantaneous) and closing (after a 20-minute time out). The OSG is designed for spaces that are not occupied continuously. It is ideally suited for bathrooms, laundry rooms, and kitchen areas.

Unitized systems, also called compartmentalized systems, have the distinct advantage of giving occupants control over their own indoor air quality, energy usage, and metering. If maintenance is ever needed, only one living space is impacted. Combine centralized system with demand controlled ventilation such as Zone Register Terminals for even more energy savings and greater control over boost and low-flow ventilation.

INSPIRAIR® COMPACT HEAT AND ENERGY RECOVERY VENTILATORS (HRV/ERV)

Aldes North America multi-family line of HRV/ERV — InspirAIR® Compact Heat or Energy Recovery units maximize energy efficiency. InspirAIR® Compact are sized just right for smaller living spaces and deliver between 80-130 CFM of fresh, filtered air for all occupants to enjoy. Our E80-HRX-N unit includes the first in-suite air exchanger to offer an automatic free cooling economizer function feature that saves energy by using cool outdoor air to help reduce the demand for air conditioning during spring and fall. The slim height of just 9" easily fits above suspended ceilings, or in drywalled areas due to the bottom controls and aesthetic access door. The 22" width allows to fit between trusses.

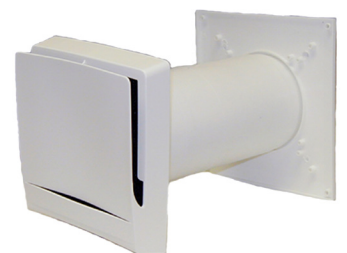


E80-HRX-N



AIRLETS™

Airlets™ introduce controlled amounts of fresh air through a wall without the use of a duct system. American Aldes has the most broad range of window- and wall-mounted fresh air inlet devices on the market. AIRLETS™ are designed to compliment exhaust systems by introducing controlled amounts of fresh air. They are easily adjustable for walls of varying thickness. Airlets™ are designed to be used in low-rise buildings and are not for use with forced air heating and cooling systems.



AIRLETS™

VERTICAL FAN COIL UNIT WITH INTEGRATED HRV/ERV



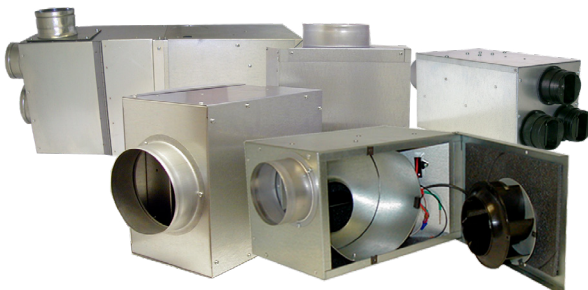
Discover Aldes' unique vertical stacked fan coil with integrated heat or energy recovery. Use in individual condos, apartments, barracks or senior living for lower initial cost compared to central systems. This unit provides better occupant control, meets demand-control ventilation requirements, and saves space by combining heating and mechanical ventilation in one compact unit. Integrated HRV or ERV fan coils meet or exceed the industry standards for performance, sound and quality. With 6 unit capacities for efficient control, automatic coil freeze protection, 2-way or 3-way valve operation, 2 or 4 pipe systems efficient EC motors for lower electricity costs and automatic fresh air balancing, it is one of the most cost-effective and versatile in-suite units available.



IQ-VFC Available in USA only.

VENTERGY® SERIES FANS

Ventergy® Series Fans deliver performance, efficiency and flexibility. Aldes range of ENERGY STAR® rated ventilators, are smart choices to fit in tight spaces. Ventergy® fans are available as in-line exhaust, multi-port exhaust, distributing supply, filtering supply, and blending-filtering supply. Designed for low-rise buildings and residential applications.



Ventergy® Series Fans



INSPIRAIR® FRESH

The InspirAIR Fresh represents a leap forward for in-suite ventilation in multi-unit residential buildings. ASHRAE and Passive House now recommend that each suite be equipped with its own balanced ventilation system, preferably with energy-recovery. The InspirAIR Fresh offers industry leading, quiet energy-recovery performance while putting the emphasis on filtration and healthy air. Filters are easily exchangeable by opening the front access panel and residents have a choice of MERV8 or MERV13, while maintaining the same amount of airflow. With a height of just 9¾" and no drain required, this ERV can be installed anywhere on concrete slab ceilings while leaving plenty of headroom for residents. The InspirAIR Fresh can also be used in single family homes, on wood joists or installed vertically on a wall.



For Passive House projects, Aldes' InspirAIR Fresh will be a very affordable alternative to expensive European imports and designs. In addition, InspirAIR Fresh is certified to the new CSA 439/2018 standard, which is the equivalent of about 2-3% more efficiency than the 2009 standard.

When it comes to installation, there is no balancing required since the EC motors will adjust to the maximum and continuous speeds required, by using built in pressure sensors. Our Cold Supply Air Protection feature ensures that the supply air never drops below freezing. Overall, Aldes is a safe choice!

SOME MULTI-FAMILY PROJECTS

- Myrtle Terraces, Gainesville, GA—AIRLETS™
- Artistry Apartments, Indianapolis, IN—Ventergy® Series Fans
- Edgewood The Commons, Watertown, SD—HRVs
- 4Marq, Minneapolis, MN—ZRTs and CARs
- Madison at Racine, Chicago, IL—ERVs
- 1000 South Clark, Chicago, IL—ZRTs
- Woodlawn Park, Chicago, IL—ERVs
- Myrtle Avenue Apartments, Brooklyn, NY—CARs
- Hollins House Apartments, Baltimore, MD—ERVs
- Centerbridge, Bridgewater, NJ—CARs
- Front Street Lofts, Hartford, CT—CERs
- One Canal Apartment Homes, Boston, MA—CARs
- Valley Vista Senior Apartments, Syracuse, NY—CERs
- Linden Plaza Apartments, Brooklyn, NY—CERs
- 30 Park Place, New York, NY—CARs and ZRTs
- Harlem Canaan House, New York, NY—CERs and CSRs
- Strivers Plaza, New York, NY—Ventergy® Series Fans
- Twin Parks North West, Bronx, NY—CERs

WE'RE NO STRANGER TO LEED AND ENERGY STAR® PROJECTS

The Dunn Development Corporation, together with Northeast Brooklyn Housing Development Corporation launched an initiative aimed at improving energy performance at a 33-unit apartment building in Brooklyn, New York. The goal was to bring Myrtle Avenue Apartments into accordance with local requirements and reduce the building's energy use by 20% compared to a baseline ASHRAE 90.1-2004 compliant building.

The apartment building became the nation's second multi-family high-rise building to receive the ENERGY STAR® label. One of the energy conservation measures included, installing a central exhaust ventilation system with Aldes Constant Airflow Regulators (CAR) dampers at each floor to achieve 25 CFM exhaust ventilation in kitchens and 30 CFM in bathrooms. According to a featured article in Party Walls (Vol. 3, Issue 5), "Central exhaust systems are one of the biggest drivers of energy and indoor air quality performance in multi-family buildings. Despite the critical nature of these systems, the vast majority do not work as designed in either existing buildings or new construction. As a rule, upper floor apartments (closer to the fan) are over-ventilated, lower floor apartments are under-ventilated... Aldes Constant Airflow Regulators (CAR) were used to balance exhaust ventilation flows from floor to floor." Aldes is proud to have played a major role in this and many other LEED and ENERGY STAR® projects.



Myrtle Avenue Apartments, Brooklyn, New York



For more information, contact your
Aldes sales advisor, visit aldes-na.com,
or find us on



Aldes North America
USA 800.255.7749 CAN 800.262.0916

