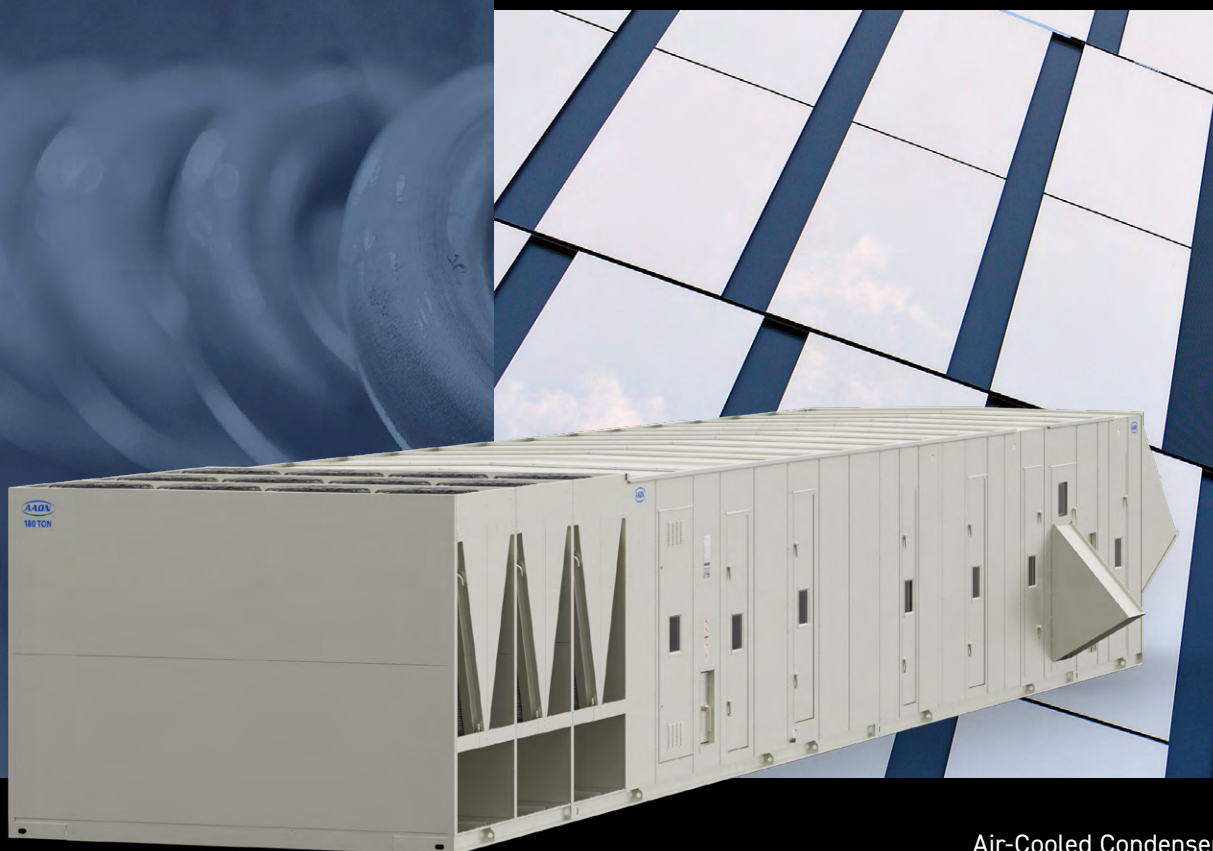


RZ Series

Packaged Rooftop Units
45-261 Tons



Air-Cooled Condenser

Evaporative Condenser

Outdoor Air Handling Units





RZ Series

AAON RZ Series sets the standard for flexible and energy-efficient packaged rooftop equipment for large building applications. With unmatched configurability, the RZ Series adapts seamlessly to various environments, from institutional spaces to state-of-the-art healthcare facilities. More than just a system, it's your solution to superior comfort, efficiency, and sustainability.



45-261 Tons

AAON sets the standard for commercial packaged rooftop units in performance, serviceability, and long-term value.



Standard Features

- Air-cooled unit capacity ranging from 45 – 240 tons or evaporative condenser unit capacity ranging from 51 – 261 tons
- Available as a chilled water, or non-compressorized DX air handling unit from 7,500-75,000 cfm
- AHRI certified performance for proven efficiency for unit sizes within the scope of the standard
- Walk-in service vestibule provides shelter for the maintenance and service personnel
- Walk-in hinged access doors with full length stainless steel piano hinges and quarter-turn, lockable handles
- Aluminum tread plate floor covering within the vestibule for improved durability and safety
- Compressor isolation valves are standard for improved service efficiency
- Draw-through or blow-through configurations available with direct drive backwards curved plenum fans allow design flexibility
- AMCA certified and labeled low leakage economizer dampers utilize outdoor air for cooling under certain conditions
- Corrosion resistant polyurethane paint exceeds a 2,500 hour salt spray test
- Standard five year non-prorated compressor warranty
- 15 year non-prorated, aluminized steel gas heat exchanger warranty, and 25 year non-prorated stainless steel gas heat exchanger warranty

EVAPORATOR COILS

Variable speed circuits come equipped with an electronic expansion valve while tandem circuits feature a thermal expansion valve. Experience consistent air temperatures with variable speed circuits covering the entire surface of the evaporator coil. A double sloped stainless steel drain pan ensures positive drainage. Units with upper and lower coils come equipped with intermediate drain pans. The tubing is dressed and structurally supported for lasting reliability.

MICROCHANNEL AIR-COOLED CONDENSER COILS

Microchannel condenser coils are more efficient, lighter, and use less refrigerant than traditional fin and tube condenser coils.

COMPRESSORS

Each interlaced evaporator coil includes one circuit with a VFD variable speed compressor, ensuring consistent air temperature across the face of the coil at all operating conditions.

During part load operation, the system can optimize costs by reducing compressor capacity. The variable speed compressors utilize inverter driven permanent magnet motors for down to 11% unit turndown on certain models. The RZ Series delivers exceptional efficiency, with IEER ratings for part loads reaching as high as 20.8.

Construction and Serviceability

DURABLE, ENERGY-EFFICIENT DESIGN

Double wall construction using closed cell polyurethane foam insulation with G90 galvanized steel walls instead of fiberglass insulation, which can be harmful to indoor air quality. With an insulation R-Value of 16, it creates a more rigid and durable assembly with less unwanted heat transfer.

ACCESSIBLE CABINET DOORS

Access doors with full-length stainless steel piano hinges and quarter-turn, lockable handles provide improved reliability over single point hinges and make the unit easily serviceable.

QUIET FAN ARRAY TECHNOLOGY

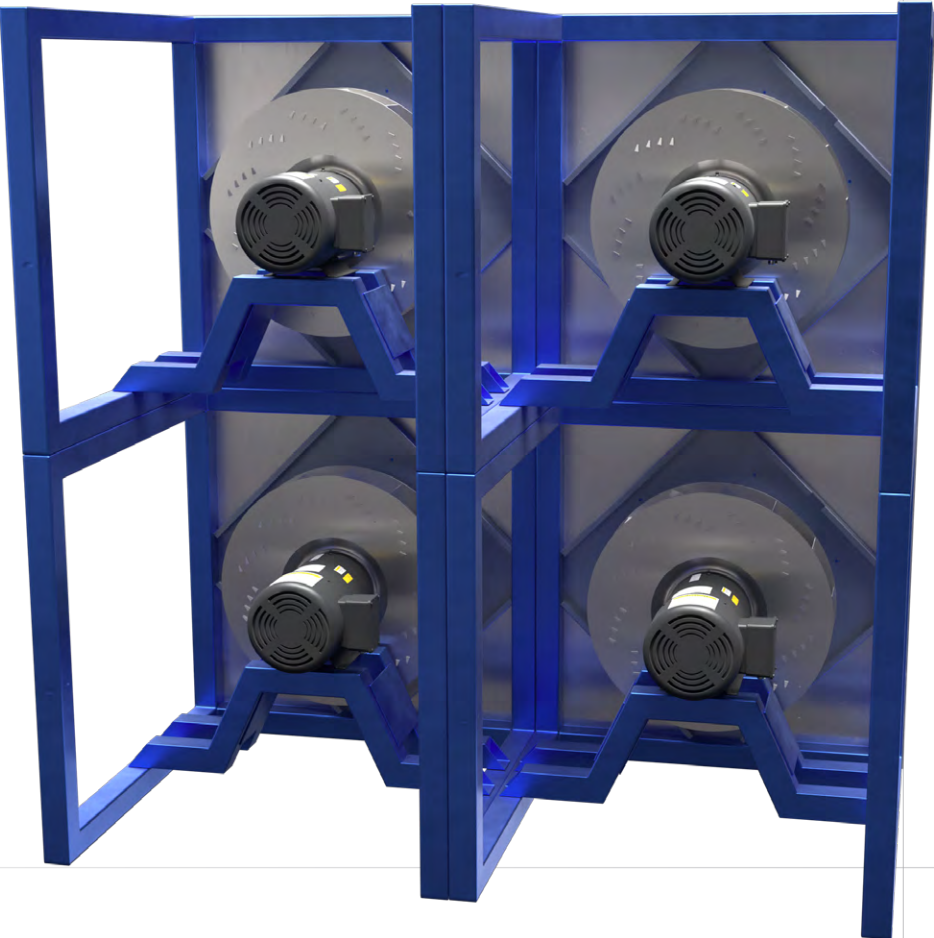
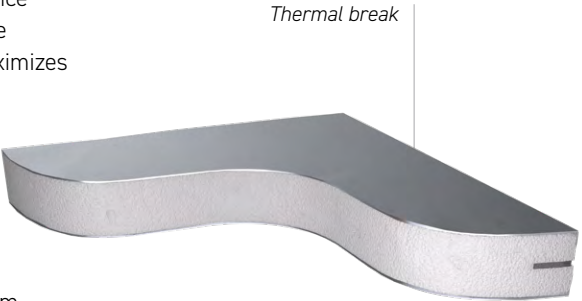
State-of-the-art computer simulations and laboratory testing were utilized to design motor mount frames with minimal vibration and sound. Each fan module is built on a dedicated assembly line with auto laser cutting and robot welding for a consistent, high-quality product. Fan modules are powder coated for corrosion protection.

STREAMLINED SERVICEABILITY

AAON equipment prioritizes efficient serviceability, reducing downtime and costs. Easily accessible compressors, control components, color-coded wiring diagrams, and labeled components minimize delays in evaluating service issues. This AAON standard feature ensures low service costs and maximizes unit run time.

INCREASED THERMAL RESISTANCE

Double wall rigid polyurethane foam-injected cabinet panel increases thermal resistance, reduces air leakage, and attenuates radiated sound. Thermal break reduces heat transfer between interior and exterior metal cabinet walls.



Configurability

AIR-COOLED CONDENSING

Microchannel condenser coils are more efficient due to their enhanced heat transfer. They are also up to 60% lighter and use less refrigerant than traditional fin and tube coils. All condenser coils are designed for at least 10°F of refrigerant sub-cooling. VFD is factory installed on the condenser fans for head pressure control and greater operating temperature range, as well as to provide reduced sound levels at off design ambient temperatures. All condenser fans are direct drive, axial flow propeller type, and discharge vertically.

ECO-FRIENDLY EVAPORATIVE CONDENSER

The RZ Series delivers both outstanding energy efficiency and operational cost savings compared to air-cooled designs. The evaporative condenser RZ Series rooftop unit is ideal for locations that require a central chiller and cooling tower. Depending on application and location, energy costs can be reduced by 20% to 40% annually.

Equipped with an air-cooled desuperheater and low sound ECM driven variable speed condenser fans, AAON's evaporative condenser uses 22-100% less water and requires 22-100% less chemical usage than conventional evaporative condensers. The interior of the evaporative condenser is constructed with 304 stainless steel and other non-corrosive materials. The desuperheater coils feature polymer e-coating for corrosion protection.

CONFIGURABLE AIR HANDLING UNIT

The RZ Series is well-suited for applications without compressors. When configured as an air handling unit, the RZ is built without a condensing section, walk-in compressor, and control vestibule. It retains all other features and offers various options, including DX coil and expansion valves and chilled water coils in 4, 6, or 8 rows. Air handling units may be specified with any heating options for a year-round rooftop heating and cooling package.

HIGH-EFFICIENCY SUPPLY FAN ARRAYS

The RZ Series offers supply fan arrays with up to 12 fans using high efficiency direct drive airfoil plenum fans with permanent magnet motors. Traditionally when greater airflows were required, the diameter of the single plenum fan was simply increased to meet the requirement. This resulted in higher tip speeds, which also meant higher sound levels. With AAON RZ Series, greater airflow rates are accomplished with multiple smaller diameter fans, resulting in an inherently quieter operation than a single larger diameter fan. All the fans are directly driven by the motor, eliminating the need for the drive belt assembly and its associated maintenance. Backdraft dampers are available for operational redundancy.

Options

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|---|---|
| <ul style="list-style-type: none">Gas heat up to 4500 MBH is available with staged or high turndown modulating gas heat for greater fuel efficiency and improved comfort. Direct fired gas heat is also available | <ul style="list-style-type: none">Double pane viewing windows can be installed in all doors where viewing of operating equipment or interior cabinet is needed |
| <ul style="list-style-type: none">Hot water and steam coils are offered in 1 or 2 row configurations with multiple different face areas, while hot water is also available in 4 row configurations to suit diverse job requirements | <ul style="list-style-type: none">115V convenience outlet option availableSound attenuators for a quieter and more comfortable environment within your building |
| <ul style="list-style-type: none">SCR (Silicon Controlled Rectifier) electric heat control for reduced power consumption, longer heater life, and improved occupant comfort | <ul style="list-style-type: none">Air mixer for mixing and blending of return and outdoor air to prevent frozen coils and ensure consistent operation at specific outdoor-air design temperatures |
| <ul style="list-style-type: none">Humidity control options including: High Capacity Coils, Return Air Bypass, and Modulating Hot Gas Reheat | <ul style="list-style-type: none">Phase and Brownout for protection against voltage imbalance |
| <ul style="list-style-type: none">Multiple high efficiency air filtration options, including HEPA, for improved indoor air quality by reducing airborne allergens and pollutants | <ul style="list-style-type: none">Polymer e-coated coils for corrosion protection |
| <ul style="list-style-type: none">Final filters available with up to MERV 14 media in gas heat unitsHEPA final filtration available | <ul style="list-style-type: none">Interior corrosion protection option protects interior components of the unit in corrosive environments |
| <ul style="list-style-type: none">Factory installed AAONAIRES® total and sensible energy recovery wheels for pre-conditioning air, reducing the heating and cooling loads | <ul style="list-style-type: none">Option boxes are available for field installed components without the trouble of installation and service in a crowded cabinet |
| <ul style="list-style-type: none">Power exhaust and power return fans with economizer for application flexibility | <ul style="list-style-type: none">Different paint color options available for unit customization |
| <ul style="list-style-type: none">LED Marine service lights for quick and convenient maintenance | <ul style="list-style-type: none">Additional customization is available by request for further flexibility in design |
| | <ul style="list-style-type: none">Low sound air-cooled condenser fans engineered for peak performance and a quiet operation" to options |



RZ Series meets capacities from 45-261 tons.



Low GWP Refrigerant

AIM ACT COMPLIANT

The AIM Act of 2020 empowered the U.S. Environmental Protection Agency to manage Hydrofluorocarbons (HFCs) and regulate refrigerants based on global warming potential (GWP). GWP was developed to compare refrigerants' impact on global warming. The final ruling mandating all new air conditioners to use refrigerants with a GWP below 700 is anticipated to begin January 1, 2025.

AAON thoroughly researched and tested low GWP refrigerants and selected R-454B for its similarity to R-410A in capacity and properties, requiring less product redesign. With a GWP of 466, R-454B is well below the upcoming regulation limits.

AAON selected R-454B, a sub 500 GWP refrigerant, to drive the industry towards a cleaner and more sustainable future.





Factory installed, sensible or enthalpy controlled AMCA certified Class 2 low leakage gear driven dampers allow for free cooling and indoor air quality control.

Indoor Air Quality

The quality of air inside a building impacts the health and cognition of those inside. AAON standard design and rooftop equipment options improve indoor air quality.

FAN SELECTION

The RZ Series offers versatile configurations as either draw-through or blow-through arrangements with supply or return fans. The supply blower assemblies feature direct drive, unhooded, single inlet fans, offered in two different widths for versatile application. The most efficient alternatives are determined for the application as a function of fan quantity, fan diameter, fan blade width, and rpm. Inlet and outlet sound ratings are provided for each combination of fans and determined for the overall unit configuration. Multiple fans provide improved reliability, greater efficiency, lower sound levels, and greater service options.

AAONAIRE® ENERGY RECOVERY WHEEL

Sensible only or enthalpy energy recovery wheels can be used to pre-condition the outside air which can greatly improve energy savings and reduce unit operation cost, especially on makeup air units. Energy recovery wheels are offered as polymer or aluminum construction with removable segments for quick cleaning.

OUTSIDE AIR VENTILATION

Bringing fresh outside air into a building helps flush out infectious aerosols and reduces CO₂ levels in the space. High capacity cooling coils are available to handle the higher latent load of outside air. Research has shown that some viruses are rendered inactive on surfaces when the ambient relative humidity was between 40% - 60%.

FILTRATION

ASHRAE recommends using a minimum of MERV 13 filter to effectively trap viruses more effectively. This option is available on all sizes of rooftop equipment and the standard backward curved supply fans are capable of handling the additional static pressure associated with the higher quality filtration. AAON offers up to MERV 14 pleated air filters.

UV LIGHTS

UV light options are available factory installed and can be used to inactivate pathogens in the airstream of an air handling unit.



Precision Cooling and Heating Control

Innovative Permanent Magnet Motor Technology sets the RZ Series apart, featuring a hybrid motor with synchronous reluctance rotor and permanent magnets for efficiency surpassing IE5 standards. Variable speed compressors ensure precise cooling, while the system's heating capabilities offer flexibility with staged or modulating gas and electric heat. The addition of hot water or steam preheat coils enhances adaptability, positioning the RZ Series as a leading HVAC solution.

PERMANENT MAGNET MOTOR TECHNOLOGY

The RZ Series supply fan array is designed around cutting-edge technology, including the option for permanent magnet motor. These hybrid motors incorporate a synchronous reluctance rotor with permanent magnets to achieve an International Efficiency rating above IE5, which is the highest level of efficiency today.

The advantages of the Hybrid Permanent Magnet Motor are even more significant at the lower fan speeds, due to the reduced load (rpm) where variable air flow fans will operate during a majority of the time. Another advantage of this motor technology is it uses standard NEMA frames, which gives more flexibility for replacement than proprietary designs.

VARIABLE SPEED COMPRESSORS

Variable speed compressors are quiet in operation and provide load matching cooling and the highest efficiency ratings when operating at part load conditions. Refrigeration controls are built-in to the AAON equipment to protect the compressors and optimize the efficiency for single or multi-zone VAV and Makeup Air applications.

PRECISION HEATING CONTROL

AAON uses patented dimpled stainless steel or aluminized heat exchangers. Staging can be set up for on/off, two stage, four stage, modulating, or high turndown. Modulating gas heat provides greater fuel efficiency, longer heater life, and improved occupancy comfort. SCR controlled electric heat strips can be used for precise electric heating control without the need for gas piping.

GAS HEAT

Ensure lasting performance with AAON's durable 304 stainless steel construction. The unique design eliminates the need for internal turbulators, reducing service issues and increasing capacity and efficiency. High turndown modulating gas heat enhances both fuel efficiency and occupant comfort. The individual gas heat exchanger modules are designed for 350 MBH and 400 MBH input rates and can be configured for up to a 4500 MBH total gas input rating on the largest cabinet size. RZ Series units allow for cartridge final filters. The option of direct fire gas heat is available to improve energy efficiency, reduce fuel consumption, and lower operating costs.

ELECTRIC HEAT

Electric resistance heating elements are open type with low watt density nickel chromium. The heating modules are 40 kW with individual circuit fusing and a manually reset high temperature limit switch. Silicon Controlled Rectifier (SCR) electric heat for reduced power consumption, longer heater life, and improved occupant comfort.

HOT WATER OR STEAM PREHEAT COILS

For certain jobsite conditions, coils are available to precondition the outside air. 1 or 2 row hot water or steam coils may be supplied to match the system requirements; hot water is also available in 4 row configurations.



RZ Series: 45-261 tons

The RZ series packaged rooftop provides comprehensive solutions, featuring air-cooled options spanning 45 to 240 tons and an impressive evaporative-cooled range from 51 to 261 tons.

**Dimensions vary depending on options selected. All dimensions are in inches. Design cfm may be 30-50% greater or less than nominal cfm.*

RZ Series	
Capacity	45-140 tons
Condenser	Air-Cooled
Compressors	45-65 tons (2) R-410A Variable Speed Scroll 75-140 tons (2) R-410A Variable Speed Scroll (1) Tandem R-410A Scroll
Compressors/ Circuits	4/3
Dimensions*	W: 100, H: 104, L: Length varies depending on options selected.

RZ Series	
Capacity	145-240 tons
Condenser	Air-Cooled
Compressors	(4) R-410A Variable Speed Scroll (2) Tandem R-410A Scroll
Compressors/ Circuits	8/6
Dimensions*	W: 142, H: 104, L: Length varies depending on options selected.

RZ Series	
Capacity	51-148 tons
Condenser	Evaporative
Compressors	(2) R-410A Variable Speed Scroll (1) Tandem R-410A Scroll
Compressors/ Circuits	4/3
Dimensions*	W: 100, H: 104, L: Length varies depending on options selected.

RZ Series	
Capacity	161-261 tons
Condenser	Evaporative
Compressors	(4) R-410A Variable Speed Scroll (2) Tandem R-410A Scroll
Compressors/ Circuits	8/6
Dimensions*	W: 142, H: 104, L: Length varies depending on options selected.



There's a confidence that comes from knowing you've chosen the best. Because our operations are as efficient as our HVAC systems, you get premier AAON quality at a reasonable price. Outstanding serviceability and support create lifetime AAON customers.



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