LG
Life's Good

VRF water efficiency

MULTI V™ WATER IV

Who is LG?

LG Electronics is a division of the LG Group which was founded in 1947. LG air conditioning systems were first manufactured in 1968. With inverter-driven commercial and residential air conditioning equipment and controls, LG is among the world's largest volume compressor and HVAC systems manufacturers, with eight global production sites.

A global leader

Establishment

- 1947 LG Group Established
- 1958 LGE Established
- 1968 Manufactured Korea's first air conditioners
- 1985 Launched Korea's first inverter air conditioners
- 1986 Exported Korea's first window air conditioner

Growth

- 1990 Developed first LG rotary compressor
- 1995 Company name changed to LG Electronics
- Manufactured first LG scroll compressor
- 1998 First LG VRF system launched
- 2000 Reached #1 seller of residential air conditioners
- 2001 Introduced picture frame air conditioner
- 2004 Achieved world's highest annual air conditioner sales of 10 million units
- 2008 US Training Center Established (Atlanta)
- Reached industry first total global sales of 100 million air conditioning units
- 2009 Established US Training Center (Southern California)
- 2011 US Training Center Est. in Secaucas, NJ & Carrolton, TX
- 2013 US Launch of Multi V IV

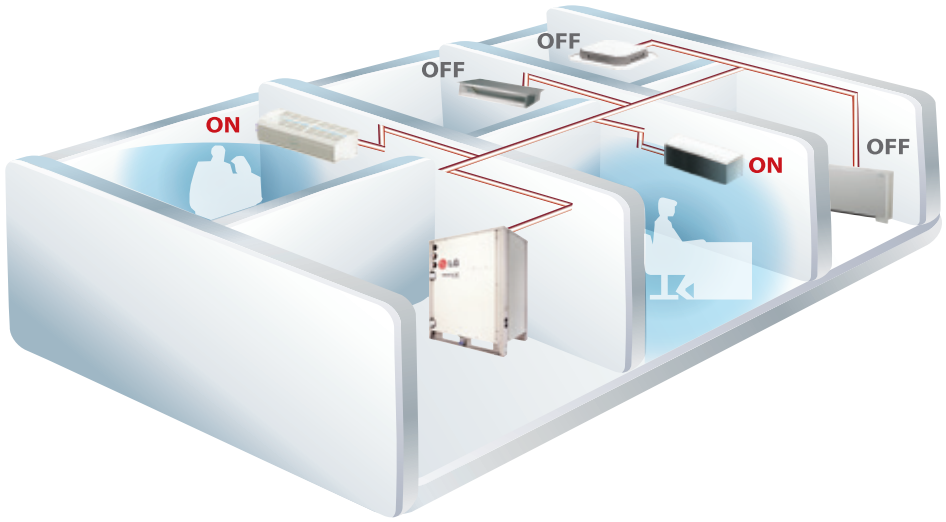
Why LG VRF?

DEHUMIDIFICATION AND COMFORT CONTROL

Using inverters and multiple compressor water source units, the LG Multi V Water IV system offers superior load matching, which prevents constant cycling or large temperature swings. Tight temperature control through precise load matching ensures maximum comfort, efficient operation, and superior dehumidification.

EFFICIENT DESIGN

No need to use large distribution ducts– the Multi V Water IV removes losses that are unavoidable in other systems. With the use of optimized scroll compressors and inverter technology, Multi V Water IV systems minimize energy levels and are certified to AHRI Standard 1230. The modular design offers comfort on demand, allowing the choice to use the systems only in the zones where it is needed, further promoting reduced energy consumption. Water heat recovery is possible in systems with multiple water source units. Multi V Water IV Heat Recovery can also add refrigerant side heat recovery.

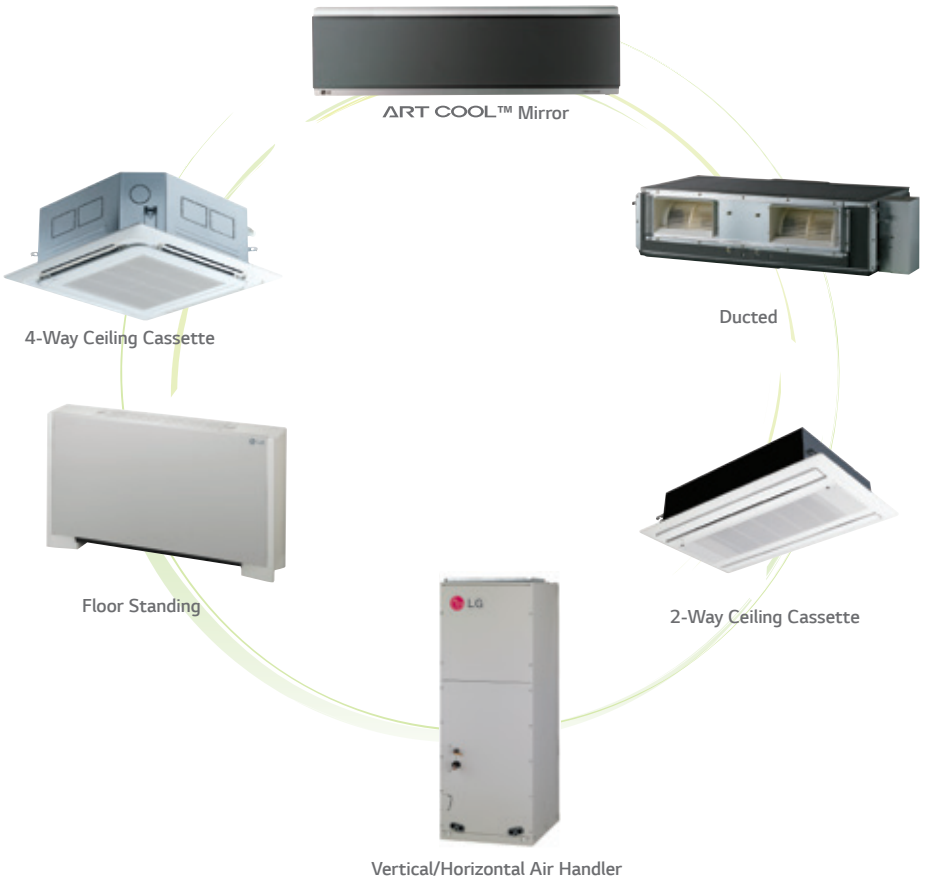


QUALITY AND RELIABILITY

LG Multi V Water IV protects against oil migration and short cycling. The Multi V Water IV system offers unmatched quality and reliability. LG has expertise in compressor design, motors, and printed circuit boards, resulting in superior quality control. Multi V Water IV is backed up with a 2-year parts and 7-year compressor warranty.

STYLISH DESIGN

Multi V indoor units are available in a wide range of styles to complement any interior design style. With indoor unit choices including cassettes that mount flush to the ceiling, ducted units that are completely concealed in the ceiling, and mirror finished wall mounted units that fit into any decor, the LG Multi V system offers unparalleled aesthetic design.



QUIET

Work without distraction. With indoor units that can operate at sound levels as low as 23 dB(A), and outdoor units that operate as low as 49 dB(A), LG Multi V Water IV creates a comfortable environment so quiet it is almost undetectable. The compact water source unit fits easily in small indoor mechanical rooms that are separate from occupied spaces to further reduce sound.

Architectural Appeal

ADAPTABLE AND FLEXIBLE

Multi V Water IV units are available in 208/230V as well as 460V and can adapt to a wide range of building types and sizes, including schools, hotels, retail stores, and offices. Multi V Water IV is ideal for retrofit projects where existing condenser water piping systems can be utilized. Water source units are installed indoors, eliminating the need for multiple condensing units mounted on a roof or at grade level, which allows for a cleaner exterior look to a building. For taller buildings, Multi V Water IV units offer flexibility for mounting in mechanical rooms or closets located on floors closer to the indoor units, shortening the refrigerant pipe runs. Multi V Water IV units modular design means water source units can be commissioned in stages so tenants can move in as each tenant space is completed. Flexible and logical placement of system components, shorter pipe lengths, and fewer joints lower installation costs and minimize the potential for leaking.

SMALLER CHASES AND PLENUMS

The LG Multi V Water IV system uses refrigerant piping to move heat, resulting in smaller space requirements compared to conventional water piping or air duct applications. This helps to reduce the overall construction and material cost of your building and give back leasable space.

Multi V Water IV Indoor Unit (Eliminate Soffit)

Conventional Duct Soffit

SUSTAINABILITY

The architectural and engineering community is adopting a balanced design approach that considers energy and water consumption, repetitive maintenance costs, the impact of development on the environment, and the building's initial cost as equally important factors in developing high-performance, sustainable buildings that will increase building value.

The American Society of Heating, Refrigerating, and Air Conditioning Engineers (ASHRAE) and the U.S. Green Building Council (USGBC) have been instrumental in developing and documenting voluntary best practice standards that provide the construction industry an all-encompassing balanced approach for developing sustainable buildings.

ASHRAE Standards provide best practices for safe refrigerant handling and proper building ventilation, controlling building temperature, relative humidity, and energy and water efficiency. The USGBC has developed holistic design standards for constructing new buildings and retrofitting existing ones, known as LEED® – Leadership in Energy and Environmental Design. The LEED® Green Building Rating System is a voluntary, consensus-based program for developing high-performance, sustainable buildings. Based on well-founded scientific standards, LEED ® emphasizes state-of-the-art strategies for sustainable site development, water and energy conservation, as well as a guide for selecting construction materials that are easily renewable and manufactured to promote indoor environmental quality.

The LEED® rating system provides a complete framework for assessing building performance and meeting sustainability goals. Based on a system of prerequisites and credits, which often refer to ASHRAE Standards, LEED® projects earn points during the certification process and then are awarded one of four available certification levels: Certified, Silver, Gold and Platinum. The LEED® rating system does not endorse products, but sets performance criteria to award prerequisites and points toward certification of the completed building.

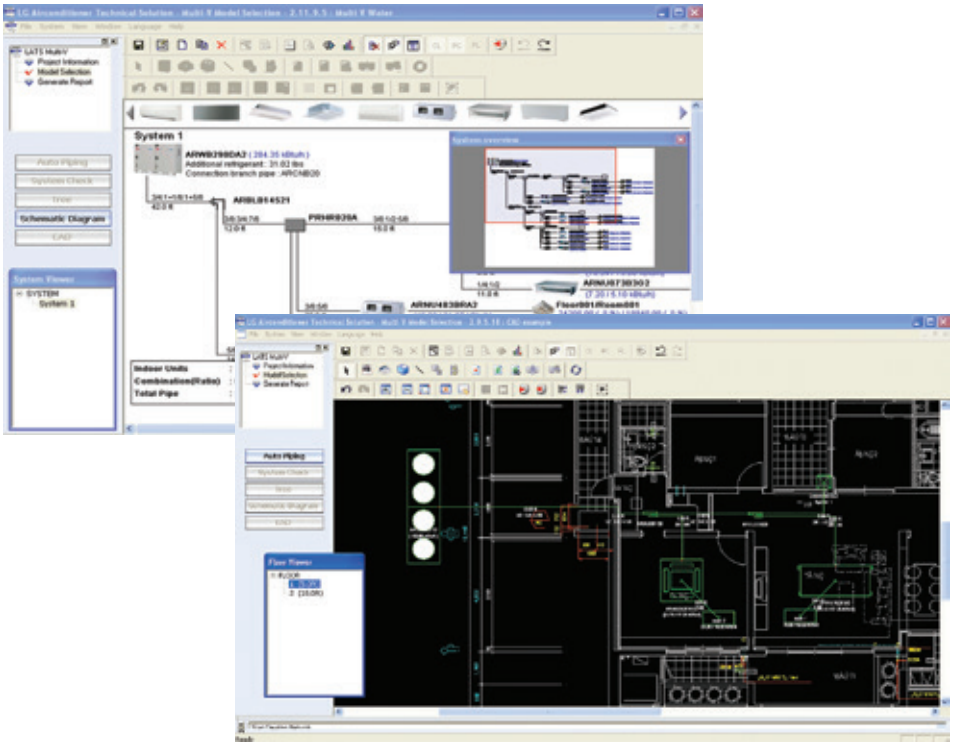
Multi V variable refrigerant flow air conditioning systems are engineered for sustainable green building and provides opportunities for designers to claim numerous LEED® prerequisites and points.

1. The Multi V Water IV system uses refrigerant R410A
2. The Multi V Water IV offers exceptional energy performance by using state-of-the-art controls and high efficiency variable speed evaporator fan assemblies with a variable speed inverter-driven compressor that provide superior load matching and energy conservation
3. The modular design of the Multi V Water IV uses multiple indoor units, allowing the designer to provide individualized control for each occupant
4. The LG family of zone, centralized, and BMS integrators make it easy to monitor energy usage and control the Multi V Water IV system operations based on building usage or indoor air quality
5. The Multi V Water IV unit's compact size and ease of installation allow the designer to maintain existing walls, floors, and roofs to take advantage of credits listed under Material and Resources
6. MERV 8 and 13 rated filters can be utilized in conjunction with LG family of high static indoor units and DOAS units

Engineering Advantage

INTUITIVE DESIGN

LATS Multi V design and layout software provides an intuitive method of laying out a Multi V Water IV system. LATS Multi V checks refrigerant piping lengths and elevations, and assists with the sizing of indoor and water source units by calculating capacity based on design conditions. LATS Multi V can import AutoCAD™ drawings and lay out the Multi V Water IV system to scale, without the need to add AutoCAD™ software to your computer. When the user finishes the AutoCAD™ system layout, all of the refrigerant piping lengths will be calculated and a drawing file with the Multi V Water IV system can be exported.



ABOUT LG VRF TECHNOLOGY

Variable Refrigerant Flow is a technology introduced as a system to minimize efficiency losses and provide sustainable energy benefits. LG VRF systems are engineered to save on the cost of ducts and distribution fans. VRF water systems can tie into existing building condenser water loops. Additionally, VRF systems have a lower life cycle cost compared to the majority of systems on the market today.

WHY LG VRF?

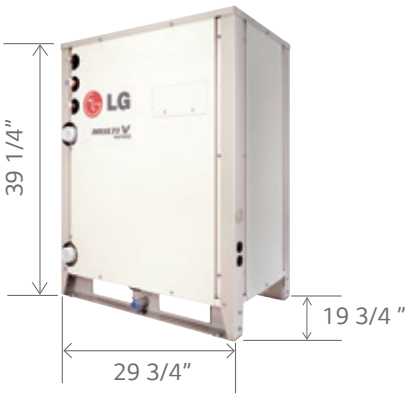
The benefits are numerous: modern style, mirror units for interior designers, less piping for installers, and energy efficiency for owners. LG has low sound levels, so units are quiet and can be installed inside a building. LG-manufactured inverter scroll compressors optimize system energy efficiency and are certified using AHRI Standard 1230.

Fits in Elevators

The Multi V unit can be transported in standard size elevators for installation access.

Contractor-Friendly Front Piping

All piping is done on the front for ease of installation and maintenance.



Space-Saver Advantage

Designed to save floor space.

COMMISSIONING AND TROUBLESHOOTING

Installation and Commissioning Support

LG is committed to the success of every Multi V Water IV project. Proper installation is important to operation and system longevity. Installation and commissioning training conducted at our training centers provides students with the knowledge and tools to properly install Multi V Water IV systems. For on-site startup and commissioning, our technical staff or an approved technical agent is on hand to record system operation to start the warranty validation process.

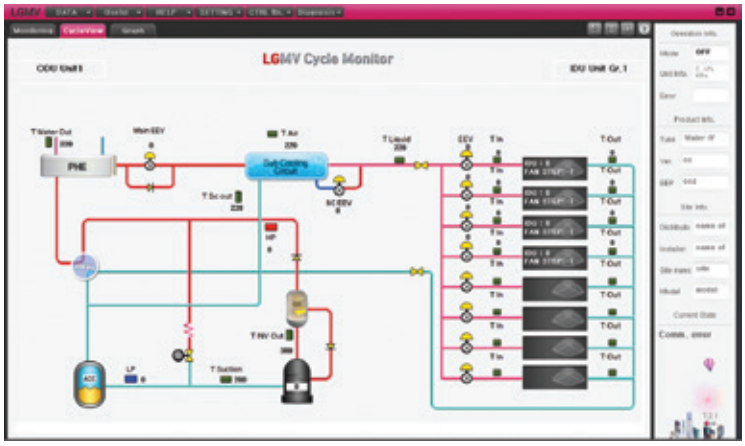
Easy to maintain

Though highly advanced, Multi V Water IV equipment is simple to maintain, mainly consisting of cleaning filters. Fan motors use permanently lubricated ball bearings. LGMV software provides a window into the system for the technician to quickly check operating conditions as part of an annual or semi-annual maintenance program.

LGMV (LG Monitoring View) Service Tool

Aligning with the LG commitment to quality, the LGMV service tool provides the user a window into the inner workings of our sophisticated operating systems. From a laptop computer, this tool is used to monitor low side and high side pressures, status of liquid injection, hot gas bypass valves, operating frequency of the inverter compressor, electronic expansion valve (EEV) position and super heat values for all connected indoor units. The software provides an accurate picture of an operating system without the need to manually check system temperatures, access the refrigerant circuit for system pressures, or perform time-consuming resistance and voltage tests. This service tool provides the most effective troubleshooting method for LG Multi V Water IV equipment.


LGMV
MODEL
Multi V Water
Water IV
REF. INFO
R410A
ODU/IDU
1Unit
4
SITE
name of dis
name of in
model
site
SERIAL
COM PORT
COM1


LGMV Cycle Monitor
ODU Unit1
IDU Unit Gr.1
PHE

TRAINING

LG is committed to excellence in Multi V system design and installation training.
LG offers complete training for engineers, architects, installers, and servicers to ensure every Multi V Water IV installation is successful.

Engineers and Architects

LG has designed a comprehensive workshop tailored to specifying engineers and architects. Training includes a complete product and controls introduction, which explains advanced features and benefits of the LG Multi V Water IV system. A live tutorial covers the setup and use of the LATS Multi V design and layout software. A standard feature of all LG training is open forum interaction between the facilitator and all attendees. LG offers educational courses in various regional academies as well as local markets, including our AIA accredited seminars.

TRAINING

Installers and Commissioners

LG offers multiple levels of training:
- Level One: Installation Fundamentals Class
- Level Two: The Multi V Commissioner Training Class
- Level Three: Service/Maintenance Class

The Installation Fundamentals course encompasses best practices for installing, piping, and wiring all Multi V systems. In depth technical topics such as sequence of operation for all systems are covered. Lab activities are designed to reinforce classroom discussion, including topics such as V-Net™ controls. Time is also set aside to provide hands-on experience using LGMV (commissioning and troubleshooting software) used on operating equipment in our training labs.

MULTI V WATER IV UNITS

MULTI V™ WATER IV

Heat Pump

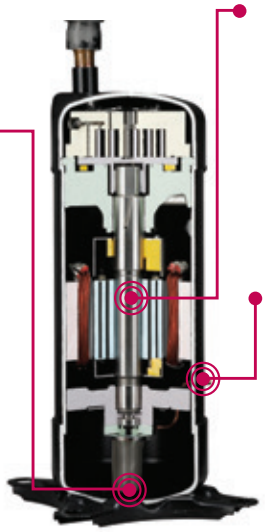
MULTI V™ WATER IV

Heat Recovery

Advanced Compressor Technology

COMPRESSOR SPEED
SMART OIL CONTROL OPERATION
HiPOR™

4th Generation of LG Inverter Compressor



COMPRESSOR SPEED 20 HZ-140HZ

Enhanced heating, rapid response capability

- Compact core design (concentrated motor)
- Down to 20 Hz Partial load efficiency

OIL CONTROL OPERATION

- Sensor for direct oil level sensing: Oil recovery operation only when required
- Enhanced compressor reliability and occupant comfort

HiPOR™ (HIGH PRESSURE OIL RETURN)

- Improving partial load efficiency at all Hz
- Reduces mixing of oil with refrigerant

INVERTER TECHNOLOGY

With compressors optimized around R410A and the latest inverter technology, the LG Multi V IV system precisely matches the load. This helps prevent constant cycling, resulting in tight temperature control, superior dehumidification, and optimized system efficiency. Occupants can stay comfortable while reducing utility costs.

COMPRESSOR

Multi V IV takes advantage of a digitally controlled (DC) inverter speed compressor combination that maximizes efficiency while precisely matching load. The inverter drive on the compressor matches the load exactly, recapturing the efficiency of a partially loaded compressor while eliminating compressor cycling.

DC Inverter Compressor

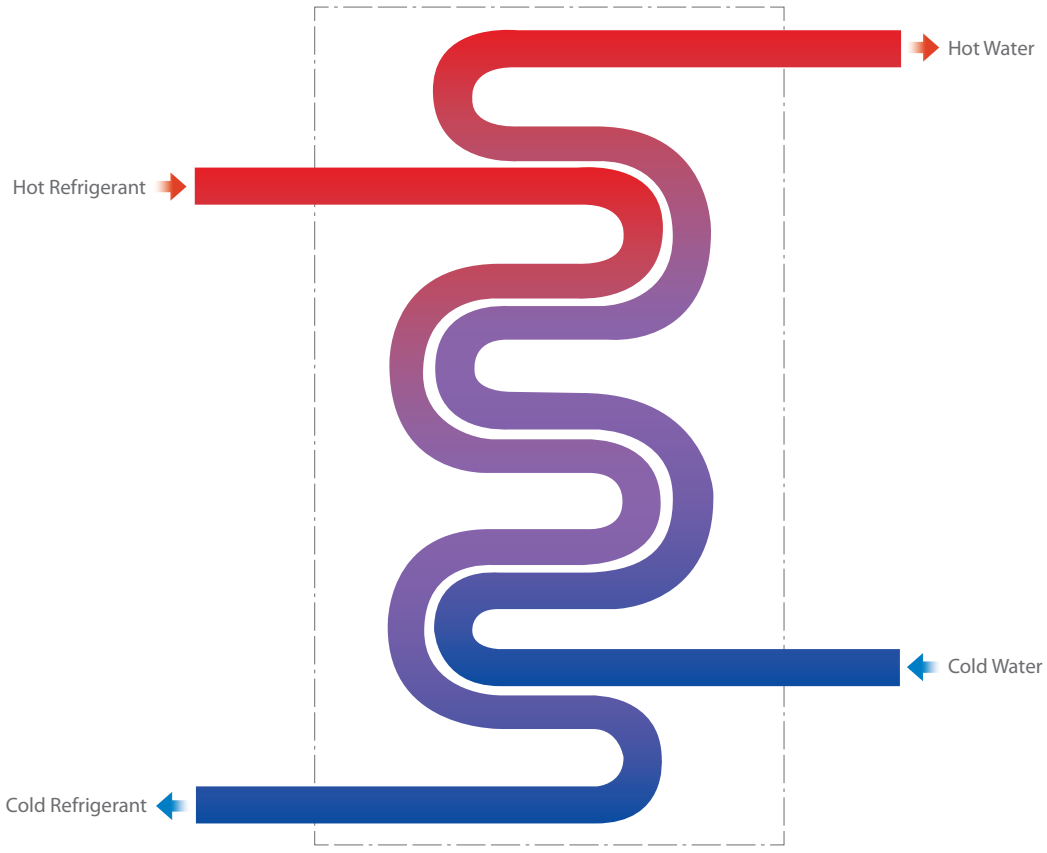
LG Compressor Advantages

- Smart Oil Control eliminates timed oil return cycles
- HiPOR™ (High Pressure Oil Return) improves the system's efficiency performance

Heat Transfer Efficiency

PLATE HEAT EXCHANGER

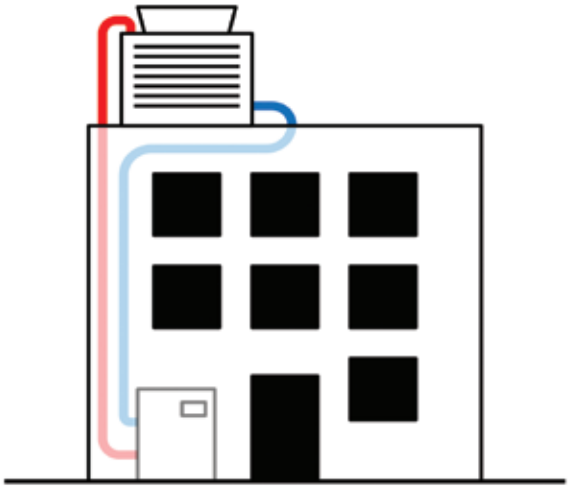
All Multi V Water IV units are equipped with a stainless steel plate heat exchanger. This compact heat exchanger has easy access front panel pipe connections. Built-in water temperature sensors monitor water temperature to ensure safe operating levels. Multi V Water IV comes equipped with control terminals to interlock field-supplied flow switch and solenoid valves. The durable heat exchanger is constructed of copper and type 316 stainless steel and is easy to maintain when the recommended service ports are installed, allowing for cleaning of the heat exchanger. Condenser water treatment is recommended. If a closed-loop cooling tower system is not used, a secondary heat exchanger should be installed to isolate the Multi V Water IV unit from the open system.



Applications

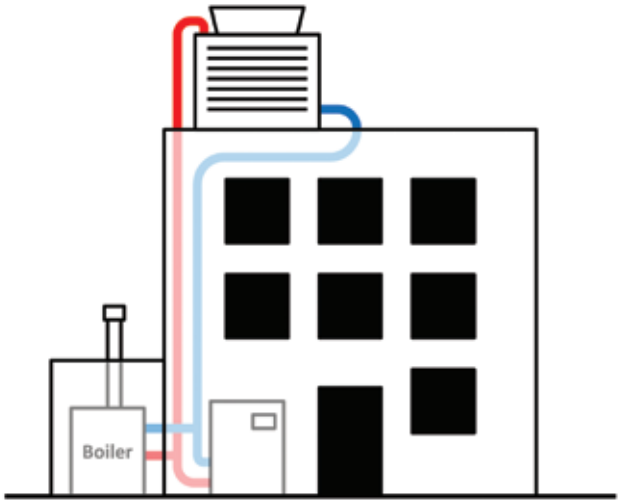
COOLING TOWER

The Multi V Water IV can be connected to a cooling tower system. The cooling tower rejects heat to the atmosphere when Multi V Water IV units are in cooling mode.
A closed-loop cooling tower system or an open tower system with an intermediate heat exchanger is recommended.



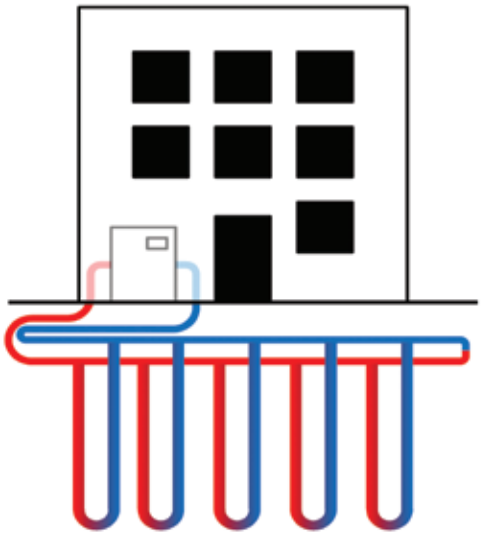
COOLING TOWER/BOILER

The Multi V Water IV can also be connected to a cooling tower/boiler system, which is common in cold weather climates. The boiler adds heat to the system when Multi V Water IV units are in heating mode. Being a water source system, the defrost cycle is not required during heating mode.



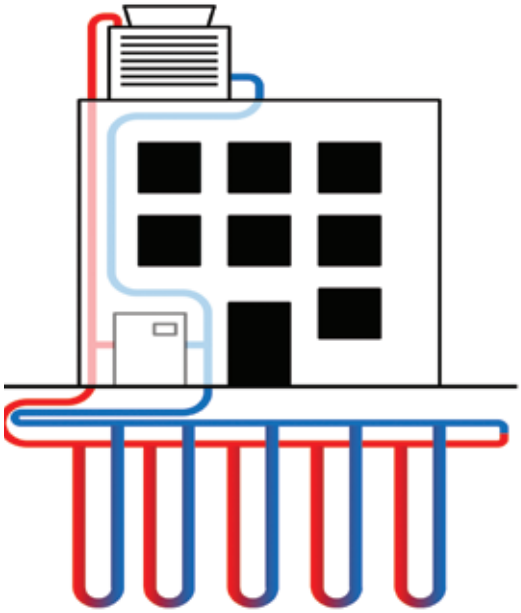
GEOTHERMAL

Geothermal systems that utilize the stable ground temperatures can be connected to Multi V Water IV units. Heat is rejected to the geothermal field when Multi V Water IV units are in cooling mode. Heat is transferred from the geothermal field to indoor units when Multi V Water IV units are in heating mode.



HYBRID GEOTHERMAL

Hybrid geothermal systems that combine geothermal fields with a cooling tower can be used with the Multi V Water IV. The cooling tower is used to reject heat to the atmosphere during peak cooling load periods or when a geothermal field is too small to absorb the entire heat load.



MULTI V™ WATER IV Units

The LG Multi V Water IV consists of two distinct products that will fit any application. With high elevation and flexible piping technology, the Multi V system can reduce installed cost by reaching that last zone in the building that would otherwise require an additional outdoor unit and piping network.

	Ton	6	12	18	24
	MBh	72	144	216	288
MULTI V™ WATER IV *Heat Pump* 208/230V-60Hz-3ø pg. 28					
MULTI V™ WATER IV *Heat Recovery* 208/230V-60Hz-3ø pg. 32					

	Ton	8	16	24
	MBh	96	192	288
MULTI V™ WATER IV *Heat Pump* 460V-60Hz-3ø pg. 30				
MULTI V™ WATER IV *Heat Recovery* 460V-60Hz-3ø pg. 34				

Multi V Water IV Heat Pump: 208/230V and 460V, 3-phase
Heating Inlet Water Temperature Range: 23°F to 113°F
Cooling Inlet Temperature Range: 23°F to 113°F

- Piping length (equivalent)

Total	1640 ft.
Longest	738 ft.
From first branch	295 ft.

- Elevation

Water source unit	
Above/below indoor unit	164 ft.
Indoor maximum separation	131 ft.

Multi V Water IV Heat Recovery: 208/230V and 460V, 3-phase
Heating Inlet Water Temperature Range: 23°F to 113°F
Cooling Inlet Temperature Range: 23°F to 113°F

- Piping length (equivalent)

Total	1640 ft.
Longest	738 ft.
From first branch	295 ft.

- Elevation

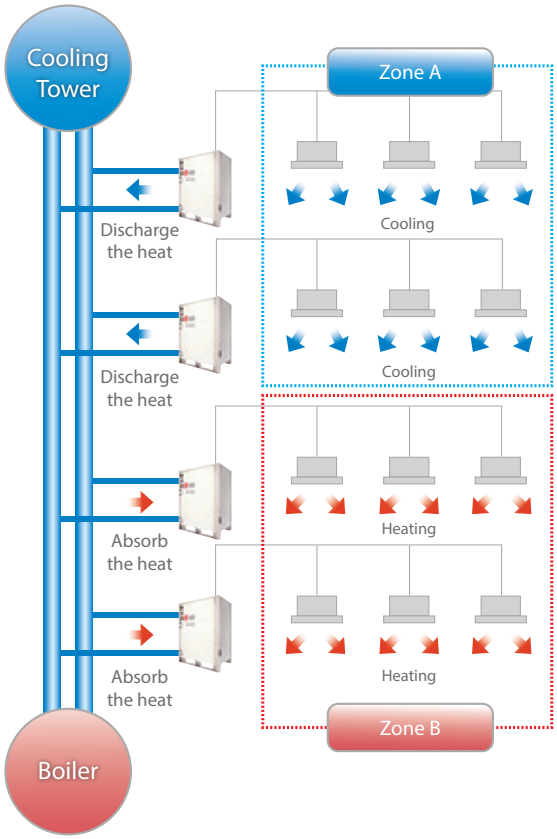
Water source unit	
Above indoor unit	164 ft.
Indoor maximum separation	49 ft.

30	36	42	48
360	432	504	576

32	40	48
384	480	576

WATER SIDE HEAT RECOVERY

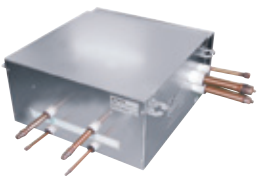
Heat recovery is possible when heat is moved from where it is not needed to where it is needed. In a water source system, heat can be recovered from the water source units in cooling mode by supplementing the heat needed by the water source units in heating mode. When a system made up of multiple water source units is in cooling mode, the cooling tower rejects heat from the system. If one or more of those units change from cooling to heating mode, the cold condenser water helps to unload the cooling tower from having to reject as much heat. The result is reduced power consumption by the cooling tower. When the same system is in heating mode, the boiler adds heat to the water loop for the water source units to provide heating. If one or more of those units change from heating to cooling mode, the warm condenser water helps to unload the boiler from having to provide as much heat. The result is that the power consumption or fuel required for the boiler to heat is reduced.



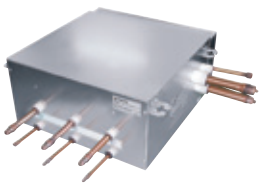
REFRIGERANT SIDE HEAT RECOVERY

Refrigerant heat recovery can be achieved using Multi V Water IV Heat Recovery. This system can turn some indoors units into zoned condensers, providing heat while leaving others in cooling mode. By pairing interior with exterior zones, eastern with western exposures, southern with northern exposures, this system takes full advantage of building diversity. Heat can be moved from zones requiring cooling to zones that need heat.

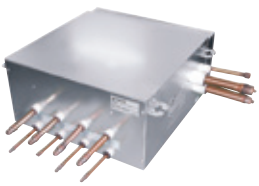
Heat Recovery Headers



Dual Port



Three Port

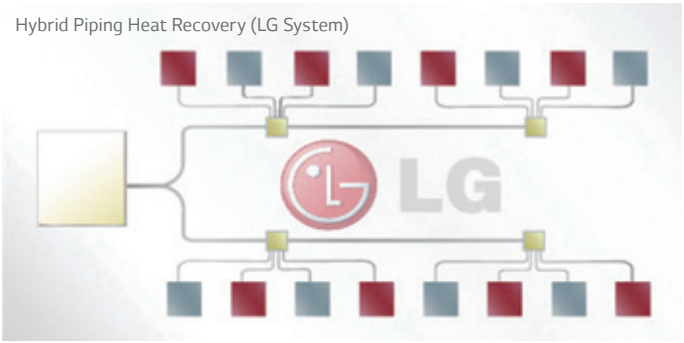


Four Port

INSTALLATION

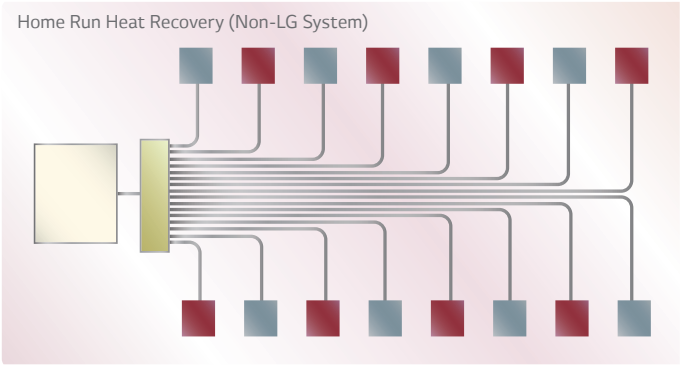
The Multi V Water IV Heat Recovery combines the best features of heat recovery VRF systems. Condensate drains are not required for Multi V Water IV Heat Recovery units. Heat recovery units that can serve 2, 3, or 4 zones are strategically placed in series or parallel to maximize piping reach while minimizing material and labor costs. Piping, fittings, branches, hangers, insulation, joints, nitrogen, and labor hours can be greatly reduced, which results in significantly lower installation costs.

Hybrid Piping Heat Recovery (LG System)



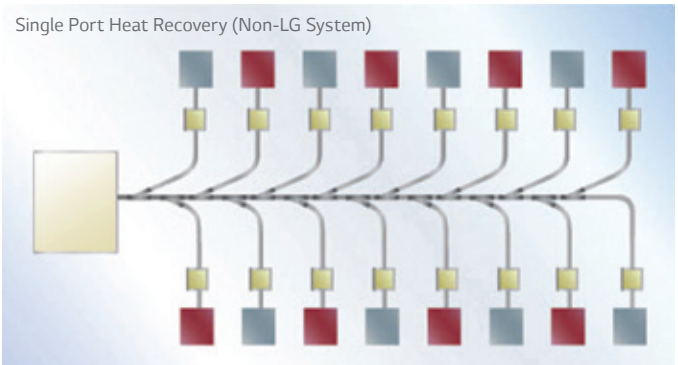
- Configured for fully independent heating and cooling
- Series and/or parallel configuration
  - Ports are closer to the indoor units they serve, which reduces piping costs
  - Smaller number of Y-Branch brazes reduces field install labor
- No heat recovery unit condensate drains saves material costs VRF

Home Run Heat Recovery (Non-LG System)

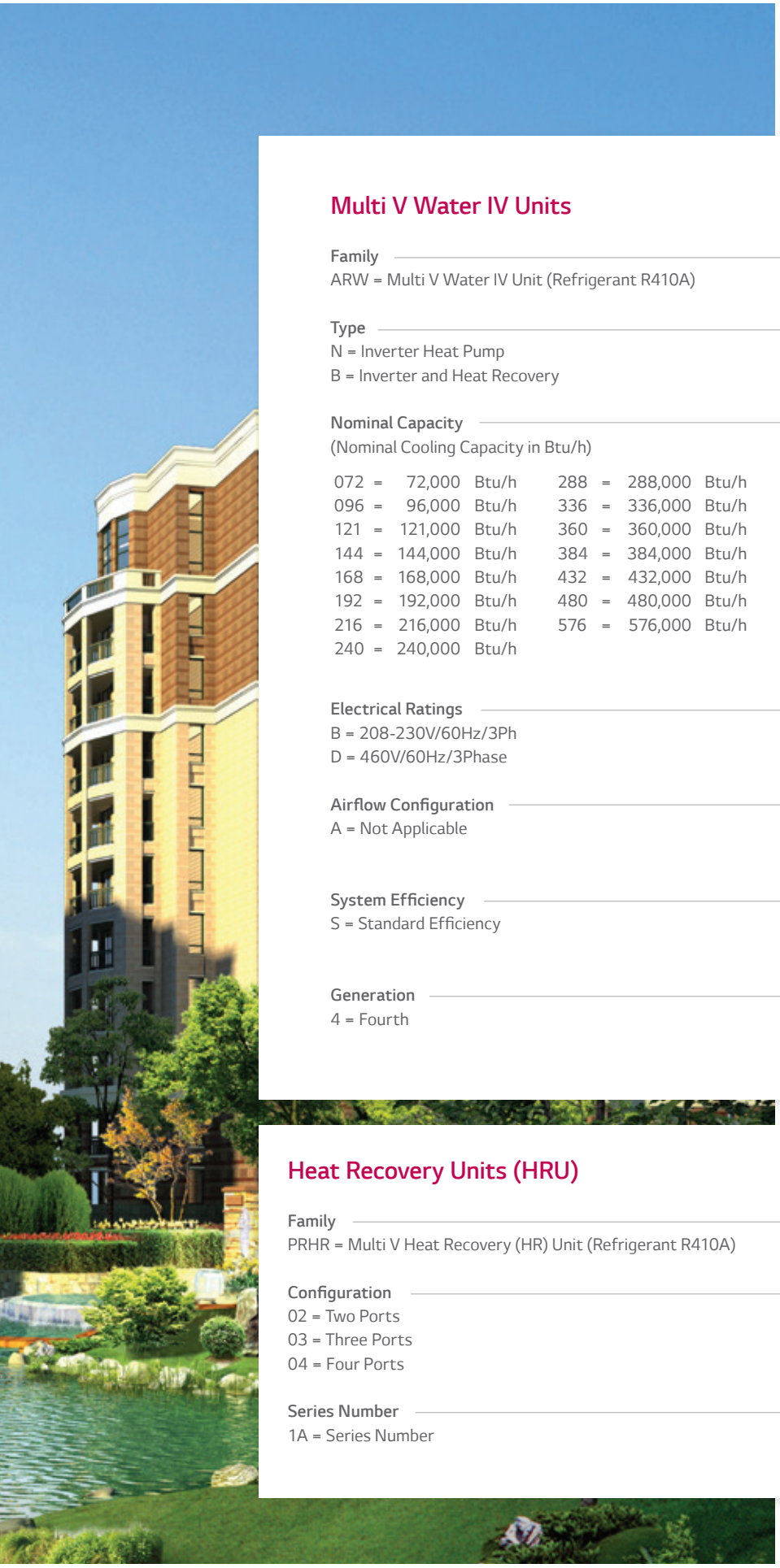


- Configured for fully independent heating and cooling
- Series configuration only
- Lengthy homerun piping
- May require heat recovery unit condensate drain

Single Port Heat Recovery (Non-LG System)



- Configured for fully independent heating and cooling
- Parallel configuration only
- Many heat recovery units for independent heating and cooling
- Numerous joints



Multi V Water IV Units

ARW | N | 072 | B | A | S | 4

Family
ARW = Multi V Water IV Unit (Refrigerant R410A)

Type
N = Inverter Heat Pump
B = Inverter and Heat Recovery

Nominal Capacity
(Nominal Cooling Capacity in Btu/h)

072	=	72,000 Btu/h	288	=	288,000 Btu/h
096	=	96,000 Btu/h	336	=	336,000 Btu/h
121	=	121,000 Btu/h	360	=	360,000 Btu/h
144	=	144,000 Btu/h	384	=	384,000 Btu/h
168	=	168,000 Btu/h	432	=	432,000 Btu/h
192	=	192,000 Btu/h	480	=	480,000 Btu/h
216	=	216,000 Btu/h	576	=	576,000 Btu/h
240	=	240,000 Btu/h			

Electrical Ratings
B = 208-230V/60Hz/3Ph
D = 460V/60Hz/3Phase

Airflow Configuration
A = Not Applicable

System Efficiency
S = Standard Efficiency

Generation
4 = Fourth

Heat Recovery Units (HRU)

PRHR | 02 | 1A

Family
PRHR = Multi V Heat Recovery (HR) Unit (Refrigerant R410A)

Configuration
02 = Two Ports
03 = Three Ports
04 = Four Ports

Series Number
1A = Series Number

MULTI V™ WATER IV

Heat Pump

Note :
1. Rated capacities are in accordance with AHRI Standard 1230
2. Sound pressure levels are tested in an anechoic chamber under ISO Standard 3794
3. Due to our policy of innovation, some specifications may be changed without notification

208-230V/60Hz/3ø

Model	ARWN • • • BAS4		072	096	121	144
Ton			6	8	10	12
Nominal Capacity	Cooling	Btu/h	72,000	96,000	120,000	144,000
	Heating	Btu/h	81,000	108,000	135,000	162,000
Rated Capacity	Cooling	Btu/h	69,000	92,000	114,000	138,000
	Heating	Btu/h	77,000	103,000	129,000	154,000
Power Supply		V / Hz / ø	208-230/60/3	208-230/60/3	208-230/60/3	208-230/60/3
Dimensions (W×H×D)		inch	(29-3/4 x 19-3/4 x 39-1/4) x 1	(29-3/4 x 19-3/4 x 39-1/4) x 1	(29-3/4 x 19-3/4 x 39-1/4) x 1	(29-3/4 x 19-3/4 x 39-1/4)
Net Weight		lbs	280	280	280	280
Sound Pressure		dB(A)	51	53	56	58
Compressor	Type		Inverter Scroll	Inverter Scroll	Inverter Scroll	Inverter Scroll
	Quantity		1	1	1	1
Heat Exchanger	Type		Stainless Steel Plate	Stainless Steel Plate	Stainless Steel Plate	Stainless Steel Plate
	Flow Rate Nominal	GPM	20.3	25.4	30.4	35.5
	Pressure Drop	ft wg	3.7	5.3	7.4	9.5
Temp. Range of Circulation Water	Cooling		23°F ~ 113°F	23°F ~ 113°F	23°F ~ 113°F	23°F ~ 113°F
	Heating		23°F ~ 113°F	23°F ~ 113°F	23°F ~ 113°F	23°F ~ 113°F
Refrigerant	Type		R410A	R410A	R410A	R410A
	Charge	Pounds	12.8	12.8	12.8	12.8
	Control		EEV	EEV	EEV	EEV
Maximum Connectable Number of Indoor Units			13	16	20	23

208-230V/60Hz/3ø

Model			ARWN • • • BAS4	168	192	126	288
Component			ARWN • • • BAS4	096	121	144	144
Component			ARWN • • • BAS4	072	072	072	144
Ton				14	16	18	24
Nominal Capacity	Cooling	Btu/h		168,000	192,000	216,000	288,000
	Heating	Btu/h		189,000	216,000	243,000	324,000
Rated Capacity	Cooling	Btu/h		160,000	184,000	207,000	274,000
	Heating	Btu/h		180,000	206,000	231,000	309,000
Power Supply		V / Hz / ø		208-230/60/3	208-230/60/3	208-230/60/3	208-230/60/3
Dimensions (W×H×D)		inch		(29-3/4 x 19-3/4 x 39-1/4) x 2	(29-3/4 x 19-3/4 x 39-1/4) x 2	(29-3/4 x 19-3/4 x 39-1/4) x 2	(29-3/4 x 19-3/4 x 39-1/4) x 2
Net Weight		lbs		280+280	280+280	280+280	280+280
Sound Pressure		dB(A)		56	60	57	59
Compressor	Type			Inverter Scroll	Inverter Scroll	Inverter Scroll	Inverter Scroll
	Quantity			2	2	2	2
Heat Exchanger	Type			Stainless Steel Plate	Stainless Steel Plate	Stainless Steel Plate	Stainless Steel Plate
	Flow Rate Nominal	GPM		25.4+20.3	30.4+20.3	35.5+20.3	35.5+35.5
	Pressure Drop	ft wg		5.3+3.7	5.3+3.7	9.5+3.7	9.5+9.5
Temp. Range of Circulation Water	Cooling			23°F ~ 113°F	23°F ~ 113°F	23°F ~ 113°F	23°F ~ 113°F
	Heating			23°F ~ 113°F	23°F ~ 113°F	23°F ~ 113°F	23°F ~ 113°F
Refrigerant	Type			R410A	R410A	R410A	R410A
	Charge	Pounds		12.8+12.8	12.8+12.8	12.8+12.8	12.8+12.8
	Control			EEV	EEV	EEV	EEV
Maximum Connectable Number of Indoor Units				29	32	35	45

208-230V/60Hz/3ø

Model			ARWN • • • BAS4	360	432
Component			ARWN • • • BAS4	144	144
Component			ARWN • • • BAS4	144	144
Component			ARWN • • • BAS4	072	144
Ton				30	36
Nominal Capacity	Cooling	Btu/h		360,000	432,000
	Heating	Btu/h		405,000	486,000
Rated Capacity	Cooling	Btu/h		344,000	412,000
	Heating	Btu/h		386,000	463,000
Power Supply		V / Hz / ø		208-230/60/3	208-230/60/3
Dimensions (W×H×D)		inch		(29-3/4 x 19-3/4 x 39-1/4) x 3	(29-3/4 x 19-3/4 x 39-1/4) x 3
Net Weight		lbs		280+280+280	280+280+280
Sound Pressure		dB(A)		57	62
Compressor	Type			Inverter Scroll	Inverter Scroll
	Quantity			3	3
Heat Exchanger	Type			Stainless Steel Plate	Stainless Steel Plate
	Flow Rate Nominal	GPM		35.5+35.5+20.3	35.5+35.5+35.5
	Pressure Drop	ft wg		9.5+9.5+3.7	9.5+9.5+9.5
Temp. Range of Circulation Water	Cooling			23°F ~ 113°F	23°F ~ 113°F
	Heating			23°F ~ 113°F	23°F ~ 113°F
Refrigerant	Type			R410A	R410A
	Charge	Pounds		12.8+12.8+12.8	12.8+12.8+12.8
	Control			EEV	EEV
Maximum Connectable Number of Indoor Units				58	64

MULTI V™ WATER IV
Heat Pump

Note :
1. Rated capacities are in accordance with AHRI Standard 1230
2. Sound pressure levels are tested in an anechoic chamber under ISO Standard 3794
3. Due to our policy of innovation, some specifications may be changed without notification

460V/60Hz/3ø

Model			ARWN • • • DAS4	072	096	121	144	168	192
Ton				6	8	10	12	14	16
Nominal Capacity	Cooling	Btu/h		72,000	96,000	120,000	144,000	168,000	192,000
	Heating	Btu/h		81,000	108,000	135,000	162,000	189,000	216,000
Rated Capacity	Cooling	Btu/h		69,000	92,000	114,000	138,000	160,000	184,000
	Heating	Btu/h		77,000	103,000	129,000	154,000	180,000	206,000
Power Supply		V / Hz / ø		460/60/3	460/60/3	460/60/3	460/60/3	460/60/3	460/60/3
Dimensions (W×H×D)		inch		(29-3/4 x 19-3/4 x 39-1/4) x 1	(29-3/4 x 19-3/4 x 39-1/4) x 1	(29-3/4 x 19-3/4 x 39-1/4) x 1	(29-3/4 x 19-3/4 x 39-1/4)	(29-3/4 x 19-3/4 x 39-1/4)	(29-3/4 x 19-3/4 x 39-1/4)
Net Weight		lbs		280	280	280	309	309	309
Sound Pressure		dB(A)		51	53	56	58	57	60
Compressor	Type			Inverter Scroll	Inverter Scroll	Inverter Scroll	Inverter Scroll	Inverter Scroll	Inverter Scroll
	Quantity			1	1	1	1	1	1
Heat Exchanger	Type			Stainless Steel Plate	Stainless Steel Plate	Stainless Steel Plate	Stainless Steel Plate	Stainless Steel Plate	Stainless Steel Plate
	Flow Rate Nominal	GPM		20.3	25.4	30.4	35.5	45.7	50.7
	Pressure Drop	ft wg		3.7	5.3	7.4	5.3	8.0	9.7
Temp. Range of Circulation Water	Cooling			23°F ~ 113°F	23°F ~ 113°F	23°F ~ 113°F	23°F ~ 113°F	23°F ~ 113°F	23°F ~ 113°F
	Heating			23°F ~ 113°F	23°F ~ 113°F	23°F ~ 113°F	23°F ~ 113°F	23°F ~ 113°F	23°F ~ 113°F
Refrigerant	Type			R410A	R410A	R410A	R410A	R410A	R410A
	Charge	Pounds		12.8	12.8	12.8	6.6	6.6	6.6
	Control			EEV	EEV	EEV	EEV	EEV	EEV
Maximum Connectable Number of Indoor Units				13	16	20	23	29	32

460V/60Hz/3ø

Model			ARWN • • • DAS4	240	288	336	384
Component			ARWN • • • DAS4	144	168	168	192
Component			ARWN • • • DAS4	096	121	168	192
Ton				20	24	28	32
Nominal Capacity	Cooling	Btu/h		240,000	288,000	336,000	384,000
	Heating	Btu/h		270,000	324,000	378,000	432,000
Rated Capacity	Cooling	Btu/h		230,000	274,000	320,000	368,000
	Heating	Btu/h		257,000	309,00	360,000	412,000
Power Supply		V / Hz / ø		460/60/3	460/60/3	460/60/3	460/60/3
Dimensions (W×H×D)		inch		(29-3/4 x 19-3/4 x 39-1/4) x 2	(29-3/4 x 19-3/4 x 39-1/4) x 2	(29-3/4 x 19-3/4 x 39-1/4) x 2	(29-3/4 x 19-3/4 x 39-1/4) x 2
Net Weight		lbs		309+280	309+280	309+309	309+309
Sound Pressure		dB(A)		57	59	61	61
Compressor	Type			Inverter Scroll	Inverter Scroll	Inverter Scroll	Inverter Scroll
	Quantity			2	2	2	2
Heat Exchanger	Type			Stainless Steel Plate	Stainless Steel Plate	Stainless Steel Plate	Stainless Steel Plate
	Flow Rate Nominal	GPM		35.5+25.4	45.7+30.4	45.7+45.7	50.7+50.7
	Pressure Drop	ft wg		5.3+5.3	8.0+7.4	8.0+8.0	9.7+9.7
Temp. Range of Circulation Water	Cooling			23°F ~ 113°F	23°F ~ 113°F	23°F ~ 113°F	23°F ~ 113°F
	Heating			23°F ~ 113°F	23°F ~ 113°F	23°F ~ 113°F	23°F ~ 113°F
Refrigerant	Type			R410A	R410A	R410A	R410A
	Charge	Pounds		12.8+6.6	12.8+6.6	6.6+6.6	6.6+6.6
	Control			EEV	EEV	EEV	EEV
Maximum Connectable Number of Indoor Units				39	45	55	61

460V/60Hz/3ø

Model			ARWN • • • DAS4	480	576
Component			ARWN • • • DAS4	192	192
Component			ARWN • • • DAS4	144	192
Component			ARWN • • • DAS4	144	192
Ton				40	48
Nominal Capacity	Cooling	Btu/h		480,000	576,000
	Heating	Btu/h		540,000	648,000
Rated Capacity	Cooling	Btu/h		460,000	552,000
	Heating	Btu/h		514,000	618,000
Power Supply		V / Hz / ø		460/60/3	460/60/3
Dimensions (W×H×D)		inch		(29-3/4 x 19-3/4 x 39-1/4) x 3	(29-3/4 x 19-3/4 x 39-1/4) x 3
Net Weight		lbs		309+309+309	309+309+309
Sound Pressure		dB(A)		62	62
Compressor	Type			Inverter Scroll	Inverter Scroll
	Quantity			3	3
Heat Exchanger	Type			Stainless Steel Plate	Stainless Steel Plate
	Flow Rate Nominal	GPM		50.7+35.5+35.5	50.7+50.7+50.7
	Pressure Drop	ft wg		9.7+5.3+5.3	9.7+9.7+9.7
Temp. Range of Circulation Water	Cooling			23°F ~ 113°F	23°F ~ 113°F
	Heating			23°F ~ 113°F	23°F ~ 113°F
Refrigerant	Type			R410A	R410A
	Charge	Pounds		6.6+6.6+6.6	6.6+6.6+6.6
	Control			EEV	EEV
Maximum Connectable Number of Indoor Units				64	64

MULTI V™ WATER IV

Heat Recovery

Note :
1. Rated capacities are in accordance with AHRI Standard 1230
2. Sound pressure levels are tested in an anechoic chamber under ISO Standard 3794
3. Due to our policy of innovation, some specifications may be changed without notification

208-230V/60Hz/3ø

Model			ARWN • • • BAS4	072	096	121	144
Ton				6	8	10	12
Nominal Capacity	Cooling	Btu/h		72,000	96,000	120,000	144,000
	Heating	Btu/h		81,000	108,000	135,000	162,000
Rated Capacity	Cooling	Btu/h		69,000	92,000	114,000	138,000
	Heating	Btu/h		77,000	103,000	129,000	154,000
Power Supply		V / Hz / ø		208-230/60/3	208-230/60/3	208-230/60/3	208-230/60/3
Dimensions (W×H×D)		inch		(29-3/4 x 19-3/4 x 39-1/4) x 1	(29-3/4 x 19-3/4 x 39-1/4) x 1	(29-3/4 x 19-3/4 x 39-1/4) x 1	(29-3/4 x 19-3/4 x 39-1/4)
Net Weight		lbs		280	280	280	280
Sound Pressure		dB(A)		51	53	56	58
Compressor	Type			Inverter Scroll	Inverter Scroll	Inverter Scroll	Inverter Scroll
	Quantity			1	1	1	1
Heat Exchanger	Type			Stainless Steel Plate	Stainless Steel Plate	Stainless Steel Plate	Stainless Steel Plate
	Flow Rate Nominal	GPM		20.3	25.4	30.4	35.5
	Pressure Drop	ft wg		3.7	5.3	7.4	9.5
Temp. Range of Circulation Water	Cooling			23°F ~ 113°F	23°F ~ 113°F	23°F ~ 113°F	23°F ~ 113°F
	Heating			23°F ~ 113°F	23°F ~ 113°F	23°F ~ 113°F	23°F ~ 113°F
Refrigerant	Type			R410A	R410A	R410A	R410A
	Charge	Pounds		12.8	12.8	12.8	12.8
	Control			EEV	EEV	EEV	EEV
Maximum Connectable Number of Indoor Units				13	16	20	23

208-230V/60Hz/3ø

Model			ARWN • • • BAS4	168	192	216	288
Component			ARWN • • • BAS4	096	121	144	144
Component			ARWN • • • BAS4	072	072	168	144
Ton				14	16	18	24
Nominal Capacity	Cooling	Btu/h		168,000	192,000	216,000	288,000
	Heating	Btu/h		189,000	216,000	243,000	324,000
Rated Capacity	Cooling	Btu/h		160,000	184,000	207,000	274,000
	Heating	Btu/h		180,000	206,000	231,000	309,000
Power Supply		V / Hz / ø		208-230/60/3	208-230/60/3	208-230/60/3	208-230/60/3
Dimensions (W×H×D)		inch		(29-3/4 x 19-3/4 x 39-1/4) x 2	(29-3/4 x 19-3/4 x 39-1/4) x 2	(29-3/4 x 19-3/4 x 39-1/4) x 2	(29-3/4 x 19-3/4 x 39-1/4) x 2
Net Weight		lbs		280+280	280+280	280+280	280+280
Sound Pressure		dB(A)		56	60	57	59
Compressor	Type			Inverter Scroll	Inverter Scroll	Inverter Scroll	Inverter Scroll
	Quantity			2	2	2	2
Heat Exchanger	Type			Stainless Steel Plate	Stainless Steel Plate	Stainless Steel Plate	Stainless Steel Plate
	Flow Rate Nominal	GPM		25.4+20.3	30.4+20.3	35.5+20.3	35.5+35.5
	Pressure Drop	ft wg		5.3+3.7	5.3+3.7	9.5+3.7	9.5+9.5
Temp. Range of Circulation Water	Cooling			23°F ~ 113°F	23°F ~ 113°F	23°F ~ 113°F	23°F ~ 113°F
	Heating			23°F ~ 113°F	23°F ~ 113°F	23°F ~ 113°F	23°F ~ 113°F
Refrigerant	Type			R410A	R410A	R410A	R410A
	Charge	Pounds		12.8+12.8	12.8+12.8	12.8+12.8	12.8+12.8
	Control			EEV	EEV	EEV	EEV
Maximum Connectable Number of Indoor Units				29	32	35	45

208-230V/60Hz/3ø

Model			ARWN • • • BAS4	360	432
Component			ARWN • • • BAS4	144	144
Component			ARWN • • • BAS4	144	144
Component			ARWN • • • BAS4	072	144
Ton				30	36
Nominal Capacity	Cooling	Btu/h		360,000	432,000
	Heating	Btu/h		405,000	486,000
Rated Capacity	Cooling	Btu/h		344,000	412,000
	Heating	Btu/h		386,000	463,000
Power Supply		V / Hz / ø		208-230/60/3	208-230/60/3
Dimensions (W×H×D)		inch		(29-3/4 x 19-3/4 x 39-1/4) x 3	(29-3/4 x 19-3/4 x 39-1/4) x 3
Net Weight		lbs		280+280+280	280+280+280
Sound Pressure		dB(A)		57	62
Compressor	Type			Inverter Scroll	Inverter Scroll
	Quantity			3	3
Heat Exchanger	Type			Stainless Steel Plate	Stainless Steel Plate
	Flow Rate Nominal	GPM		35.5+35.5+20.3	35.5+35.5+35.5
	Pressure Drop	ft wg		9.5+9.5+3.7	9.5+9.5+9.5
Temp. Range of Circulation Water	Cooling			23°F ~ 113°F	23°F ~ 113°F
	Heating			23°F ~ 113°F	23°F ~ 113°F
Refrigerant	Type			R410A	R410A
	Charge	Pounds		12.8+12.8+12.8	12.8+12.8+12.8
	Control			EEV	EEV
Maximum Connectable Number of Indoor Units				58	64

MULTI V™ WATER IV
Heat Recovery

Note :
1. Rated capacities are in accordance with AHRI Standard 1230
2. Sound pressure levels are tested in an anechoic chamber under ISO Standard 3794
3. Due to our policy of innovation, some specifications may be changed without notification

460V/60Hz/3ø

Model	ARWN • • • DAS4		072	096	121	144	168	192
Ton			6	8	10	12	14	16
Nominal Capacity	Cooling	Btu/h	72000	96,000	120,000	144,000	168,000	192,000
	Heating	Btu/h	81000	108,000	135,000	162,000	189,000	216,000
Rated Capacity	Cooling	Btu/h	69,000	92,000	114,000	138,000	160,000	184,000
	Heating	Btu/h	77,000	103,000	129,000	154,000	180,000	206,000
Power Supply		V / Hz / ø	460/60/3	460/60/3	460/60/3	460/60/3	460/60/3	460/60/3
Dimensions (W×H×D)		inch	(29-3/4 x 19-3/4 x 39-1/4) x 1	(29-3/4 x 19-3/4 x 39-1/4) x 1	(29-3/4 x 19-3/4 x 39-1/4) x 1	(29-3/4 x 19-3/4 x 39-1/4)	(29-3/4 x 19-3/4 x 39-1/4)	(29-3/4 x 19-3/4 x 39-1/4)
Net Weight		lbs	280	280	280	309	309	309
Sound Pressure		dB(A)	51	53	56	58	57	60
Compressor	Type		Inverter Scroll	Inverter Scroll	Inverter Scroll	Inverter Scroll	Inverter Scroll	Inverter Scroll
	Quantity		1	1	1	1	1	1
Heat Exchanger	Type		Stainless Steel Plate	Stainless Steel Plate	Stainless Steel Plate	Stainless Steel Plate	Stainless Steel Plate	Stainless Steel Plate
	Flow Rate Nominal	GPM	20.3	25.4	30.4	35.5	45.7	50.7
	Pressure Drop	ft wg	3.7	5.3	7.4	5.3	8.0	9.7
Temp. Range of Circulation Water	Cooling		23°F ~ 113°F	23°F ~ 113°F	23°F ~ 113°F	23°F ~ 113°F	23°F ~ 113°F	23°F ~ 113°F
	Heating		23°F ~ 113°F	23°F ~ 113°F	23°F ~ 113°F	23°F ~ 113°F	23°F ~ 113°F	23°F ~ 113°F
Refrigerant	Type		R410A	R410A	R410A	R410A	R410A	R410A
	Charge	Pounds	12.8	12.8	12.8	6.6	6.6	6.6
	Control		EEV	EEV	EEV	EEV	EEV	EEV
Maximum Connectable Number of Indoor Units			13	16	20	23	29	32

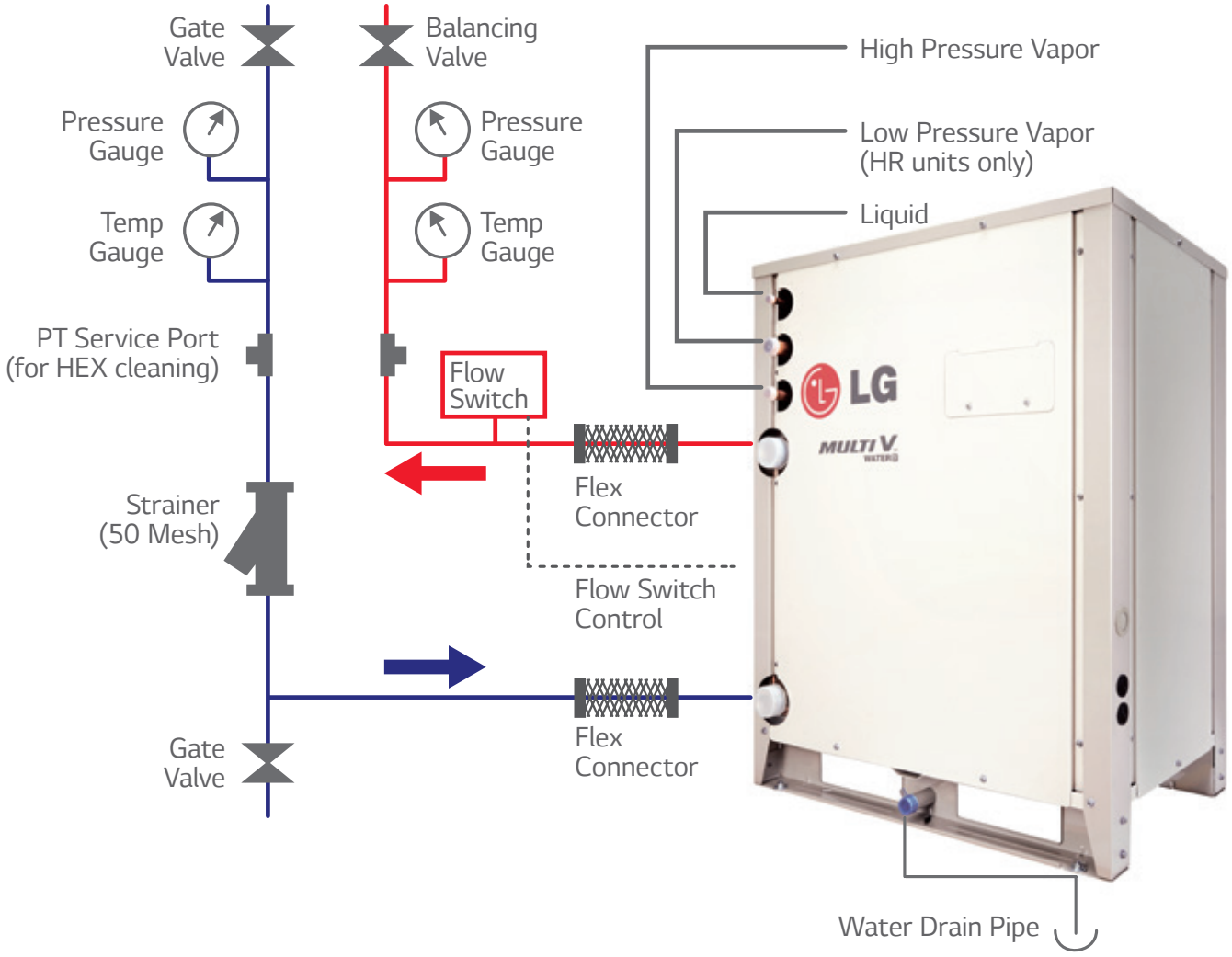
460V/60Hz/3ø

Model			ARWN • • • DAS4	240	288	336	384
Component			ARWN • • • DAS2	144	168	168	192
Component			ARWN • • • DAS2	096	121	168	192
Ton				20	24	28	32
Nominal Capacity	Cooling	Btu/h		240,000	288,000	336,000	384,000
	Heating	Btu/h		270,000	324,000	378,000	432,000
Rated Capacity	Cooling	Btu/h		230,000	274,000	320,000	368,000
	Heating	Btu/h		257,000	309,00	360,000	412,000
Power Supply		V / Hz / ø		460/60/3	460/60/3	460/60/3	460/60/3
Dimensions (W×H×D)		inch		(29-3/4 x 19-3/4 x 39-1/4) x 2	(29-3/4 x 19-3/4 x 39-1/4) x 2	(29-3/4 x 19-3/4 x 39-1/4) x 2	(29-3/4 x 19-3/4 x 39-1/4) x 2
Net Weight		lbs		309+280	309+280	309+309	309+309
Sound Pressure		dB(A)		57	59	61	61
Compressor	Type			Inverter Scroll	Inverter Scroll	Inverter Scroll	Inverter Scroll
	Quantity			2	2	2	2
Heat Exchanger	Type			Stainless Steel Plate	Stainless Steel Plate	Stainless Steel Plate	Stainless Steel Plate
	Flow Rate Nominal	GPM		35.5+25.4	45.7+30.4	45.7+45.7	50.7+50.7
	Pressure Drop	ft wg		5.3+5.3	8.0+7.4	8.0+8.0	9.7+9.7
Temp. Range of Circulation Water	Cooling			23°F ~ 113°F	23°F ~ 113°F	23°F ~ 113°F	23°F ~ 113°F
	Heating			23°F ~ 113°F	23°F ~ 113°F	23°F ~ 113°F	23°F ~ 113°F
Refrigerant	Type			R410A	R410A	R410A	R410A
	Charge	Pounds		12.8+6.6	12.8+6.6	6.6+6.6	6.6+6.6
	Control			EEV	EEV	EEV	EEV
Maximum Connectable Number of Indoor Units				39	45	55	61

460V/60Hz/3ø

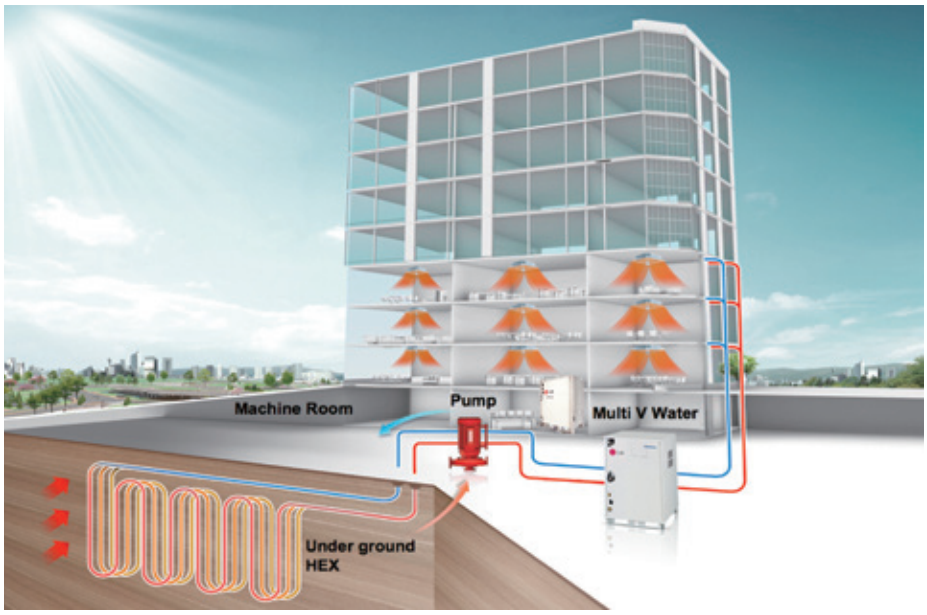
Model			ARWN • • • DAS4	480	576
Component			ARWN • • • DAS4	192	192
Component			ARWN • • • DAS4	144	192
Component			ARWN • • • DAS4	144	192
Ton				40	48
Nominal Capacity	Cooling	Btu/h		480,000	576,000
	Heating	Btu/h		540,000	648,000
Rated Capacity	Cooling	Btu/h		460,000	552,000
	Heating	Btu/h		514,000	618,000
Power Supply		V / Hz / ø		460/60/3	460/60/3
Dimensions (W×H×D)		inch		(29-3/4 x 19-3/4 x 39-1/4) x 3	(29-3/4 x 19-3/4 x 39-1/4) x 3
Net Weight		lbs		309+309+309	309+309+309
Sound Pressure		dB(A)		62	62
Compressor	Type			Inverter Scroll	Inverter Scroll
	Quantity			3	3
Heat Exchanger	Type			Stainless Steel Plate	Stainless Steel Plate
	Flow Rate Nominal	GPM		50.7+35.5+35.5	50.7+50.7+50.7
	Pressure Drop	ft wg		9.7+5.3+5.3	9.7+9.7+9.7
Temp. Range of Circulation Water	Cooling			23°F ~ 113°F	23°F ~ 113°F
	Heating			23°F ~ 113°F	23°F ~ 113°F
Refrigerant	Type			R410A	R410A
	Charge	Pounds		6.6+6.6+6.6	6.6+6.6+6.6
	Control			EEV	EEV
Maximum Connectable Number of Indoor Units				64	64

Water Pipe Connection Detail



GLYCOL CORRECTION FACTORS

Antifreeze Type	Item	Antifreeze % by wt				
		10%	20%	30%	40%	50%
Methanol	Cooling	0.998	0.997	0.995	0.993	0.992
	Heating	0.995	0.99	0.985	0.979	0.974
	Pressure Drop	1.023	1.057	1.091	1.122	1.160
Ethylene Glycol	Cooling	0.996	0.991	0.987	0.983	0.979
	Heating	0.993	0.985	0.997	0.969	0.961
	Pressure Drop	1.024	1.068	1.124	1.188	1.263
Propylene Glycol	Cooling	0.993	0.987	0.98	0.974	0.968
	Heating	0.986	0.973	0.96	0.948	0.935
	Pressure Drop	1.040	1.096	1.174	1.273	1.405



Items	Closed Type
	Circulating Water
pH [25°C]	7.0 -8.0
Conductivity [77°F] (mS/m)	Below 30
Chlorine Ions (mg Cl-l)	Below 50
Sulfate Ions (mg SO_4^{-2}/ l)	Below 50
Acid Consumption (pH 4.8) (mg $CaCO_3$/ l)	Below 50
Total Hardness (mg $CACO_3$/ l)	Below 70
Calcium Hardness (mg $CaCO_3$/ l)	Below 50
Ionic-Static Sillca (mg SiO_2/ l)	Below 30
Iron (mg Fe/ l)	Below 1.0
Copper (mg Cu/ l)	Below 1.0
Sulfate Ion (mg SO_4^{-2}/ l)	Must not be detected
Ammonium Ion (mg NH_4^+/ l)	Below 0.3
Residual Chlorine (mg Cl/ l)	Below 0.25
Free Carbon Dioxide(mg CO_2/ l)	Below 0.4
Stability Index	-

* When the water temperature is 104°F (40°C) or above or when uncoated iron is exposed to the water, it can result in corrosion. Adding an inhibitor agent or removing the air can be very effective.

Accessories

HEADERS AND Y-BRANCHES

Headers and Y-Branches are specially designed and manufactured under tight quality control for low pressure drop to ensure the Multi V Water IV system operates at peak performance with the longest piping runs in the industry.

LGMV SOFTWARE
(PRCTSL1, PRCTFE1)

LGMV software is a service tool that allows users to view the operating conditions of the Multi V Water IV system. Software: PRCTSL1 + Cables: PRCTFE1

VARIABLE VALVE CONTROL KIT
(PWFCKN000)

The Variable Valve Control Kit allows Multi V Water IV units to connect to a variable pumping condenser water loop. The kit includes a sub-control board, transformer for power modulating valve and terminal for connection of a modulating valve control wiring. The benefit of the variable valve control kit is saving on pumping cost.

Note: For detailed indoor unit and controls information, see separate Multi V Indoor Unit and Controls Catalogs.

The LG Air Conditioning Technical Support Call Center

The LG technical support team can answer questions on all LG VRF systems,
from design and field installation to aftermarket technical support. Simply call 1-888-865-3026 and follow the prompts.

MULTI V™ WATER IV

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