

Superior Technology and Integration



HITACHI **SMARTFLEX**[™]
Variable Refrigerant Flow
Systems Product Catalog
for New Construction and Renovation Projects



HITACHI

SMARTFLEX[™]

EFFICIENT, COST-EFFECTIVE COMFORT



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NEXT-GENERATION CAPABILITIES

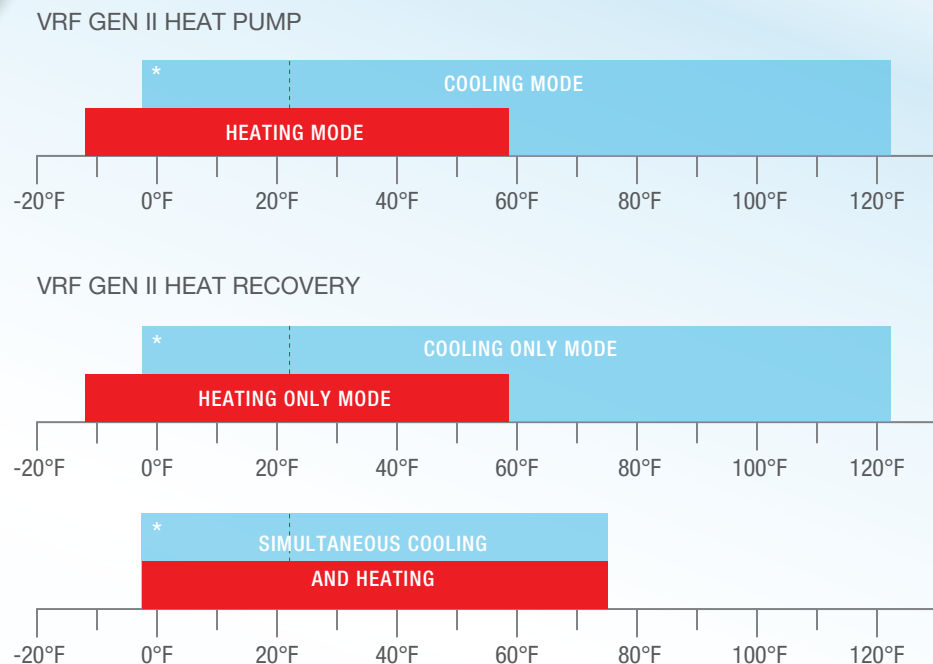
STATE-OF-THE-ART DESIGN BRINGS NEW OPPORTUNITIES FOR VRF TECHNOLOGY

Hitachi **SmartFlex™** VRF Gen II builds upon the game-changing innovations that make variable refrigerant flow systems the most flexible and energy-efficient HVAC solutions in the world. With an expanded, re-engineered equipment line and new, groundbreaking technology, Hitachi **SmartFlex** VRF Gen II offers greater performance, more design freedom, new business opportunities and exceptional control.



The Hitachi **SmartFlex** VRF Gen II Outdoor Unit line has been re-engineered to perform in an extended operating range, making VRF technology an ideal selection for more projects. The Hitachi **SmartFlex** VRF Gen II line can now provide heating down to an ambient outdoor temperature as low as -13°F and cooling down to -4°F ambient. This brings energy-efficient Hitachi **SmartFlex** VRF technology to new customers meaning more business opportunities for you.

Extended operating ranges



*With low-ambient kit installed, the cooling operating range extends as low as -4°F.

Extended outdoor ambient temperature operating ranges make Hitachi **SmartFlex** VRF Gen II an excellent choice even in extreme climates.

NEXT-GENERATION CONTROL

GAME-CHANGING GATEWAY FOR UNPRECEDENTED CONTROL

Johnson Controls' revolutionary VRF Smart Gateway achieves what competitive products only approximate: complete integration of VRF system data with building automation systems such as *Facility Explorer*® BAS. Unlike other BACnet® adapters, the VRF Smart Gateway makes integration fast and simple. No special programming or expensive technician time is required because VRF system data is automatically discovered and imported into your BAS:

- Quick, easy integration of all detailed data with automatic formatting
- All data conforms to your BAS conventions
- Detailed data available for every component across system
- 24/7 control from a laptop, tablet or smartphone

This breakthrough product makes it possible to install an energy-efficient Hitachi **SmartFlex** VRF HVAC system without incurring high integration costs or sacrificing data access or equipment control. So, you are free to choose a Hitachi **SmartFlex** VRF system based on merit alone.

Integration
on an
elite level



The VRF Smart Gateway provides complete data integration for absolute control of Hitachi **SmartFlex** VRF equipment through a building automation system.

ULTIMATE FLEXIBILITY

MULTI-PORT CHANGE-OVER BOXES MULTIPLY THE OPTIONS

New Multi-Port Change-Over Boxes (COBs) offer additional design freedom. Hitachi **SmartFlex** VRF systems can now be designed for diverse applications using:

- **Single Port COBs** (available in two sizes) – an ideal choice for zones that require individual heating and cooling control.
- **4 and 8 Port COBs** – provide flexibility and minimize mechanical and electrical installation costs.
- **12 Port COBs** – offer a maximum total capacity of 22.7 Tons. 12 Port COBs provide flexibility and minimize mechanical and electrical installation costs.

A wide selection of Change-Over Boxes for more design options



Single Port
Change-Over Box



4 Port
Change-Over Box



8 Port
Change-Over Box



12 Port
Change-Over Box

PRECISE SOLUTIONS

MORE OUTDOOR UNITS FOR RIGHT-SIZED SYSTEMS

No other HVAC technology provides as many design options as VRF technology. And now there are even more options with the Hitachi **SmartFlex** VRF Gen II line.

Units in 6, 8, 10, 12, 14 and 16 ton capacities can be configured in multiple ways to design systems up to

36 tons, providing the precise capacity needed. And larger capacity Heat Pump and Heat Recovery systems can now be designed using fewer units. The result is space-saving solutions that reduce installation costs for a true competitive advantage.

Together, the expanded Outdoor Unit line and new Multi-Port Change-Over Boxes provide exceptional flexibility, enabling you to design systems that precisely meet application needs and win more business.

8, 10 & 12
Ton Systems

6 Ton
Systems

14 & 16
Ton Systems



The expanded Outdoor Unit line increases design options for more competitive bids and superior solutions.

Rated Capacity (Ton)	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36
Number of Modules	1						2						3			
Capacity of Module(s) (Ton)	6	8	10	12	14	16	12 6	10 10	12 10	12 12	14 12	16 12	16 14	12 10 10	12 12 10	12 12 10

ADVANCED TECHNOLOGY

ENGINEERED FOR ENHANCED PERFORMANCE

Hitachi **SmartFlex™** VRF Gen II takes VRF technology to the next level with superior performance and an extended product line:

■ **14 different types of Indoor Units increase flexibility and savings:**

- A multitude of capacities means more design options
- Up to 25% improvement in static pressure in medium- and high-static Indoor Units means more flexibility
- 4-way cassette, wall-mount and ducted medium- and high-static units are available in additional capacities for more options

■ **The re-engineered inverter compressor provides peak performance and boosts energy efficiency:**

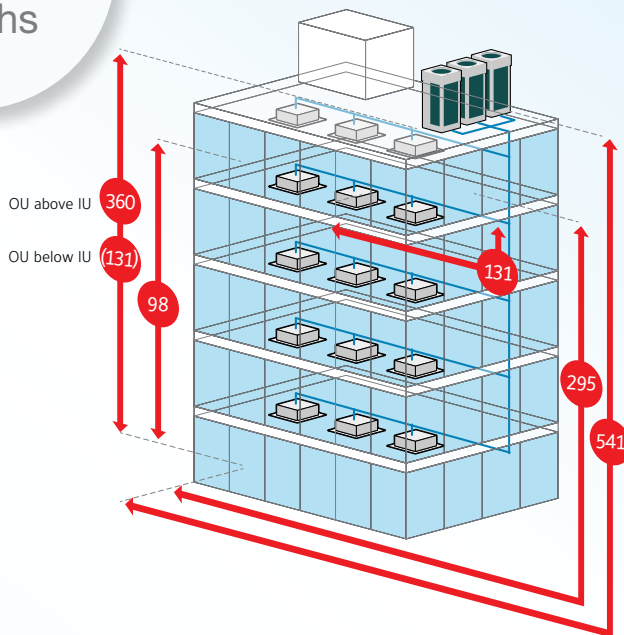
- Smooth drive control modulates in smaller increments resulting in approximately 30% less power draw at 30% system load
- Dual inverter compressors are standard in the 8, 10, 12, 14, and 16 ton Outdoor Units

■ **Redesigned Outdoor Units provide exceptional performance:**

- New dual fan design increases air flow up to 23% while lowering sound levels
- Extended connection ratios are some of the best in the industry — up to 150% for all Outdoor Unit capacities

■ **Vertical piping distance limits extend to 360 feet for greater layout flexibility**

Longer piping lengths



Maximum Distances	HP	HR
Total piping, one-way	3,281 ft.	
Vertically between OU and IU	360 ft.	
OU above IU	131 ft.	
OU below IU		
Vertically between IUs	96 ft.	49 ft.
1st branch and IU	295 ft.	
Linear Length, OU and IU	541 ft.	
Branch and IU	131 ft.	

EFFICIENT PERFORMANCE

THE COST-EFFECTIVE, ENERGY-EFFICIENT CHOICE

VRF systems effectively address the ongoing challenge of climate control in buildings - balancing comfort and efficiency - because they deliver just the right amount of heating and cooling to every space using no more energy than necessary. VRF technology achieves this balance by using DC inverter scroll compressors which save energy and avoid the wear and tear of frequent cycling. These compressors improve air conditioning efficiency by modulating refrigerant delivery to each specific zone to meet demand. The advantages of VRF technology include:

- **Exceptional efficiency** with an average of up to 39% energy savings for some applications compared to conventional HVAC systems.
- **Flexibility** to specify a customized modular system to the exacting requirements of each project with options that include heat pump and heat recovery systems and a host of fan coil options.
- **Freedom** for designers to choose ducted systems with short or long runs, or non-ducted systems that require much lower clearance between building floors (and reduce construction costs as a result).
- **Impressively quiet comfort**, with control to deliver precisely the correct amount of heating or cooling to each zone.

Greater
energy
efficiency

Improved energy ratings provide increased cost-savings.

IEER

Integrated Energy
Efficiency Ratio
up to **26.5**

EER

Energy
Efficiency Ratio
up to **14.9**

COP

Coefficient
of Performance
up to **4.25**

SCHE

Simultaneous
Cooling and
Heating Efficiency
up to **32.2**



INNOVATIVE ENGINEERING

TAKING TECHNOLOGY TO THE NEXT LEVEL OF PERFORMANCE

We now offer a full line of Change-Over Box options: Single-Port Change-Over Boxes in two sizes and Multi-Port Change-Over Boxes with 4, 8 and 12 ports for ultimate flexibility in system design.

Our Change-Over Boxes offer:

- **Built-in simplicity.** The Change-Over Box directs refrigerant to the desired zone and indoor unit(s). Since our design does not produce any condensate, no drain or condensate considerations are required.
- **Quieter operation.** Each box has a minimum number of valves, engineered to minimize noise and condensation. This increases placement flexibility.
- **Reliable performance.** Valves in Change-Over Boxes work according to the cooling and heating demand of each zone, and for added reliability, they are protected with a fine mesh strainer in the refrigerant circuit. An optimized box design enables easy service access if required.

Meet
multiple
needs



MODULAR BY DESIGN

FLEXIBILITY IS BUILT INTO OUR SYSTEM

A variety of standard modular components let you customize and size equipment to meet specific project requirements. Because ductwork is generally needed only for ventilation, ducts can be smaller, reducing capital cost and reducing use of valuable space. Systems can easily be adapted as space is reconfigured. Unlike conventional HVAC systems, VRF systems allow the addition of capacity to accommodate expansion simply by adding modular units (system sizes up to 36 tons). There is no need to replace the original unit or reconfigure ductwork.

Install and Maintain with Ease

Our VRF systems are designed for quick and simple installation. Outdoor units can be installed without a crane or other heavy equipment — even for rooftop installations — because they can be transported through a service elevator. Indoor units are similarly easy to transport as they are also small and light. Piping from outdoor units can be

connected from the front, back, or underneath. Service is simple, too: Systems need little maintenance beyond the changing of filters and cleaning of coils. Removal of a single panel on the outdoor unit provides easy access to control boards, electrical connections, compressor and piping.

Outdoor Unit Reliability

Compressors in systems with multiple units operate on programmed sequence, equalizing wear. If one unit fails, remaining units continue operating to safeguard occupant comfort.

Outdoor Unit Noise Reduction

Users can select from three “not to exceed” sound level settings for outdoor units going as low as 51 dBA. This is especially valued by occupants when units are located close to windows.



Multiple sizes and styles allow custom-fit designs

VRF systems allow the addition of capacity to accommodate expansion simply by adding modular units (system sizes up to 36 tons), as required.

ABSOLUTE CONTROL

CHOOSE FROM SEVERAL CONTROL OPTIONS

Multiple control options are available, from simple units with on/off, set point, load and speed settings, to programmable units that enable scheduling. Wireless units are available to provide remote control of zone space conditions.

Central station controllers for larger projects provide remote control and scheduling of the entire system from one or more control points.

Our leading-edge VRF Smart Gateway provides comprehensive control of all Hitachi **SmartFlex™** VRF technology through building automation systems (BAS) such as *Facility Explorer®* BAS.

The new VRF Cloud Gateway integrates our VRF systems with smart devices, tablets and home automation system controllers for comprehensive control of all home systems through one device. The VRF Cloud Gateway works as a stand-alone solution to enable HVAC system control over the web through a smartphone, tablet or PC.



THE OPTIMAL CHOICE

AN IDEAL SOLUTION FOR DIVERSE APPLICATIONS

VRF systems suit a wide range of new construction and retrofit applications. Projects that VRF technology is particularly well-suited for include:

- **Buildings with multiple zones** that have different comfort needs including:
 - hotels
 - medical office buildings
 - schools
 - commercial office buildings
- **Historical building renovations** in which ducted HVAC options are severely limited and the basic building structure must not be disturbed.

With VRF technology, building owners and occupants enjoy:

- **Energy savings and low life-cycle costs.** Systems essentially eliminate duct losses; variable-speed compressors in outdoor units provide extremely high part-load efficiency.
- **Individual comfort.** Modular design and advanced controls enable precise control to meet diverse comfort needs. Occupants can choose the optimum set point for their space; the system is designed to maintain the room temperature within one degree from the setpoint.
- **Quiet operation.** Outdoor units are quieter than most residential systems, and indoor units are nearly noise-free.
- **LEED® recognition.** Efficiencies gained from Hitachi **SmartFlex™** VRF technology can help gain LEED points in more categories than conventional HVAC systems.



WHY JOHNSON CONTROLS?

RECOGNIZED HVAC EXPERTISE AND UNRIVALED SUPPORT

Johnson Controls-Hitachi Air Conditioning is the joint venture of Johnson Controls, Hitachi, Ltd. and Hitachi Appliances, Inc. — industry-leading companies with more than 100 years' experience in HVAC, building control, refrigeration and security systems. We serve customers worldwide, bringing our combined expertise to the development of advanced air conditioning products and technology.

Johnson-Controls-Hitachi Air Conditioning is dedicated to outstanding product design, engineering and manufacturing. We have a team of some 14,000 employees at 24 locations throughout Asia, Europe and Latin America. We offer customers around the world the most diverse range of HVAC products in the industry including world-class variable refrigerant flow systems, high-efficiency chillers and industry-leading building automation solutions.

YOUR TRUSTED PARTNERS

Johnson Controls is a global, multi-industrial company with 130 years' experience supplying heating, ventilation, air-conditioning, building controls, refrigeration and security systems for buildings. Our Building Efficiency business delivers solutions that increase energy efficiency and lower operating costs to over one million customers through nearly 700 offices in more than 150 countries.

Hitachi Ltd. has a long history of product innovation. Hitachi develops, manufactures and markets state-of-the-art products with advanced technology for homes and businesses worldwide. Hitachi's air conditioning products division is known for its superior-quality commercial systems that provide exceptional energy savings, consistent comfort and extraordinary reliability.

GLOBAL REPUTATION. LOCAL SUPPORT.

When you work with Johnson Controls, you are backed by a local account team that supports you as no one else can. In addition to personal assistance from your local sales team, you can expect:

- **access to an online portal** with comprehensive tools, documentation, and support for VRF systems available 24/7 from any device
- **help from customer service professionals** with specific VRF system knowledge
- **comprehensive training** available from our VRF experts and access to our world-class VRF Training Center
- **advanced logistics and delivery** from our VRF warehouse

24/7 SUPPORT

VRFPRO.COM – YOUR INFORMATION SOURCE BEFORE, DURING AND AFTER THE SALE

Everything you need from initial design to maintenance manuals is available to you through the VRFPro.com portal.

Our VRF selection software intuitively guides you step-by-step through equipment selection, so you can quickly and accurately choose an appropriate and cost-effective equipment package for each project:

- **Design detailed final system drawings** including piping and wiring diagrams.
- **Accurately select systems** using a System Sizing Analysis. Proprietary algorithms calculate system size using data on all included units and piping, load, and site specific measurements to ensure your system is optimized.
- **Select options and accessories** using intuitively designed features and functionality that make the design process fast, easy, and accurate. So, there is no need to refer to additional information or perform further calculations.
- **Output reports** as Excel and PDF files and drawings as AutoCAD, Revit and PDF files.
- **Generate pricing** for equipment through our pricing system, UST, and adjust pricing to reflect the desired margin for the project.
- **Generate a complete bill of materials** with itemized pricing and a complete quotation submittal package with drawings and detailed product information.
- **Send the bill of materials directly to the ordering system.**

Once you have ordered equipment, VRFPro.com is your source for all the product information you need including product documentation, technical and service manuals, troubleshooting guides, brochures, videos, technical support, contact information, and more. All information is available instantly through your smartphone or tablet simply by scanning the Quick Reference (QR) code on the product nameplate. The QR code can also be used for fast, simple warranty registration.



CUSTOMER SERVICE AT EVERY STEP

A dedicated support center for VRF systems

distinguishes our approach from others in the industry. One phone number connects you with the support you need to address any issue:

- Application and design questions or collaboration
- General customer service help
- Training questions or scheduling
- Technical questions or assistance

Throughout the application and design phase of a project, you can call upon our technical support team to answer questions and provide guidance as needed. We provide multiple levels of support depending upon the level of expertise that is required.



During the ordering process, our customer service team can help you place orders and will answer questions about order status and inventory.

We maintain a full supply of equipment, and our customer service representatives can tell you exactly what's in stock and ready to ship. They can also coordinate special deliveries and fulfill special requirements to ensure the right equipment arrives when needed and everything is properly labeled for efficient installation.

After purchase, our technical support team is on-call every Monday through Friday 7:00 am to 5:00 pm central time to answer questions from the field. Whether you have questions or concerns or need help troubleshooting a problem, they'll provide the technical assistance needed to resolve your issue.

Our customer service team is also available to answer questions about training including course availability and class schedules. And they can help with class registration and special requests such as on-site training or special group sessions.

Whatever your needs, we will connect you with experts who can address them quickly and completely. We maintain a thorough case history – past issues, open tickets, and staff member(s) who helped on previous calls – to ensure an efficient process. We're equipped to handle a wide range of issues and are committed to resolving them quickly, professionally, and to your complete satisfaction.

ON-TIME, ACCURATE DELIVERIES

INTEGRATED LOGISTICS SYSTEMS

The local Johnson Controls logistics team is in constant communication with our Johnson Controls-Hitachi Air Conditioning partners around the globe, so you can count on equipment arriving when you need it. Our ample inventory and advanced order management and logistics systems ensure that you can set a project timeline, schedule labor efficiently, and meet your installation deadlines. Fast, accurate parts delivery from our state-of-

the-art distribution center in the Memphis area – where UPS and FedEx have hubs – simplify expedited shipments when additional parts are needed. Most equipment arrives within one to three days, and all shipments arrive within five days.

And, when your equipment arrives, it will be ready for installation. Our professionals have been in the warehouse business for over 20 years, and they take special care to ensure that your equipment arrives at the job site undamaged. Our 99% damage-free work record exceeds the industry average.



WORLD-CLASS TRAINING

Our premier VRF training center offers an extensive line of classes with specialized modules and topics to ensure you have the knowledge and skills needed to effectively and efficiently deploy our VRF technology. Our classes help:

- **salespeople** submit competitive bids and close deals
- **engineers** easily and accurately design, select and configure equipment
- **installers** proficiently complete jobs on-time and on-budget
- **service technicians** efficiently maintain, troubleshoot, and repair systems

The training center includes a dedicated VRF laboratory with multiple working systems, components, controls and integration equipment to provide hands-on experience for students. Videos and webinars supplement classroom learning on specific subjects to refresh and enhance the skills of your sales, design, installation, and service teams. With our VRF training programs, your staff will have the knowledge and confidence to compete in a growing industry. Courses include:

VRF System Design and Engineering for architects, contractors, consulting engineers, installation mechanics, controls engineers, and others involved in the design or selection of VRF and ductless systems.

Participants gain deep knowledge and practical experience in effectively and efficiently designing and selecting equipment for Hitachi **SmartFlex** VRF systems. The class includes extensive hands-on experience with the VRF Selection Tool to help participants confidently design, select, and submit specifications for various commercial applications.

VRF Installation and Commissioning for mechanical contractors, installation mechanics, and controls and service technicians.

This course teaches proper procedures for start-up, commissioning, and routine maintenance of Hitachi **SmartFlex** VRF systems. Participants will learn the proper procedures for accurately and comprehensively inspecting installations before startup, gain hands-on experience configuring controls for maximum system efficiency, explore tools and resources available to support fast and easy installation and commissioning, and learn proper maintenance schedules and techniques that help maximize efficiency and service life.



WORLD-CLASS TRAINING *(CONTINUED)*

VRF Service and Troubleshooting. This instructor-led class covers proper procedures and techniques for servicing and troubleshooting VRF systems and includes extensive hands-on experience with fully functional VRF lab equipment. Students learn to use the seven-segment display and the VRF service checker tool on live equipment to minimize the time necessary to diagnose and repair equipment in the field. The course includes various maintenance procedures and maintenance scheduling considerations for efficient system operation and system longevity.

Controls Commissioning. In this instructor-led course, students learn proper procedures and techniques for installing and commissioning the VRF Controls systems. Students gain extensive hands-on experience with fully functional VRF lab equipment to learn the proper procedures and techniques to accurately and comprehensively install and commission VRF Controls. Material covered includes identification of error codes and techniques used to diagnose communications errors on newly installed or existing equipment.

Johnson Controls
VRF Training Center
features
a training lab
with multiple working
systems and expert
instructors.



PARTNER FOR THE LONG-TERM

STATE-OF-THE-ART WARRANTY SYSTEM

Our warranty registration process is the easiest in the industry. Simply complete your commissioning and start-up form, and all your equipment is automatically registered for a standard warranty. Our system automatically captures the information needed. Once you've completed training, you are automatically upgraded to our extended warranty.



Hitachi **SmartFlex** VRF systems



HITACHI SMARTFLEX™ VRF SYSTEMS: FEATURES AND BENEFITS

	FEATURES	ADVANTAGES	BENEFITS
ARCHITECT / SYSTEM DESIGNER	Pipe runs up to 3,281 feet. Vertical piping distance between Outdoor Unit and Indoor Unit is now up to 360 feet.*	<ul style="list-style-type: none"> • Suitable for short or long runs; accommodates nearly all projects 	<ul style="list-style-type: none"> • Provides exceptional design freedom
	Compact footprint	<ul style="list-style-type: none"> • Requires less indoor space than conventional systems 	<ul style="list-style-type: none"> • Footprint is now up to 38% smaller for more placement options and use within even tighter lot lines.
	Modular components	<ul style="list-style-type: none"> • Provides flexibility to customize systems to each project's needs 	<ul style="list-style-type: none"> • Simplifies design process • Allows easy updates as space is reconfigured or expanded
	Low Ambient Outdoor Units	<ul style="list-style-type: none"> • Effectively heat down to -13°F 	<ul style="list-style-type: none"> • Provide efficient and reliable cold-climate heating performance
	Non-ducted systems	<ul style="list-style-type: none"> • Ultimate in design flexibility • Reduces clearance between building floors 	<ul style="list-style-type: none"> • Reduces system costs • Saves space • Ideal for historic renovations
	Ducted systems	<ul style="list-style-type: none"> • Accommodates retrofits by making use of existing duct infrastructure • New fan design increases static pressure. • Suits unique buildings that include ducted and non-ducted areas 	<ul style="list-style-type: none"> • Reduces overall construction costs
	EconoFresh Economizer	<ul style="list-style-type: none"> • Provides energy-saving free-cooling (or outside air to maintain good indoor air quality) 	<ul style="list-style-type: none"> • Saves energy and maintains good indoor air quality
	Gen II Heat Pump Systems	<ul style="list-style-type: none"> • Precisely heats or cools multiple zones 	<ul style="list-style-type: none"> • Provide extreme system design flexibility
	Gen II Heat Recovery Systems	<ul style="list-style-type: none"> • Allow simultaneous heating/cooling • Allows transfer of excess heat/cooling from one zone to another space 	<ul style="list-style-type: none"> • Maximize comfort and efficiency • Maximize design flexibility • Increase occupant comfort to specified zones
	Comprehensive training	<ul style="list-style-type: none"> • Modules tailored to specific job functions 	<ul style="list-style-type: none"> • Enables effective equipment selection and specification
	Web-based system selection software	<ul style="list-style-type: none"> • Intuitive functionality that simplifies and speeds designs • Accessible from any computer or tablet 	<ul style="list-style-type: none"> • Allow confident selection and right-sizing of systems
Multi-Port Change-Over Boxes (COBs) available with 4, 8, and 12 ports	<ul style="list-style-type: none"> • Multi-port COBs provide multiple layout options and accommodate future growth 	<ul style="list-style-type: none"> • Provide exceptional design flexibility 	

* When Outdoor Unit is above Indoor Unit

	FEATURES	ADVANTAGES	BENEFITS
MECHANICAL CONTRACTOR / INSTALLER	Installation simplicity	<ul style="list-style-type: none"> • Outdoor unit piping can be connected from front, back or underneath. • Small and light indoor units are easy to handle without heavy equipment • Outdoor Units are smaller and lighter than before 	<ul style="list-style-type: none"> • Reduces installation time and cost • Provides more placement options
	Comprehensive training	<ul style="list-style-type: none"> • Modules tailored to specific job functions 	<ul style="list-style-type: none"> • Enables professional, high-quality, timely installation
	Consistent, reliable product delivery	<ul style="list-style-type: none"> • Ensures correct delivery to job sites on time 	<ul style="list-style-type: none"> • Enhances installation efficiency • Allows efficient labor scheduling
	Easy maintenance access	<ul style="list-style-type: none"> • All components accessible via removal of one panel on outdoor unit 	<ul style="list-style-type: none"> • Speeds up time spent on maintenance, repair, and troubleshooting, if required.
	Easy access to product information	<ul style="list-style-type: none"> • All product information is available on VRFPro.com portal • QR code on unit nameplate allows access to all information on that unit, including warranty registration. 	<ul style="list-style-type: none"> • Simplifies and speeds up maintenance, troubleshooting and repairs
	Refrigerant check	<ul style="list-style-type: none"> • Automatically checks that system is charged with the correct amount of refrigerant to meet requirements. 	<ul style="list-style-type: none"> • Helps contractor and installer adjust for optimum efficiency and performance

HITACHI SMARTFLEX™ VRF SYSTEMS: FEATURES AND BENEFITS

		FEATURES	ADVANTAGES	BENEFITS
BUILDING OWNER	System	Rotational operation	<ul style="list-style-type: none"> In multiple-unit applications at partial load, outdoor units operate alternately so that operating hours are shared equally. 	<ul style="list-style-type: none"> Optimizes efficiency Extends service life Increases reliability
		Backup operation function	<ul style="list-style-type: none"> Allows one outdoor unit to be taken off-line for maintenance while remaining units keep operating. 	<ul style="list-style-type: none"> Avoids system downtime Protects occupant comfort
		Efficiency optimized for part-load operation	<ul style="list-style-type: none"> Certified efficiency among industry's highest for VRF systems 	<ul style="list-style-type: none"> Saves energy
		Optimum individualized comfort	<ul style="list-style-type: none"> Heat recovery systems deliver simultaneous heating and cooling 	<ul style="list-style-type: none"> Efficient heating/cooling Maximizes occupant comfort
		Noise reduction preference mode	<ul style="list-style-type: none"> Lets users choose from three settings for a "not to exceed" sound level 	<ul style="list-style-type: none"> Extremely quiet (sound ratings as low as 51 dBA for outdoor units; 26 dBA for indoor units) Ideal where outdoor units are positioned on side of building or in locations where there are noise restrictions
	Compressor	DC inverter-driven scroll compressor	<ul style="list-style-type: none"> Redesigned to deliver the optimum efficiency at normal load conditions Dual inverter compressors are standard in 8, 10, 12, 14 and 16 ton units for increased efficiency 	<ul style="list-style-type: none"> Among industry's most efficient VRF systems: Highest IEER Highest SCHE Highest COP
		Compressor modulation in small increments	<ul style="list-style-type: none"> Smoothly delivers only the exact amount of refrigerant needed for the load 	<ul style="list-style-type: none"> Allows fine control for optimum comfort Saves energy
	Outdoor Units	Demand control	<ul style="list-style-type: none"> Users can select from a wide variety of power settings from 100% to 60% and program "not to exceed" a given power level 	<ul style="list-style-type: none"> Limits electric demand charges Limits equipment wear and tear Reduces noise
		Load shedding	<ul style="list-style-type: none"> Allows programming to turn units on/off in rotation at 10- to 20-minute intervals 	<ul style="list-style-type: none"> Saves energy Limits demand charges
		Dual fan design	<ul style="list-style-type: none"> Dual fan design increases airflow - up to 23% - and decreases sound 	<ul style="list-style-type: none"> Reduces noise Extends motor life Increases airflow
		Dual heat exchanger	<ul style="list-style-type: none"> Newly designed dual heat exchanger in Gen II Outdoor Units provides 10% more surface area 	<ul style="list-style-type: none"> Increases capacity Improves efficiency
	Indoor Units	As high as 1.2 in. WG static pressure in ducted systems	<ul style="list-style-type: none"> Offers adjustable speeds to match any site-specific static pressure requirement 	<ul style="list-style-type: none"> Flexibility to accommodate long or short ductwork runs
		Optional motion and radiant sensors	<ul style="list-style-type: none"> Sets back temperature when space is unoccupied, increasing efficiency even further 	<ul style="list-style-type: none"> Saves energy
	Controls	H-Link II Protocol	<ul style="list-style-type: none"> Controls multiple indoor and outdoor units from one control point Adds versatility to connect various central control options 	<ul style="list-style-type: none"> Maximizes indoor comfort Saves energy Improves system management
		Temperature control	<ul style="list-style-type: none"> Adjusts in 1 degree Fahrenheit increments Adjustable fan speeds 	<ul style="list-style-type: none"> Auto-adjusts for daylight saving time Provides options to satisfy multiple projects/buildings
		VRF Smart Gateway	<ul style="list-style-type: none"> Enables control of VRF systems by way of a building management system (e.g., Facility Explorer®) for almost unlimited control in a building or campus enterprise. 	<ul style="list-style-type: none"> Automatic data formatting reduces integration time and expense Full BMS capabilities enable superior control of all system components Wi-Fi accessibility enables 24/7 monitoring and control from laptops, tablets and smartphones

Indoor Units

Hitachi **SmartFlex™** VRF indoor units operate quietly and are easy to install, service and maintain. A wide variety of non-ducted and ducted units are available in styles and capacities to fit multiple applications. Units operate quietly with sound ratings as low as 26 dBA.

- | | |
|---------------------|-------------------------------------|
| 1-Way Cassette | Ducted High Static |
| 2-Way Cassette | Ducted Medium Static |
| 4-Way Mini Cassette | Ducted Slim |
| 4-Way Cassette | Dedicated Outside Air System (DOAS) |
| Ceiling-Suspended | EconoFresh Economizer |
| Wall-Mount | Multi-Position Air Handler |
| Floor-Exposed | |
| Floor-Concealed | |



INDOOR UNITS: OVERVIEW

1-WAY CASSETTE INDOOR UNIT



This slim and stylish yet inexpensive unit is ideal for spaces that only require one-way airflow.



CEILING-SUSPENDED INDOOR UNIT



This unit with its sleek design operates quietly and efficiently while evenly distributing airflow.



2-WAY CASSETTE INDOOR UNIT



Providing bi-directional airflow, this exceptionally quiet unit is a good choice for many different spaces.



WALL-MOUNT INDOOR UNIT



With wide-angle louvers, this unit distributes air comfortably throughout a room for an even temperature.



4-WAY MINI CASSETTE INDOOR UNIT



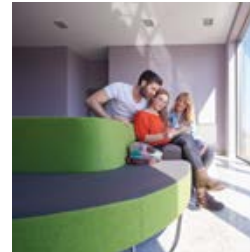
This versatile unit is quiet, energy-efficient and compact, making it a great choice for many applications.



FLOOR-EXPOSED INDOOR UNIT



This slim-design unit leaves design options open and is ideal for perimeter conditioning of air.



4-WAY CASSETTE INDOOR UNIT



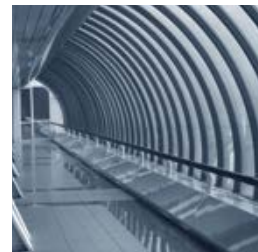
Compact and lightweight, this unit with 4-way airflow is easy to install even in tight spaces.



FLOOR-CONCEALED INDOOR UNIT



This unit has a compact design which enables installation in many spaces where perimeter conditioning of air is needed.



DUCTED HIGH STATIC INDOOR UNIT



This unit has a high-efficiency AC fan motor, multiple fan speeds and bottom access for ease of service.



DEDICATED OUTSIDE AIR SYSTEM (DOAS)



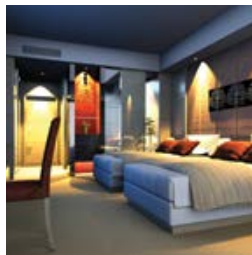
This unit enables fresh air to be brought into the VRF system for a healthier, more comfortable indoor environment.



DUCTED MEDIUM STATIC INDOOR UNIT



With a high-efficiency DC fan motor, this unit has multiple fan speeds and bottom access for ease of service.



ECONOFRESH ECONOMIZER INDOOR UNIT



This unit combines a ducted medium static unit with an Economizer Kit to provide outside air/free cooling when conditions permit.



DUCTED SLIM INDOOR UNIT



This slim-line unit features a high-efficiency DC fan motor, multiple fan speeds and bottom access for ease of service.

















MULTI-POSITION AIR HANDLER UNIT



This flexible unit with multiple installation positions is ideal both for residential and light commercial applications.



INDOOR UNIT SELECTION

Tonnage		0.5	0.7	1.0	1.3	1.5	2.0	2.3	2.5	3.0	4.0	4.5	5.0	6.0	8.0	
1-Way Cassette Indoor Unit		[Blue bar from 0.5 to 1.3]														
2-Way Cassette Indoor Unit		[Blue bar from 1.5 to 2.0]														
4-Way Mini Cassette Indoor Unit		[Blue bar from 0.7 to 1.5]														
4-Way Cassette Indoor Unit		[Blue bar from 0.7 to 4.0]														
Ceiling Suspended Indoor Unit		[Blue bars from 1.3 to 1.5, 1.5 to 2.0, 2.5 to 3.0]														
Wall Mount Indoor Unit		[Blue bar from 0.5 to 2.0, 2.5 to 2.5]														
Floor Exposed Indoor Unit		[Blue bar from 0.5 to 1.3]														
Floor Concealed Indoor Unit		[Blue bar from 0.5 to 1.3]														
Ducted High Static Indoor Unit		[Blue bar from 1.3 to 5.0, 6.0 to 8.0]														
Ducted Medium Static Indoor Unit		[Blue bar from 0.5 to 5.0]														
Ducted Slim Indoor Unit		[Blue bar from 0.5 to 1.5]														
Dedicated Outside Air System (DOAS)		[Blue bar from 8.0 to 8.0]														
EconoFresh Economizer Indoor Unit		[Blue bar from 2.5 to 4.0]														
Multi-Position Air Handler Unit		[Blue bars from 1.5 to 2.0, 2.5 to 4.0, 5.0 to 5.0]														

1-WAY CASSETTE INDOOR UNIT

Ceiling-mounted one-way cassettes offer compact designs and a choice of corner-mounted, one-way discharge or two-way discharge (from the front and downward).

KEY FEATURES

- Slim and stylish design
- Automatic swing louver distributes airflow evenly for uniform temperature
- Optional energy saving motion and radiant heat sensor for optimized airflow and temperature control in response to room occupancy.



Capacities 6,000 to 15,000 Btu/hr

Tonnage				0.5		0.7		1.0		1.3	
1-Way Cassette Indoor Unit – Model				HIC1006B21S		HIC1008B21S		HIC1012B21S		HIC1015B21S	
Power Supply				AC 1 Phase, 208/230V, 60Hz							
Nominal Cooling Capacity *		Btu / h	(kW)	6000	(1.8)	8000	(2.3)	12000	(3.5)	15000	(4.4)
Nominal Heating Capacity *		Btu / h	(kW)	6700	(2.0)	9000	(2.6)	13500	(4.0)	17000	(5.0)
Sound Pressure Level (Overall A Scale) (Hi2-Hi-Me-Lo)		dB		34-32-29-27		36-34-31-28		40-37-33-31		42-38-35-31	
Outer Dimensions	Height	in.	(mm)	9-1/4	(235)	9-1/4	(235)	9-1/4	(235)	9-1/4	(235)
	Width	in.	(mm)	35-7/16	(900)	35-7/16	(900)	35-7/16	(900)	35-7/16	(900)
	Depth	in.	(mm)	27-15/16	(710)	27-15/16	(710)	27-15/16	(710)	27-15/16	(710)
Net Weight		lbs.	(kg)	55	(25)	55	(25)	57	(26)	57	(26)
Refrigerant				R410A							
Indoor Fan	Air Flow Rate	cfm		300-265-229-212		335-300-265-229		459-406-353-300		512-459-388-335	
	(Hi2-Hi-Me-Lo)	(m³/min)		(8.5-7.5-6.5-6)		(9.5-8.5-7.5-6.5)		(13-11.5-10-8.5)		(14.5-13-11-9.5)	
External Pressure		in. W.G.		0.0		0.0		0.0		0.0	
		(Pa)		(0)		(0)		(0)		(0)	
Motor Nominal Output		W		50		50		50		50	
Connections				Flare-Nut Connection (with Flare Nuts)							
Refrigerant Piping				Flare-Nut Connection (with Flare Nuts)							
	Liquid Line	in.	(mm)	1/4	(6.35)	1/4	(6.35)	1/4	(6.35)	1/4	(6.35)
	Gas Line	in.	(mm)	1/2	(12.70)	1/2	(12.70)	1/2	(12.70)	1/2	(12.70)
Condensate Drain				VP25							
	OU	in.	(mm)	1-1/4	(32)	1-1/4	(32)	1-1/4	(32)	1-1/4	(32)
	IU	in.	(mm)	31/32	(25)	31/32	(25)	31/32	(25)	31/32	(25)
Adjustable Panel Model Name				P-AP36CNA				P-AP56CNA			
Applicable Indoor Unit Model				HIC1006B21S and HIC1008B21S				HIC1012B21S and HIC1015B21S			
Color				Neutral White							
Dimension	Height	in.	(mm)	1-3/8 (35)							
	Width	in.	(mm)	43-5/16 (1100)							
	Depth	in.	(mm)	31-1/2 (800)							
Net Weight		lbs.	(kg)	10 (4.5)							

NOTES:

* Nominal capacity condition is based on the following conditions. See www.ahrinet.org for more information.

COOLING OPERATION CONDITIONS HEATING OPERATION CONDITIONS

Indoor Air Inlet Temperature:	80°F DB (26.7°C DB)	Indoor Air Inlet Temperature:	70°F DB (21.1°C DB)	Piping Length: 24 ft. 7-3/16 in. (7.5m) Piping Lift: 0ft. (0m)
	67°F WB (19.4°C WB)	Outdoor Air Inlet Temperature:	47°F DB (8.3°C DB)	
Outdoor Air Inlet Temperature:	95°F DB (35.0°C DB)		43°F WB (6.1°C WB)	

2-WAY CASSETTE INDOOR UNIT

With a sound level down to 33 dB(A) this unit is among the quietest on the market. Individual louver control with auto-swing or fixed air exhaust angles enables comfortable space environment in a variety of room layouts.



Capacities 18,000 to 24,000 Btu/hr

KEY FEATURES

- Nominal capacity of 18 or 24 MBH
- Compact design - requires only 11-3/4" height
- Energy-efficient DC fan motor
- Optional Air Filter box
- Standard integrated condensate DC drain pump with 33-7/16 inch lift height
- Optional energy saving motion and radiant heat sensor for optimized airflow and temperature control in response to room occupancy.

Tonnage				1.5		2.0	
2-Way Cassette Indoor Unit – Model				HIC2018B21S		HIC2024B21S	
Power Supply				AC 1 Phase, 208/230V, 60Hz			
Nominal Cooling Capacity *		Btu/h	(kW)	18,000	(5.3)	24,000	(7.0)
Nominal Heating Capacity *		Btu/h	(kW)	20,000	(5.9)	27,000	(7.9)
Sound Pressure Level (Overall A Scale) (Hi2-Hi-Me-Lo)			dB	42-39-36-33		46-43-39-34	
Outer Dimensions	Height	in.	(mm)	11-3/4	(298)	11-3/4	(298)
	Width	in.	(mm)	33-7/8	(860)	33-7/8	(860)
	Depth	in.	(mm)	24-13/16	(630)	24-13/16	(630)
Net Weight		lbs.	(kg)	55.1	(25)	55.1	(25)
Refrigerant				R410A			
Indoor Fan	Air Flow Rate	cfm		653-582-512-441		777-688-582-459	
	(Hi2-Hi-Me-Lo)	(m³/min)		(18.5-16.5-14.5-12.5)		(22-19.5-16.5-13)	
External Pressure			in. W.G.	0.0		0.0	
			(Pa)	(0)		(0)	
Motor Nominal Output			W	57		57	
Connections							
Refrigerant Piping				Flare-Nut Connection (with Flare Nuts)			
	Liquid Line	in.	(mm)	3/8	(9.52)	3/8	(9.52)
	Gas Line	in.	(mm)	5/8	(15.88)	5/8	(15.88)
Condensate Drain				VP25		VP25	
	OU	in.	(mm)	1-1/4	(32)	1-1/4	(32)
	IU	in.	(mm)	31/32	(25)	31/32	(25)
Adaptable Panel Model				P-AP90DNA (without Motion Sensor)			
Color				Neutral White			
Outer Dimensions	Height	in.	(mm)	1-3/16		(30)	
	Width	in.	(mm)	43-5/16		(1,100)	
	Depth	in.	(mm)	27-15/16		(709)	
Net Weight		in.	(mm)	16.5		(7.5)	

NOTES:

* Nominal capacity condition is based on the following conditions. See www.ahrinet.org for more information.

COOLING OPERATION CONDITIONS HEATING OPERATION CONDITIONS

Indoor Air Inlet Temperature:	80°F DB (26.7°C DB)	Indoor Air Inlet Temperature:	70°F DB (21.1°C DB)
	67°F WB (19.4°C WB)	Outdoor Air Inlet Temperature:	47°F DB (8.3°C DB)
Outdoor Air Inlet Temperature:	95°F DB (35.0°C DB)		43°F WB (6.1°C WB)

Piping Length: 24 ft. 7-3/16 in. (7.5m)
Piping Lift: 0ft. (0m)

4-WAY MINI-CASSETTE INDOOR UNIT

Mini-cassette indoor units are designed to meet a variety of building requirements in energy efficient, quiet packages. Compact size enables installation in tight spaces.



Capacities 8,000 to 18,000 Btu/hr

KEY FEATURES

- High-performance and high-efficiency heat exchanger
- Efficient turbo fan for low-noise performance
- Wide range of air flow settings
- Optional energy saving motion and radiant heat sensor for optimized airflow and temperature control in response to room occupancy.
- Motorized 2-, 3- or 4-channel air flow louvers with louver kit

Tonnage				0.7		1.0		1.3		1.5	
4-Way Mini-Cassette Indoor Unit – Model				HICM008B21S		HICM012B21S		HICM015B21S		HICM018B21S	
Power Supply				AC 1Phase, 208/230V, 60Hz							
Nominal Cooling Capacity*	Btu / h	(kW)		8,000	(2.3)	12,000	(3.5)	15,000	(4.4)	18,000	(5.3)
Nominal Heating Capacity*	Btu / h	(kW)		9,000	(2.6)	13,500	(4.0)	17,000	(5.0)	20,000	(5.9)
Sound Pressure Level (Overall A Scale) (Hi2-Hi-Me-Lo)	dB			38-34-30-24.5		41-37-33-27.5		45-39-35-31		47-43-39-35	
Outer Dimensions	Height	in.	(mm)	11-1/4	(285)	11-1/4	(285)	11-1/4	(285)	11-1/4	(285)
	Width	in.	(mm)	22-7/16	(570)	22-7/16	(570)	22-7/16	(570)	22-7/16	(570)
	Depth	in.	(mm)	22-7/16	(570)	22-7/16	(570)	22-7/16	(570)	22-7/16	(570)
Net Weight	lbs.	(kg)		35	(16)	35	(16)	37	(17)	37	(17)
Refrigerant				R410A							
Indoor Fan	Air Flow Rate	cfm		424-353-300-212		459-388-335-247		530-424-353-282		565-494-424-353	
	(Hi2-Hi-Me-Lo)	(m³/min)		(12-10-8.5-6)		(13-11-9.5-7)		(15-12-10-8)		(16-14-12-10)	
External Pressure	in. W.G.			0.0		0.0		0.0		0.0	
	(Pa)			(0)		(0)		(0)		(0)	
Motor Nominal Output	W			57		57		57		57	
Connections											
Refrigerant Piping				Flare-Nut Connection (with Flare Nuts)							
	Liquid Line	in.	(mm)	1/4	(6.35)	1/4	(6.35)	1/4	(6.35)	3/8	(9.52)
	Gas Line	in.	(mm)	1/2	(12.70)	1/2	(12.70)	1/2	(12.70)	5/8	(15.88)
Condensate Drain				VP25							
	OU	in.	(mm)	1-1/4	(32)	1-1/4	(32)	1-1/4	(32)	1-1/4	(32)
	IU	in.	(mm)	31/32	(25)	31/32	(25)	31/32	(25)	31/32	(25)
Adaptable Panel Model				P-AP56NAM							
Color				Neutral White							
Outer Dimensions	Height	in.	(mm)	1-3/16				(30)			
	Width	in.	(mm)	24-13/32				(620)			
	Depth	in.	(mm)	24-13/32				(620)			
Net Weight	lbs.	(kg)	6				(3)				

NOTES:

* Nominal capacity condition is based on the following conditions. See www.ahrinet.org for more information.

COOLING OPERATION CONDITIONS HEATING OPERATION CONDITIONS

Indoor Air Inlet Temperature:	80°F DB (26.7°C DB)	Indoor Air Inlet Temperature:	70°F DB (21.1°C DB)
	67°F WB (19.4°C WB)	Outdoor Air Inlet Temperature:	47°F DB (8.3°C DB)
Outdoor Air Inlet Temperature:	95°F DB (35.0°C DB)		43°F WB (6.1°C WB)

Piping Length: 24 ft. 7-3/16 in. (7.5m)
Piping Lift: 0ft. (0m)

4-WAY CASSETTE INDOOR UNIT

Ceiling-mounted 4-way cassettes measuring 33 x 33 inch (84 x 84 cm) are offered with standard decorative panels. Compact, thin and lightweight, they are easy to install even in tight spaces.



Capacities: 8,000 to 48,000 Btu/hr

Tonnage			0.7		1.0		1.3		1.5	
4-Way Cassette Indoor Unit – Model			HIC4008B21S		HIC4012B21S		HIC4015B21S		HIC4018B21S	
Power Supply			AC 1Phase, 208/230V, 60Hz							
Nominal Cooling Capacity *	Btu/h		8,000		12,000		15,000		18,000	
	(kW)		(2.3)		(3.5)		(4.4)		(5.3)	
Nominal Heating Capacity *	Btu/h		9,000		13,500		17,000		20,000	
	(kW)		(2.6)		(4.0)		(5.0)		(5.8)	
Sound Pressure Level (Overall A Scale) (Hi2-Hi-Me-Lo)		dB	33-30-28-27		35-31-30-27		37-32-30-27		42-36-32-28	
Outer Dimensions	Height	in. (mm)	9-3/4	(248)	9-3/4	(248)	9-3/4	(248)	9-3/4	(248)
	Width	in. (mm)	33-1/16	(840)	33-1/16	(840)	33-1/16	(840)	33-1/16	(840)
	Depth	in. (mm)	33-1/16	(840)	33-1/16	(840)	33-1/16	(840)	33-1/16	(840)
Net Weight		lbs. (kg)	44	(20)	46	(21)	46	(21)	49	(22)
Refrigerant			R410A							
Indoor Fan	Air Flow Rate	cfm	530-459-388-318		741-600-494-388		777-600-494-388		953-777-635-494	
	(Hi2-Hi-Me-Lo)	(m³/min)	(15-13-11-9)		(21-17-14-11)		(22-17-14-11)		(27-22-18-14)	
External Pressure		in. W.G.	0.0		0.0		0.0		0.0	
		(Pa)	(0)		(0)		(0)		(0)	
Motor Nominal Output		W	57		57		57		57	
Connections			Flare-Nut Connection (with Flare Nuts)							
Refrigerant Piping			Flare-Nut Connection (with Flare Nuts)							
	Liquid Line	in.(mm)	1/4	(6.35)	1/4	(6.35)	1/4	(6.35)	3/8	(9.52)
	Gas Line	in.(mm)	1/2	(12.70)	1/2	(12.70)	1/2	(12.70)	5/8	(15.88)
Condensate Drain			VP25		VP25		VP25		VP25	
	OU	in.(mm)	1-1/4	(32)	1-1/4	(32)	1-1/4	(32)	1-1/4	(32)
	IU	in.(mm)	31/32	(25)	31/32	(25)	31/32	(25)	31/32	(25)

NOTES:

* Nominal capacity condition is based on the following conditions. See www.ahrinet.org for more information.

COOLING OPERATION CONDITIONS HEATING OPERATION CONDITIONS

Indoor Air Inlet Temperature:	80°F DB (26.7°C DB)	Indoor Air Inlet Temperature:	70°F DB (21.1°C DB)
	67°F WB (19.4°C WB)	Outdoor Air Inlet Temperature:	47°F DB (8.3°C DB)
Outdoor Air Inlet Temperature:	95°F DB (35.0°C DB)		43°F WB (6.1°C WB)

Piping Length: 24 ft. 7-3/16 in. (7.5m)
Piping Lift: 0ft. (0m)

4-WAY CASSETTE INDOOR UNIT (CONTINUED)

KEY FEATURES

- Optional energy saving motion and radiant heat sensor for optimized airflow and temperature control in response to room occupancy
- Multiple fan speed settings
- Air filter (polypropylene) included
- Anti-bacterial filter available
- Optional fresh air kit available
- Four air volume settings including Ultra Hi for higher ceilings
- 4-way airflow standard but can be configured for 2-way or 3-way
- Integrated condensate pumps in all units
- Uniform panel sizing
- Motorized 2-, 3- or 4-channel air flow louvers with louver kit

Tonnage		2.0		2.5		3.0		4.0		
4-Way Cassette Indoor Unit – Model		HIC4024B21S		HIC4030B21S		HIC4036B21S		HIC4048B21S		
Power Supply		AC 1Phase, 208/230V, 60Hz								
Nominal Cooling Capacity *	Btu/h	24,000		30,000		36,000		48,000		
	(kW)	(7.0)		(8.8)		(10.5)		(14.1)		
Nominal Heating Capacity *	Btu/h	27,000		34,000		40,000		54,000		
	(kW)	(7.9)		(10.0)		(11.7)		(15.8)		
Sound Pressure Level (Overall A Scale) (Hi2-Hi-Me-Lo)	dB	42-36-32-28		48-43-39-33		48-45-40-35		48-46-41-37		
Outer Dimensions	Height	in. (mm)	11-23/32 (298)	11-23/32 (298)	11-23/32 (298)	11-23/32 (298)	11-23/32 (298)	11-23/32 (298)		
	Width	in. (mm)	33-1/16 (840)	33-1/16 (840)	33-1/16 (840)	33-1/16 (840)	33-1/16 (840)	33-1/16 (840)		
	Depth	in. (mm)	33-1/16 (840)	33-1/16 (840)	33-1/16 (840)	33-1/16 (840)	33-1/16 (840)	33-1/16 (840)		
Net Weight	lbs. (kg)	57 (26)	57 (26)	57 (26)	57 (26)	57 (26)	57 (26)	57 (26)		
Refrigerant		R410A								
Indoor Fan	Air Flow Rate	cfm	953-812-635-494		1306-1094-847-706		1306-1165-918-741		1306-1236-988-777	
	(Hi2-Hi-Me-Lo)	(m³/min)	(27-23-18-14)		(37-31-24-20)		(37-33-26-21)		(37-35-28-22)	
External Pressure	in. W.G.		0.0		0.0		0.0		0.0	
	(Pa)		(0)		(0)		(0)		(0)	
Motor Nominal Output	W		57		127		127		127	
Connections										
Refrigerant Piping		Flare-Nut Connection (with Flare Nuts)								
	Liquid Line	in.(mm)	3/8 (9.52)	3/8 (9.52)	3/8 (9.52)	3/8 (9.52)	3/8 (9.52)	3/8 (9.52)		
	Gas Line	in.(mm)	5/8 (15.88)	5/8 (15.88)	5/8 (15.88)	5/8 (15.88)	5/8 (15.88)	5/8 (15.88)		
Condensate Drain		VP25								
	OU	in.(mm)	1-1/4 (32)	1-1/4 (32)	1-1/4 (32)	1-1/4 (32)	1-1/4 (32)	1-1/4 (32)		
	IU	in.(mm)	31/32 (25)	31/32 (25)	31/32 (25)	31/32 (25)	31/32 (25)	31/32 (25)		

Adaptable Panel Model (applies to all models)		P-AP160NA2 (without Motion and Radiant Heat Sensors)		P-AP160NAE1 (with Motion and Radiant Heat Sensors)	
Color		Neutral White			
Outer Dimensions	Height	in.(mm)	1-9/16 (40)	1-9/16 (40)	(40)
	Width	in.(mm)	37-13/32 (950)	37-13/32 (950)	(950)
	Depth	in.(mm)	37-13/32 (950)	37-13/32 (950)	(950)
Net Weight	lbs(kg)	14 (6.5)	14 (6.5)	14 (6.5)	(6.5)

See notes on page 22 for cooling operation and heating operation conditions.



CEILING-SUSPENDED INDOOR UNIT

Ceiling-suspended indoor units have a stylized design and color that make them among the most elegant units on the market. Units are equipped with an automatic swing louver to ensure even air distribution.

CEILING-SUSPENDED INDOOR UNIT

KEY FEATURES

- Optional energy saving motion and radiant heat sensor for optimized airflow and temperature control in response to room occupancy
- New fan design for high efficiency and low noise
- Flexible installation for high ceilings



Capacities 15,000 to 36,000 Btu/hr

Tonnage				1.3		2.0		2.5		3.0	
Ceiling-Suspended Indoor Unit – Model				HICS015B21S		HICS024B21S		HICS030B21S		HICS036B21S	
Power Supply				AC 1Phase, 208/230V, 60Hz							
Nominal Cooling Capacity *		Btu / h	(kW)	15,000	(4.4)	24,000	(7.0)	30,000	(8.8)	36,000	(10.5)
Nominal Heating Capacity *		Btu / h	(kW)	17,000	(5.0)	27,000	(7.9)	34,000	(10.0)	40,000	(11.7)
Sound Pressure Level (Overall A Scale) (Hi2-Hi-Me-Lo)		dB		38-35-31-28		43-40-36-31		44-42-37-32		48-45-41-35	
Outer Dimensions	Height	in.	(mm)	9-1/4	(235)	9-1/4	(235)	9-1/4	(235)	9-1/4	(235)
	Width	in.	(mm)	37-13/16	(960)	50	(1270)	62-3/16	(1580)	62-3/16	(1580)
	Depth	in.	(mm)	27-3/16	(690)	27-3/16	(690)	27-3/16	(690)	27-3/16	(690)
Net Weight		lbs.	(kg)	59	(27)	77	(35)	90	(41)	90	(41)
Refrigerant				R410A							
Indoor Fan	Air Flow Rate		cfm	530-459-388-318		847-741-635-512		1059-935-777-600		1236-1094-900-706	
	(Hi2-Hi-Me-Lo)		(m³/min)	(15-13-11-9)		(24-21-18-14.5)		(30-26.5-22-17)		(35-31-25.5-20)	
External Pressure			in. W.G.	0.0		0.0		0.0		0.0	
			(Pa)	(0)		(0)		(0)		(0)	
Motor Nominal Output			W	50		80		160		160	
Connections											
Refrigerant Piping				Flare-Nut Connection (with Flare Nuts)							
	Liquid Line		in. (mm)	1/4	(6.35)	3/8	(9.52)	3/8	(9.52)	3/8	(9.52)
	Gas Line		in. (mm)	1/2	(12.70)	5/8	(15.88)	5/8	(15.88)	5/8	(15.88)
Condensate Drain				VP25							
	OU		in. (mm)	1-1/4	(32)	1-1/4	(32)	1-1/4	(32)	1-1/4	(32)
	IU		in. (mm)	31/32	(25)	31/32	(25)	31/32	(25)	31/32	(25)

NOTES:

* Nominal capacity condition is based on the following conditions. See www.ahrinet.org for more information.

COOLING OPERATION CONDITIONS HEATING OPERATION CONDITIONS

Indoor Air Inlet Temperature:	80°F DB (26.7°C DB)	Indoor Air Inlet Temperature:	70°F DB (21.1°C DB)
	67°F WB (19.4°C WB)	Outdoor Air Inlet Temperature:	47°F DB (8.3°C DB)
Outdoor Air Inlet Temperature:	95°F DB (35.0°C DB)		43°F WB (6.1°C WB)

Piping Length: 24 ft. 7-3/16 in. (7.5m)
Piping Lift: 0ft. (0m)

WALL-MOUNT INDOOR UNIT

Wall-mount indoor units include wide-angle louvers that distribute airflow comfortably. An auto-swing function ensures efficient air distribution and uniform temperature throughout the conditioned space. Drain piping can be connected at the right, left or rear of the unit for ease of installation.



Tonnage			0.5		0.7		1.0	
Wall-Mount Indoor Unit - Model			TIWM006B21S		TIWM008B21S		TIWM012B21S	
Power Supply			AC 1Phase, 208/230V, 60Hz					
Nominal Cooling Capacity *	Btu/h		6,000		8,000		12,000	
	(kW)		(1.8)		(2.3)		(3.5)	
Nominal Heating Capacity *	Btu/h		6,700		9,000		13,500	
	(kW)		(2.0)		(2.6)		(4.0)	
Sound Pressure Level (Overall A Scale) (Hi2-Hi-Me-Lo)		dB	39-35-32-30		39-35-32-30		46-40-36-33	
Outer Dimensions	Height	in.(mm)	11-13/16	(300)	11-13/16	(300)	11-13/16	(300)
	Width	in.(mm)	31-3/32	(790)	31-3/32	(790)	35-7/16	(900)
	Depth	in.(mm)	9-1/16	(230)	9-1/16	(230)	9-1/16	(230)
Net Weight		lbs.(kg)	22	(10)	22	(10)	24	(11)
Refrigerant			R410A					
Indoor Fan	Air Flow Rate	cfm	353-282-247-229		353-282-247-229		494-388-318-265	
	(Hi2-Hi-Me-Lo)	(m³/min)	(10-8-7-6.5)		(10-8-7-6.5)		(14-11-9-7.5)	
External Pressure		in. W.G.	0.0		0.0		0.0	
		(Pa)	(0)		(0)		(0)	
Motor Nominal Output		W	38		38		38	
Connections								
Refrigerant Piping			Flare-Nut Connection (with Flare Nuts)					
	Liquid Line	in.(mm)	1/4	(6.35)	1/4	(6.35)	1/4	(6.35)
	Gas Line	in.(mm)	1/2	(12.70)	1/2	(12.70)	1/2	(12.70)
Condensate Drain			VP16		VP16		VP16	
	OU	in.(mm)	7/8	(22)	7/8	(22)	7/8	(22)
	IU	in.(mm)	5/8	(16)	5/8	(16)	5/8	(16)

NOTES:

* Nominal capacity condition is based on the following conditions. See www.ahrinet.org for more information.

COOLING OPERATION CONDITIONS HEATING OPERATION CONDITIONS

Indoor Air Inlet Temperature:	80°F DB (26.7°C DB)	Indoor Air Inlet Temperature:	70°F DB (21.1°C DB)
	67°F WB (19.4°C WB)	Outdoor Air Inlet Temperature:	47°F DB (8.3°C DB)
Outdoor Air Inlet Temperature:	95°F DB (35.0°C DB)		43°F WB (6.1°C WB)

Piping Length: 24 ft. 7-3/16 in. (7.5m)
Piping Lift: 0ft. (0m)

WALL-MOUNT INDOOR UNIT (CONTINUED)

KEY FEATURES

- Removable front panel for easy cleaning.
- Built-in wireless sensor for use with optional wireless zone controller.
- Optional condensate pump



Capacities: 6,000 to 30,000 Btu/hr

Tonnage		1.3		1.5		2.0		2.5			
Wall-Mount Indoor Unit - Model		TIWM015B21S		TIWM018B21S		TIWM024B21S		TIWM030B21S			
Power Supply		AC 1Phase, 208/230V, 60Hz									
Nominal Cooling Capacity *	Btu/h	15,000		18,000		24,000		30,000			
	(kW)	(4.4)		(5.3)		(7.0)		(8.8)			
Nominal Heating Capacity *	Btu/h	17,000		20,000		27,000		34,000			
	(kW)	(5.0)		(5.8)		(7.9)		10.0			
Sound Pressure Level (Overall A Scale) (Hi2-Hi-Me-Lo)		dB		42-40-38-33		49-43-40-36		51-49-46-41		51-49-46-41	
Outer Dimensions	Height	in.(mm)	13-1/8 (333)	13-1/8 (333)	13-1/8 (333)	13-1/8 (333)	13-1/8 (333)	13-1/8 (333)	13-1/8 (333)		
	Width	in.(mm)	45-9/32 (1150)	45-9/32 (1150)	45-9/32 (1150)	45-9/32 (1150)	45-9/32 (1150)	45-9/32 (1150)	45-9/32 (1150)		
	Depth	in.(mm)	9-21/32 (245)	9-21/32 (245)	9-21/32 (245)	9-21/32 (245)	9-21/32 (245)	9-21/32 (245)	9-21/32 (245)		
Net Weight		lbs.(kg)	37 (17)	40 (18)	40 (18)	40 (18)	40 (18)	40 (18)	40 (18)		
Refrigerant		R410A									
Indoor Fan	Air Flow Rate	cfm	530-494-459-353		671-600-494-424		777-671-600-530		777-671-600-530		
	(Hi2-Hi-Me-Lo)	(m³/min)	(15-14-13-10)		(19-17-14-12)		(22-19-17-15)		(22-19-17-15)		
External Pressure		in. W.G.	0.0		0.0		0.0		0.0		
		(Pa)	(0)		(0)		(0)		(0)		
Motor Nominal Output		W	38		38		38		38		
Connections											
Refrigerant Piping		Flare-Nut Connection (with Flare Nuts)									
	Liquid Line	in.(mm)	1/4 (6.35)	3/8 (9.52)	3/8 (9.52)	3/8 (9.52)	3/8 (9.52)	3/8 (9.52)	3/8 (9.52)		
	Gas Line	in.(mm)	1/2 (12.70)	5/8 (15.88)	5/8 (15.88)	5/8 (15.88)	5/8 (15.88)	5/8 (15.88)	5/8 (15.88)		
Condensate Drain		VP16		VP16		VP16		VP16			
	OU	in.(mm)	7/8 (22)	7/8 (22)	7/8 (22)	7/8 (22)	7/8 (22)	7/8 (22)	7/8 (22)		
	IU	in.(mm)	5/8 (16)	5/8 (16)	5/8 (16)	5/8 (16)	5/8 (16)	5/8 (16)	5/8 (16)		

NOTES:

* Nominal capacity condition is based on the following conditions. See www.ahrinet.org for more information.

COOLING OPERATION CONDITIONS HEATING OPERATION CONDITIONS

Indoor Air Inlet Temperature:	80°F DB (26.7°C DB)	Indoor Air Inlet Temperature:	70°F DB (21.1°C DB)
	67°F WB (19.4°C WB)	Outdoor Air Inlet Temperature:	47°F DB (8.3°C DB)
Outdoor Air Inlet Temperature:	95°F DB (35.0°C DB)		43°F WB (6.1°C WB)

Piping Length: 24 ft. 7-3/16 in. (7.5m)
Piping Lift: 0ft. (0m)

FLOOR-EXPOSED INDOOR UNIT

Floor-exposed indoor units have a slim-line design compatible with the style of the room.



Capacities 6,000 to 15,000 Btu/hr

KEY FEATURES

- 8.7-inch (220 mm) depth preserves room space
- 24.8-inch height leaves ample window space
- Ideal for perimeter zone air conditioning

Tonnage				0.5		0.7		1.0		1.3	
Floor-Exposed Indoor Unit – Model				HIFE006B21S		HIFE008B21S		HIFE012B21S		HIFE015B21S	
Indoor Unit Power Supply				AC 1Phase, 208/230V, 60Hz							
Nominal Cooling Capacity *	Btu / h	(kW)	6,000	(1.8)	8,000	(2.3)	12,000	(3.5)	15,000	(4.4)	
Nominal Heating Capacity *	Btu / h	(kW)	6,700	(2.0)	9,000	(2.6)	13,500	(4.0)	17,000	(5.0)	
Sound Pressure Level (Overall A Scale) (Hi-Me-Lo)	dB		39-33-29		39-33-29		43-35-32		48-43-36		
Outer Dimensions	Height	in. (mm)	24-13/16	(630)	24-13/16	(630)	24-13/16	(630)	24-13/16	(630)	
	Width	in. (mm)	41-1/8	(1045)	41-1/8	(1045)	46-1/16	(1170)	55-7/8	(1420)	
	Depth	in. (mm)	8-11/16	(220)	8-11/16	(220)	8-11/16	(220)	8-11/16	(220)	
Net Weight	lbs.	(kg)	61	(28)	61	(28)	68	(31)	79	(36)	
Refrigerant				R410A							
Indoor Fan	Air Flow Rate	cfm	300-247-212		300-247-212		424-353-318		565-494-388		
	(Hi-Me-Lo)	(m ³ /min)	(8.5-7-6)		(8.5-7-6)		(12-10-9)		(16-14-11)		
External Pressure	in. W.G.		0.0		0.0		0.0		0.0		
	(Pa)		(0)		(0)		(0)		(0)		
Motor Nominal Output	W		20		20		28		45		
Connections											
Refrigerant Piping				Flare-Nut Connection (with Flare Nuts)							
	Liquid Line	in. (mm)	1/4	(6.35)	1/4	(6.35)	1/4	(6.35)	1/4	(6.35)	
	Gas Line	in. (mm)	1/2	(12.70)	1/2	(12.70)	1/2	(12.70)	1/2	(12.70)	
Condensate Drain				VP25							
	OD	in. (mm)	1-1/4	(32)	1-1/4	(32)	1-1/4	(32)	1-1/4	(32)	
	IU	in. (mm)	31/32	(25)	31/32	(25)	31/32	(25)	31/32	(25)	

NOTES:

* Nominal capacity condition is based on the following conditions. See www.ahrinet.org for more information.

COOLING OPERATION CONDITIONS HEATING OPERATION CONDITIONS

Indoor Air Inlet Temperature:	80°F DB (26.7°C DB)	Indoor Air Inlet Temperature:	70°F DB (21.1°C DB)
	67°F WB (19.4°C WB)	Outdoor Air Inlet Temperature:	47°F DB (8.3°C DB)
Outdoor Air Inlet Temperature:	95°F DB (35.0°C DB)		43°F WB (6.1°C WB)

Piping Length: 24 ft. 7-3/16 in. (7.5m)
Piping Lift: 0ft. (0m)

FLOOR-CONCEALED INDOOR UNIT

Floor-concealed indoor units are ideal for installation in areas such as the wall beneath windows in a hallway to provide complete comfort within a clean design.

KEY FEATURES

- Compact design for limited spaces
- Provides compatibility with interior designs
- Ideal for perimeter zone air conditioning



Capacities 6,000 to 15,000 Btu/hr

Tonnage				0.5		0.7		1.0		1.3	
Floor-Concealed Indoor Unit – Model				HIFC006B21S		HIFC008B21S		HIFC012B21S		HIFC015B21S	
Indoor Unit Power Supply				AC 1Phase, 208/230V, 60Hz							
Nominal Cooling Capacity *	Btu / h	(kW)		6,000	(1.8)	8,000	(2.3)	12,000	(3.5)	15,000	(4.4)
Nominal Heating Capacity *	Btu / h	(kW)		6,700	(2.0)	9,000	(2.6)	13,500	(4.0)	17,000	(5.0)
Sound Pressure Level (Overall A Scale) (Hi-Me-Lo)	dB			39-33-29		39-33-29		43-35-32		48-43-36	
Outer Dimensions	Height	in.	(mm)	24-7/16	(620)	24-7/16	(620)	24-7/16	(620)	24-7/16	(620)
	Width	in.	(mm)	33-3/8	(848)	33-3/8	(848)	38-5/16	(973)	48-1/8	(1223)
	Depth	in.	(mm)	8-11/16	(220)	8-11/16	(220)	8-11/16	(220)	8-11/16	(220)
Net Weight		lbs.	(kg)	52	(24)	52	(24)	57	(26)	68	(31)
Refrigerant				R410A							
Indoor Fan	Air Flow Rate	cfm		300-247-212		300-247-212		424-353-318		565-494-388	
	(Hi-Me-Lo)	(m ³ /min)		(8.5-7-6)		(8.5-7-6)		(12-10-9)		(16-14-11)	
External Pressure			in. W.G.	0.0		0.0		0.0		0.0	
			(Pa)	(0)		(0)		(0)		(0)	
Motor Nominal Output		W		20		20		28		45	
Connections											
Refrigerant Piping				Flare-Nut Connection (with Flare Nuts)							
	Liquid Line	in.	(mm)	1/4	(6.35)	1/4	(6.35)	1/4	(6.35)	1/4	(6.35)
	Gas Line	in.	(mm)	1/2	(12.70)	1/2	(12.70)	1/2	(12.70)	1/2	(12.70)
Condensate Drain				VP25							
	OU	in.	(mm)	1-1/4	(32)	1-1/4	(32)	1-1/4	(32)	1-1/4	(32)
	IU	in.	(mm)	31/32	(25)	31/32	(25)	31/32	(25)	31/32	(25)

NOTES:

* Nominal capacity condition is based on the following conditions. See www.ahrinet.org for more information.

COOLING OPERATION CONDITIONS HEATING OPERATION CONDITIONS

Indoor Air Inlet Temperature:	80°F DB (26.7°C DB)	Indoor Air Inlet Temperature:	70°F DB (21.1°C DB)
	67°F WB (19.4°C WB)	Outdoor Air Inlet Temperature:	47°F DB (8.3°C DB)
Outdoor Air Inlet Temperature:	95°F DB (35.0°C DB)		43°F WB (6.1°C WB)

Piping Length: 24 ft. 7-3/16 in. (7.5m)
Piping Lift: 0ft. (0m)

DUCTED HIGH STATIC INDOOR UNIT

These Indoor Units now feature higher static pressure:
Up to 0.8" for 1.3 - 4.5 ton units and up to 1.2" for 6 and 8 ton units.



Capacities: 15,000 to 96,000 Btu/hr

Tonnage			1.3		1.5		2.0		2.3		2.5	
Ducted High Static Indoor Unit - Model			HIDH015B22S		HIDH018B22S		HIDH024B22S		HIDH027B22S		HIDH030B22S	
Power Supply			AC 1 Phase, 208/230V, 60Hz									
Nominal Cooling Capacity ¹	Btu/h		15,000		18,000		24,000		27,000		30,000	
	(kW)		(4.4)		(5.3)		(7.1)		(8.0)		(8.8)	
Nominal Heating Capacity ¹	Btu/h		17,000		20,000		27,000		30,000		34,000	
	(kW)		(5.0)		(5.9)		(8.0)		(8.8)		(10.0)	
Sound Pressure Level ² (Overall A Scale) (Hi2-Hi-Me-Lo)		dB	41-38-35-32		37-35-32-30		40-37-34-32		40-37-34-32		40-37-34-32	
Outer Dimensions	Height	in.(mm)	11-13/16	(300)	11-13/16	(300)	11-13/16	(300)	11-13/16	(300)	11-13/16	(300)
	Width	in.(mm)	27-9/16	(700)	41-5/16	(1050)	41-5/16	(1050)	41-5/16	(1050)	55-1/8	(1400)
	Depth	in.(mm)	31-1/2	(800)	31-1/2	(800)	31-1/2	(800)	31-1/2	(800)	31-1/2	(800)
Net Weight		lbs.(kg)	64	(29)	84	(38)	84	(38)	84	(38)	106	(48)
Refrigerant			R410A									
Indoor Fan	Air Flow Rate	cfm	512-459-388-335		653-582-512-424		759-671-582-494		759-671-582-494		1059-935-812-706	
	(Hi2-Hi-Me-Lo)	(m ³ /min)	(14.5-13-11-9.5)		(18.5-16.5-14.5-12)		(21.5-19-16.5-14)		(21.5-19-16.5-14)		(30-26.5-23-20)	
External Pressure ³	High Pressure	in. W.G. (Pa)	0.2 (0.4-0.8)		0.2 (0.4-0.8)		0.2 (0.4-0.8)		0.2 (0.4-0.8)		0.2 (0.4-0.8)	
	Standard	in. W.G. (Pa)	(50 (100-200))		(50 (100-200))		(50 (100-200))		(50 (100-200))		(50 (100-200))	
Motor Nominal Output		W	157		190		190		190		259	
Connections			Flare-Nut Connection (with Flare Nuts)									
Refrigerant Piping			Flare-Nut Connection (with Flare Nuts)									
	Liquid Line	in.(mm)	1/4	(6.35)	3/8	(9.52)	3/8	(9.52)	3/8	(9.52)	3/8	(9.52)
	Gas Line	in.(mm)	1/2	(12.7)	5/8	(15.88)	5/8	(15.88)	5/8	(15.88)	5/8	(15.88)
Condensate Drain			VP25		VP25		VP25		VP25		VP25	
	OU	in.(mm)	1-1/4	(32)	1-1/4	(32)	1-1/4	(32)	1-1/4	(32)	1-1/4	(32)
	IU	in.(mm)	31/32	(25)	31/32	(25)	31/32	(25)	31/32	(25)	31/32	(25)

NOTES:

1. Nominal capacity is based on combinations within the VRF system and the following conditions:

COOLING OPERATION CONDITIONS HEATING OPERATION CONDITIONS

Indoor Air Inlet Temperature:	80°F DB (26.7°C DB)	Indoor Air Inlet Temperature:	70°F DB (21.1°C DB)
	67°F WB (19.4°C WB)	Outdoor Air Inlet Temperature:	47°F DB (8.3°C DB)
Outdoor Air Inlet Temperature:	95°F DB (35.0°C DB)		43°F WB (6.1°C WB)

Piping Length: 24 ft. 7-3/16 in. (7.5m)
Piping Lift: 0ft. (0m)

2. The sound pressure level is based on the following conditions:
4.9 ft. (1.5m) beneath the unit.

The above data was measured in an anechoic chamber so that reflected sound should be taken into consideration in the field.

3. The data for external pressure ³ indicates Standard Pressure Setting (High Pressure Setting 1 - High Pressure Setting 2) values when a filter is not used. The sound pressure level is based on the Standard Pressure Setting.

DUCTED HIGH STATIC INDOOR UNIT (CONTINUED)

FEATURES

- High-efficiency AC fan motor
- Multiple fan speed settings
- Up to 1.16 in. WG static pressure
- Bottom access for easy service and troubleshooting
- Built-in condensate pump

Tonnage		3.0		4.0		4.5		6.0		8.0			
Ducted High Static Indoor Unit - Model		HIDH036B22S		HIDH048B22S		HIDH054B22S		HIDH072B21S		HIDH096B21S			
Power Supply		AC 1 Phase, 208/230V, 60Hz											
Nominal Cooling Capacity ¹	Btu/h	36,000		48,000		54,000		72,000		96,000			
	(kW)	(10.6)		(14.1)		(15.8)		(21.1)		(28.2)			
Nominal Heating Capacity ¹	Btu/h	40,000		54,000		60,000		81,000		108,000			
	(kW)	(11.8)		(15.8)		(17.6)		(23.8)		(31.7)			
Sound Pressure Level ² (Overall A Scale) (Hi2-Hi-Me-Lo)		dB		42-39-36-33		44-40-37-34		44-40-37-34		47-43/50-47		51-46/54-50	
Outer Dimensions	Height	in.(mm)	11-13/16	(300)	11-13/16	(300)	11-13/16	(300)	18-3/8	(466)	18-3/8	(466)	
	Width	in.(mm)	55-1/8	(1400)	55-1/8	(1400)	55-1/8	(1400)	49-3/16	(1250)	49-3/16	(1250)	
	Depth	in.(mm)	31-1/2	(800)	31-1/2	(800)	31-1/2	(800)	44-1/8	(1120)	44-1/8	(1120)	
Net Weight		lbs.(kg)	106	(48)	106	(48)	106	(48)	258	(117)	258	(117)	
Refrigerant		R410A											
Indoor Fan	Air Flow Rate	cfm	1183-1041-918-777		1271-1112-971-847		1271-1112-971-847		2047-1765		2542-2189		
	(Hi2-Hi-Me-Lo)	(m ³ /min)	(33.5-29.5-26-22)		(36-31.5-27.5-24)		(36-31.5-27.5-24)		(58.0-50.0)		(72.0-62.0)		
External Pressure ³	High Pressure	in. W.G. (Pa)	0.2 (0.4-0.8)		0.2 (0.4-0.8)		0.2 (0.4-0.8)		0.88/1.16	(220/290)	0.88/1.16	(220/290)	
	Standard	in. W.G. (Pa)	(50 (100-200))		(50 (100-200))		(50 (100-200))		0.28/0.64	(70/160)	0.32/0.64	(80/160)	
Motor Nominal Output		W	259		259		259		1100		1100		
Connections													
Refrigerant Piping		Flare-Nut Connection (with Flare Nuts)						Brazed		Brazed			
	Liquid Line	in.(mm)	3/8	(9.52)	3/8	(9.52)	3/8	(9.52)	3/8	(9.52)	3/8	(9.52)	
	Gas Line	in.(mm)	5/8	(15.88)	5/8	(15.88)	5/8	(15.88)	3/4	(19.05)	7/8	(22.20)	
Condensate Drain		VP25		VP25		VP25		VP25		VP25			
	OU	in.(mm)	1-1/4	(32)	1-1/4	(32)	1-1/4	(32)	1-1/4	(32)	1-1/4	(32)	
	IU	in.(mm)	31/32	(25)	31/32	(25)	31/32	(25)	31/32	(25)	31/32	(25)	

NOTES:

1. Nominal capacity is based on combinations within the VRF system and the following conditions:

COOLING OPERATION CONDITIONS HEATING OPERATION CONDITIONS

Indoor Air Inlet Temperature:	80°F DB (26.7°C DB)	Indoor Air Inlet Temperature:	70°F DB (21.1°C DB)
	67°F WB (19.4°C WB)	Outdoor Air Inlet Temperature:	47°F DB (8.3°C DB)
Outdoor Air Inlet Temperature:	95°F DB (35.0°C DB)		43°F WB (6.1°C WB)

Piping Length: 24 ft. 7-3/16 in. (7.5m)
Piping Lift: 0ft. (0m)

2. The sound pressure level is based on the following conditions:

4.9 ft. (1.5m) beneath the unit.

The above data was measured in an anechoic chamber so that reflected sound should be taken into consideration in the field.

3. The data for external pressure ³ indicates Standard Pressure Setting (High Pressure Setting 1 - High Pressure Setting 2) values when a filter is not used. The sound pressure level is based on the Standard Pressure Setting.

DUCTED MEDIUM STATIC INDOOR UNIT

These Indoor Units feature higher static pressure:
Up to 0.6" for Medium Static Indoor Units.



Capacities: 6,000 to 54,000 Btu/hr

Tonnage		0.5		0.7		1.0		1.3		1.5			
Ducted Medium Static Indoor Unit - Model		HIDM006B22S		HIDM008B22S		HIDM012B22S		HIDM015B22S		HIDM018B22S			
Power Supply		AC 1 Phase, 208/230V, 60Hz											
Nominal Cooling Capacity ¹	Btu/h	6,000		8,000		12,000		15,000		18,000			
	(kW)	(1.8)		(2.4)		(3.6)		(4.4)		(5.3)			
Nominal Heating Capacity ¹	Btu/h	6,700		9,000		13,500		17,000		20,000			
	(kW)	(2.0)		(2.7)		(4.0)		(5.0)		(5.9)			
Sound Pressure Level ² (Overall A Scale) (Hi2-Hi-Me-Lo)		dB		32-30-28-27		33-31-29-28		38-35-32-30		40-37-34-31		37-35-33-31	
Outer Dimensions	Height	in. (mm)	9-13/16 (250)	9-13/16 (250)	9-13/16 (250)	9-13/16 (250)	9-13/16 (250)	9-13/16 (250)	9-13/16 (250)	9-13/16 (250)	9-13/16 (250)		
	Width	in. (mm)	27-9/16 (700)	27-9/16 (700)	27-9/16 (700)	27-9/16 (700)	27-9/16 (700)	27-9/16 (700)	27-9/16 (700)	41-5/16 (1050)	41-5/16 (1050)		
	Depth	in. (mm)	31-1/2 (800)	31-1/2 (800)	31-1/2 (800)	31-1/2 (800)	31-1/2 (800)	31-1/2 (800)	31-1/2 (800)	31-1/2 (800)	31-1/2 (800)		
Net Weight		lbs. (kg)	57 (26)	57 (26)	57 (26)	60 (27)	60 (27)	60 (27)	60 (27)	79 (36)	79 (36)		
Refrigerant		R410A											
Indoor Fan	Air Flow Rate	cfm	300-265-229-194		335-300-265-229		459-406-353-300		512-459-388-335		653-582-494-424		
	(Hi2-Hi-Me-Lo)	(m ³ /min)	(8.5-7.5-6.5-5.5)		(9.5-8.5-7.5-6.5)		(13-11.5-10-8.5)		(14.5-13-11-9.5)		(18.5-16.5-14-12)		
External Pressure ³ Std (Hi-Lo)		in. W.G.	0.2 (0.4-0.6)		0.2 (0.4-0.6)		0.2 (0.4-0.6)		0.2 (0.4-0.6)		0.2 (0.4-0.6)		
		(Pa)	(50 (100-150))		(50 (100-150))		(50 (100-150))		(50 (100-150))		(50 (100-150))		
Motor Nominal Output		W	157		157		157		157		190		
Connections													
Refrigerant Piping		Flare-Nut Connection (with Flare Nuts)											
	Liquid Line	in. (mm)	1/4 (6.35)	1/4 (6.35)	1/4 (6.35)	1/4 (6.35)	1/4 (6.35)	1/4 (6.35)	1/4 (6.35)	3/8 (9.52)	3/8 (9.52)		
	Gas Line	in. (mm)	1/2 (12.7)	1/2 (12.7)	1/2 (12.7)	1/2 (12.7)	1/2 (12.7)	1/2 (12.7)	1/2 (12.7)	5/8 (15.88)	5/8 (15.88)		
Condensate Drain		VP25											
	OU	in. (mm)	1-1/4 (32)	1-1/4 (32)	1-1/4 (32)	1-1/4 (32)	1-1/4 (32)	1-1/4 (32)	1-1/4 (32)	1-1/4 (32)	1-1/4 (32)		
	IU	in. (mm)	31/32 (25)	31/32 (25)	31/32 (25)	31/32 (25)	31/32 (25)	31/32 (25)	31/32 (25)	31/32 (25)	31/32 (25)		

NOTES:

1. Nominal capacity is based on combinations within the VRF system and the following conditions:

COOLING OPERATION CONDITIONS HEATING OPERATION CONDITIONS

Indoor Air Inlet Temperature:	80°F DB (26.7°C DB)	Indoor Air Inlet Temperature:	70°F DB (21.1°C DB)
	67°F WB (19.4°C WB)	Outdoor Air Inlet Temperature:	47°F DB (8.3°C DB)
Outdoor Air Inlet Temperature:	95°F DB (35.0°C DB)		43°F WB (6.1°C WB)

Piping Length: 24 ft. 7-3/16 in. (7.5m)
Piping Lift: 0ft. (0m)

2. The sound pressure level is based on the following conditions:

4.9 ft. (1.5m) beneath the unit.

The above data was measured in an anechoic chamber so that reflected sound should be taken into consideration in the field.

3. The data for external pressure ³ indicates Standard Pressure Setting (High Pressure Setting 1 - High Pressure Setting 2) values when a filter is not used. The sound pressure level is based on the Standard Pressure Setting.

DUCTED MEDIUM STATIC INDOOR UNIT (CONTINUED)

FEATURES

- High-efficiency DC fan motor
- Multiple fan speed settings
- Up to .6 in. WG static pressure
- Bottom access for easy service and troubleshooting
- Built-in condensate pump

Tonnage		2.0		2.3		2.5		3.0		4.0		4.5		
Ducted Medium Static Indoor Unit - Model		HIDM024B22S		HIDM027B22S		HIDM030B22S		HIDM036B22S		HIDM048B22S		HIDM054B22S		
Power Supply		AC 1 Phase, 208/230V, 60Hz												
Nominal Cooling Capacity ¹	Btu/h	24,000		27,000		30,000		36,000		48,000		54,000		
	(kW)	(7.1)		(8.0)		(8.8)		(10.6)		(14.1)		(15.8)		
Nominal Heating Capacity ¹	Btu/h	27,000		30,000		34,000		40,000		54,000		60,000		
	(kW)	(8.0)		(8.8)		(10.0)		(11.8)		(15.8)		(17.6)		
Sound Pressure Level ² (Overall A Scale) (Hi2-Hi-Me-Lo)		dB		39-37-34-32		39-37-34-32		40-38-35-32		42-39-36-34		43-40-37-34		
Outer Dimensions	Height	in.(mm)	9-13/16 (250)	9-13/16 (250)	9-13/16 (250)	9-13/16 (250)	9-13/16 (250)	9-13/16 (250)	9-13/16 (250)	9-13/16 (250)	9-13/16 (250)	9-13/16 (250)	9-13/16 (250)	
	Width	in.(mm)	41-5/16 (1050)	41-5/16 (1050)	55-1/8 (1400)	55-1/8 (1400)	55-1/8 (1400)	55-1/8 (1400)	55-1/8 (1400)	55-1/8 (1400)	55-1/8 (1400)	55-1/8 (1400)	55-1/8 (1400)	
	Depth	in.(mm)	31-1/2 (800)	31-1/2 (800)	31-1/2 (800)	31-1/2 (800)	31-1/2 (800)	31-1/2 (800)	31-1/2 (800)	31-1/2 (800)	31-1/2 (800)	31-1/2 (800)	31-1/2 (800)	
Net Weight		lbs.(kg)	79 (36)	79 (36)	97 (44)	97 (44)	97 (44)	97 (44)	97 (44)	97 (44)	97 (44)	97 (44)	97 (44)	
Refrigerant		R410A												
Indoor Fan	Air Flow Rate	cfm	759-671-582-494		759-671-582-494		1059-935-812-706		1183-1041-918-777		1271-1112-971-847		1271-1112-971-847	
	(Hi2-Hi-Me-Lo)	(m ³ /min)	(21.5-19-16.5-14)		(21.5-19-16.5-14)		(30-26.5-23-20)		(33.5-29.5-26-22)		(36-31.5-27.5-24)		(36-31.5-27.5-24)	
External Pressure ³ Std (Hi-Lo)	in. W.G.	0.2 (0.4-0.6)		0.2 (0.4-0.6)		0.2 (0.4-0.6)		0.2 (0.4-0.6)		0.2 (0.4-0.6)		0.2 (0.4-0.6)		
	(Pa)	(50 (100-150))		(50 (100-150))		(50 (100-150))		(50 (100-150))		(50 (100-150))		(50 (100-150))		
Motor Nominal Output		W	190		190		259		259		259		259	
Connections														
Refrigerant Piping		Flare-Nut Connection (with Flare Nuts)												
	Liquid Line	in.(mm)	3/8 (9.52)	3/8 (9.52)	3/8 (9.52)	3/8 (9.52)	3/8 (9.52)	3/8 (9.52)	3/8 (9.52)	3/8 (9.52)	3/8 (9.52)	3/8 (9.52)	3/8 (9.52)	
	Gas Line	in.(mm)	5/8 (15.88)	5/8 (15.88)	5/8 (15.88)	5/8 (15.88)	5/8 (15.88)	5/8 (15.88)	5/8 (15.88)	5/8 (15.88)	5/8 (15.88)	5/8 (15.88)	5/8 (15.88)	
Condensate Drain		VP25												
	OU	in.(mm)	1-1/4 (32)	1-1/4 (32)	1-1/4 (32)	1-1/4 (32)	1-1/4 (32)	1-1/4 (32)	1-1/4 (32)	1-1/4 (32)	1-1/4 (32)	1-1/4 (32)	1-1/4 (32)	
	IU	in.(mm)	31/32 (25)	31/32 (25)	31/32 (25)	31/32 (25)	31/32 (25)	31/32 (25)	31/32 (25)	31/32 (25)	31/32 (25)	31/32 (25)	31/32 (25)	

NOTES:

1. Nominal capacity is based on combinations within the VRF system and the following conditions:

COOLING OPERATION CONDITIONS		HEATING OPERATION CONDITIONS	
Indoor Air Inlet Temperature:	80°F DB (26.7°C DB) 67°F WB (19.4°C WB)	Indoor Air Inlet Temperature:	70°F DB (21.1°C DB) 47°F DB (8.3°C DB)
Outdoor Air Inlet Temperature:	95°F DB (35.0°C DB)	Outdoor Air Inlet Temperature:	43°F WB (6.1°C WB)
Piping Length: 24 ft. 7-3/16 in. (7.5m)			
Piping Lift: 0ft. (0m)			

2. The sound pressure level is based on the following conditions:

4.9 ft. (1.5m) beneath the unit.
The above data was measured in an anechoic chamber so that reflected sound should be taken into consideration in the field.

3. The data for external pressure ³ indicates Standard Pressure Setting (High Pressure Setting 1 - High Pressure Setting 2) values when a filter is not used. The sound pressure level is based on the Standard Pressure Setting.

DUCTED SLIM INDOOR UNIT

FEATURES

- High-efficiency DC fan motor
- Multiple fan speed settings
- Up to .20 in. WG static pressure
- Bottom access for easy service and troubleshooting
- Built-in condensate pump



Capacities: 6,000 to 18,000 Btu/hr

Tonnage			0.5		0.7		1.0		1.3		1.5	
Ducted High Static Indoor Unit - Model			HIDS006B21S		HIDS008B21S		HIDS012B21S		HIDS015B21S		HIDS018B21S	
Power Supply			AC 1 Phase, 208/230V, 60Hz									
Nominal Cooling Capacity *	Btu/h		6,000		8,000		12,000		15,000		18,000	
	(kW)		(1.8)		(2.3)		(3.5)		(4.4)		(5.3)	
Nominal Heating Capacity *	Btu/h		6,700		9,000		13,500		17,000		20,000	
	(kW)		(2.0)		(2.6)		(4.0)		(5.0)		(5.9)	
Sound Pressure Level (Overall A Scale) (Hi2-Hi-Me-Lo)		dB	32-30-29-27		32-30-29-27		34-33.5-33-32		36-35-33-32		40-38-36-34	
Outer Dimensions	Height	in.(mm)	7-9/16	(192)	7-9/16	(192)	7-9/16	(192)	7-9/16	(192)	7-9/16	(192)
	Width	in.(mm)	35-3/4	(908)	35-3/4	(908)	35-3/4	(908)	46-3/8	(1178)	46-3/8	(1178)
	Depth	in.(mm)	17-19/32	(447)	17-19/32	(447)	17-19/32	(447)	17-19/32	(447)	17-19/32	(447)
Net Weight		lbs.(kg)	44	(20)	44	(20)	46	(21)	57	(26)	57	(26)
Refrigerant			R410A									
Indoor Fan	Air Flow Rate**	cfm	318-289-244-205		318-289-244-205		346-318-300-268		512-477-441-381		582-530-494-424	
	(Hi2-Hi-Me-Lo)	(m³/min)	(9-8-7-6)		(9-8-7-6)		(10-9-9-8)		(15-14-13-11)		(17-15-14-12)	
External Pressure** Std (Hi-Lo)		in. W.G.	0.04 (0.12-0.00)		0.04 (0.12-0.00)		0.04 (0.12-0.00)		0.04 (0.20-0.00)		0.04 (0.20-0.00)	
		(Pa)	(10 (30-0))		(10 (30-0))		(10 (30-0))		(10 (50-0))		(10 (50-0))	
Motor Nominal Output		W	40		40		40		60		60	
Connections												
Refrigerant Piping			Flare-Nut Connection (with Flare Nuts)									
	Liquid Line	in.(mm)	1/4	(6.35)	1/4	(6.35)	1/4	(6.35)	1/4	(6.35)	3/8	(9.52)
	Gas Line	in.(mm)	1/2	(12.70)	1/2	(12.70)	1/2	(12.70)	1/2	(12.70)	5/8	(15.88)
Condensate Drain			VP25		VP25		VP25		VP25		VP25	
	OU	in.(mm)	1-1/4	(32)	1-1/4	(32)	1-1/4	(32)	1-1/4	(32)	1-1/4	(32)
	IU	in.(mm)	31/32	(25)	31/32	(25)	31/32	(25)	31/32	(25)	31/32	(25)

NOTES:

* Nominal capacity condition is based on the following conditions. See www.ahrinet.org for more information.

COOLING OPERATION CONDITIONS HEATING OPERATION CONDITIONS

Indoor Air Inlet Temperature:	80°F DB (26.7°C DB)	Indoor Air Inlet Temperature:	70°F DB (21.1°C DB)
	67°F WB (19.4°C WB)	Outdoor Air Inlet Temperature:	47°F DB (8.3°C DB)
Outdoor Air Inlet Temperature:	95°F DB (35.0°C DB)		43°F WB (6.1°C WB)

Piping Length: 24 ft. 7-3/16 in. (7.5m)
Piping Lift: 0ft. (0m)

**Data values when a filter is not used.

DEDICATED OUTSIDE AIR SYSTEM (DOAS) INDOOR UNIT

Introduce and condition fresh air into a VRF system with the Dedicated Outside Air System indoor unit to create a more comfortable and healthy indoor environment.

Capacity: 96,000 Btu/hr



FEATURES

- 8 ton unit
- Pre-installed condensate drain pump
- Nominal airflow of 1,236 CFM
- High external static pressure up to 1.24 in. WG (at 230V) enables design flexibility
- Seamlessly integrates with the VRF Heat Pump system controls and piping
- **Multiple control modes** for optimizing comfort and energy efficiency include:
 - Outlet Air Temperature Control
 - Indoor Temperature Control
 - Remote Sensor and/or
 - Sensor in Optional Wired Controller

Tonnage		8.0	
Dedicated Outside Air System (DOAS) Unit - Model		HDOA096B21S	
Power Supply		AC 1 Phase, 208/230V, 60Hz	
Nominal Cooling Capacity *	Btu/h	96,000	
	(kW)	(28.2)	
Nominal Heating Capacity *	Btu/h	83,600	
	(kW)	(24.5)	
Sound Pressure Level (Overall A Scale) (208/230V)		dB	
Outer Dimensions	Height	in.(mm)	19-1/8 (486)
	Width	in.(mm)	50 (1270)
	Depth	in.(mm)	44-1/8 (1120)
Net Weight		lbs.(kg)	247 (112)
Refrigerant		R410A	
Indoor Fan	Air Flow Rate**	cfm	1236
		(m ² /min)	(35.0)
External Pressure (208/230V) **	High Pressure	in. W.G. (Pa)	1.06/1.24 (265/310)
	Standard	in. W.G. (Pa)	—
Motor Nominal Output		W	650 (Motor 2pcs)
Connections			
Refrigerant Piping		Brazed	
	Liquid Line	in.(mm)	3/8 (9.52)
	Gas Line	in.(mm)	7/8 (22.20)
Condensate Drain		VP25	
	OU	in.(mm)	1-1/4 (32)
	IU	in.(mm)	31/32 (25)

NOTES:

* Nominal capacity is based on combination with VRF system and indoor temperature control. Testing conditions listed below:

COOLING OPERATION CONDITIONS	HEATING OPERATION CONDITIONS
Indoor Air Inlet Temperature: 80°F DB (26.7°C DB) 67°F WB (19.4°C WB)	Indoor Air Inlet Temperature: 81°F DB (27.0°C DB) Outdoor Air Inlet Temperature: 32°F DB (0°C DB) 27°F WB (-2.9°C WB)
Outdoor Air Inlet Temperature: 91°F DB (33.0°C DB) 32°F DB (0°C DB)	

Piping Length: 24.6ft (7.5m)
Piping Lift: 0ft. (0m)

** Data values when a filter is not used.

ECONOFRESH ECONOMIZER INDOOR UNIT

The exclusive EconoFresh unit is a combination of a ducted medium static unit paired with an Economizer Kit which contributes to energy savings to provide outside air/free-cooling, up to 100%, when the outside conditions are favorable. Unit seamlessly integrates with VRF system to contribute to energy savings and improve air quality.



The EconoFresh unit includes the Economizer Kit and a ducted medium static unit in a choice of three capacities: 30,000, 36,000 or 48,000 Btu/hr.

Tonnage		2.5		3.0		4.0	
EconoFresh (Economizer Kit + a ducted medium static indoor unit) - Model		HIDM030B21E		HIDM036B21E		HIDM048B21E	
Power Supply		AC 1 Phase, 208/230V, 60Hz					
Nominal Cooling Capacity *	Btu/h	30,000		36,000		48,000	
	(kW)	(8.8)		(10.5)		(14.1)	
Nominal Heating Capacity *	Btu/h	34,000		40,000		54,000	
	(kW)	(10.0)		(11.7)		(15.8)	
Sound Pressure Level (Overall A Scale) (Hi-Me-Lo)	dB	38-35-32		39-35-33		40-36-33	
Outer Dimensions	Height	in.(mm)	10-7/8 (275)	10-7/8 (275)	10-7/8 (275)	10-7/8 (275)	10-7/8 (275)
	Width	in.(mm)	58-1/16 (1474)	58-1/16 (1474)	58-1/16 (1474)	58-1/16 (1474)	58-1/16 (1474)
	Depth	in.(mm)	23-5/8 (600)	23-5/8 (600)	23-5/8 (600)	23-5/8 (600)	23-5/8 (600)
Net Weight	lbs.(kg)	106 (48)	106 (48)	106 (48)	106 (48)	106 (48)	106 (48)
Refrigerant		R410A					
Indoor Fan	Air Flow Rate**	cfm	1059-953-847	1236-1094-988	1271-1130-1024	1271-1130-1024	1271-1130-1024
	(Hi-Me-Lo)	(m ³ /min)	(30-27-24)	(35-31-28)	(36-32-29)	(36-32-29)	(36-32-29)
External Pressure** Std (Hi-Me-Lo)	in. W.G.	0.17-0.12-0.10	0.16-0.11-0.10	0.16-0.11-0.10	0.12-0.10-0.08	0.12-0.10-0.08	0.12-0.10-0.08
	(Pa)	(43-30-25)	(40-28-25)	(40-28-25)	(30-25-20)	(30-25-20)	(30-25-20)
Motor Nominal Output	W	250	250	250	250	250	250
Connections							
Refrigerant Piping		Flare-Nut Connection (with Flare Nuts)					
	Liquid Line	in.(mm)	3/8 (9.52)	3/8 (9.52)	3/8 (9.52)	3/8 (9.52)	3/8 (9.52)
	Gas Line	in.(mm)	5/8 (15.88)	5/8 (15.88)	5/8 (15.88)	5/8 (15.88)	5/8 (15.88)
Condensate Drain		VP25		VP25		VP25	
	OU	in.(mm)	1-1/4 (32)	1-1/4 (32)	1-1/4 (32)	1-1/4 (32)	1-1/4 (32)
	IU	in.(mm)	31/32 (25)	31/32 (25)	31/32 (25)	31/32 (25)	31/32 (25)
Adaptable EconoFresh Kit Model		EF-456NE					
	Height	in. (mm)	10 (254)				
	Width	in. (mm)	55-1/2 (1410)				
	Depth	in. (mm)	12-3/16 (270)				
	Net Weight	lbs. (kg)	28 (12.5)				

FEATURES

- Excellent for applications with cooling demand during mid seasons and winter.
- Inputs for optional CO₂ and enthalpy sensors are available for control based on indoor air quality or temperature/humidity.
- Remote control setting of the outside air damper opening to ensure minimum outside airflow requirements are met.

NOTES::

* Nominal capacity condition is based on the following conditions. See www.ahrinet.org for more information.

COOLING OPERATION CONDITIONS

Indoor Air Inlet Temperature: 80°F DB (26.7°C DB)
67°F WB (19.4°C WB)

Outdoor Air Inlet Temperature: 95°F DB (35.0°C DB)

HEATING OPERATION CONDITIONS

Indoor Air Inlet Temperature: 70°F DB (21.1°C DB)

Outdoor Air Inlet Temperature: 47°F DB (8.3°C DB)
43°F WB (6.1°C WB)

Piping Length: 24 ft. 7-3/16 in. (7.5m)
Piping Lift: 0ft. (0m)

** Data values when a filter is not used.

MULTI-POSITION AIR HANDLER

FEATURES

- **RC2** - Rigid Case Construction interior endoskeleton for structural support, flush side, and to lock in insulation.
- **Powder-Painted** - G30 galvanized steel case provides a coated edge that resists corrosion and rust creep.
- **MaxAlloy™ Coil** - Long life aluminum coils built to deliver lasting performance, efficiency and reliability.
- **Quality Construction** - Structural components are made of aluminum or G90 galvanized steel to prevent corrosion.
- **Improved Insulation Design** - Single piece with no external screws to reduce thermal transmission paths to prevent sweating. Foil faced insulation for ease of cleaning.
- **Case Depth** - Models are 20.5" deep which enables easy access even in tight applications.
- **Thermoset Drain Pan** - Positive slope for drainage to reduce cause for potential mold or contaminants.
- **Factory Sealed** - Achieves 2% or less total airflow leakage rate at duct leakage test conditions in positive and negative pressure for system airflow verification.
- **Enhanced Filter Rack** - All models have integrated internal filter racks provided for use with 1" thick standard size filters.
- **Electric Heat Kits** - Field installed electric heat kits are available for installation-friendly and easy service applications.
- **Blowers** - All models use direct-drive, multi-speed motors.
- **Fully integrated** to the VRF system through the DX-Kit.



*Multi-Position Air Handler
Capacities: 18,000 to 60,000 Btu/hr
Fully field installed integrated DX kit.*

MULTI-POSITION AIR HANDLER

Multi-Position Air Handler with DX-Kit			HMAHP18B21S		HMAHP24B21S		HMAHP30B21S		HMAHP36B21S		HMAHP36C21S	
Adaptable Air Handler Model			AP18BX21		AP24BX21		AP30BX21		AP36BX21		AP36CX21	
Indoor Unit Power Supply			AC 1 Phase, 208/230V, 60Hz									
Nominal Cooling Capacity ¹	Btu/h		18,000		24,000		30,000		36,000		36,000	
	(kW)		(5.3)		(7.0)		(8.8)		(10.5)		(10.5)	
Nominal Heating Capacity ¹	Btu/h		20,000		27,000		34,000		40,000		40,000	
	(kW)		(5.9)		(7.9)		(10.0)		(11.7)		(11.7)	
Outer Dimensions	Height	in. (mm)	41	(1041)	41	(1041)	47-1/2	(1207)	47-1/2	(1207)	51-1/2	(1308)
	Width	in. (mm)	17-1/2	(445)	17-1/2	(445)	17-1/2	(445)	17-1/2	(445)	21	(533)
	Depth	in. (mm)	12-7/8	(327)	12-7/8	(327)	19-1/2	(495)	19-1/2	(495)	22-5/8	(575)
Net Weight		lbs (kg)	85	(39)	87	(40)	113	(51)	113	(51)	114	(52)
Refrigerant			R410A									
Indoor Fan	Air Flow Rate ^{*2}	cfm	674-490		763-593		874-685		1155-1036		1186-974	
	(Hi-Lo)	(m3/min)	(19-14)		(22-17)		(25-19)		(33-29)		(34-28)	
External Pressure ²		in. W.G.	0.4		0.7		0.7		0.7		0.7	
		(Pa)	(99)		(174)		(174)		(174)		(174)	
Refrigerant Piping	Liquid Line	in. (mm)	3/8	(9.52)	3/8	(9.52)	3/8	(9.52)	3/8	(9.52)	3/8	(9.52)
	Gas Line ^{*3}	in. (mm)	5/8	(15.88)	5/8	(15.88)	5/8	(15.88)	5/8	(15.88)	5/8	(15.88)
Condensate Drain	OU	in. (mm)	1-1/16	(26.7)	1-1/16	(26.7)	1-1/16	(26.7)	1-1/16	(26.7)	1-1/16	(26.7)
	IU	in. (mm)	13/16	(20.9)	13/16	(20.9)	13/16	(20.9)	13/16	(20.9)	13/16	(20.9)

Adaptable DX-Kit Model			EXV-018E		EXV-024E		EXV-030E		EXV-036E		
CONTROL BOX PART											
Power Supply			AC 1 Phase, 208/230V, 60Hz								
Outer Dimensions	Height	in. (mm)	3-3/16	(81.0)	3-3/16	(81.0)	3-3/16	(81.0)	3-3/16	(81.0)	
	Width	in. (mm)	12-9/16	(319.6)	12-9/16	(319.6)	12-9/16	(319.6)	12-9/16	(319.6)	
	Depth	in. (mm)	7-3/8	(187.2)	7-3/8	(187.2)	7-3/8	(187.2)	7-3/8	(187.2)	
Net Weight		lbs. (kg)	6.57	(2.98)	6.57	(2.98)	6.57	(2.98)	6.57	(2.98)	
EXPANSION VALVE BOX PART											
Power Supply			DC 12V								
Outer Dimensions	Height	in. (mm)	4-5/16	(109)	4-5/16	(109)	4-5/16	(109)	4-5/16	(109)	
	Width	in. (mm)	17-1/16	(433)	17-1/16	(433)	17-1/16	(433)	17-1/16	(433)	
	Depth	in. (mm)	5-5/16	(151)	5-5/16	(151)	5-5/16	(151)	5-5/16	(151)	
Net Weight		lbs. (kg)	8.84	(4.01)	8.84	(4.01)	8.84	(4.01)	8.84	(4.01)	
Refrigerant			R410A								
Refrigerant Piping	Liquid Line In	in. (mm)	3/8	(9.52)	3/8	(9.52)	3/8	(9.52)	3/8	(9.52)	
	Liquid Line Out	in. (mm)	3/8	(9.52)	3/8	(9.52)	3/8	(9.52)	3/8	(9.52)	

1. Nominal capacity is based on combination with VRF system and following conditions:

COOLING OPERATION CONDITIONS HEATING OPERATION CONDITIONS

Indoor Air Inlet Temperature:	80°F DB (26.7°C DB)	Indoor Air Inlet Temperature:	70°F DB (21.1°C DB)
	67°F WB (19.4°C WB)	Outdoor Air Inlet Temperature:	47°F DB (8.3°C DB)
Outdoor Air Inlet Temperature:	95°F DB (35.0°C DB)		43°F WB (6.1°C WB)

Piping Length: 24.6ft (7.5m)
Piping Lift: 0ft. (0m)

2. Hi and Lo setting on the wired controller.

(Hi = Air Handler's High tap and Lo = Air Handler's Medium tap)

Make sure both the external pressure and air flow rate match the specification.

3. Gas line attached with reducer (accessory of DX-Kit)

MULTI-POSITION AIR HANDLER

Multi-Position Air Handler with DX-Kit			HMAHP48C21S		HMAHP48D21S		HMAHP60C21S		HMAHP60D21S	
Adaptable Air Handler Model			AP48CX21		AP48DX21		AP60CX21		AP60DX21	
Indoor Unit Power Supply			AC 1 Phase, 208/230V, 60Hz							
Nominal Cooling Capacity ¹	Btu/h		48,000		48,000		60,000		60,000	
	(kW)		(14.1)		(14.1)		(17.6)		(17.6)	
Nominal Heating Capacity ¹	Btu/h		54,000		54,000		64,000		64,000	
	(kW)		(15.8)		(15.8)		(18.8)		(18.8)	
Outer Dimensions	Height	in. (mm)	51-1/2 (1308)		55-1/2 (1410)		55-3/4 (1416)		55-1/2 (1410)	
	Width	in. (mm)	21 (533)		24-1/2 (622)		21 (533)		24-1/2 (622)	
	Depth	in. (mm)	22-5/8 (575)		26-5/8 (676)		26-7/8 (683)		26-5/8 (676)	
Net Weight		lbs (kg)	150 (68)		153 (69)		146 (66)		170 (77)	
Refrigerant			R410A							
Indoor Fan	Air Flow Rate *2	cfm	1451-1233		1451-1233		1743-1661		1743-1661	
	(Hi-Lo)	(m3/min)	(41-35)		(41-35)		(49-47)		(49-47)	
External Pressure ²		in. W.G.	0.7		0.7		0.4		0.4	
		(Pa)	(174)		(174)		(99)		(99)	
Refrigerant Piping	Liquid Line	in. (mm)	3/8 (9.52)		3/8 (9.52)		3/8 (9.52)		3/8 (9.52)	
	Gas Line *3	in. (mm)	5/8 (15.88)		5/8 (15.88)		3/4 (19.05)		3/4 (19.05)	
Condensate Drain	OU	in. (mm)	1-1/16 (26.7)		1-1/16 (26.7)		1-1/16 (26.7)		1-1/16 (26.7)	
	IU	in. (mm)	13/16 (20.9)		13/16 (20.9)		13/16 (20.9)		13/16 (20.9)	

Adaptable DX-Kit Model			EXV-048E		EXV-060E	
CONTROL BOX PART						
Power Supply			AC 1 Phase, 208/230V, 60Hz			
Outer Dimensions	Height	in. (mm)	3-3/16 (81.0)		3-3/16 (81.0)	
	Width	in. (mm)	12-9/16 (319.6)		12-9/16 (319.6)	
	Depth	in. (mm)	7-3/8 (187.2)		7-3/8 (187.2)	
Net Weight		lbs. (kg)	6.57 (2.98)		6.57 (2.98)	
EXPANSION VALVE BOX PART						
Power Supply			DC 12V			
Outer Dimensions	Height	in. (mm)	4-5/16 (109)		4-5/16 (109)	
	Width	in. (mm)	17-1/16 (433)		17-1/16 (433)	
	Depth	in. (mm)	5-5/16 (151)		5-5/16 (151)	
Net Weight		lbs. (kg)	8.84 (4.01)		11.05 (5.01)	
Refrigerant			R410A			
Refrigerant Piping	Liquid Line In	in. (mm)	3/8 (9.52)		3/8 (9.52)	
	Liquid Line Out	in. (mm)	3/8 (9.52)		3/8 (9.52)	

1. Nominal capacity is based on combination with VRF system and following conditions:

COOLING OPERATION CONDITIONS HEATING OPERATION CONDITIONS

Indoor Air Inlet Temperature:	80°F DB (26.7°C DB) 67°F WB (19.4°C WB)	Indoor Air Inlet Temperature:	70°F DB (21.1°C DB)
Outdoor Air Inlet Temperature:	95°F DB (35.0°C DB)	Outdoor Air Inlet Temperature:	47°F DB (8.3°C DB) 43°F WB (6.1°C WB)

Piping Length: 24.6ft (7.5m)
Piping Lift: 0ft. (0m)

2. Hi and Lo setting on the wired controller.

(Hi = Air Handler's High tap and Lo = Air Handler's Medium tap)

Make sure both the external pressure and air flow rate match the specification.

3. Gas line attached with reducer (accessory of DX-Kit)

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Outdoor Units

Reliable, quiet Hitachi **SmartFlex™** VRF outdoor units are available in capacities to fit multiple applications and operate multiple indoor units. Heat pump and heat recovery units provide flexibility of design for a variety of building spaces and ambient conditions. Units operate quietly with sound ratings as low as 51 dBA.

Gen II Heat Recovery 208/230V

Gen II Heat Recovery 460V

Gen II Heat Pump 208/230

Gen II Heat Pump 460V

Mini VRF Single-Phase 208/230V

Low Ambient Heat Pump 208/230V

Low Ambient Heat Pump 460V



FLEXIBLE, PRECISE SOLUTIONS WITH HITACHI **SMARTFLEX™** OUTDOOR UNITS

Hitachi **SmartFlex** Outdoor Units are equipped with inverter compressors. These state-of-the-art compressors modulate refrigerant flow to Indoor Units, offering precise solutions for indoor comfort needs.

The Outdoor Unit line features:

- An extended operating range to suit even more climates
- Connection ratios up to 150% and vertical piping lift up to 360 feet for ultimate design flexibility
- Capacities from 6 to 36 tons to meet diverse application requirements
- Outdoor Units in 8, 10, 12, 14 and 16 tons offer dual inverter driven compressors for increased efficiency
- Compact design for easy installation and design flexibility
- Higher capacities at low and high ambient temperatures
- Smooth drive control for improved comfort and efficiency



SUMMARY TABLE OF OUTDOOR UNITS

Gen II Heat Pump and Heat Recovery Units 208/230V & 460V	Heat Recovery VRF	Heat Pump VRF
Capacity	6 to 36 Tons	6 to 36 Tons
Maximum connectable indoor unit quantity	64	64

Connection ratio OU / IU	As low as 55% and up to 150%		
Total piping length	ft (m)	3,281 (1000)	3,281 (1000)
Maximum piping length between OU and IU	ft (m)	541 (165)	541 (165)
Maximum piping length between 1st branch and IU	ft (m)	295 (90)	295 (90)

Maximum height difference between OU and IU (when OU is higher than IU)	ft (m)	360 (110)	360 (110)
Maximum height difference between OU and IU (when IU is higher than OU)	ft (m)	131 (40)	131 (40)
Maximum height difference between IU and IU	ft (m)	49 (15)	98 (30)

Cooling Operation Range*	°F (°C)	-4 to 122 (-20 to 50)	-4 to 122 (-20 to 50)
Heating Operation Range*	°F (°C)	-13 to 59 (-25 to 15)	-13 to 59 (-25 to 15)

Cooling Operation Range* (Low Ambient Heat Pump)	°F (°C)	—	14 to 118 (-10 to 48)
Heating Operation Range* (Low Ambient Heat Pump)	°F (°C)	—	-13 to 59 (-25 to 15)

* For more details and limitations, please consult Hitachi **SmartFlex™** sales team or refer to product manuals

Mini VRF Technical Data (see page 53 for details)				3 Ton	4 Ton	5 Ton	
Performance	Rated Cooling Capacity		Btu/h (kW)	36,000	48,000	59,000	
	Rated Heating Capacity (Btu/h)		Btu/h (kW)	40,000	54,000	64,000	
	Operating Range* — Cooling	Indoor	°F WB (°C WB)		59 (15) ~ 73 (23)	59 (15) ~ 73 (23)	59 (15) ~ 73 (23)
		Outdoor	°F DB (°C DB)		23 (-5) ~ 118 (48)	23 (-5) ~ 118 (48)	23 (-5) ~ 118 (48)
	Operating Range* — Heating	Indoor	°F DB (°C DB)		59 (15) ~ 80 (27)	59 (15) ~ 80 (27)	59 (15) ~ 80 (27)
		Outdoor	°F WB (°C WB)		-4 (-20) ~ 59 (15)	-4 (-20) ~ 59 (15)	-4 (-20) ~ 59 (15)
Power Supply (V/ph/Hz)				208-230 / 1 / 60			
Configurations	Number Of Indoor Units			1 to 6	1 to 8	1 to 8	
Refrigerant Piping	Maximum Piping Length		ft (m)	492 (150)			
	Maximum Total Piping Length		ft (m)	984 (300)			
	Maximum Vertical Distance, IU to OU — OU above IU / OU below IU		ft (m)	164 / 49 (50 / 15)			
	Maximum Vertical Distance Between Indoor Units		ft (m)	49 (15)			
Size	Dimensions — H x W x D		in (mm)	54- 5/16 x 37-3/8 x 14-9/16 (1380 x 950 x 370)			

* For more details and limitations, please consult Hitachi **SmartFlex** sales team or refer to product manuals

OUTDOOR UNITS: OVERVIEW

Hitachi **SmartFlex™** VRF outdoor units provide maximum flexibility for modular design.

GEN II HEAT RECOVERY MODELS 208/230V

6-16 Ton

Single Unit Systems

6 Ton	HVAHR072B32S	12 Ton	HVAHR144B32S
8 Ton	HVAHR096B32S	14 Ton	HVAHR168B32S
10 Ton	HVAHR120B32S	16 Ton	HVAHR192B32S

18-30 Ton

Double Unit Systems

18 Ton	HVAHR216B32S	26 Ton	HVAHR312B32S
20 Ton	HVAHR240B32S	28 Ton	HVAHP336B32S
22 Ton	HVAHR264B32S	30 Ton	HVAHP360B32S
24 Ton	HVAHR288B32S		

32-36 Ton

Triple Unit Systems

32 Ton	HVAHR384B32S
34 Ton	HVAHR408B32S
36 Ton	HVAHR432B32S

GEN II HEAT RECOVERY MODELS 460V

6-16 Ton

Single Unit Systems

6 Ton	HVAHR072B42S	12 Ton	HVAHR144B42S
8 Ton	HVAHR096B42S	14 Ton	HVAHR168B42S
10 Ton	HVAHR120B42S	16 Ton	HVAHR192B42S

18-30 Ton

Double Unit Systems

18 Ton	HVAHR216B42S	26 Ton	HVAHR312B42S
20 Ton	HVAHR240B42S	28 Ton	HVAHP336B42S
22 Ton	HVAHR264B42S	30 Ton	HVAHP360B42S
24 Ton	HVAHR288B42S		

32-36 Ton

Triple Unit Systems

32 Ton	HVAHR384B42S
34 Ton	HVAHR408B42S
36 Ton	HVAHR432B42S

GEN II HEAT PUMP MODELS 208/230V

6-16 Ton

Single Unit Systems

6 Ton	HVAHP072B32S	12 Ton	HVAHP144B32S
8 Ton	HVAHP096B32S	14 Ton	HVAHP168B32S
10 Ton	HVAHP120B32S	16 Ton	HVAHP192B32S

18-30 Ton

Double Unit Systems

18 Ton	HVAHP216B32S	26 Ton	HVAHP312B32S
20 Ton	HVAHP240B32S	28 Ton	HVAHP336B32S
22 Ton	HVAHP264B32S	30 Ton	HVAHP360B32S
24 Ton	HVAHP288B32S		

32-36 Ton

Triple Unit Systems

32 Ton	HVAHP384B32S
34 Ton	HVAHP408B32S
36 Ton	HVAHP432B32S

GEN II HEAT PUMP MODELS 460V

6-16 Ton

Single Unit Systems

6 Ton	HVAHP072B42S	12 Ton	HVAHP144B42S
8 Ton	HVAHP096B42S	14 Ton	HVAHP168B42S
10 Ton	HVAHP120B42S	16 Ton	HVAHP192B42S

18-30 Ton

Double Unit Systems

18 Ton	HVAHP216B42S	26 Ton	HVAHP312B42S
20 Ton	HVAHP240B42S	28 Ton	HVAHP336B42S
22 Ton	HVAHP264B42S	30 Ton	HVAHP360B42S
24 Ton	HVAHP288B42S		

32-36 Ton

Triple Unit Systems

32 Ton	HVAHP384B42S
34 Ton	HVAHP408B42S
36 Ton	HVAHP432B42S

LOW AMBIENT HEAT PUMP MODELS 208/230V

6-8 Ton

Single Unit Systems

6 Ton	HVAHP072B31CW
8 Ton	HVAHP096B31CW

12-16 Ton

Double Unit Systems

12 Ton	HVAHP144B31CW
14 Ton	HVAHP168B31CW
16 Ton	HVAHP192B31CW

24 Ton Systems

Triple Unit Systems

24 Ton	HVAHP288B31CW
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LOW AMBIENT HEAT PUMP MODELS 460V

6-8 Ton

Single Unit Systems

6 Ton	HVAHP072B41CW
8 Ton	HVAHP096B41CW

12-16 Ton

Double Unit Systems

12 Ton	HVAHP144B41CW
14 Ton	HVAHP168B41CW
16 Ton	HVAHP192B41CW

24 Ton Systems

Triple Unit Systems

24 Ton	HVAHP288B41CW
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MINI VRF HEAT PUMP MODELS 208/230V

Mini VRF 3 Ton Unit

HVAHP036B21S

Mini VRF 4 Ton Unit





HVAHP048B21S

Mini VRF 5 Ton Unit

HVAHP060B21S

* High efficiency configurations.

HITACHI **SMARTFLEX™** VRF OUTDOOR UNITS

Tonnage	3	4	5	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	
Gen II Heat Recovery 208/230V & 460V 				[Red bar indicating availability from 6 to 36 tons]																
Gen II Heat Pump 208/230V & 460V 				[Red bar indicating availability from 6 to 36 tons]																
Low Ambient Heat Pump 208/230V & 460V 				[Red bar]		[Red bar]		[Red bar]					[Red bar]							
Mini VRF Single-Phase Heat Pump 208/230V 	[Red bar]																			

HITACHI **SMARTFLEX™** VRF OUTDOOR UNITS

Hitachi **SmartFlex** VRF outdoor units, in capacities from 3.0 to 36 tons with modular system combinations, include heat pump and heat recovery units.

Heat pump units can either heat or cool spaces. Hitachi **SmartFlex** VRF Gen II Heat Pump units offer an extended operating temperature range: outdoor ambient temperature as low as -4°F (-20°C) in the cooling mode with the low-ambient kit installed and as low as -13°F (-25°C) in the heating mode.

Heat recovery units can heat and cool spaces simultaneously. Hitachi **SmartFlex** VRF Gen II Heat Recovery units offer an extended operating temperature range: outdoor ambient temperature as low as -4°F (-20°C) in the cooling mode with the low-ambient kit installed and as low as -13°F (-25°C) in the heating mode.

Hitachi **SmartFlex** VRF Low Ambient Heat Pump systems offer an extended operating temperature range with efficient high-capacity heating down to -13°F (-25°C) ambient air temperature.

Hitachi **SmartFlex** Mini VRF Heat Pump units offer an extended operating temperature range: outdoor ambient temperature as low as 23°F (-5°C) in the cooling mode and as low as -4°F (-20°C) in the heating mode.

ALL 6-TON OR GREATER OUTDOOR UNITS FEATURE:

- **Long refrigerant piping lengths** – up to 3,281 feet total pipe run and vertical distance of 360’ when Outdoor Unit is above Indoor Unit.
- **Continuous heating during defrost operation** for multi-module Heat Recovery systems.
- **Ability to operate up to 64 indoor units** on a single piping network
- **Power-saving demand control** for reduced peak load and energy savings
- **Automatic judgement system for Refrigerant Amount** to verify refrigerant charge is correct
- **Diagnostics and malfunction codes** available at push of a control panel button

MINI VRF HEAT PUMP OUTDOOR UNITS

SINGLE-PHASE 208/230V (HEAT PUMP)

Exceptionally efficient Hitachi **SmartFlex™** Mini VRF systems provide design versatility and flexibility and quiet personalized comfort. The single-phase (208-230V) 3-, 4- and 5-ton heat pump system with inverter compressor technology provides cooling up to 118°F and heating down to -4°F ambient. Multiple indoor unit options enable individual comfort control of up to eight rooms/zones.



MINI VRF HEAT PUMP OUTDOOR UNITS

208/230V HP | 3-, 4- & 5-TON SYSTEMS



3, 4 & 5 Ton Systems		Type		Mini VRF Outdoor Units					
		Tonnage		3 Ton		4 Ton		5 Ton	
Model				HVAHP036B21S		HVAHP048B21S		HVAHP060B21S	
Power Supply				208/230V/ 1PH 60Hz		208/230V/ 1PH 60Hz		208/230V/ 1PH 60Hz	
Capacity (Nominal)	Cooling	Capacity (Nominal)	Btu/h (kW)	36,000 (10.6)		48,000 (14.1)		60,000 (17.6)	
		Power input	kW	2.53		3.78		5.05	
		Current input	A	12.3 / 11.1		18.6 / 16.9		24.8 / 22.4	
	Heating	Capacity (Nominal)	Btu/h (kW)	40,000 11.7		54,000 15.8		64,000 18.7	
		Power input	kW	2.40		4.00		4.40	
Current input		A	11.8 / 10.6		19.6 / 17.7		21.7 / 19.6		
Efficiency Ratings *	Cooling <i>(for Non-ducted and Ducted)</i>	Capacity (Rated)	Btu/h	36,000 36,000		48,000 48,000		60,000 55,000	
		EER	Btu/Wh	16.70 13.70		16.10 13.10		12.20 9.60	
		SEER	Btu/Wh	23.10 18.70		23.10 18.40		16.80 15.90	
	Heating <i>(for Non-ducted and Ducted)</i>	Rated Capacity	Btu/h	40,000 40,000		54,000 54,000		64,000 64,000	
		COP	W/W	5.12 / 3.90		4.56 / 3.86		3.90 / 3.30	
HSPF	Btu/Wh	11.90 11.00		11.70 11.80		12.10 10.60			
Cooling Operating Range**		Indoor	°F WB (°C WB)	59 (15) ~ 73 (23)		59 (15) ~ 73 (23)		59 (15) ~ 73 (23)	
		Outdoor	°F DB (°C DB)	23 (-5) ~ 118 (48)		23 (-5) ~ 118 (48)		23 (-5) ~ 118 (48)	
Heating Operating Range**		Indoor	°F DB (°C DB)	59 (15) ~ 80 (27)		59 (15) ~ 80 (27)		59 (15) ~ 80 (27)	
		Outdoor	°F WB (°C WB)	-4 (-20) ~ 59 (15)		-4 (-20) ~ 59 (15)		-4 (-20) ~ 59 (15)	
Outer Dimensions	Height	in (mm)	54-5/16 (1380)		54-5/16 (1380)		54-5/16 (1380)		
	Width	in (mm)	37-3/8 (950)		37-3/8 (950)		37-3/8 (950)		
	Depth	in (mm)	14-9/16 (370)		14-9/16 (370)		14-9/16 (370)		
Package Dimensions	Height	in (mm)	59-9/16 (1513)		59-9/16 (1513)		59-9/16 (1513)		
	Width	in (mm)	40-3/8 (1025)		40-3/8 (1025)		40-3/8 (1025)		
	Depth	in (mm)	18-1/8 (460)		18-1/8 (460)		18-1/8 (460)		
Weight	Net	lbs (kg)	249 (113)		249 (113)		249 (113)		
	Gross	lbs (kg)	267 (121)		267 (121)		267 (121)		
Connection Ratio		Connection Ratio Range	%	60-130		60-130		60-105	
		Max. (Recommendation) indoor units/system		6		8		8	
Heat Exchanger	Type	-		Multi-pass cross-finned tube					
	Material	-		Cu-Al (Anti-corrosion)					
Compressor	Type	-		HA36PHD-A1S2		HA36PHD-A1S2		A36PHD-A1S2	
	Motor Output (Pole)	— / —		3PH / 6		3PH / 6		3PH / 6	
	Start Method	-		Inverter					
	Operation Range	%		10 ~ 100		10 ~ 100		10 ~ 100	
	Refrigeration Oil Type	-		FVC68D		FVC68D		FVC68D	
Crank Case Heater		W×Q'ty	52W(208V) ×1		52W(208V) ×1		52W(208V) ×1		
Fan	Type	-		Propeller Fan		Propeller Fan		Propeller Fan	
	Motor Output (Pole)	W (Pole)		58(10) + 58(10)		58(10) + 58(10)		58(10) + 58(10)	
	Quantity	Q'ty		2					
	Air Flow Rate	cfm (m³/min)	3177 (90)		3530 (100)		3530 (100)		
	Drive	-		Direct drive					
Electrical	Min Circuit Amps	A		31		31		31	
	Max. Overcurrent Protective Device	A		40					
Sound Pressure Level	Cooling (Night-Shift)	dB(A)		51 (44)		52 (46)		53 (46)	
	Heating	dB(A)		52		54		56	
Protection devices	Cycle	-		High pressure switch at 601psi (4.15MPa)					
	Compressor	-		Over-current protection Over-heat protection Circuit breaker (30A)					
	Fan Motor	-		Over-current protection Over-heat protection Self-contained fuse (5A)					
	PCB (Control Circuit)	-		Fuse on PCB(5A)					
Refrigerant	Type	-		R410A					
	Charge amount	lbs (kg)	7.9 (3.6)		7.9 (3.6)		7.9 (3.6)		
Refrigeration Oil	Charge amount	gal/Unit (kg/Unit)	0.34 (1.3)		0.34 (1.3)		0.34 (1.3)		
Defrost Method	-		Reversed refrigerant cycle						
Main Refrigerant Piping	Gas Line	in (mm)	5/8 (15.88)		5/8 (15.88)		5/8 (15.88)		
	Liquid Line	in (mm)	3/8 (9.52)		3/8 (9.52)		3/8 (9.52)		

NOTES:

* Efficiency ratings are based on the AHRI 210/240 test standard.

** For more detailed operation ranges, please consult Hitachi SmartFlex™ sales team or refer to product manuals.

GEN II HEAT RECOVERY OUTDOOR UNITS

208/230V | 460V

Heat recovery units can heat and cool spaces simultaneously. Hitachi **SmartFlex™** VRF Gen II Heat Recovery units offer an extended operating temperature range: outdoor ambient temperature as low as -4°F (-20°C) in the cooling mode utilizing a low ambient kit and as low as -13°F (-25°C) in the heating mode. Simultaneous heating and cooling operating range is from -4°F to 75°F.



GEN II HEAT RECOVERY OUTDOOR UNITS

208/230V | 460V | 6-16 TON SYSTEMS



6-16 Ton Systems	Type		Single Unit Systems					
	Tonnage		6 Ton	8 Ton	10 Ton	12 Ton	14 Ton	16 Ton
Model	208-230V/3Ph/60Hz		HVAHR072B32S	HVAHR096B32S	HVAHR120B32S	HVAHR144B32S	HVAHR168B32S	HVAHR192B32S
	460V/3Ph/60Hz		HVAHR072B42S	HVAHR096B42S	HVAHR120B42S	HVAHR144B42S	HVAHR168B42S	HVAHR192B42S
Performance	Rated Cooling Capacity	BTU/h	72,000	96,000	120,000	144,000	168,000	192,000
	Rated Heating Capacity	BTU/h	81,000	108,000	135,000	162,000	189,000	216,000
	IEER (Non-Ducted / Ducted)	-	26.5 / 21.1	23.9 / 22.1	24.4 / 21.7	23.9 / 21.2	23.4 / 21.4	21.4 / 20.8
	COP, Non-Ducted (47°F / 17°F)	-	4.25 / 2.60	3.77 / 2.40	3.84 / 2.37	3.42 / 2.12	3.65 / 2.16	3.32 / 2.05
	SCHE, Non-Ducted	-	26.7	30.3	29.9	30.9	30.7	32.2
	Sound Pressure (Cooling / Heating)	dB(A)	60 / 60	63 / 63		65 / 65	64 / 64	66 / 66
	Cooling Outdoor Rated Operating Range (Standard / Extended)	°F DB	23 - 122 / -4 - 122					
	Heating Outdoor Rated Operating Range	°F WB	-13 - 59					
Fan	Airflow, Nominal	CFM	6,707	8,437	9,037	11,614	12,284	
	Fan ESP, Max	in. WG	0.32					
Compressor	Compressors, all inverter	Qty	1	2				
	Capacity Control Range	%	10 - 100	8 - 100	7 - 100	6-100	5-100	
Connection Ratio	Connection Ratio Range (Standard/Extended)	%	70 - 130 / 70 - 150	65 - 130 / 65 - 150	60 - 130 / 60 - 150	55 - 130 / 55 - 150		
	Maximum Number of Indoor Units (Standard/Extended Connection Ratio)	Qty	15 / 8	20 / 8	26 / 8	26 / 10	36 / 12 / 40 / 14	
Refrigerant Piping Layout	Maximum Vertical Distance, OU - IU (OU above IU/OU below IU)	ft.	360 / 131					
	Maximum Vertical Distance Between IUs	ft.	49					
	Maximum Actual Pipe Length	ft.	541					
	Maximum Total Pipe Length	ft.	3,281					
Refrigerant Piping Connections	Gas Pipe, Main Line	in.	7/8		1-1/8			
	High/Low Pressure Gas Line	in.	3/4		7/8			
	Liquid Pipe, Main Line	in.	1/2			5/8		
Electrical	Maximum Overcurrent Protection, MOP (208-230V/3Ph/60Hz / 460V/3Ph/60Hz)	A	40 / 20	50 / 30	60 / 30	70 / 35	80 / 40 / 90 / 50	
	Minimum Circuit Amps, MCA (208-230V/3Ph/60Hz / 460V/3Ph/60Hz)	A	29-26 / 15	39-35 / 22	46-42 / 24	58-52 / 30	65-59 / 34 / 76-68 / 39	
Unit	Factory Refrigerant Charge	lbs.	15.9	19.6	21.8	23.6	24.9 / 25.6	
	Weight (208-230V/3Ph/60Hz / 460V/3Ph/60Hz)	lbs.	527 / 534	598 / 611	730 / 734	723 / 737	860 / 860	
	Height	in.	66-1/4					
	Width	in.	38-3/8	48-5/8			64	
	Depth	in.	30-1/2					

Optional Accessories	Low Ambient Damper Kit
	Drain Adapter
	Protection Net
	Snow Protection Hood

Rating conditions are based on AHRI 1230 test standard.

Cooling Conditions:
 Indoor Air Temperature: 80°F DB / 67°F WB
 Outdoor Air Temperature: 95°F DB

Heating Conditions:
 Indoor Air Temperature: 70°F DB
 Outdoor Air Temperature: 47°F DB / 43°F WB

GEN II HEAT RECOVERY OUTDOOR UNITS

208/230V | 460V | 18-22 TON SYSTEMS



18-22 Ton Systems	Type		Double Module Systems		
	Tonnage		18 Ton	20 Ton	22 Ton
Model	208-230V/3Ph/60Hz		HVAHR216B32S	HVAHR240B32S	HVAHR264B32S
	460V/3Ph/60Hz		HVAHR216B42S	HVAHR240B42S	HVAHR264B42S
Combination			HVAHR144B_2S	HVAHR120B_2S	HVAHR144B_2S
			HVAHR072B_2S	HVAHR120B_2S	HVAHR120B_2S
Performance	Rated Cooling Capacity	BTU/h	216,000	240,000	264,000
	Rated Heating Capacity	BTU/h	243,000	270,000	297,000
	IEER (Non-Ducted / Ducted)	-	20.9 / 20.7	20.8 / 21.0	21.1 / 20.8
	COP, Non-Ducted (47°F / 17°F)	-	3.82 / 2.32	3.67 / 2.35	3.70 / 2.26
	SCHE, Non-Ducted	-	29.4	29	30.1
	Sound Pressure (Cooling / Heating)	dB(A)	66 / 66		67 / 67
	Cooling Outdoor Rated Operating Range (Standard / Extended)	°F DB	23 - 122 / -4 - 122		
	Heating Outdoor Rated Operating Range	°F WB	-13 - 59		
Fan	Airflow, Nominal	CFM	9,037+6,707	9,037+9,037	
	Fan ESP, Max	in. WG	0.32		
Compressor	Compressors, all inverter	Qty	1 + 2	2 + 2	
	Capacity Control Range	%	4-100		3 - 100
Connection Ratio	Connection Ratio Range (Standard/Extended)	%	60 -130 / 60 -150		55 -130 / 55 -150
	Maximum Number of Indoor Units (Standard/Extended Connection Ratio)	Qty	46 / 18	52 / 18	56 / 20
Refrigerant Piping Layout	Maximum Vertical Distance, OU - IU (OU above IU/OU below IU)	ft.	360 / 131		
	Maximum Vertical Distance Between IUs	ft.	49		
	Maximum Actual Pipe Length	ft.	541		
	Maximum Total Pipe Length	ft.	3,281		
Refrigerant Piping Connections	Gas Pipe, Main Line	in.	1-1/8	1-3/8	
	High/Low Pressure Gas Line	in.	7/8	1-1/8	
	Liquid Pipe, Main Line	in.	3/4		
Electrical	Maximum Overcurrent Protection, MOP (208-230V/3Ph/60Hz / 460V/3Ph/60Hz)	A	70+40 / 35+20	60+60 / 30+30	70+60 / 35+30
	Minimum Circuit Amps, MCA (208-230V/3Ph/60Hz / 460V/3Ph/60Hz)	A	(58-52)+(29-26) / 30+15	(46-42)+(46-42) / 24+24	(58-52)+(46-42) / 30+24
Unit	Factory Refrigerant Charge	lbs.	23.6+16.1	20.9 + 20.9	23.6+20.9
	Weight (208-230V/3Ph/60Hz / 460V/3Ph/60Hz)	lbs.	723+527 / 737+534	730 + 730 / 734+734	732+730 / 737+734
	Height	in.	66-1/4		
	Width	in.	87-13/16	98-1/16	
	Depth	in.	30-1/2		

Optional Accessories	Low Ambient Damper Kit
	Drain Adapter
	Protection Net
	Snow Protection Hood

Rating conditions are based on AHRI 1230 test standard.

Cooling Conditions:

Indoor Air Temperature: 80°F DB / 67°F WB
Outdoor Air Temperature: 95°F DB

Heating Conditions:

Indoor Air Temperature: 70°F DB
Outdoor Air Temperature: 47°F DB / 43°F WB

GEN II HEAT RECOVERY OUTDOOR UNITS

208/230V | 460V | 24-26 TON SYSTEMS



24-26 Ton Systems	Type			
	Tonnage		Double Module Systems	
			24 Ton	26 Ton
Model	208-230V/3Ph/60Hz		HVAHR288B32S	HVAHR312B32S
	460V/3Ph/60Hz		HVAHR288B42S	HVAHR312B42S
Combination			HVAHR144B_2S	HVAHR168B_2S
			HVAHR144B_2S	HVAHR144B_2S
Performance	Rated Cooling Capacity	BTU/h	288,000	312,000
	Rated Heating Capacity	BTU/h	324,000	351,000
	IEER (Non-Ducted / Ducted)	-	19.4 / 20.7	20.3 / 19.5
	COP, Non-Ducted (47°F / 17°F)	-	3.42 / 2.21	3.37 / 2.05
	SCHE, Non-Ducted	-	30.7	27.2
	Sound Pressure (Cooling / Heating)	dB(A)	68 / 68	
	Cooling Outdoor Rated Operating Range (Standard / Extended)	°F DB	23 - 122 / -4 - 122	
	Heating Outdoor Rated Operating Range	°F WB	-13 - 59	
Fan	Airflow, Nominal	CFM	9,037+9,037	11,614+9,037
	Fan ESP, Max	in. WG	0.32	
Compressor	Compressors, all inverter	Qty	2 + 2	
	Capacity Control Range	%	3 - 100	
Connection Ratio	Connection Ratio Range (Standard/Extended)	%	55 -130 / 55 -150	
	Maximum Number of Indoor Units (Standard/Extended Connection Ratio)	Qty	59 / 20	64 / 22
Refrigerant Piping Layout	Maximum Vertical Distance, OU - IU (OU above IU/OU below IU)	ft.	360 / 131	
	Maximum Vertical Distance Between IUs	ft.	49	
	Maximum Actual Pipe Length	ft.	541	
	Maximum Total Pipe Length	ft.	3,281	
Refrigerant Piping Connections	Gas Pipe, Main Line	in.	1-3/8	
	High/Low Pressure Gas Line	in.	1-1/8	
	Liquid Pipe, Main Line	in.	3/4	
Electrical	Maximum Overcurrent Protection, MOP (208-230V/3Ph/60Hz / 460V/3Ph/60Hz)	A	70+70 / 35+35	80+70 / 40+35
	Minimum Circuit Amps, MCA (208-230V/3Ph/60Hz / 460V/3Ph/60Hz)	A	(58-52)+(58-52) / 30+30	(65-59)+(58-52) / 34+30
Unit	Factory Refrigerant Charge	lbs.	23.6+23.6	24.9+23.6
	Weight (208-230V/3Ph/60Hz / 460V/3Ph/60Hz)	lbs.	732+732 / 737+737	860+732 / 860+737
	Height	in.	66-1/4	
	Width	in.	98-1/16	113-3/8
	Depth	in.	30-1/2	

Optional Accessories	Low Ambient Damper Kit
	Drain Adapter
	Protection Net
	Snow Protection Hood

Rating conditions are based on AHRI 1230 test standard.

Cooling Conditions:

Indoor Air Temperature: 80°F DB / 67°F WB
 Outdoor Air Temperature: 95°F DB

Heating Conditions:

Indoor Air Temperature: 70°F DB
 Outdoor Air Temperature: 47°F DB / 43°F WB

GEN II HEAT RECOVERY OUTDOOR UNITS

208/230V | 460V | 28-30 TON SYSTEMS



28-30 Ton Systems	Type			
	Tonnage		Double Module Systems	
			28 Ton	30 Ton
Model	208-230V/3Ph/60Hz		HVAHR336B32S	HVAHR360B32S
	460V/3Ph/60Hz		HVAHR336B42S	HVAHR360B42S
Combination			HVAHR192B_2S	HVAHR192B_2S
			HVAHR144B_2S	HVAHR168B_2S
Performance	Rated Cooling Capacity	BTU/h	336,000	360,000
	Rated Heating Capacity	BTU/h	378,000	405,000
	IEER (Non-Ducted / Ducted)	-	20.8 / 19.1	19.8 / 19.5
	COP, Non-Ducted (47°F / 17°F)	-	3.27 / 2.31	3.27 / 2.05
	SCHE, Non-Ducted	-	27.8	26.6
	Sound Pressure (Cooling / Heating)	dB(A)	69 / 69	68 / 68
	Cooling Outdoor Rated Operating Range (Standard / Extended)	°F DB	23 - 122 / -4 - 122	
	Heating Outdoor Rated Operating Range	°F WB	-13 - 59	
Fan	Airflow, Nominal	CFM	12,284+9,037	12,284+11,614
	Fan ESP, Max	in. WG	0.32	
Compressor	Compressors, all inverter	Qty	2 + 2	
	Capacity Control Range	%	3 - 100	
Connection Ratio	Connection Ratio Range (Standard/Extended)	%	55 -130 / 55 -150	
	Maximum Number of Indoor Units (Standard/Extended Connection Ratio)	Qty	64 / 24	64 / 28
Refrigerant Piping Layout	Maximum Vertical Distance, OU - IU (OU above IU/OU below IU)	ft.	360 / 131	
	Maximum Vertical Distance Between IUs	ft.	49	
	Maximum Actual Pipe Length	ft.	541	
	Maximum Total Pipe Length	ft.	3,281	
Refrigerant Piping Connections	Gas Pipe, Main Line	in.	1-3/8	
	High/Low Pressure Gas Line	in.	1-1/8	
	Liquid Pipe, Main Line	in.	3/4	
Electrical	Maximum Overcurrent Protection, MOP (208-230V/3Ph/60Hz / 460V/3Ph/60Hz)	A	90+70 / 50+35	90+80 / 50+40
	Minimum Circuit Amps, MCA (208-230V/3Ph/60Hz / 460V/3Ph/60Hz)	A	(76-68)+(58-52) / 39+30	(76-68)+(65-59) / 39+34
Unit	Factory Refrigerant Charge	lbs.	25.6+23.6	25.6+24.9
	Weight (208-230V/3Ph/60Hz / 460V/3Ph/60Hz)	lbs.	860+732 / 860+737	860+860 / 860+860
	Height	in.	66-1/4	
	Width	in.	113-3/8	113-3/8
	Depth	in.	30-1/2	

Optional Accessories	Low Ambient Damper Kit
	Drain Adapter
	Protection Net
	Snow Protection Hood

Rating conditions are based on AHRI 1230 test standard.

Cooling Conditions:

Indoor Air Temperature: 80°F DB / 67°F WB
Outdoor Air Temperature: 95°F DB

Heating Conditions:

Indoor Air Temperature: 70°F DB
Outdoor Air Temperature: 47°F DB / 43°F WB

GEN II HEAT RECOVERY OUTDOOR UNITS

208/230V | 460V | 32-36 TON SYSTEMS



32-36 Ton Systems	Type		Triple Module Systems		
	Tonnage		32 Ton	34 Ton	36 Ton
Model	208-230V/3Ph/60Hz		HVAHR384B32S	HVAHR408B32S	HVAHR432B32S
	460V/3Ph/60Hz		HVAHR384B42S	HVAHR408B42S	HVAHR432B42S
Combination			HVAHR144B_2S	HVAHR144B_2S	HVAHR144B_2S
			HVAHR120B_2S	HVAHR144B_2S	HVAHR144B_2S
			HVAHR120B_2S	HVAHR120B_2S	HVAHR144B_2S
Performance	Rated Cooling Capacity	BTU/h	384,000	408,000	432,000
	Rated Heating Capacity	BTU/h	432,000	459,000	488,000
	IEER (Non-Ducted / Ducted)	-	19.6 / 18.6	19.3 / 19.2	19.5 / 19.0
	COP, Non-Ducted (47°F / 17°F)	-	3.37 / 2.20	3.34 / 2.08	3.21 / 2.05
	SCHE, Non-Ducted	-	28.6	28.9	30.1
	Sound Pressure (Cooling / Heating)	dB(A)	69 / 69		70 / 70
	Cooling Outdoor Rated Operating Range (Standard / Extended)	°F DB	23 - 122 / -4 - 122		
	Heating Outdoor Rated Operating Range	°F WB	-13 - 59		
Fan	Airflow, Nominal	CFM	9,037+9,037+9,037		
	Fan ESP, Max	in. WG	0.32		
Compressor	Compressors, all inverter	Qty	2+2+2		
	Capacity Control Range	%	2-100		
Connection Ratio	Connection Ratio Range (Standard/Extended)	%	55 -130 / 55 -150		55 -135 / 55 -150
	Maximum Number of Indoor Units (Standard/Extended Connection Ratio)	Qty	64 / 30		
Refrigerant Piping Layout	Maximum Vertical Distance, OU - IU (OU above IU/OU below IU)	ft.	360 / 131		
	Maximum Vertical Distance Between IUs	ft.	49		
	Maximum Actual Pipe Length	ft.	541		
	Maximum Total Pipe Length	ft.	3,281		
Refrigerant Piping Connections	Gas Pipe, Main Line	in.	1-5/8		
	High/Low Pressure Gas Line	in.	1-3/8		
	Liquid Pipe, Main Line	in.	3/4		
Electrical	Maximum Overcurrent Protection, MOP (208-230V/3Ph/60Hz / 460V/3Ph/60Hz)	A	70+60+60 / 35+30+30	70+70+60 / 35+35+30	70+70+70 / 35+35+35
	Minimum Circuit Amps, MCA (208-230V/3Ph/60Hz / 460V/3Ph/60Hz)	A	(58-52)+(46-42)+(46-42) / 30+24+24	(58-52)+(58-52)+(46-42) / 30+30+24	(58-52)+(58-52)+(58-52) / 30+30+30
Unit	Factory Refrigerant Charge	lbs.	23.6+20.9+20.9	23.6+23.6+20.9	23.6+23.6+23.6
	Weight (208-230V/3Ph/60Hz / 460V/3Ph/60Hz)	lbs.	723+730+730 / 737+734+734	732+732+730 / 737+737+734	732+732+732 / 737+737+737
	Height	in.	66-1/4		
	Width	in.	147-7/16		
	Depth	in.	30-1/2		

Optional Accessories	Low Ambient Damper Kit
	Drain Adapter
	Protection Net
	Snow Protection Hood

Rating conditions are based on AHRI 1230 test standard.

Cooling Conditions:

Indoor Air Temperature: 80°F DB / 67°F WB
 Outdoor Air Temperature: 95°F DB

Heating Conditions:

Indoor Air Temperature: 70°F DB
 Outdoor Air Temperature: 47°F DB / 43°F WB

GEN II HEAT PUMP OUTDOOR UNITS

208/230V | 460V

Heat pump units can either heat or cool spaces. Hitachi **SmartFlex™** VRF Gen II Heat Pump units offer an extended operating temperature range: outdoor ambient temperature as low as -4°F (-20°C) in the cooling mode utilizing a low ambient kit and as low as -13°F (-25°C) in the heating mode.



GEN II HEAT PUMP OUTDOOR UNITS

208/230V | 460V | 6-16 TON SYSTEMS



6-16 Ton Systems	Type		Single Unit Systems					
	Tonnage		6 Ton	8 Ton	10 Ton	12 Ton	14 Ton	16 Ton
Model	208-230V/3Ph/60Hz		HVAHP072B32S	HVAHP096B32S	HVAHP120B32S	HVAHP144B32S	HVAHP168B32S	HVAHP192B32S
	460V/3Ph/60Hz		HVAHP072B42S	HVAHP096B42S	HVAHP120B42S	HVAHP144B42S	HVAHP168B42S	HVAHP192B42S
Performance	Rated Cooling Capacity	BTU/h	72,000	96,000	120,000	144,000	168,000	192,000
	Rated Heating Capacity	BTU/h	81,000	108,000	135,000	162,000	189,000	216,000
	IEER (Non-Ducted / Ducted)	-	26.5 / 21.1	23.9 / 22.1	24.4 / 21.7	23.9 / 21.2	23.4 / 21.4	21.4 / 20.8
	COP, Non-Ducted (47°F / 17°F)	-	4.25 / 2.60	3.77 / 2.40	3.84 / 2.37	3.42 / 2.12	3.65 / 2.16	3.32 / 2.05
	Sound Pressure (Cooling / Heating)	dB(A)	60 / 60	63 / 63		65 / 65	66 / 66	
	Cooling Outdoor Rated Operating Range (Standard / Extended)	°F DB	23 - 122 / -4 - 122					
	Heating Outdoor Rated Operating Range	°F WB	-13 - 59					
Fan	Airflow, Nominal	CFM	6,707	8,437	9,037		11,614	12,284
	Fan ESP, Max	in. WG	0.32					
	Compressors, all inverter	Qty	1		2			
	Capacity Control Range	%	10 - 100	8 - 100	7 - 100	6-100	5-100	
Connection Ratio	Connection Ratio Range (Standard/Extended)	%	70 - 130 / 70 - 150	65 - 130 / 65 - 150	60 - 130 / 60 - 150	55 - 130 / 55 - 150		
	Maximum Number of Indoor Units (Standard/Extended Connection Ratio)	Qty	15 / 8	20 / 8	26 / 8	26 / 10	36 / 12	40 / 14
Refrigerant Piping Layout	Maximum Vertical Distance, OU - IU (OU above IU/OU below IU)	ft.	360 / 131					
	Maximum Vertical Distance Between IUs	ft.	98					
	Maximum Actual Pipe Length	ft.	541					
	Maximum Total Pipe Length	ft.	3,281					
Refrigerant Piping Connections	Gas Pipe, Main Line	in.	7/8		1-1/8			
	Liquid Pipe, Main Line	in.	1/2			5/8		
Electrical	Maximum Overcurrent Protection, MOP (208-230V/3Ph/60Hz / 460V/3Ph/60Hz)	A	40 / 20	50 / 30	60 / 30	70 / 35	80 / 40	90 / 50
	Minimum Circuit Amps, MCA (208-230V/3Ph/60Hz / 460V/3Ph/60Hz)	A	29-26 / 15	39-35 / 22	46-42 / 24	58-52 / 30	65-59 / 34	76-68 / 39
Unit	Factory Refrigerant Charge	lbs.	16.1	18.7	20.9	23.6	24.9	25.6
	Weight (208-230V/3Ph/60Hz / 460V/3Ph/60Hz)	lbs.	516 / 523	591 / 604	721 / 725	723 / 728	849 / 849	849 / 849
	Height	in.	66-1/4					
	Width	in.	38-3/8	48-5/8			64	
	Depth	in.	30-1/2					

Optional Accessories	Low Ambient Damper Kit
	Drain Adapter
	Protection Net
	Snow Protection Hood

Rating conditions are based on AHRI 1230 test standard.

Cooling Conditions:

- Indoor Air Temperature: 80°F DB / 67°F WB
- Outdoor Air Temperature: 95°F DB

Heating Conditions:

- Indoor Air Temperature: 70°F DB
- Outdoor Air Temperature: 47°F DB / 43°F WB

GEN II HEAT PUMP OUTDOOR UNITS

208/230V | 460V | 18-22 TON SYSTEMS



18-22 Ton Systems	Type		Double Module Systems		
	Tonnage		18 Ton	20 Ton	22 Ton
Model	208-230V/3Ph/60Hz		HVAHP216B32S	HVAHP240B32S	HVAHP264B32S
	460V/3Ph/60Hz		HVAHP216B42S	HVAHP240B42S	HVAHP264B42S
Combination			HVAHP144B_2S	HVAHP120B_2S	HVAHP144B_2S
			HVAHP072B_2S	HVAHP120B_2S	HVAHP120B_2S
Performance	Rated Cooling Capacity	BTU/h	216,000	240,000	264,000
	Rated Heating Capacity	BTU/h	243,000	270,000	297,000
	IEER (Non-Ducted / Ducted)	-	20.9 / 20.7	20.8 / 21.0	21.1 / 20.8
	COP, Non-Ducted (47°F / 17°F)	-	3.82 / 2.32	3.67 / 2.35	3.70 / 2.26
	Sound Pressure (Cooling / Heating)	dB(A)	66 / 66		67 / 67
	Cooling Outdoor Rated Operating Range (Standard / Extended)	°F DB	23 - 122 / -4 - 122		
	Heating Outdoor Rated Operating Range	°F WB	-13 - 59		
Fan	Airflow, Nominal	CFM	9,037+6,707	9,037+9,037	
	Fan ESP, Max	in. WG	0.32		
Compressor	Compressors, all inverter	Qty	1 + 2	2 + 2	
	Capacity Control Range	%	4-100		3 - 100
Connection Ratio	Connection Ratio Range (Standard/Extended)	%	60 -130 / 60 -150		55 -130 / 55 -150
	Maximum Number of Indoor Units (Standard/Extended Connection Ratio)	Qty	46 / 18	52 / 18	56 / 20
Refrigerant Piping Layout	Maximum Vertical Distance, OU - IU (OU above IU/OU below IU)	ft.	360 / 131		
	Maximum Vertical Distance Between IUs	ft.	98		
	Maximum Actual Pipe Length	ft.	541		
	Maximum Total Pipe Length	ft.	3,281		
Refrigerant Piping Connections	Gas Pipe, Main Line	in.	1-1/8	1-3/8	
	Liquid Pipe, Main Line	in.	3/4		
Electrical	Maximum Overcurrent Protection, MOP (208-230V/3Ph/60Hz / 460V/3Ph/60Hz)	A	70+40 / 35+20	60+60 / 30+30	70+60 / 35+30
	Minimum Circuit Amps, MCA (208-230V/3Ph/60Hz / 460V/3Ph/60Hz)	A	(58-52)+(29-26) / 30+15	(46-42)+(46-42) / 24+24	(58-52)+(46-42) / 30+24
Unit	Factory Refrigerant Charge	lbs.	23.6+16.1	20.9 + 20.9	23.6+20.9
	Weight (208-230V/3Ph/60Hz / 460V/3Ph/60Hz)	lbs.	723+516 / 728+523	721 + 721 / 725+725	723+721 / 728+725
	Height	in.	66-1/4		
	Width	in.	87-13/16	98-1/16	
	Depth	in.	30-1/2		

Optional Accessories	Low Ambient Damper Kit
	Drain Adapter
	Protection Net
	Snow Protection Hood

Rating conditions are based on AHRI 1230 test standard.

Cooling Conditions:

- Indoor Air Temperature: 80°F DB / 67°F WB
- Outdoor Air Temperature: 95°F DB

Heating Conditions:

- Indoor Air Temperature: 70°F DB
- Outdoor Air Temperature: 47°F DB / 43°F WB

GEN II HEAT PUMP OUTDOOR UNITS

208/230V | 460V | 24-26 TON SYSTEMS



24-26 Ton Systems	Type			
	Tonnage		Double Module Systems	
			24 Ton	26 Ton
Model	208-230V/3Ph/60Hz		HVAHP288B32S	HVAHP312B32S
	460V/3Ph/60Hz		HVAHP288B42S	HVAHP312B42S
Combination			HVAHP144B_2S	HVAHP168B_2S
			HVAHP144B_2S	HVAHP144B_2S
Performance	Rated Cooling Capacity	BTU/h	288,000	312,000
	Rated Heating Capacity	BTU/h	324,000	351,000
	IEER (Non-Ducted / Ducted)	-	19.4 / 20.7	20.3 / 19.5
	COP, Non-Ducted (47°F / 17°F)	-	3.42 / 2.21	3.37 / 2.05
	Sound Pressure (Cooling / Heating)	dB(A)	68 / 68	
	Cooling Outdoor Rated Operating Range (Standard / Extended)	°F DB	23 - 122 / -4 - 122	
	Heating Outdoor Rated Operating Range	°F WB	-13 - 59	
Fan	Airflow, Nominal	CFM	9,037+9,037	11,614+9,037
	Fan ESP, Max	in. WG	0.32	
Compressor	Compressors, all inverter	Qty	2 + 2	2 + 2
	Capacity Control Range	%	3 - 100	
Connection Ratio	Connection Ratio Range (Standard/Extended)	%	55 -130 / 55 -150	
	Maximum Number of Indoor Units (Standard/Extended Connection Ratio)	Qty	59 / 20	64 / 22
Refrigerant Piping Layout	Maximum Vertical Distance, OU - IU (OU above IU/OU below IU)	ft.	360 / 131	
	Maximum Vertical Distance Between IUs	ft.	98	
	Maximum Actual Pipe Length	ft.	541	
	Maximum Total Pipe Length	ft.	3,281	
Refrigerant Piping Connections	Gas Pipe, Main Line	in.	1-3/8	
	Liquid Pipe, Main Line	in.	3/4	
Electrical	Maximum Overcurrent Protection, MOP (208-230V/3Ph/60Hz / 460V/3Ph/60Hz)	A	70+70 / 35+35	80+70 / 40+35
	Minimum Circuit Amps, MCA (208-230V/3Ph/60Hz / 460V/3Ph/60Hz)	A	(58-52)+(58-52) / 30+30	(65-59)+(58-52) / 34+30
Unit	Factory Refrigerant Charge	lbs.	23.6+23.6	24.9+23.6
	Weight (208-230V/3Ph/60Hz / 460V/3Ph/60Hz)	lbs.	723+723 / 728+728	849+723 / 849+728
	Height	in.	66-1/4	
	Width	in.	98-1/16	113-3/8
	Depth	in.	30-1/2	

Optional Accessories	Low Ambient Damper Kit
	Drain Adapter
	Protection Net
	Snow Protection Hood

Rating conditions are based on AHRI 1230 test standard.

Cooling Conditions:

- Indoor Air Temperature: 80°F DB / 67°F WB
- Outdoor Air Temperature: 95°F DB

Heating Conditions:

- Indoor Air Temperature: 70°F DB
- Outdoor Air Temperature: 47°F DB / 43°F WB

GEN II HEAT PUMP OUTDOOR UNITS

208/230V | 460V | 28-30 TON SYSTEMS



28-30 Ton Systems	Type		Double Module Systems	
	Tonnage		28 Ton	30 Ton
Model	208-230V/3Ph/60Hz		HVAHP336B32S	HVAHP360B32S
	460V/3Ph/60Hz		HVAHP336B42S	HVAHP360B42S
Combination			HVAHP192B_2S	HVAHP192B_2S
			HVAHP144B_2S	HVAHP168B_2S
Performance	Rated Cooling Capacity	BTU/h	336,000	360,000
	Rated Heating Capacity	BTU/h	378,000	405,000
	IEER (Non-Ducted / Ducted)	-	20.8 / 19.1	19.8 / 19.5
	COP, Non-Ducted (47°F / 17°F)	-	3.27 / 2.31	3.27 / 2.05
	Sound Pressure (Cooling / Heating)	dB(A)	69 / 69	68 / 68
	Cooling Outdoor Rated Operating Range (Standard / Extended)	°F DB	23 - 122 / -4 - 122	
	Heating Outdoor Rated Operating Range	°F WB	-13 - 59	
Fan	Airflow, Nominal	CFM	12,284+9,037	12,284+11,614
	Fan ESP, Max	in. WG	0.32	
Compressor	Compressors, all inverter	Qty	2 + 2	
	Capacity Control Range	%	3 - 100	
Connection Ratio	Connection Ratio Range (Standard/Extended)	%	55 -130 / 55 -150	
	Maximum Number of Indoor Units (Standard/Extended Connection Ratio)	Qty	64 / 24	64 / 28
Refrigerant Piping Layout	Maximum Vertical Distance, OU - IU (OU above IU/OU below IU)	ft.	360 / 131	
	Maximum Vertical Distance Between IUs	ft.	98	
	Maximum Actual Pipe Length	ft.	541	
	Maximum Total Pipe Length	ft.	3,281	
Refrigerant Piping Connections	Gas Pipe, Main Line	in.	1-3/8	
	Liquid Pipe, Main Line	in.	3/4	
Electrical	Maximum Overcurrent Protection, MOP (208-230V/3Ph/60Hz / 460V/3Ph/60Hz)	A	90+70 / 50+35	90+80 / 50+40
	Minimum Circuit Amps, MCA (208-230V/3Ph/60Hz / 460V/3Ph/60Hz)	A	(76-68)+(58-52) / 39+30	(76-68)+(65-59) / 39+34
Unit	Factory Refrigerant Charge	lbs.	25.6+23.6	25.6+24.9
	Weight (208-230V/3Ph/60Hz / 460V/3Ph/60Hz)	lbs.	849+723 / 849+728	849+849 / 849+849
	Height	in.	66-1/4	
	Width	in.	113-3/8	128-3/4
	Depth	in.	30-1/2	

Optional Accessories	Low Ambient Damper Kit
	Drain Adapter
	Protection Net
	Snow Protection Hood

Rating conditions are based on AHRI 1230 test standard.

Cooling Conditions:

- Indoor Air Temperature: 80°F DB / 67°F WB
- Outdoor Air Temperature: 95°F DB

Heating Conditions:

- Indoor Air Temperature: 70°F DB
- Outdoor Air Temperature: 47°F DB / 43°F WB

GEN II HEAT PUMP OUTDOOR UNITS

208/230V | 460V | 32-36 TON SYSTEMS



32-36 Ton Systems	Type		Triple Module Systems		
	Tonnage		32 Ton	34 Ton	36 Ton
Model	208-230V/3Ph/60Hz		HVAHP384B32S	HVAHP408B32S	HVAHP432B32S
	460V/3Ph/60Hz		HVAHP384B42S	HVAHP408B42S	HVAHP432B42S
Combination			HVAHP144B_2S	HVAHP144B_2S	HVAHP144B_2S
			HVAHP120B_2S	HVAHP144B_2S	HVAHP144B_2S
			HVAHP120B_2S	HVAHP120B_2S	HVAHP144B_2S
Performance	Rated Cooling Capacity	BTU/h	384,000	408,000	432,000
	Rated Heating Capacity	BTU/h	432,000	459,000	488,000
	IEER (Non-Ducted / Ducted)	-	19.6 / 18.6	19.3 / 19.2	19.5 / 19.0
	COP, Non-Ducted (47°F / 17°F)	-	3.37 / 2.20	3.34 / 2.08	3.21 / 2.05
	Sound Pressure (Cooling / Heating)	dB(A)	69 / 69		70 / 70
	Cooling Outdoor Rated Operating Range (Standard / Extended)	°F DB	23 - 122 / -4 - 122		
	Heating Outdoor Rated Operating Range	°F WB	-13 - 59		
Fan	Airflow, Nominal	CFM	9,037+9,037+9,037		
	Fan ESP, Max	in. WG	0.32		
Compressor	Compressors, all inverter	Qty	2+2+2		
	Capacity Control Range	%	2-100		
Connection Ratio	Connection Ratio Range (Standard/Extended)	%	55 -130 / 55 -150		55 -135 / 55 -150
	Maximum Number of Indoor Units (Standard/Extended Connection Ratio)	Qty	64 / 30		
Refrigerant Piping Layout	Maximum Vertical Distance, OU - IU (OU above IU/OU below IU)	ft.	360 / 131		
	Maximum Vertical Distance Between IUs	ft.	98		
	Maximum Actual Pipe Length	ft.	541		
	Maximum Total Pipe Length	ft.	3,281		
Refrigerant Piping Connections	Gas Pipe, Main Line	in.	1-5/8		
	Liquid Pipe, Main Line	in.	5/8	3/4	
Electrical	Maximum Overcurrent Protection, MOP (208-230V/3Ph/60Hz / 460V/3Ph/60Hz)	A	70+60+60 / 35+30+30	70+70+60 / 35+35+30	70+70+70 / 35+35+35
	Minimum Circuit Amps, MCA (208-230V/3Ph/60Hz / 460V/3Ph/60Hz)	A	(58-52)+(46-42)+(46-42) / 30+24+24	(58-52)+(58-52)+(46-42) / 30+30+24	(58-52)+(58-52)+(58-52) / 30+30+30
Unit	Factory Refrigerant Charge	lbs.	23.6+20.9+20.9	23.6+23.6+20.9	23.6+23.6+23.6
	Weight (208-230V/3Ph/60Hz / 460V/3Ph/60Hz)	lbs.	723+721+721 / 728+725+725	723+723+721 / 728+728+725	723+723+723 / 728+728+728
	Height	in.	66-1/4		
	Width	in.	147-7/16		
	Depth	in.	30-1/2		

Optional Accessories	Low Ambient Damper Kit
	Drain Adapter
	Protection Net
	Snow Protection Hood

Rating conditions are based on AHRI 1230 test standard.

Cooling Conditions:

- Indoor Air Temperature: 80°F DB / 67°F WB
- Outdoor Air Temperature: 95°F DB

Heating Conditions:

- Indoor Air Temperature: 70°F DB
- Outdoor Air Temperature: 47°F DB / 43°F WB

LOW AMBIENT HEAT PUMP OUTDOOR UNITS

230/208V AND 460V

Heat pump units can either heat or cool spaces. Hitachi **SmartFlex™** VRF heat pump units offer an extended operating temperature range: outdoor ambient temperature as low as 14°F (-10°C) in the cooling mode and as low as -13°F (-25°C) in the heating mode.



LOW AMBIENT HEAT PUMP OUTDOOR UNITS 230/208V | 6-8 TON SYSTEMS

6-8 Ton Systems		Type			Low Ambient Outdoor Systems				
		Tonnage			6 Ton		8 Ton		
Model (combination)					HVAHP072B31CW		HVAHP096B31CW		
Model (individual)		Unit A			-		-		
		Unit B			-		-		
		Unit C			-		-		
Power Supply					208/230V/ 3PH 60Hz		208/230V/ 3PH 60Hz		
Capacity (Nominal) *	Cooling	Capacity (Nominal)		Btu/h	(kW)	72,000	(21.1)	96,000	(28.1)
		Power input		kW		5.88		9.61	
		Current input		A (208/230V)		16.8 / 16.1		27.2 / 25.9	
	Heating	Capacity (Nominal)		Btu/h	(kW)	81,000	(23.7)	108,000	(31.7)
		Power Input		kW		5.51		8.08	
		Current Input		A (208/230V)		15.8 / 15.0		23.1 / 21.8	
Efficiency Ratings **	Cooling	Capacity (Rated)		Btu/h	(kW)	69,000	(20.2)	92,000	(27.0)
		EER		Btu/Wh	(W/W)	13.00	(3.81)	11.90	(3.49)
		IEER		Btu/Wh	(Wh/Wh)	18.10	(5.31)	18.90	(5.54)
	Heating High	Capacity (Rated)		Btu/h	(kW)	76,000	(22.3)	103,000	(30.2)
		COP		W/W		4.09		3.80	
	Heating Low	Capacity		Btu/h	(kW)	64,000	(18.8)	87,000	(25.5)
COP		W/W		2.57		2.42			
Cooling Operating Range	Indoor			°F WB (°C WB)		59(15) ~ 73(23)		59(15) ~ 73(23)	
	Outdoor ***			°F DB (°C DB)		14(-10) ~ 118(48)		14(-10) ~ 118(48)	
Heating Operating Range	Indoor			°F DB (°C DB)		59(15) ~ 80(27)		59(15) ~ 80(27)	
	Outdoor ****			°F WB (°C WB)		-13(-25) ~ 59(15)		-13(-25) ~ 59(15)	
Cabinet Color (Munsell Code)					2.5Y 8/2		2.5Y 8/2		
Outer Dimensions		(H x W x D)		in		68-1/8 x 48-1/8 x 31-1/4		68-1/8 x 48-1/8 x 31-1/4	
Package Dimensions		(H x W x D)		in		74-1/4 x 50-7/8 x 34		74-1/4 x 50-7/8 x 34	
Weight	Net		lbs (kg)		699 (317)		699 (317)		
	Gross		lbs (kg)		756 (343)		756 (343)		
Connection Ratio	Connection Ratio Range		%		130 - 60		110 - 60		
	Max. (Recommendation) indoor units/system		-		15 (10)		16 (10)		
Heat Exchanger	Type		-		Multi-pass cross-finned tube				
	Material		-		Cu-Al (Anti-corrosion)				
Compressor	Type		Inverter		EK655DHD×1		EK655DHD×1		
			Fixed Speed		EK655DH×1		EK655DH×1		
	Motor Output (Pole)		kW (Pole)		3.2(4)+3.0(2)		3.2(4)+3.0(2)		
	Start Method		-		inverter				
	Operation Range		%		14 ~ 100		14 ~ 100		
Refrigeration Oil Type		-		FVC68D		FVC68D			
Crank Case Heater				W×Qty		40.8 (230V) ×6		40.8 (230V) ×6	
Fan	Type		-		Propeller Fan				
	Motor Output (Pole)		kW (Pole)		0.66(8)		0.66(8)		
	Quantity		Qty		1				
	Airflow Rate		cfm (m³/min)		6884 (195)		6884 (195)		
	External Static Pressure *****		in.WG (Pa)		0 (0)		0 (0)		
Drive		-		Direct-drive					
Electrical	Min Circuit Amps		A		51/46		51/46		
	Max Overcurrent Protective Device		A		72/65		72/65		
	Maximum Fuse Size		A		70/60		70/60		
Sound Pressure Level	Cooling (Night-Shift)		dB (A)		60 (56)		60 (56)		
	Heating		dB (A)		61		61		
Protection devices	Cycle		-		High pressure switch at 601psi (4.15MPa)				
	Inverter		-		Over-current protection / Over-heat protection				
	Compressor		-		Over-heat protection				
	PCB		-		Over-current protection				
Refrigerant	Type		-		R410A				
	Charge Amount		lbs (kg)		17.0 (7.7)		17.0 (7.7)		
Refrigeration Oil	Charge Amount		gal/Unit (L/Unit)		2.1 (7.9)		2.1 (7.9)		
Defrost Method				-		Reversed refrigerant cycle / Hot gas bypass			
Main Refrigerant Piping (Heat Pump)	Gas Line		in (mm)		7/8 (22.2)		7/8 (22.2)		
	Liquid Line		in (mm)		3/8 (9.52)		3/8 (9.52)		

* Rating Conditions are shown as below with piping length 24 feet 7-3/16 inch, piping lift 0 feet.
 Cooling Indoor Air Inlet Temperature: 80°F DB, 67 °F WB Outdoor Air Inlet Temperature: 95°F DB
 Heating Indoor Air Inlet Temperature: 70°F DB Outdoor Air Inlet Temperature: 47°F DB, 43°F WB

** Rating Conditions are based on the AHRI 1230 test standard.
 *** For more details, please refer to Engineering manual "Operation range" section.
 **** For more details, please refer to Engineering manual "Operation range" section.
 ***** External static pressure can be changed via DSW setting 0.24 in. W.G.. (60Pa).

LOW AMBIENT HEAT PUMP OUTDOOR UNITS 230/208V HP | 12-24 TON SYSTEMS

12-24 Ton Systems	Type		Low Ambient Outdoor Systems									
	Tonnage		12 Ton (6 + 6)		14 Ton (8+6)		16 Ton (8+8)		24 Ton (8+8+8)			
Model (combination)			HVAHP144B31CW		HVAHP168B31CW		HVAHP192B31CW		HVAHP288B31CW			
Model (individual)	Unit A		HVAHP072B31CW		HVAHP096B31CW		HVAHP096B31CW		HVAHP096B31CW			
	Unit B		HVAHP072B31CW		HVAHP072B31CW		HVAHP096B31CW		HVAHP096B31CW			
	Unit C		-		-		-		HVAHP096B31CW			
Power Supply			208/230V/ 3PH 60Hz		208/230V/ 3PH 60Hz		208/230V/ 3PH 60Hz		208/230V/ 3PH 60Hz			
Capacity (Nominal) *	Cooling	Capacity (Nominal)	Btu/h	(kW)	144,000	(42.2)	168,000	(49.2)	192,000	(56.3)	288,000	(84.4)
		Power input	kW		11.77		15.50		19.23		28.84	
		Current input	A (208/230V)		33.6 / 32.2		44.0 / 42.0		54.4 / 51.8		81.6 / 77.7	
	Heating	Capacity (Nominal)	Btu/h	(kW)	162,000	(47.5)	189,000	(55.4)	216,000	(63.3)	324,000	(95.0)
		Power Input	kW		11.02		13.59		16.16		24.25	
		Current Input	A (208/230V)		31.6 / 30.0		38.9 / 36.8		46.2 / 43.6		69.3 / 65.4	
Efficiency Ratings **	Cooling	Capacity (Rated)	Btu/h	(kW)	138,000	(40.5)	160,000	(46.9)	182,000	(53.4)	274,000	(80.4)
		EER	Btu/Wh	(W/W)	12.80	(3.75)	12.30	(3.61)	12.20	(3.58)	10.60	(3.11)
		IEER	Btu/Wh	(Wh/Wh)	17.60	(5.16)	18.50	(5.43)	18.50	(5.43)	17.70	(5.19)
	Heating High	Capacity (Rated)	Btu/h	(kW)	154,000	(45.2)	178,000	(52.2)	204,000	(59.8)	308,000	(90.3)
		COP	W/W		3.99		3.80		3.68		3.57	
	Heating Low	Capacity	Btu/h	(kW)	129,000	(37.8)	151,000	(44.3)	174,000	(51.0)	260,000	(76.3)
COP		W/W		2.50		2.33		2.37		2.34		
Cooling Operating Range	Indoor	°F WB (°C WB)		59(15) ~ 73(23)		59(15) ~ 73(23)		59(15) ~ 73(23)		59(15) ~ 73(23)		
	Outdoor ***	°F DB (°C DB)		14(-10) ~ 118(48)		14(-10) ~ 118(48)		14(-10) ~ 118(48)		14(-10) ~ 118(48)		
Heating Operating Range	Indoor	°F DB (°C DB)		59(15) ~ 80(27)		59(15) ~ 80(27)		59(15) ~ 80(27)		59(15) ~ 80(27)		
	Outdoor ****	°F WB (°C WB)		-13(-25) ~ 59(15)		-13(-25) ~ 59(15)		-13(-25) ~ 59(15)		-13(-25) ~ 59(15)		
Cabinet Color (Munsell Code)			-		2.5Y 8/2		2.5Y 8/2		2.5Y 8/2		2.5Y 8/2	
Outer Dimensions	(H x W x D)		in		(68-1/8 x 48-1/8 x 31-1/4) x2		(68-1/8 x 48-1/8 x 31-1/4) x2		(68-1/8 x 48-1/8 x 31-1/4) x2		(68-1/8 x 48-1/8 x 31-1/4) x3	
Package Dimensions	(H x W x D)		in		-		-		-		-	
Weight	Net	lbs	(kg)	1398	(634)	1398	(634)	1398	(634)	2097	(951)	
	Gross	lbs	(kg)	1513	(686)	1513	(686)	1513	(686)	2269	(1029)	
Connection Ratio	Connection Ratio Range	%		130 - 60		110 - 60		110 - 60		110 - 60		
	Max. (Recommendation) indoor units/system	-		31(18)		30(18)		33(18)		50(32)		
Heat Exchanger	Type	-		Multi-pass cross-finned tube								
	Material	-		Cu-Al (Anti-corrosion)								
Compressor	Type	Inverter	-		EK655DHD×2		EK655DHD×2		EK655DHD×2		EK655DHD×3	
		Fixed Speed	-		EK655DH×2		EK655DH×2		EK655DH×2		EK655DH×3	
	Motor Output (Pole)	kW (Pole)		3.2(4)+3.0(2) 3.2(4)+3.0(2)		3.2(4)+3.0(2) 3.2(4)+3.0(2)		3.2(4)+3.0(2) 3.2(4)+3.0(2)		3.2(4)+3.0(2) 3.2(4)+3.0(2)		
	Start Method	-		inverter								
	Operation Range	%		7 ~ 100		7 ~ 100		7 ~ 100		8 ~ 100		
	Refrigeration Oil Type	-		FVC68D		FVC68D		FVC68D		FVC68D		
Crank Case Heater	W×Qty		40.8 (230V) ×12		40.8 (230V) ×12		40.8 (230V) ×12		40.8 (230V) ×18			
Fan	Type	-		Propeller Fan								
	Motor Output (Pole)	kW (Pole)		0.66(8)×2		0.66(8)×2		0.66(8)×2		0.66(8)×3		
	Quantity	Qty		2		2		2		3		
	Airflow Rate	cfm	(m³/min)	6884+6884	(195+195)	6884+6884	(195+195)	6884+6884	(195+195)	6884+6884+6884	(195+195+195)	
	External Static Pressure *****	in.WG	(Pa)	0 (0)		0 (0)		0 (0)		0 (0)		
	Drive	-		Direct-drive								
Electrical	Min Circuit Amps	A		Reference: HVAHP072B31CW HVAHP072B31CW		Reference: HVAHP096B31CW HVAHP072B31CW		Reference: HVAHP096B31CW HVAHP096B31CW		Reference: HVAHP096B31CW HVAHP096B31CW HVAHP096B31CW		
	Max Overcurrent Protective Device	A										
	Maximum Fuse Size	A										
Sound Pressure Level	Cooling (Night-Shift)	dB (A)		63 (59)		63 (59)		63 (59)		65 (61)		
	Heating	dB (A)		64		64		64		66		
Protection devices	Cycle	-		High pressure switch at 601psi (4.15MPa)								
	Inverter	-		Over-current protection / Over-heat protection								
	Compressor	-		Over-heat protection								
	PCB	-		Over-current protection								
Refrigerant	Type	-		R410A								
	Charge Amount	lbs	(kg)	17.0+17.0	(7.7+7.7)	17.0+17.0	(7.7+7.7)	17.0+17.0	(7.7+7.7)	17.0+17.0+17.0	(7.7+7.7+7.7)	
Refrigeration Oil	Charge Amount	gal/Unit	(L/Unit)	2.1+2.1	(7.9+7.9)	2.1+2.1	(7.9+7.9)	2.1+2.1	(7.9+7.9)	2.1+2.1+2.1	(7.9+7.9+7.9)	
Defrost Method			-		Reversed refrigerant cycle / Hot gas bypass							
Main Refrigerant Piping (Heat Pump)	Gas Line	in	(mm)	1-1/8	(28.58)	1-1/8	(28.58)	1-1/8	(28.58)	1-3/8	(34.93)	
	Liquid Line	in	(mm)	5/8	(15.88)	5/8	(15.88)	5/8	(15.88)	3/4	(19.05)	

* Rating Conditions are shown as below with piping length 24 feet 7-3/16 inch, piping lift 0 feet.

Cooling
Indoor Air Inlet Temperature: 80°F DB, 67 °F WB
Outdoor Air Inlet Temperature: 95°F DB

Heating
Indoor Air Inlet Temperature: 70°F DB
Outdoor Air Inlet Temperature: 47°F DB, 43°F WB

** Rating Conditions are based on the AHRI 1230 test standard.

*** For more details, please refer to Engineering manual "Operation range" section.

**** For more details, please refer to Engineering manual "Operation range" section.

***** External static pressure can be changed via DSW setting 0.24 in. W.G.. (60Pa).

LOW AMBIENT HEAT PUMP OUTDOOR UNITS 460V HP | 6-8 TON SYSTEMS

6-8 Ton Systems		Type		Low Ambient Outdoor Systems						
		Tonnage		6 Ton		8 Ton				
Model (combination)				HVAHP072B41CW		HVAHP096B41CW				
Model (individual)		Unit A		-		-				
		Unit B		-		-				
		Unit C		-		-				
Power Supply				460V/ 3PH 60Hz		460V/ 3PH 60Hz				
Capacity (Nominal) *	Cooling	Capacity (Nominal)		Btu/h	(kW)	72,000	(21.1)	96,000	(28.1)	
		Power input		kW		5.88		9.61		
		Current input		A		7.9		12.8		
	Heating	Capacity (Nominal)		Btu/h	(kW)	81,000	(23.7)	108,000	(31.7)	
		Power Input		kW		5.51		8.08		
Current Input		A		7.4		10.8				
Efficiency Ratings **	Cooling	Capacity (Rated)		Btu/h	(kW)	69,000	(20.2)	92,000	(27.0)	
		EER		Btu/Wh	(W/W)	13.00	(3.81)	11.90	(3.49)	
		IEER		Btu/Wh	(Wh/Wh)	18.10	(5.31)	18.90	(5.54)	
	Heating High	Capacity (Rated)		Btu/h	(kW)	76,000	(22.3)	103,000	(30.2)	
		COP		W/W		4.09		3.80		
	Heating Low	Capacity		Btu/h	(kW)	64,000	(18.8)	87,000	(25.5)	
		COP		W/W		2.57		2.42		
Cooling Operating Range	Indoor			°F WB (°C WB)		59(15) ~ 73(23)		59(15) ~ 73(23)		
	Outdoor ***			°F DB (°C DB)		14(-10) ~ 118(48)		14(-10) ~ 118(48)		
Heating Operating Range	Indoor			°F DB (°C DB)		59(15) ~ 80(27)		59(15) ~ 80(27)		
	Outdoor ****			°F WB (°C WB)		-13(-25) ~ 59(15)		-13(-25) ~ 59(15)		
Cabinet Color (Munsell Code)				-		2.5Y 8/2		2.5Y 8/2		
Outer Dimensions		(H x W x D)		in		68-1/8 x 48-1/8 x 31-1/4		68-1/8 x 48-1/8 x 31-1/4		
Package Dimensions		(H x W x D)		in		74-1/4 x 50-7/8 x 34		74-1/4 x 50-7/8 x 34		
Weight	Net		lbs	(kg)	787	(357)	787	(357)		
	Gross		lbs	(kg)	845	(383)	845	(383)		
Connection Ratio	Connection Ratio Range				%		130 - 60		110 - 60	
	Max. (Recommendation) indoor units/system				-		15 (10)		16 (10)	
Heat Exchanger	Type				-		Multi-pass cross-finned tube			
	Material				-		Cu-Al (Anti-corrosion)			
Compressor	Type	Inverter			-		EK655DHD×1		EK655DHD×1	
		Fixed Speed			-		EK655DH×1		EK655DH×1	
	Motor Output (Pole)				kW (Pole)		3.2(4)+3.0(2)		3.2(4)+3.0(2)	
	Start Method				-		inverter			
	Operation Range				%		14 ~ 100		14 ~ 100	
Refrigeration Oil Type				-		FVC68D		FVC68D		
Crank Case Heater				W×Qty		40.8 (230V) ×6		40.8 (230V) ×6		
Fan	Type				-		Propeller Fan			
	Motor Output (Pole)				kW (Pole)		0.66(8)		0.66(8)	
	Quantity				Qty		1			
	Airflow Rate		cfm	(m³/min)	6884	(195)	6884	(195)		
	External Static Pressure *****		in.WG (Pa)		0 (0)		0 (0)			
Drive				-		Direct-drive				
Electrical	Min Circuit Amps				A		24		24	
	Max Overcurrent Protective Device				A		34		34	
	Maximum Fuse Size				A		30		30	
Sound Pressure Level	Cooling (Night-Shift)				dB (A)		60		(56)	
	Heating				dB (A)		61		61	
Protection devices	Cycle				-		High pressure switch at 601psi (4.15MPa)			
	Inverter				-		Over-current protection / Over-heat protection			
	Compressor				-		Over-heat protection			
	PCB				-		Over-current protection			
Refrigerant	Type				-		R410A			
	Charge Amount		lbs	(kg)	17.0	(7.7)	17.0	(7.7)		
Refrigeration Oil	Charge Amount		gal/Unit	(L/Unit)	2.1	(7.9)	2.1	(7.9)		
	Defrost Method				-		Reversed refrigerant cycle / Hot gas bypass			
Main Refrigerant Piping (Heat Pump)	Gas Line		in	(mm)	7/8	(22.2)	7/8	(22.2)		
	Liquid Line		in	(mm)	3/8	(9.52)	3/8	(9.52)		

* Rating Conditions are shown as below with piping length 24 feet 7-3/16 inch, piping lift 0 feet.

Cooling Indoor Air Inlet Temperature: 80°F DB, 67 °F WB
Outdoor Air Inlet Temperature: 95°F DB

Heating Indoor Air Inlet Temperature: 70°F DB
Outdoor Air Inlet Temperature: 47°F DB, 43°F WB

** Rating Conditions are based on the AHRI 1230 test standard.

*** For more details, please refer to Engineering manual "Operation range" section.

**** For more details, please refer to Engineering manual "Operation range" section.

***** External static pressure can be changed via DSW setting 0.24 in. W.G.. (60Pa).

LOW AMBIENT HEAT PUMP OUTDOOR UNITS 460V HP | 12-24 TON SYSTEMS

12-24 Ton Systems	Type			Low Ambient Outdoor Systems								
	Tonnage			12 Ton (6 + 6)		14 Ton (8+6)		16 Ton (8+8)		24 Ton (8+8+8)		
Model (combination)				HVAHP144B41CW		HVAHP168B41CW		HVAHP192B41CW		HVAHP288B41CW		
Model (individual)	Unit A			HVAHP072B41CW		HVAHP096B41CW		HVAHP096B41CW		HVAHP096B41CW		
	Unit B			HVAHP072B41CW		HVAHP072B41CW		HVAHP096B41CW		HVAHP096B41CW		
	Unit C			-		-		-		HVAHP096B41CW		
Power Supply				460V/ 3PH 60Hz		460V/ 3PH 60Hz		460V/ 3PH 60Hz		460V/ 3PH 60Hz		
Capacity (Nominal) *	Cooling	Capacity (Nominal)	Btu/h	(kW)	144,000	(42.2)	168,000	(49.2)	192,000	(56.3)	288,000	(84.4)
		Power input	kW		11.77		15.50		19.23		28.84	
		Current input	A		15.8		20.7		25.6		38.4	
	Heating	Capacity (Nominal)	Btu/h	(kW)	162,000	(47.5)	189,000	(55.4)	216,000	(63.3)	324,000	(95.0)
		Power Input	kW		11.02		13.59		16.16		24.25	
		Current Input	A		14.8		18.2		21.6		32.4	
Efficiency Ratings **	Cooling	Capacity (Rated)	Btu/h	(kW)	138,000	(40.5)	160,000	(46.9)	182,000	(53.4)	274,000	(80.4)
		EER	Btu/Wh	(W/W)	12.80	(3.75)	12.30	(3.61)	12.20	(3.58)	10.60	(3.11)
		IEER	Btu/Wh	(Wh/Wh)	17.60	(5.16)	18.50	(5.43)	18.50	(5.43)	17.70	(5.19)
	Heating High	Capacity (Rated)	Btu/h	(kW)	154,000	(45.2)	178,000	(52.2)	204,000	(59.8)	308,000	(90.3)
		COP	W/W		3.99		3.80		3.68		3.57	
	Heating Low	Capacity	Btu/h	(kW)	129,000	(37.8)	151,000	(44.3)	174,000	(51.0)	260,000	(76.3)
COP		W/W		2.50		2.33		2.37		2.34		
Cooling Operating Range	Indoor	°F WB (°C WB)		59(15) ~ 73(23)		59(15) ~ 73(23)		59(15) ~ 73(23)		59(15) ~ 73(23)		
	Outdoor ***	°F DB (°C DB)		14(-10) ~ 118(48)		14(-10) ~ 118(48)		14(-10) ~ 118(48)		14(-10) ~ 118(48)		
Heating Operating Range	Indoor	°F DB (°C DB)		59(15) ~ 80(27)		59(15) ~ 80(27)		59(15) ~ 80(27)		59(15) ~ 80(27)		
	Outdoor ****	°F WB (°C WB)		-13(-25) ~ 59(15)		-13(-25) ~ 59(15)		-13(-25) ~ 59(15)		-13(-25) ~ 59(15)		
Cabinet Color (Munsell Code)				2.5Y ~ 8/2		2.5Y ~ 8/2		2.5Y ~ 8/2		2.5Y ~ 8/2		
Outer Dimensions	(H x W x D)		in	(68-1/8 x 48-1/8 x 31-1/4) x2		(68-1/8 x 48-1/8 x 31-1/4) x2		(68-1/8 x 48-1/8 x 31-1/4) x2		(68-1/8 x 48-1/8 x 31-1/4) x3		
Package Dimensions	(H x W x D)		in	-		-		-		-		
Weight	Net	lbs	(kg)	1574	(714)	1574	(714)	1574	(714)	2362	(1071)	
	Gross	lbs	(kg)	1689	(766)	1689	(766)	1689	(766)	2534	(1149)	
Connection Ratio	Connection Ratio Range	%		130 - 60		110 - 60		110 - 60		110 - 60		
	Max. Recommendation) indoor units/system	-		31(18)		30(18)		33(18)		50(32)		
Heat Exchanger	Type	-			Multi-pass cross-finned tube							
	Material	-			Cu-Al (Anti-corrosion)							
Compressor	Type	Inverter	-		EK655DHD×2		EK655DHD×2		EK655DHD×2		EK655DHD×3	
		Fixed Speed	-		EK655DH×2		EK655DH×2		EK655DH×2		EK655DH×3	
	Motor Output (Pole)	kW (Pole)		3.2(4)+3.0(2) 3.2(4)+3.0(2)		3.2(4)+3.0(2) 3.2(4)+3.0(2)		3.2(4)+3.0(2) 3.2(4)+3.0(2)		3.2(4)+3.0(2) 3.2(4)+3.0(2)		
	Start Method	-			inverter							
	Operation Range	%		7 ~ 100		7 ~ 100		7 ~ 100		8 ~ 100		
	Refrigeration Oil Type	-		FVC68D		FVC68D		FVC68D		FVC68D		
Crank Case Heater	W×Qty		40.8 (230V) ×12		40.8 (230V) ×12		40.8 (230V) ×12		40.8 (230V) ×18			
Fan	Type	-			Propeller Fan							
	Motor Output (Pole)	kW (Pole)		0.66(8)×2		0.66(8)×2		0.66(8)×2		0.66(8)×3		
	Quantity	Qty		2		2		2		3		
	Airflow Rate	cfm	(m3/min)	6884+6884	(195+195)	6884+6884	(195+195)	6884+6884	(195+195)	6884+6884+6884	(195+195+195)	
	External Static Pressure ****	in.WG	(Pa)	0 (0)		0 (0)		0 (0)		0 (0)		
	Drive	-			Direct-drive							
Electrical	Min Circuit Amps	A		Reference: HVAHP072B41CW		Reference: HVAHP096B41CW		Reference: HVAHP096B41CW		Reference: HVAHP096B41CW		
	Max Overcurrent Protective Device	A		HVAHP072B41CW		HVAHP072B41CW		HVAHP096B41CW		HVAHP096B41CW		
	Maximum Fuse Size	A		HVAHP072B41CW		HVAHP072B41CW		HVAHP096B41CW		HVAHP096B41CW		
Sound Pressure Level	Cooling (Night-Shift)	dB (A)		63	(59)	63	(59)	63	(59)	65	(61)	
	Heating	dB (A)		64		64		64		66		
Protection devices	Cycle	-			High pressure switch at 601psi (4.15MPa)							
	Inverter	-			Over-current protection / Over-heat protection							
	Compressor	-			Over-heat protection							
	PCB	-			Over-current protection							
Refrigerant	Type	-			R410A							
	Charge Amount	lbs	(kg)	17.0+17.0	(7.7+7.7)	17.0+17.0	(7.7+7.7)	17.0+17.0	(7.7+7.7)	17.0+17.0+17.0	(7.7+7.7+7.7)	
Refrigeration Oil	Charge Amount	gal/Unit	(L/Unit)	2.1+2.1	(7.9+7.9)	2.1+2.1	(7.9+7.9)	2.1+2.1	(7.9+7.9)	2.1+2.1+2.1	(7.9+7.9+7.9)	
Defrost Method	-			Reversed Refrigerant cycle / Hot Gas Bypass								
Main Refrigerant Piping (Heat Pump)	High/Low Pressure Gas Line	in	(mm)	1-1/8	(28.58)	1-1/8	(28.58)	1-1/8	(28.58)	1-3/8	(34.93)	
	Liquid Line	in	(mm)	5/8	(15.88)	5/8	(15.88)	5/8	(15.88)	3/4	(19.05)	

* Rating Conditions are shown as below with piping length 24 feet 7-3/16 inch, piping lift 0 feet.
Cooling
 Indoor Air Inlet Temperature: 80°F DB, 67 °F WB
 Outdoor Air Inlet Temperature: 95°F DB
Heating
 Indoor Air Inlet Temperature: 70°F DB
 Outdoor Air Inlet Temperature: 47°F DB, 43°F WB

** Rating Conditions are based on the AHRI 1230 test standard.
 *** For more details, please refer to Engineering manual "Operation range" section.
 **** For more details, please refer to Engineering manual "Operation range" section.
 ***** External static pressure can be changed via DSW setting 0.24 in. W.G.. (60Pa).

Optional Parts & Accessories

The new Multi-Port Change-Over Boxes provide unprecedented design freedom. And the new low ambient kits enable VRF Gen II systems to offer an unprecedented operating range.

Change-Over Boxes

Accessories

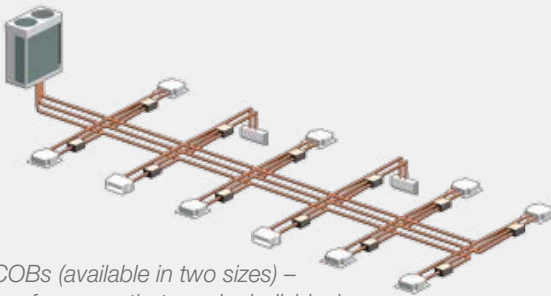


CHANGE-OVER BOXES

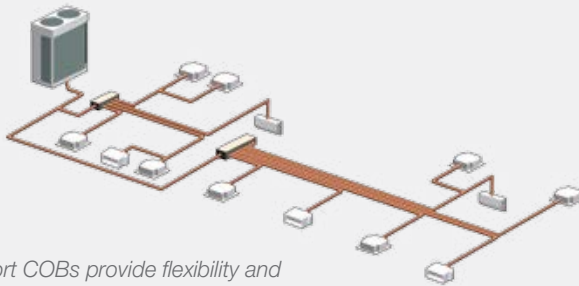
The new Multi-Port Change-Over Boxes provide exceptional design flexibility:

- Single, 4, 8, and 12 port options
- Multi-Port and Single-Port Change-Over Boxes enable fully customized designs
- More options means there are more ways to reduce costs including material and labor
- No drain or condensate consideration required

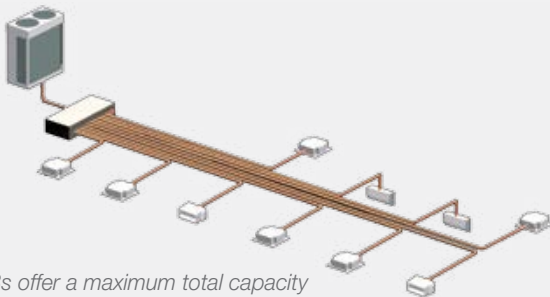
More options provide greater flexibility for your projects.



Single-Port COBs (available in two sizes) – an ideal choice for zones that require individual heating and cooling control.



4 and 8 Port COBs provide flexibility and minimize mechanical and electrical installation costs.



12 Port COBs offer a maximum total capacity of 22.7 Tons. 12 Port COBs provide flexibility and minimize mechanical and electrical installation costs.

Hitachi **SmartFlex** VRF Heat Recovery systems utilize 3-pipe technology. The above drawings are for illustrative purposes only.

Multi-Port Change-Over Boxes Easily Accommodate Future Expansion.



Single-Port Change-Over Box



4 Port Change-Over Box



8 Port Change-Over Box



12 Port Change-Over Box

CHANGE-OVER BOXES

Change-Over Box Type			Single Port		Multiple Port		
Model			COBS048B22S/C	COBS096B22S/C	COB04M132B22S	COB08M264B22S	COB12M264B22S
Power Supply			1 Phase, 208/230V, 60Hz				
Number of Ports			1	1	4	8	12
Single Indoor Unit Per Port	Maximum Total Capacity of All Connected Indoor Units	MBH	≤48	≤96	≤132	≤264	≤264
	Maximum Total Capacity of Connected Indoor Units Per Port	MBH	≤48	≤96	≤96	≤96	≤96
Multiple Indoor Units Per Port	Maximum Number of Connected Indoor Units Per Port	-	7	8	6	6	6
	Maximum Total Capacity of All Connected Indoor Units	MBH	≤41	≤71	≤114	≤216	≤216
	Maximum Total Capacity of Connected Indoor Units Per Port	MBH	≤41	≤71	≤41	≤41	≤41
Dimensions	Height	in. (mm)	7-1/2 (191)	7-1/2 (191)	10-1/4 (260)	10-1/4 (260)	10-1/4 (260)
	Width	in. (mm)	11-7/8 (301)	11-7/8 (301)	11-15/16 (303)	21-3/8 (543)	30-13/16 (783)
	Depth	in. (mm)	8-7/16 (214)	8-7/16 (214)	13-7/8 (352)	13-7/8 (352)	13-7/8 (352)
Net Weight		lbs. (kg)	13 (6)	13 (6)	31 (14)	56 (25)	80 (36)
Refrigerant		-	R410A				
Power Consumption		W	5	5	11.2	22.4	33.6
Minimum Circuit Ampacity		A	0.1	0.1	0.2	0.4	0.6
Recommended Fuse/Breaker Size		A	15	15	15	15	15
Refrigerant Piping (Outdoor Unit)	Gas Line (High/Low Pressure)	in. (mm)	5/8 (15.88)	5/8 (15.88)	7/8 (22.2)	7/8 (22.2)	1 (25.4)
	Gas Line (Low Pressure)	in. (mm)	3/4 (19.05)	3/4 (19.05)	1 (25.4)	1-1/8 (28.58)	1-1/8 (28.58)
	Liquid Line	in. (mm)	-	-	1/2 (12.7)	1/2 (12.7)	5/8 (15.88)
Refrigerant Piping (Indoor Unit)	Gas Line	in. (mm)	5/8 (15.88)	3/4 (19.05)	5/8 (15.88)	5/8 (15.88)	5/8 (15.88)
	Liquid Line	in. (mm)	-	-	3/8 (9.53)	3/8 (9.53)	3/8 (9.53)

VRF SYSTEM ACCESSORIES

Unit Type	Accessory	Description
Outdoor Units	Drain adapter	For connection of field supplied drain pipe to drain pan
	Low Ambient Kit	For cooling operation at extended low ambient air temperature
	Protection Net (Rear)	For protection of Outdoor Unit heat exchanger
	Snow Protection Hood (Upper)	Hood for protecting the OU air inlet/outlet from snow/hail
	Air Filter	Washable air filter with mounting flange
	Wind Guard	Protects air inlet/outlet from strong winds
	Wind Prevention Tool	Prevents the OU from tipping over
	Toppling Prevention Tool	Prevents OU from tipping over when Snow Protection Hood is in use
Ducted Indoor Units	3-Pin Connector Cable	Kit that provides remote start/stop capability for IU and operating status of IU functions
	Relay and 3-Pin Connector Kit	Relay and 3-Pin Connector Kit used for input/output signals between central controller and IU
	Remote Sensor	Remote air temperature sensor
	Anti-Bacterial Air Filter	Anti-bacterial air filter
	Air Outlet Shutter Plate	Plate for blocking of air outlet
	Fresh Air Intake Kit	Kit to enable connection of outside air to the IU
	Panel with Motion and Radiant Heat Sensors	Panel with motion and radiant heat sensor
	Motion Sensor Kit	Kit for detection of motion
	Duct Adapter	Kit for connection of outside air duct to the IU
	Grille for Front Discharge	Grille used for front air outlet from IU
Non-Ducted Indoor Units	Air Outlet Shutter Plate	Plate for blocking of air outlet
	IR Receiver Kit	Kit for use with wireless controller CIR01
	Filter Box	Mounting box for Anti-Bacterial Air Filter
	Drain Pump Kit	Drain pump kit
	Rectorseal drain pump	Drain pump kit
	3-Pin Connector Cable	Kit that enables remote start/stop capability IU and operating status
	Relay and 3-Pin Connector Kit	Relay and 3 Pin Connector Kit used for input/output signals between central controller and IU
	Remote Sensor	Remote air temperature sensor

Controllers

Hitachi **SmartFlex** VRF systems offer a wide range of control systems to suit multiple applications. The VRF Control Systems include wired and wireless controllers that manage zones and central stations for central control of the entire system. The Johnson Controls VRF Smart Gateway (BACnet)[®] and the LONWorks[®] adapter provide control through building automation systems.

Simplified Wired Zone Controller

Programmable Wired Zone Controller

Wireless Zone Controller

Centralized Controllers

VRF Smart Gateway (BACnet)

LONWorks Adapter

VRF Cloud Gateway

CONTROLLERS

Project Requirements	Simplified Wired (CIS01)	Wired (CIW01)	Wireless (CIR01)	Mini Central Station (CCM01)	Large Central Station (CCL01)	Computerized Central Controller (CCCS01/CCCA01)	Web-Enabled Central Controller (CCWEB01)	VRF Cloud Gateway (CMNETS)	VRF Smart Gateway (BACnet)® (CBN02)	LONWorks® Adapter (CLW01)
Simple individual zone control	✓	✓	✓	✓	✓			✓		
Independent Cool and Heat setpoints	✓	✓	✓	✓	✓	✓	✓	✓	■	■
Individual zone control with weekly programmable scheduling		✓		✓	✓	✓	✓		■	■
Basic central point on/off control of all units				✓	✓	✓	✓	✓	✓	✓
Advanced multi-zone control of small to medium size projects				✓	✓		✓	✓	■	■
Advanced multi-zone control of large commercial projects					✓	✓		✓	■	■
Automatic cooling/heating changeover for heat pump systems	✓	✓	✓	✓	✓	✓	✓		■	■
Single input batch shutdown of all connected units				✓	✓	✓	✓	✓	✓	✓
Multiple tenant power billing for shared condenser applications*						✓			■	
Temperature set-point range restrictions	✓	✓		✓	✓	✓	✓	✓	■	■
Graphical user interface with floor plan layout						✓			■	■
Exposes more points									■	■
Exposes outdoor unit points									■	■
Capable of reading Indoor and Outdoor Unit sensors								✓	✓	
Wi-Fi enabled								✓	✓	■
Easy integration								✓	✓	■
Easy commissioning								✓	✓	■

✓ = Native application or feature of this device ■ = Dependent upon capabilities of a third party energy management system * = Additional metering hardware is required for consumption-based tenant billing

ZONE CONTROLLERS



MODEL CIW01

PROGRAMMABLE WIRED ZONE CONTROLLER

- Standard wall controller
- Dual set point
- Controls temperature, mode, fan speed
- Seven-day schedule with multiple setpoints
- Control up to 16 indoor units
- Built-in 23-hour timer
- Room name and service company name programmable
- Help menus and error code diagnosis
- Large LCD display permits users to see the operating conditions and settings.
- The timer can be set at half-hour intervals up to 23 hours.
- Monitors the operating conditions in the system and an alarm is issued if a problem occurs.
- A “self-diagnosis function” checks for problems on printed boards in indoor and outdoor units.

ZONE CONTROLLERS ENERGY-SAVING FEATURES

Temperature range limit

Setback

Occupancy-based operation
(Sensors available on select Indoor Units.)

Set temperature auto reset

Off timer

Individual function lockout
(mode, temperature, fan speed)



MODEL CIR01

WIRELESS ZONE CONTROLLER

- Controls up to 16 indoor units
- Built-in 23-hour timer
- Wireless receiver must be added for all indoor units except wall-mount models (built in)



MODEL CIS01

SIMPLIFIED WIRED ZONE CONTROLLER

- Small size for discreet applications
- Controls 1 to 16 indoor units (same settings)
- Error code diagnosis
- Adjustable fan speed
- Typically used in hotels, offices and restaurants

CENTRALIZED CONTROLLERS

CENTRAL STATION

Mini and large systems are available.

- Large version controls up to 64 groups of indoor units (maximum 160 units).
- Mini version controls up to 32 groups of indoor units (maximum 160 units).
- Easy-to-use touchscreen interface
- Records accumulated operations time for tenant billing
- Color-coded graphics for quick reference
- Set up to 10 on/off times per day
- Up to 8 stations can be connected to the H-LINK II.
- In addition to basic control, such as settings for operation/stop, the operation mode and temperature, the air quantity and auto louver can be set. If a problem occurs, an alarm code immediately shows the details of the problem.
- An external input terminal is provided as standard. External signals enable the following functions:
 - central operation/stop
 - demand control
 - emergency stop
 - central operation output and
 - central alarm output



Large: MODEL CCL01



Mini: MODEL CCM01

Compatible with the H-LINK II

Control up to **160** indoor units

Control up to **32 or 64** groups
(model dependent)*

Connect up to **8** stations

*See model details for specifics

CENTRALIZED CONTROLLERS

WEB-ENABLED CENTRAL CONTROLLER

The Web-Enabled Central Controller is a web-based interface to control and monitor VRF systems with up to five (5) local or remote Windows-based PCs and/or tablets.



MODEL
CCWEB01

Features

- 24V AC powered
- Built-in software for easy access with no need for an optical drive for installation
- Advanced multi-zone control of large commercial projects
- Scheduling
- Block and Group Control for scheduling, mode, set point, prohibit RC functions
- Connect up to 8 Large (CCL01) and/or Mini (CCM01) Central Controllers simultaneously in the same H-LINK II segment
- Support for the following maximum device limits:
 - 64 Refrigerant Systems
 - 160 IDUs

COMPUTERIZED CENTRAL CONTROLLER

Computerized central controllers can manage up to 2,048 groups of systems with a maximum 2,560 total indoor units from a PC. This option increases management and setting possibilities and allows instructions to be carried out from any point on a local communication network.

Computerized Central Controller Software:

MODEL CCOS01

Computerized Central Computer Adapter:

MODEL CCA01



INTEGRATING HITACHI **SMARTFLEX™** VRF WITH BUILDING MANAGEMENT SYSTEMS

JOHNSON CONTROLS VRF SMART GATEWAY

The VRF Smart Gateway enables unprecedented control of Hitachi **SmartFlex** VRF system components through fast, simple integration into the *Facility Explorer®* BAS. Complete system data is available for all components in the system.



MODEL CBN02

Enhanced Features

- Automatically structures and organizes data for faster, easier and less costly integration
- **Works over Ethernet** to obtain system data and make it accessible through BAS
- **Brings all BMS capabilities to VRF components** including User Interface, Global Search, schedules, reporting, and offline configuration
- BACnet® compatible
- **Information conforms to BAS conventions** for quick adoption
- **Wi-Fi accessibility** enables 24/7 monitoring and control of equipment from laptops, tablets and smartphones



LONWORKS® ADAPTER

- Supports up to 64 Remote Control Groups
- Supports up to 160 Indoor Units with a variety of network variables on a per indoor unit basis
- Control points include: Run/Stop, Operation Mode, Fan Speed, Temperature Setpoint, Prohibit Zone Controller Functions
- Monitoring points include: Run/Stop Status, Operation Mode Status, Fan Speed Status, Temperature Setpoint, Thermo Status, Alarm Status



MODEL CLW01

Features

- 24V AC powered
- Connect up to 4 LonWorks Adapters (CLW01) simultaneously to the same H-LINK II segment
- Connect up to 8 Large (CCL01) and/or Mini (CCM01) Central Controllers and/or LONWorks Adapters (CLW01) simultaneously to the same H-LINK II segment
- Support for the following maximum device limits:
 - 64 Refrigerant Systems
 - 160 Indoor Units
 - Total of 200 nodes: A combination of up to 160 indoor units and a maximum of 64 outdoor units, not to exceed a total of 200.

VRF CLOUD GATEWAY

CONTROL AND INTEGRATE HITACHI SMARTFLEX™ VRF SYSTEMS WITH SMART DEVICES AND HOME AUTOMATION SYSTEMS



Model CMNETS

The new VRF Cloud Gateway by Cool Automation seamlessly integrates VRF systems with smart phones, tablets, or any similar wireless device as well as home automation control systems. This simplifies monitoring and control as VRF

systems can be managed through the same interface as lighting, security and other home systems. It can also be used as a stand-alone device with information accessible over the web. And, it comes with the peace of mind that it has been thoroughly tested by the team at Johnson Controls.

Features

- Monitor and control equipment from a laptop, tablet or smartphone anytime, anywhere
- Manage and control Indoor Units through simple touchscreen display
- Install and integrate with ease (true plug-and-play device)
- Interface through RS232 (ASCII), RS485 (MODBUS RTU) or ethernet (ASCII & MODBUS IP)



H-LINK II NETWORK SYSTEMS

H-LINK II

H-LINK II is a unique communication system that can be used to control multiple outdoor and indoor units from one control point. Its use assists installers and service engineers by simplifying commissioning and service maintenance. For building owners and occupants, it provides great versatility to connect various types of central control options enabling better system management.

The H-LINK II communication system for connection between outdoor and indoor units provides an extended system configuration and improved functions without sacrificing workability and flexibility.

Our proprietary high-performance communication system enables connection of control wiring between indoor and outdoor units, and between a centralized control system and indoor/outdoor units across two or more refrigerant systems.

Flexible Wiring Routes

The H-LINK allows for easy installation through a simple daisy-chain configuration. Simply connect to the adjacent units or the terminal block of a centralized control system.

H-LINK II System	
Max. Number of Refrigerant Groups / System	64
Address Setting Range of Indoor Units / Refrigerant Group	0 to 63
Max. Number of Indoor Units / System	160
Total Number of Devices in the same H-LINK II	200
Total Max. Wiring Length	Total 3,281 ft



For more details on terms, conditions, and limitations, please refer to the warranty certificate.

Contact your sales person or visit our warranty support center at BE-VRFWarranty@jci.com for specific eligibility requirements.



INDUSTRY CERTIFIED

Hitachi **SmartFlex™** VRF systems are Intertek ETL Listed (Canada & USA), signifying that they comply with the standard of Heating and Cooling Equipment (ANSI/UL 1995 and CAN/CSA C22.2 No. 236-11, 4th Edition, October 14, 2011). The systems are also certified by the Air Conditioning, Heating & Refrigeration Institute.

Learn more at SmartFlex-HVAC.com

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