PRODUCT CATALOG

LG
Life's Good

MULTI V™ WATER II

Life's Good!

From installation to maintenance and repair, LG runs more than 60 global air conditioning academies, each provides training for air conditioning professionals.

What is LG?

LG Electronics is a division of the LG Group founded in 1947. LG air conditioners 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 manufacturers with 8 production sites.

Establishment Growth Expansion

1947 LG Group Established

1958 LGE Established

1968 Manufactured Korea's first air conditioners

1985 Korea's first inverter air conditioners

1986 Exported Korea's first window air conditioner

1990 First LG rotary compressor

1995 Company name changed to LG Electronics
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 worlds 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 US Training Center Established (Southern California)
LG Air Conditioning division created

2011 US Training Center Est. in Secaucas, NJ & Carrollton, TX

What is VRF?

Variable Refrigerant Flow (VRF) technology was introduced as a system to minimize losses found in conventional HVAC systems. A water source VRF system is engineered to minimize ductwork by eliminating large air handlers, giving back valuable mechanical room and ceiling plenum space. Water source VRF is ideal for retrofit projects with the ability to utilize existing water pipe systems. The factory mounted controls simplify the installation. The modular design of a VRF system provides exceptional dehumidification and temperature control by rapidly adapting to changing loads. Superior energy savings are achieved by giving occupants the choice to condition only the zones being used. Energy efficient and easy to design, install, and maintain, a VRF system has low life cycle cost compared to other systems on the market today.

Why LG VRF?

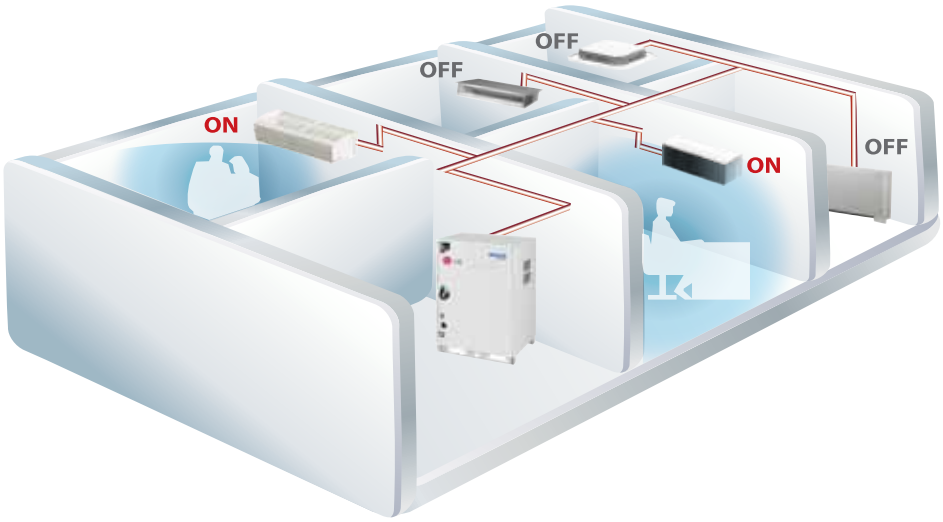
Multi V Water II is engineered to bring together efficiency and easy installation. With an LG Multi V Water II system your residence or building consumes less energy.

DEHUMIDIFICATION AND COMFORT CONTROL

With the use of inverters and multiple compressor water source units, the LG Multi V Water II 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

Without using large distribution ducts, Multi V Water II removes losses that are unavoidable in other systems. With the use of optimized scroll compressors and inverter technology, Multi V Water II systems minimize energy consumption to levels previously unattainable by non-VRF systems. 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 II Heat Recovery can add refrigerant side heat recovery.



QUALITY AND RELIABILITY

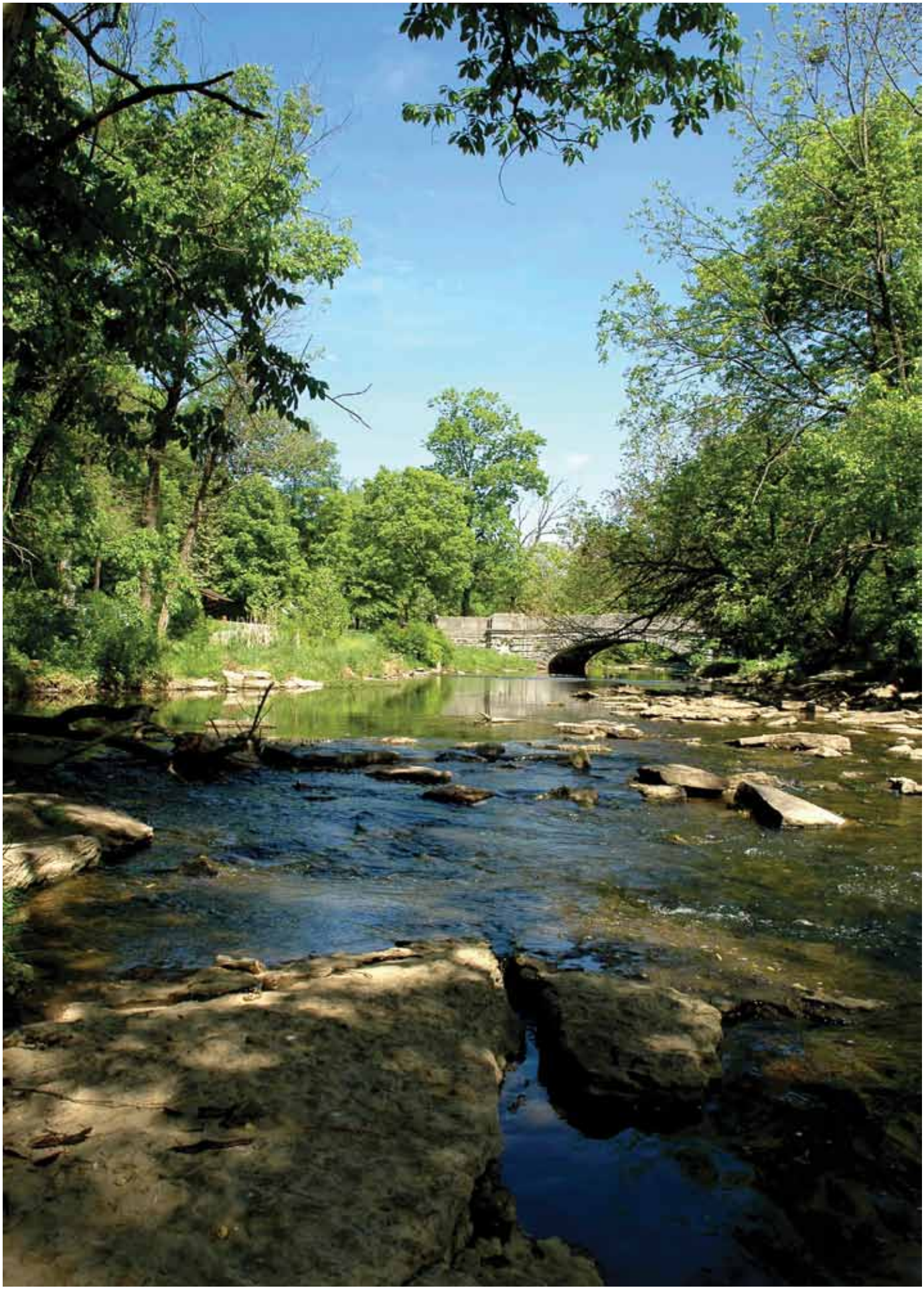
With controls that alternate compressors and protect against oil migration and short cycling, the Multi V Water II offers unmatched quality and reliability. LG has expertise in compressor design, motors, and printed circuit boards, resulting in superior quality control. Multi V Water II is backed up with a 2-year parts and additional 4-year compressor warranty.

STYLISH DESIGN

Multi V indoor units are available in a wide range of styles to fit any interior design. 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 décor, 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 23dB(A), and water source units that operate as low as 49 dB(A), LG Multi V Water II 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 and further reduce sound.



Architectural Appeal

ADAPTABLE AND FLEXIBLE

Multi V Water II units can be adapted to a wide range of building types and sizes including but not limited to schools, hotels, hospitals, and offices. Multi V Water II 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 II units offer flexibility to be mounted in mechanical rooms located on floors closer to the indoor units, shortening the refrigerant pipe runs. Multi V Water II 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 II system uses refrigerant piping to move heat resulting in smaller space requirements compared to water piping or air ducts. This helps reduce the overall construction and material cost of your building and give back leasable space.

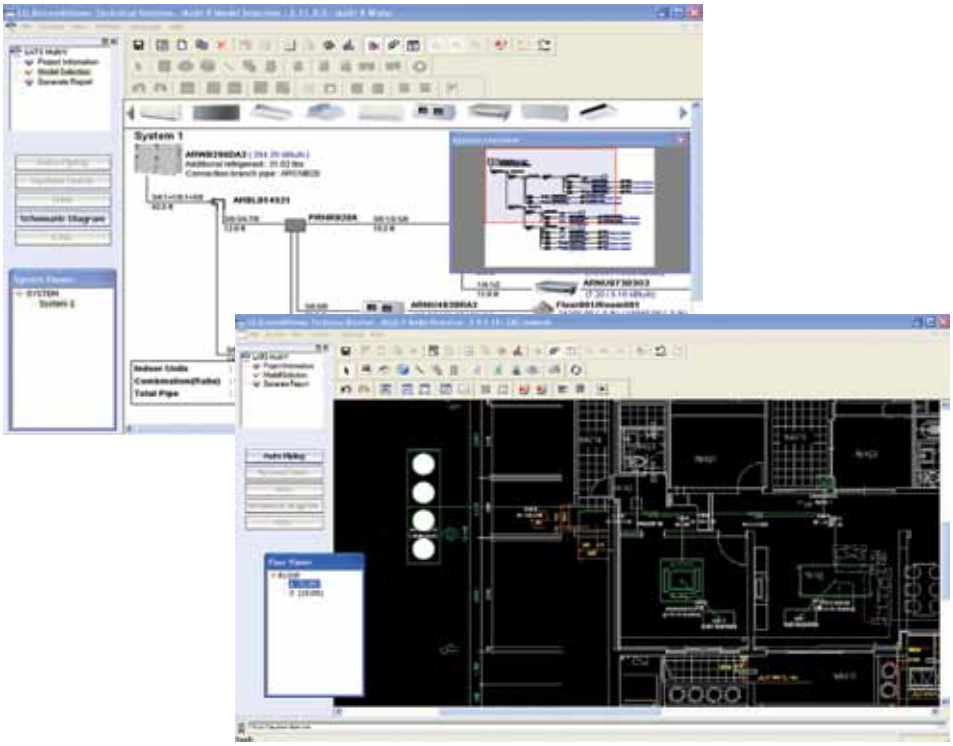
Multi V Water II indoor Unit (eliminate soffit)

Conventional Duct Soffit

Engineering Advantage

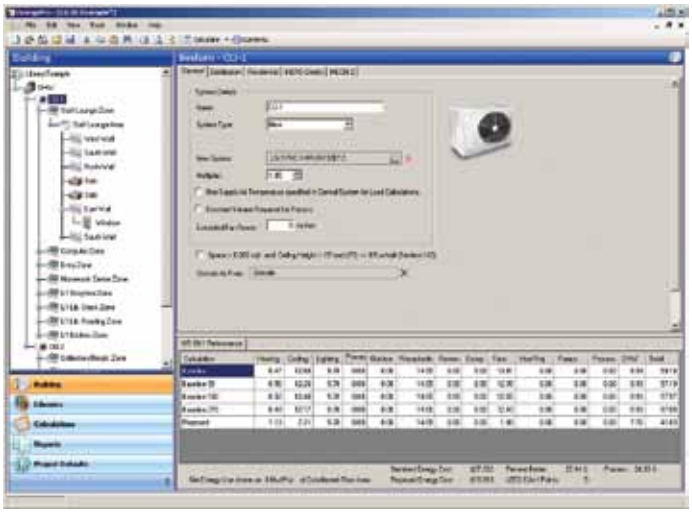
INTUITIVE DESIGN

The LATS Multi V design and layout software provides an intuitive method of laying out a Multi V Water II 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 is the industry's only software that can import AutoCAD™ drawings and lay out the Multi V Water II 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 II system can be exported.



ENERGY MODELING

LG stands behind efficiency and performance with proof. You can find Multi V Water II in the EnergyPro™ building energy simulation software from EnergySoft®. EnergyPro™ is approved by the California Energy Commission and can be used for documentation with the California Title 24 Standards as well as energy codes throughout the United States including ASHRAE 90.1 and LEED®. The software accurately models energy consumption based on building design, orientation, location, and other design conditions taking into account your specific utility rate structure.



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 and relative humidity, energy and water efficiency. The USGBC has developed holistic design standards for constructing new and retrofitting existing buildings 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, often referring 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.

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

1. The Multi V Water II system uses refrigerant R410A.
2. Multi V Water II offers exceptional energy performance by using state of the art controls, high efficiency variable speed evaporator fan assemblies, and a combination of variable and constant speed compressors that provide unmatched unloading performance.
3. The modular design of Multi V Water II uses multiple indoor units allowing the designer to provide individualized control for each occupant.
4. LG's family of local controllers, central controllers, building management controllers and communication gateways make it easy to monitor energy usage and control the Multi V Water II system operations based on building usage or indoor air quality.
5. Multi V Water II units 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 credits.

AHRI CERTIFIED™
www.ahridirectory.org
Variable Refrigerant Flow (VRF) Multi-Split AC and HP
AHRI Standard 1230

U.S. GREEN BUILDING COUNCIL MEMBER

Caring for Environment
R 410A
LG Air Conditioner

COMMISSIONING AND TROUBLESHOOTING

Installation and Commissioning Support

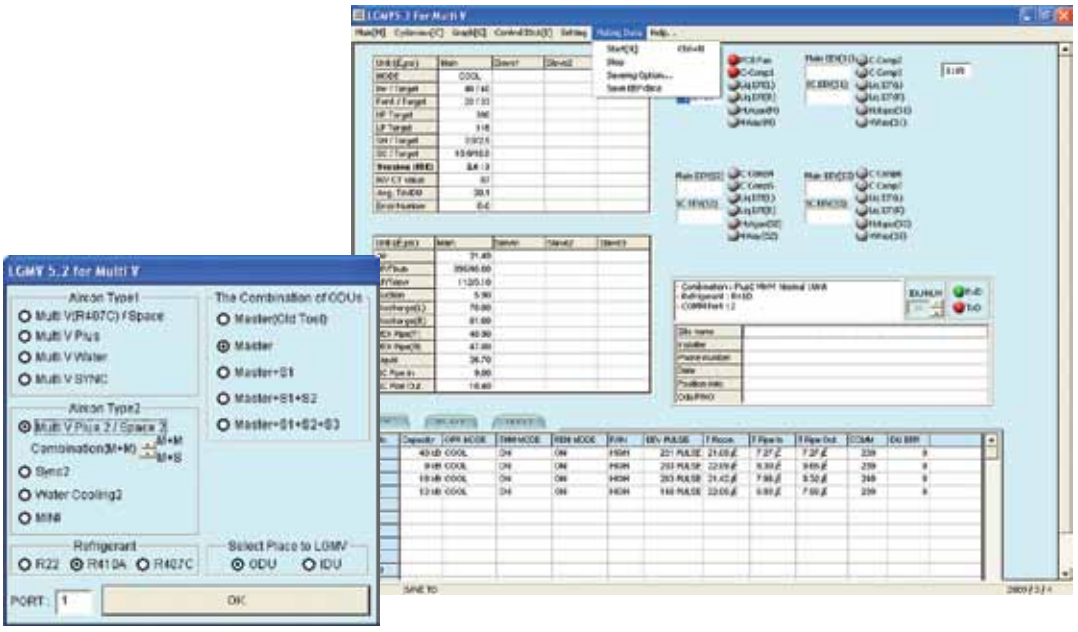
LG is committed to the success of every Multi V Water II project. Proper installation is important to operation and system longevity. Installation and commissioning training conducted at our training centers provides students with the knowledge and tools to properly install Multi V Water II systems. 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.

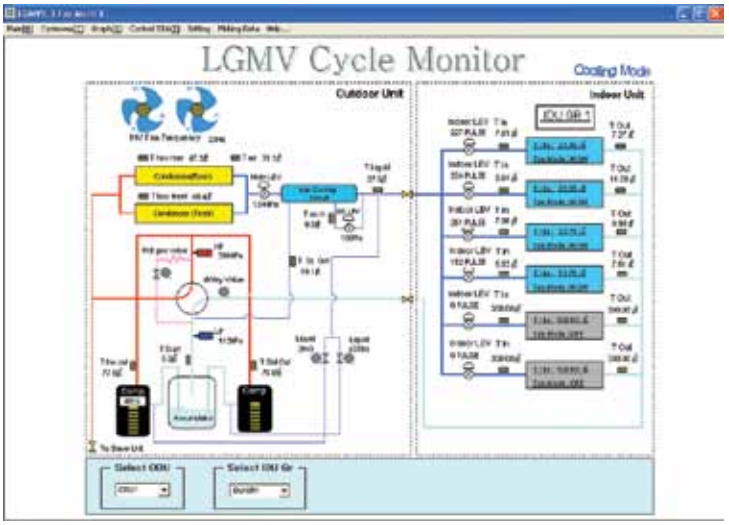
LGMV (LG Monitoring View) Service Tool

Aligning with LG's 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 by-pass 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 II equipment.

Easy to maintain

Though highly advanced, Multi V Water II 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 5.2 for Multi V
Aircon Type1
Multi V(R407C) f Space
Multi V Plus
Multi V Water
Multi V SYNC
Aircon Type2
Multi V Plus 2 / Space 2
Combination(M+M)
M+M
M+S
Sync2
Water Cooling2
MINI
The Combination of ODUs
Master(Old Type)
Master
Master+S1
Master+S1+S2
Master+S1+S2+S3
Refrigerant
R22
R410A
R407C
Select Place to LGMV
ODU
IDU
PORT
1
OK


LGMV Cycle Monitor
Cooling Mode
Outdoor Unit
Indoor Unit

TRAINING

At LG we are committed to excellence in Multi V Water II design and installation training. We offer complete training for engineers, architects, installers and servicers to ensure every Multi V Water II installation is successful.

Engineers and Architects

We have 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 II 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.

Installers and Commissioners

LG offers multiple levels of training. Level One is an Installation Fundamentals Class. Level Two is Multi V Commissioner Training Class. Level Three is a 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 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 II UNITS

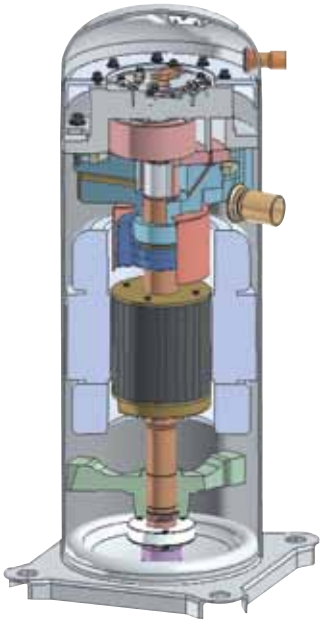
MULTI V™ WATER II

MULTI V™ WATER II
Heat Recovery

Advanced Compressor Technology

OIL MANAGEMENT

The oil injection mechanism ensures a reliable oil film on moving parts even at low speed operation, allowing the inverter compressor to safely operate at low speed. Also, concern over oil migration is minimized. The compressor discharge is specially designed to minimize the amount of oil leaving the compressor. Oil that may leave the compressor is then brought back to the compressor using an oil separator after the discharge and the most dependable oil return control algorithms available.



INVERTER TECHNOLOGY

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

DUAL COMPRESSORS

Multi V Water II takes advantage of a digitally controlled(DC) inverter and constant speed compressor combination that maximizes efficiency while precisely matching load. Every compressor runs most efficiently at full load. The inverter drive on the first compressor matches the load exactly, recapturing the efficiency of a partially loaded compressor while eliminating compressor cycling. The constant speed compressor will run in more heavily loaded conditions, taking the majority of the load running in its most efficient operating range. This inverter and constant speed compressor combination adds redundancy to the system and also allows for lower load operation than a single inverter design.

Inverter

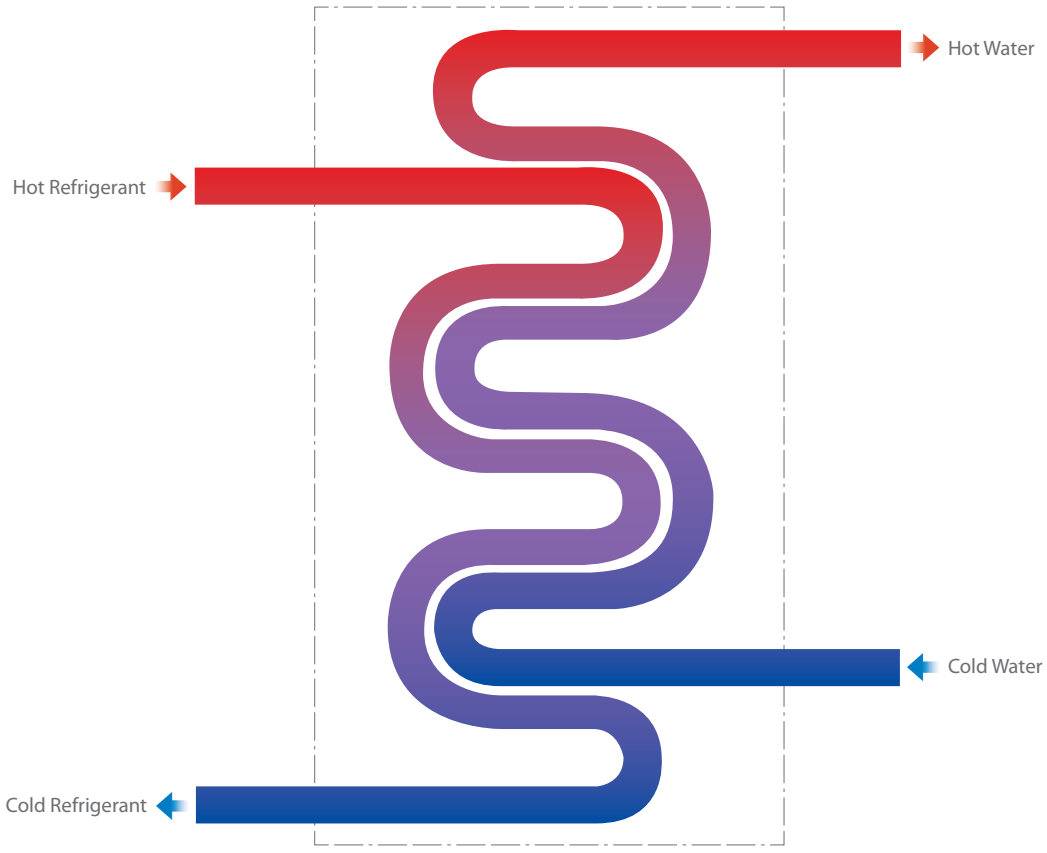
DC Inverter Compressor

Constant speed Compressor

Heat Transfer Efficiency

PLATE HEAT EXCHANGER

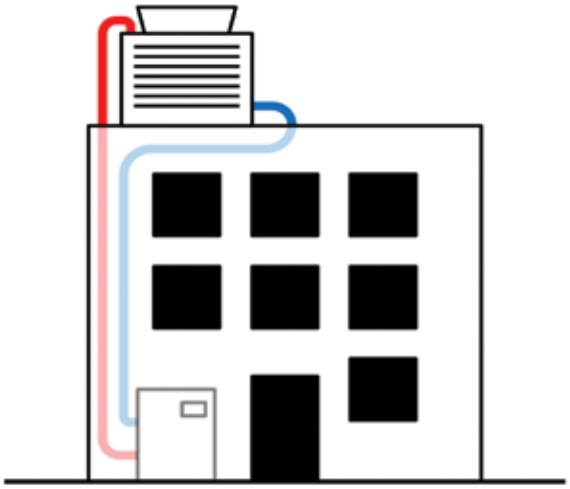
All Multi V Water II units are equipped with a stainless steel plate heat exchanger. This compact heat exchanger has easy access front panel pipe connections. Built in water temperature sensors monitor water temperature to ensure safe operating levels. Multi V Water II comes equipped with control terminals to interlock field supplied flow switch and solenoid valves. The durable heat exchanger is constructed of 316 stainless steel and copper and is easy to maintain when the recommended service ports are installed to allow 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 Multi V Water II unit from open system.



Applications

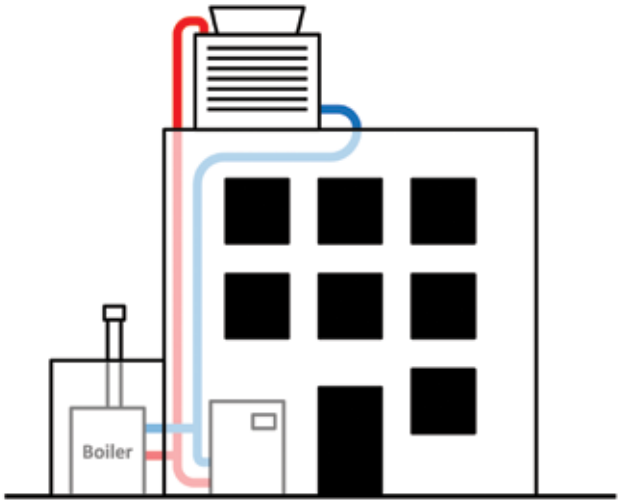
COOLING TOWER

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



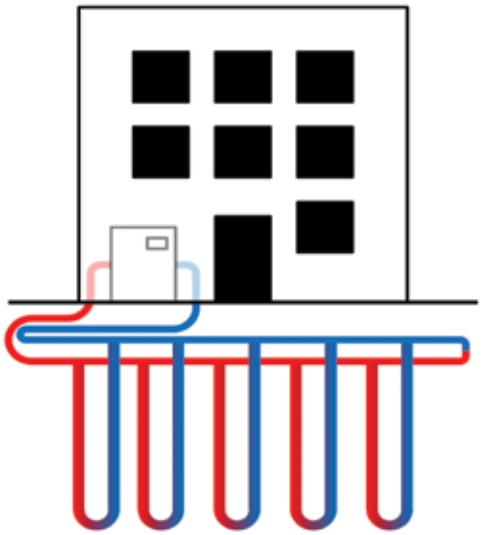
COOLING TOWER/BOILER

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



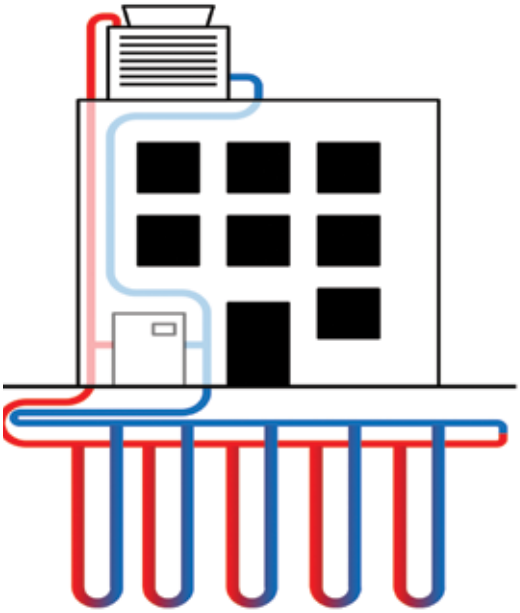
GEOTHERMAL

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



HYBRID GEOTHERMAL

Hybrid geothermal systems which combine geothermal fields with a cooling tower can be used with Multi V Water II. 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 II Units

LG Multi V consists of two distinct products that will fit any application. With the longest and most flexible piping in the industry, 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 II

208V/230V-60Hz-3ø

pg. 36

MULTI V™ WATER II *Heat Recovery*

208V/230V-60Hz-3ø

pg. 40

Ton	8	16	24
MBh	96	192	288

MULTI V™ WATER II

460V-60Hz-3ø

pg. 38

MULTI V™ WATER II *Heat Recovery*

460V-60Hz-3ø

pg. 42

30	36	42	48
360	432	504	

32	40	48
384	480	

MULTI V WATER II

Multi V Water II is a water source heat pump system that is available in capacities from 6 tons to 48 tons. This system is best suited for applications that require either heating or cooling, such as large office buildings with a common exposure, hotel ballrooms, and meeting areas. Multi V Water II is available in 208-230V and 460 V three phase.

Heating Inlet Water temperature range: 23°F to 113°F
Cooling Inlet Water temperature range: 50°F to 113°F

* For more information see page 36

- 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	49 ft.

MULTI V WATER II HEAT RECOVERY

Multi V Water II Heat Recovery is a water source heat recovery system that is available in capacities from 6 to 48 tons. This system is best suited for diverse loads that require simultaneous heating and cooling in different zones such as hotel guestrooms, high-rise buildings, or any building that can utilize exposures from opposite sides or interior and exterior zones on the same system. Multi V Water II Heat Recovery is available in 208/230 V and 460 V three phase.

Heating Inlet Water temperature range: 23°F to 113°F
Cooling Inlet Water temperature range: 50°F to 113°F

* For more information see page 40

- Piping length (equivalent)

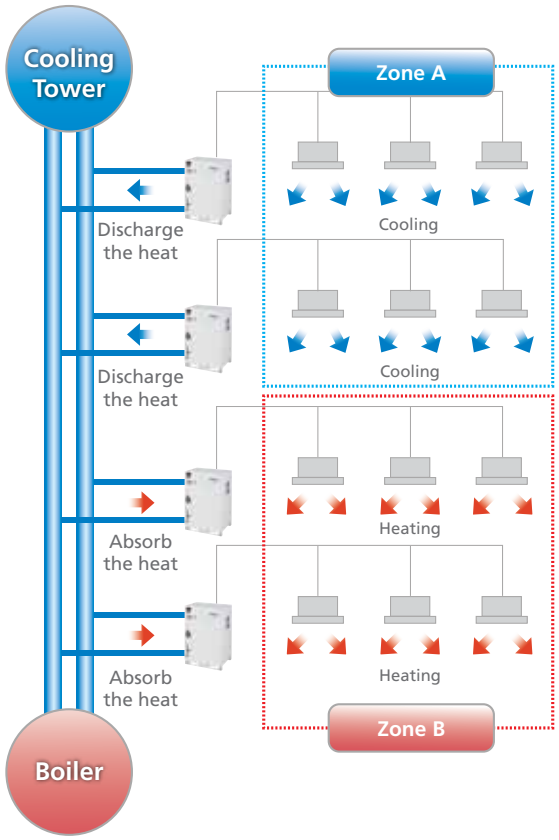
Total	1640 ft.
Longest	738 ft.
From first branch	295 ft.

- Elevation

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

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.

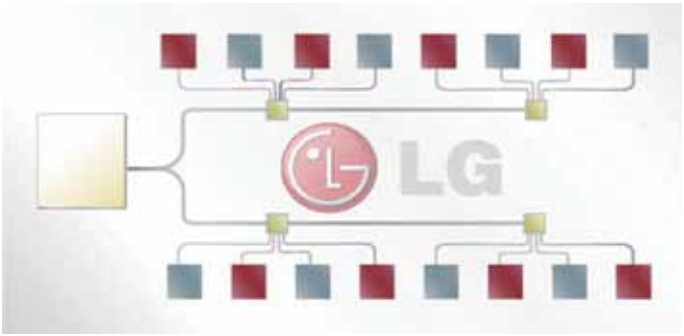


REFRIGERANT SIDE HEAT RECOVERY

Refrigerant heat recovery can be achieved using Multi V Water II 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.

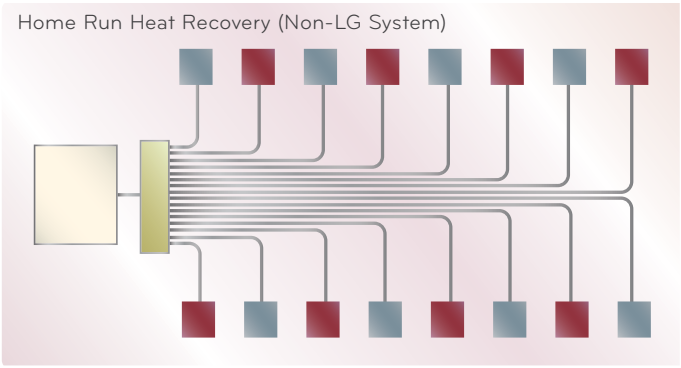
INSTALLATION

The Multi V Water II Heat Recovery combines the best features of heat recovery VRF systems. Condensate drains are not required for Multi V Water II 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.



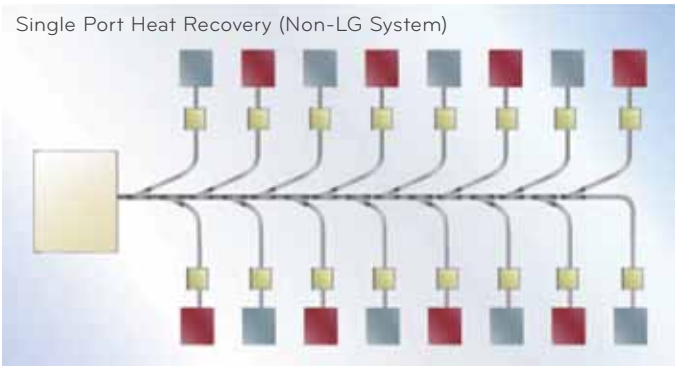
- Configured for fully independent heating and cooling
- Series and/or parallel configuration
- Short piping
- Few joints
- No heat recovery unit condensate drains
- Fast 3 minute mode change

Home Run Heat Recovery (Non-LG System)

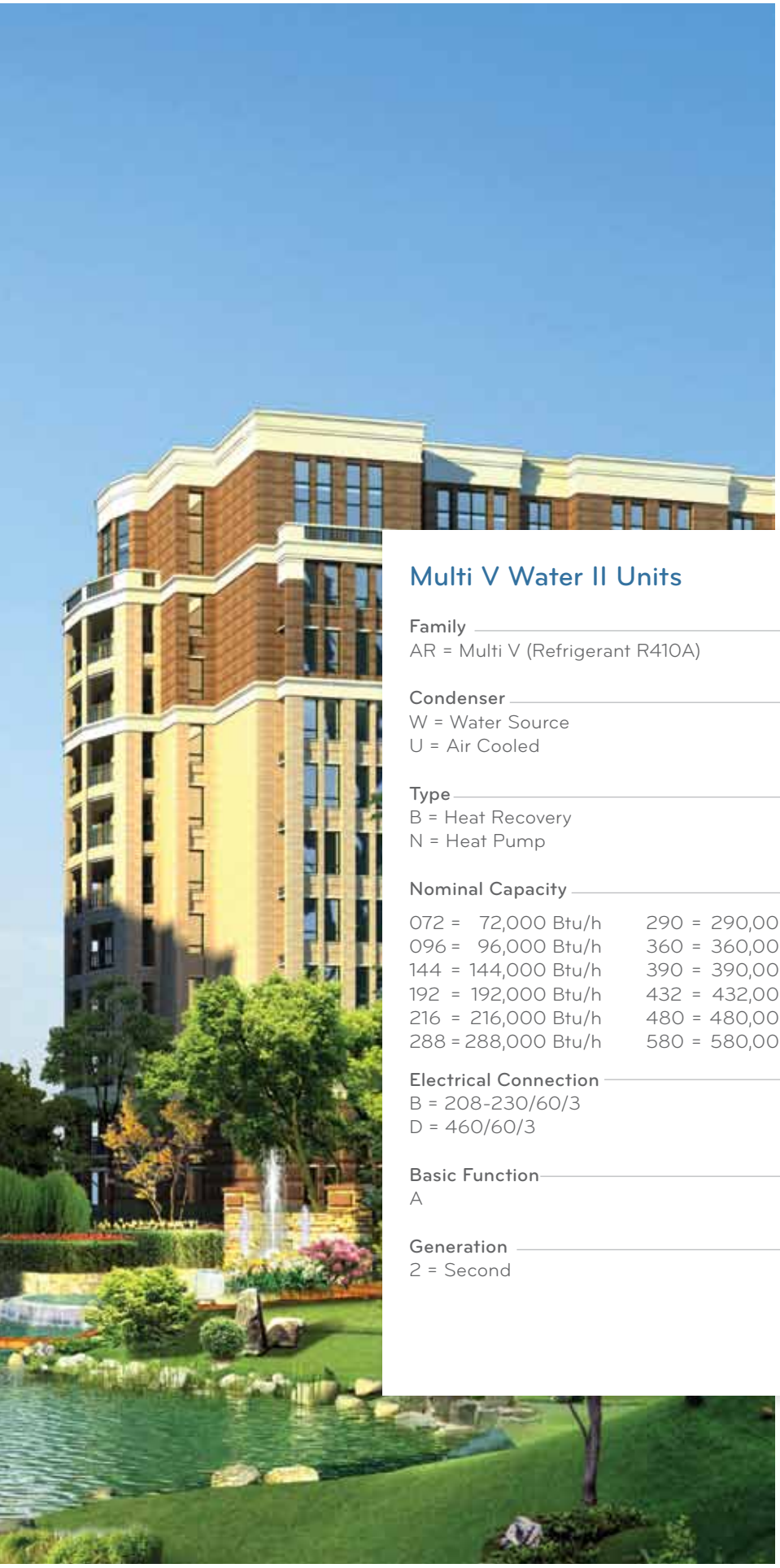


- Configured for fully independent heating and cooling
- Series configuration only
- Lengthy homerun piping
- May require heat recovery unit condensate drain

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 II Units

AR W B 072 D A 2

Family
AR = Multi V (Refrigerant R410A)

Condenser
W = Water Source
U = Air Cooled

Type
B = Heat Recovery
N = Heat Pump

Nominal Capacity

072 = 72,000 Btu/h	290 = 290,000 Btu/h
096 = 96,000 Btu/h	360 = 360,000 Btu/h
144 = 144,000 Btu/h	390 = 390,000 Btu/h
192 = 192,000 Btu/h	432 = 432,000 Btu/h
216 = 216,000 Btu/h	480 = 480,000 Btu/h
288 = 288,000 Btu/h	580 = 580,000 Btu/h

Electrical Connection
B = 208-230/60/3
D = 460/60/3

Basic Function
A

Generation
2 = Second

MULTI V™ WATER II

Note :
1. Nominal Capacities are outside the scope of AHRI Standard 1230.
2. Rated Capacities are in accordance with AHRI Standard 1230.
3. AHRI Standard 1230 does not apply to units larger than 300,000 Btu/h rated capacity.
4. Sound pressure levels are tested in an anechoic chamber under ISO Standard 1996.
5. EER, IEER, COP mentioned in the tables below is applied with non-ducted indoor units. Values are subject to change without notice. Performance data found on the AHRI website http://www.ahridirectory.org supersedes the data found in this catalog.
6. Due to our policy of innovation some specifications may be changed without notification.

208-230V/60Hz/3ø

Model			ARWN • • • BA2	072	144
Ton				6	12
Nominal Capacity	Cooling		Btu/h	72,000	144,000
	Heating		Btu/h	81,000	162,000
Rated Capacity	Cooling		Btu/h	69,000	138,000
	Heating		Btu/h	77,000	154,000
EER	Cooling		Btu/W-h	16.10	14.50
IEER	Cooling		Btu/W-h	24.00	22.90
COP	Heating		W/W	4.86	4.48
Power Supply			V / Hz / ø	208-230 / 60 / 3	208-230 / 60 / 3
Dimensions(W×H×D)			inch	30-7/16 x 44-1/8 x 21-9/16	30-7/16 x 44-1/8 x 21-9/16
Net Weight			lbs	375	525
Sound Pressure			dB(A)	49	50
Compressor	Type			DC Scroll	DC Scroll + Constant
	Number of compressors			1	1+1
Heat Exchanger				Stainless Steel Plate	Stainless Steel Plate
Nominal Flow Rate			GPM	21.1	42.2
Range of Flow Rate			GPM	10.6-26.4	21.2-52.8
Water Pressure Drop			ft wg	8.9	14.4
Refrigerant	Refrigerant Type			R410A	R410A
	Charge		lbs	16.1	19.4
	Control			EEV	EEV
Maximum Number of Indoor Units				16	32

208-230V/60Hz/3ø

Model	ARWN • • • BA2		Dual Frame	216	288
			Combination	144	144
				072	144
Ton				18	24
Nominal Capacity	Cooling	Btu/h		216,000	288,000
	Heating	Btu/h		243,000	324,000
Rated Capacity	Cooling	Btu/h		206,000	274,000
	Heating	Btu/h		232,000	308,000
EER	Cooling	Btu/W-h		11.00	11.30
IEER	Cooling	Btu/W-h		19.50	18.00
COP	Heating	W/W		4.09	4.26
Power Supply		V / Hz / ø		208-230 / 60 /3	208-230 / 60 / 3
Dimensions(W×H×D)		inch		(30-7/16 x 44-1/8 x 21-9/16) x 2	(30-7/16 x 44-1/8 x 21-9/16) x 2
Net Weight		lbs		525+375	525+525
Sound Pressure*		dB(A)		51	52
Compressor	Type			DC Scroll + Constant	DC Scroll + Constant
	Number of compressors			(2+1) x 2	(2+1) x 2
Heat Exchanger				Stainless Steel Plate	Stainless Steel Plate
Nominal Flow Rate		GPM		42.2+21.1	42.2+42.2
Range of Flow Rate		GPM		31.8-79.2	42.4-105.6
Water Pressure Drop		ft wg		14.4+8.9	14.4+14.4
Refrigerant	Refrigerant Type			R410A	R410A
	Charge	lbs		19.4+16.1	19.4+19.4
	Control			EEV	EEV
Maximum Number of Indoor Units				49	64

208-230V/60Hz/3ø

Model	ARWN • • • BA2		Triple Frame	360	432
			Combination	144	144
				144	144
				072	144
Ton				30	36
Nominal Capacity	Cooling	Btu/h		360,000	432,000
	Heating	Btu/h		405,000	486,000
Power Supply		V / Hz / ø		208-230 / 60 / 3	208-230 / 60 / 3
Dimensions(W×H×D)		inch		(30-7/16 x 44-1/8 x 21-9/16) x 3	(30-7/16 x 44-1/8 x 21-9/16) x 3
Net Weight		lbs		525+525+375	525+525+525
Sound Pressure*		dB(A)		53	54
Compressor	Type			DC Scroll + Constant	DC Scroll + Constant
	Number of compressors			(3 +2) x 3	(3+2) x 3
Heat Exchanger				Stainless Steel Plate	Stainless Steel Plate
Nominal Flow Rate		GPM		42.2+42.2+21.1	42.2+42.2+42.2
Range of Flow Rate		GPM		63.6-158.4	79.2-190.2
Water Pressure Drop		ft wg		14.4+14.4+8.9	14.4+14.4+14.4
Refrigerant	Refrigerant Type			R410A	R410A
	Charge	lbs		19.4+19.4+16.1	19.4 + 19.4 + 19.4
	Control			EEV	EEV
Maximum Number of Indoor Units				64	64

MULTI V™ WATER II

Note :
1. Nominal Capacities are outside the scope of AHRI Standard 1230.
2. Rated Capacities are in accordance with AHRI Standard 1230.
3. AHRI Standard 1230 does not apply to units larger than 300,000 Btu/h rated capacity.
4. Sound pressure levels are tested in an anechoic chamber under ISO Standard 1996.
5. EER, IEER, COP mentioned in the tables below is applied with non-ducted indoor units. Values are subject to change without notice. Performance data found on the AHRI website http://www.ahridirectory.org supersedes the data found in this catalog.
6. Due to our policy of innovation some specifications may be changed without notification.

460V/60Hz/3ø

Model	ARWN • • • DA2	Single Frame	096	192
Ton			8	16
Nominal Capacity	Cooling	Btu/h	95,900	191,100
	Heating	Btu/h	107,500	225,000
Rated Capacity	Cooling	Btu/h	92,000	184,000
	Heating	Btu/h	103,000	206,000
EER	Cooling	Btu/W-h	13.30	11.30
IEER	Cooling	Btu/W-h	19.10	17.80
COP	Heating	W/W	4.61	4.24
Power Supply		V / Hz / ø	460 / 60 / 3	460 / 60 / 3
Dimensions(W×H×D)		inch	30-7/16 x 44-1/8 x 21-9/16	30-7/16 x 44-1/8 x 21-9/16
Net Weight		lbs	375	525
Sound Pressure*		dB(A)	51	51
Compressor	Type		DC Scroll	DC Scroll + Constant
	Number of compressors		1	1 + 1
Heat Exchanger			Stainless Steel Plate	Stainless Steel Plate
Nominal Flow Rate		GPM	25.4	50.8
Range of Flow Rate		GPM	13.2-31.7	26.4-63.4
Water Pressure Drop		ft wg	8..9	14.4
Refrigerant	Refrigerant Type		R410A	R410A
	Charge	lbs	16.1	19.4
	Control		EEV	EEV
Maximum Number of Indoor Units			16	32

460V/60Hz/3ø

Model	ARWN • • •DA2	Dual Frame	290	390
		Combination	192	192
			096	192
Ton			24	32
Nominal Capacity	Cooling	Btu/h	286,600	382,200
	Heating	Btu/h	322,500	429,900
Rated Capacity	Cooling	Btu/h	280,000	N/A
	Heating	Btu/h	310,000	N/A
EER	Cooling	Btu/W-h	11.40	N/A
IEER	Cooling	Btu/W-h	18.10	N/A
COP	Heating	W/W	4.26	N/A
Power Supply		V / Hz / ø	460 / 60 / 3	460 / 60 / 3
Dimensions(W×H×D)		inch	(30-7/16 x 44-1/8 x 21-9/16) x 2	(30-7/16 x 44-1/8 x 21-9/16) x 2
Net Weight		lbs	525+375	525+525
Sound Pressure*		dB(A)	53	54
Compressor	Type		DC Scroll + Constant	DC Scroll + Constant
	Number of compressors		(2 + 1) x 2	(2 + 1) x 2
Heat Exchanger			Stainless Steel Plate	Stainless Steel Plate
Nominal Flow Rate			50.8+25.4	50.8+50.8
Range of Flow Rate			39.6-95.1	52.8-126.8
Water Pressure Drop			14.4+8.9	14.4+14.4
Refrigerant	Refrigerant Type		R410A	R410A
	Charge	lbs	19.4+16.1	19.4+19.4
	Control		EEV	EEV
Maximum Number of Indoor Units			49	64

460V/60Hz/3ø

Model	ARWN • • • DA2	Triple Frame	480	580
		Combination	192	192
			192	192
			096	192
Ton			40	48
Nominal Capacity	Cooling	Btu/h	477,800	573,400
	Heating	Btu/h	537,500	645,000
Power Supply		V / Hz / ø	460 / 60 / 3	460 / 60 / 3
Dimensions(W×H×D)		inch	(30-7/16 x 44-1/8 x 21-9/16) x 3	(30-7/16 x 44-1/8 x 21-9/16) x 3
Net Weight		lbs	525+525+375	525+525+525
Sound Pressure*		dB(A)	55	56
Compressor	Type		DC Scroll + Constant	DC Scroll + Constant
	Number of compressors		(3 + 2) x 3	(3+2) x 3
Heat Exchanger			Stainless Steel Plate	Stainless Steel Plate
Nominal Flow Rate		GPM	50.8+50.8+25.4	50.8+50.8+50.8
Range of Flow Rate		GPM	66-158.5	79.2-190.2
Water Pressure Drop		ft wg	14.4+14.4+8.9	14.4+14.4+14.4
Refrigerant	Refrigerant Type		R410A	R410A
	Charge	lbs	19.4+19.4+16.1	19.4+19.4+19.4
	Control		EEV	EEV
Maximum Number of Indoor Units			64	64

MULTI V™ WATER II Heat Recovery

Note :
1. Nominal Capacities are outside the scope of AHRI Standard 1230.
2. Rated Capacities are in accordance with AHRI Standard 1230.
3. AHRI Standard 1230 does not apply to units larger than 300,000 Btu/h rated capacity.
4. Sound pressure levels are tested in an anechoic chamber under ISO Standard 1996.
5. EER, IEER, COP mentioned in the tables below is applied with non-ducted indoor units. Values are subject to change without notice. Performance data found on the AHRI website http://www.ahridirectory.org supersedes the data found in this catalog.
6. Due to our policy of innovation some specifications may be changed without notification.

208-230V/60Hz/3ø

Model	ARWB • • • BA2	Single Frame	072	144
Ton			6	12
Nominal Capacity	Cooling	Btu/h	72,000	144,000
	Heating	Btu/h	81,000	162,000
Rated Capacity	Cooling	Btu/h	69,000	138,000
	Heating	Btu/h	77,000	154,000
EER	Cooling	Btu/W-h	16.10	14.50
IEER	Cooling	Btu/W-h	24.00	22.90
COP	Heating	W/W	4.86	4.48
Power Supply		V / Hz / ø	208-230 / 60 / 3	208-230 / 60 / 3
Dimensions(W×H×D)		inch	30-7/16 x 44-1/8 x 21-9/16	30-7/16 x 44-1/8 x 21-9/16
Net Weight		lbs	375	525
Sound Pressure*		dB(A)	49	50
Compressor	Type		DC Scroll	DC Scroll + Constant
	Number of compressors		1	1+1
Heat Exchanger			Stainless Steel Plate	Stainless Steel Plate
Nominal Flow Rate			21.1	42.2
Range of Flow Rate			10.6-26.4	21.2-52.8
Water Pressure Drop			8.9	14.4
Refrigerant	Refrigerant Type		R410A	R410A
	Charge	lbs	16.1	19.4
	Control		EEV	EEV
Maximum Number of Indoor Units			16	32

208-230V/60Hz/3ø

Model	ARWB • • • BA2		Dual Frame	216	288
			Combination	144	144
				072	144
Ton				18	24
Nominal Capacity	Cooling	Btu/h		216,000	288,000
	Heating	Btu/h		243,000	324,000
Rated Capacity	Cooling	Btu/h		206,000	274,000
	Heating	Btu/h		232,000	308,000
EER	Cooling	Btu/W-h		11.00	11.30
IEER	Cooling	Btu/W-h		19.50	18.00
COP	Heating	W/W		4.09	4.26
Power Supply		V / Hz / ø		208-230 / 60 / 3	208-230 / 60 / 3
Dimensions(W×H×D)		inch		(30-7/16 x 44-1/8 x 21-9/16) x 2	(30-7/16 x 44-1/8 x 21-9/16) x 2
Net Weight		lbs		525+375	525+525
Sound Pressure*		dB(A)		51	52
Compressor	Type			DC Scroll + Constant	DC Scroll + Constant
	Number of compressors			(2+1) x2	(2+2) x 2
Heat Exchanger				Stainless Steel Plate	Stainless Steel Plate
Nominal Flow Rate		GPM		42.2+21.1	42.2+42.2
Range of Flow Rate		GPM		31.8-79.2	42.4-105.6
Water Pressure Drop		ft wg		14.4+8.9	14.4+14.4
Refrigerant	Refrigerant Type			R410A	R410A
	Charge	lbs		19.4+16.1	19.4+ 19.4
	Control			EEV	EEV
Maximum Number of Indoor Units				49	64

208-230V/60Hz/3ø

Model	ARWB • • • BA2		Triple Frame	360	432
			Combination	144	144
				144	144
				072	144
Ton				30	36
Nominal Capacity	Cooling	Btu/h		360,000	432,000
	Heating	Btu/h		405,000	486,000
Power Supply		V / Hz / ø		208-230 / 60 / 3	208-230 / 60 / 3
Dimensions(W×H×D)		inch		(30-7/16 x 44-1/8 x 21-9/16) x 3	(30-7/16 x 44-1/8 x 21-9/16) x 3
Net Weight		lbs		525+525+375	525+525+525
Sound Pressure*		dB(A)		53	54
Compressor	Type			DC Scroll + Constant	DC Scroll + Constant
	Number of compressors			(3+2) x 3	(3+3) x 3
Heat Exchanger				Stainless Steel Plate	Stainless Steel Plate
Nominal Flow Rate		GPM		42.2+42.2+21.1	42.2+42.2+42.2
Range of Flow Rate		GPM		63.6-158.4	79.2-190.2
Water Pressure Drop		ft wg		14.4+14.4+8.9	14.4+14.4+14.4
Refrigerant	Refrigerant Type			R410A	R410A
	Charge	lbs		19.4+19.4+16.1	19.4+19.4+19.4
	Control			EEV	EEV
Maximum Number of Indoor Units				64	64

MULTI V™ WATER II Heat Recovery

Note :
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6. Due to our policy of innovation some specifications may be changed without notification.

460V/60Hz/3ø

Model	ARWB • • • DA2	Single Frame	096	192
Ton			8	16
Nominal Capacity	Cooling	Btu/h	95,900	191,100
	Heating	Btu/h	107,500	225,000
Rated Capacity	Cooling	Btu/h	92,000	184,000
	Heating	Btu/h	103,000	206,000
EER	Cooling	Btu/W-h	13.30	11.30
IEER	Cooling	Btu/W-h	19.10	17.80
COP	Heating	W/W	4.61	4.24
Power Supply		V / Hz / ø	460 / 60 / 3	460 / 60 / 3
Dimensions(W×H×D)		inch	30-7/16 x 44-1/8 x 21-9/16	30-7/16 x 44-1/8 x 21-9/16
Net Weight		lbs	375	525
Sound Pressure*		dB(A)	51	51
Compressor	Type		DC Scroll	DC Scroll + Constant
	Number of compressors		1	1+1
Heat Exchanger			Stainless Steel Plate	Stainless Steel Plate
Nominal Flow Rate		GPM	25.4	50.8
Range of Flow Rate		GPM	13.2-31.7	26.4-63.4
Water Pressure Drop		ft wg	8.9	14.4
Refrigerant	Refrigerant Type		R410A	R410A
	Charge	lbs	16.1	19.4
	Control		EEV	EEV
Maximum Number of Indoor Units			16	32

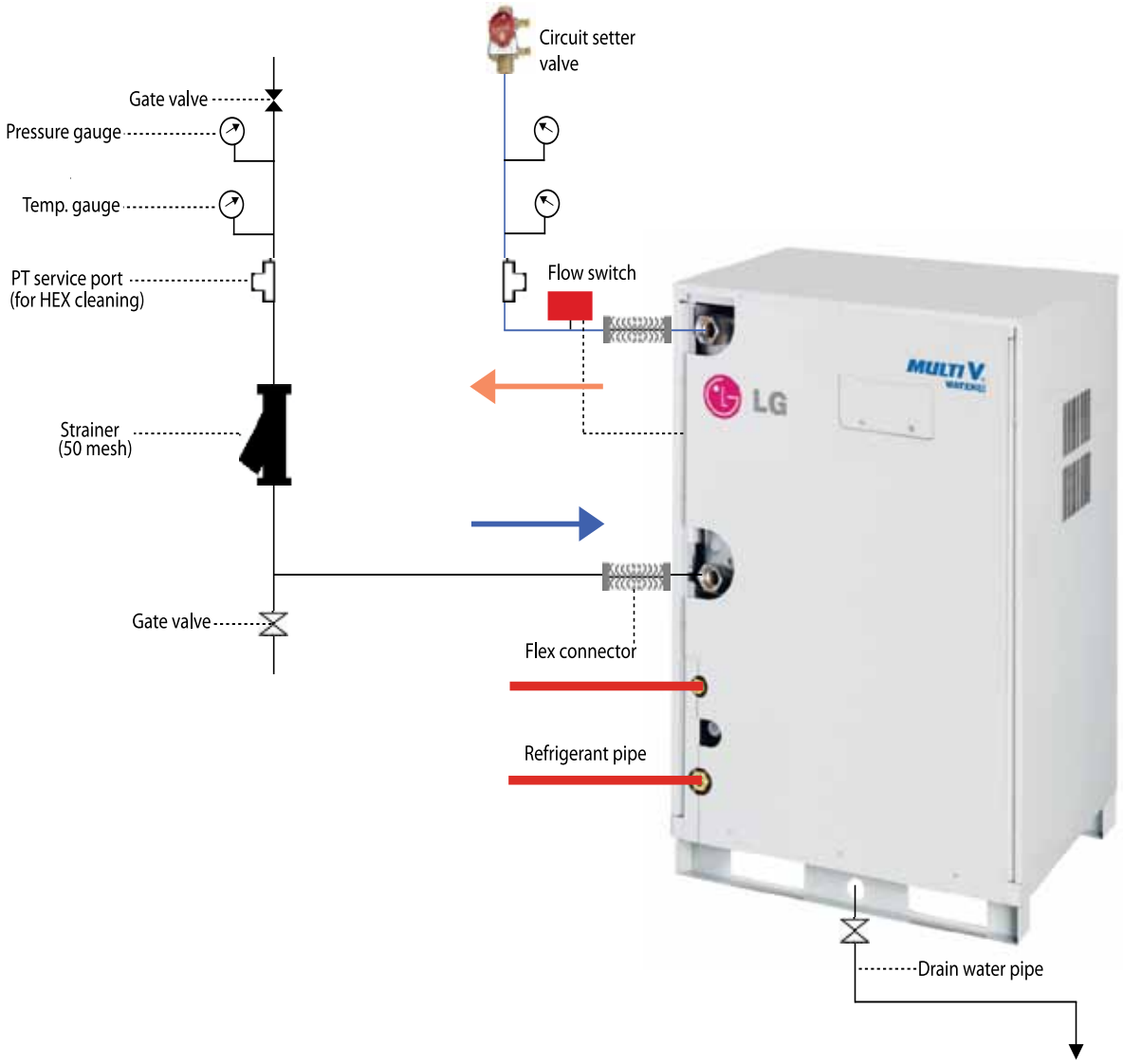
460V/60Hz/3ø

Model	ARWB • • • DA2		Dual Frame	290	390
			Combination	192	192
				096	192
Ton				24	32
Nominal Capacity	Cooling		Btu/h	286,600	382,200
	Heating		Btu/h	322,500	429,900
Rated Capacity	Cooling		Btu/h	280,000	N/A
	Heating		Btu/h	310,000	N/A
EER	Cooling		Btu/W-h	11.40	N/A
IEER	Cooling		Btu/W-h	18.10	N/A
COP	Heating		W/W	4.26	N/A
Power Supply			V / Hz / ø	460 / 60 / 3	460 / 60 / 3
Dimensions(W×H×D)			inch	(30-7/16 x 44-1/8 x 21-9/16) x 2	(30-7/16 x 44-1/8 x 21-9/16) x 2
Net Weight			lbs	525+375	525+525
Sound Pressure*			dB(A)	53	54
Compressor	Type			DC Scroll + Constant	DC Scroll + Constant
	Number of compressors			(2+1) x 2	(2+2) x2
Heat Exchanger				Stainless Steel Plate	Stainless Steel Plate
Nominal Flow Rate				50.8+25.4	50.8+50.8
Range of Flow Rate				39.6-95.1	52.8-126.8
Water Pressure Drop				14.4+8.9	14.4+14.4
Refrigerant	Refrigerant Type			R410A	R410A
	Charge		lbs	19.4+16.1	19.4+19.4
	Control			EEV	EEV
Maximum Number of Indoor Units				49	64

460V/60Hz/3ø

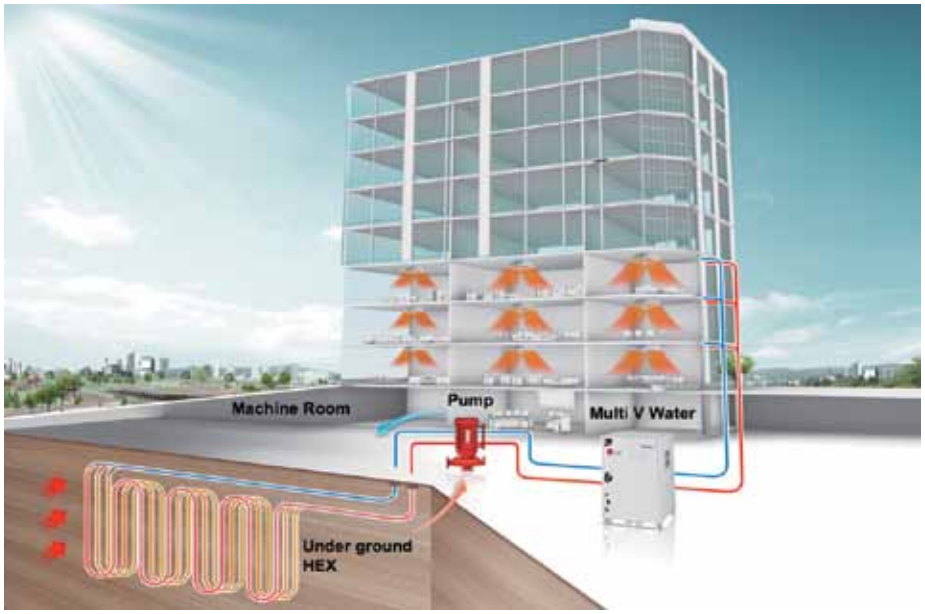
Model	ARWB • • • DA2		Triple Frame	480	580
			Combination	192	192
				192	192
				096	192
Ton				40	48
Nominal Capacity	Cooling		Btu/h	477,800	573,400
	Heating		Btu/h	537,500	645,000
Power Supply			V / Hz / ø	460 / 60 / 3	460 / 60 / 3
Dimensions(W×H×D)			inch	(30-7/16 x 44-1/8 x 21-9/16) x 3	(30-7/16 x 44-1/8 x 21-9/16) x 3
Net Weight			lbs	525+525+375	525+525+525
Sound Pressure*			dB(A)	55	56
Compressor	Type			DC Scroll + Constant	DC Scroll `+ Constant
	Number of compressors			(3+2) x3	(3+3) x 3
Heat Exchanger				Stainless Steel Plate	Stainless Steel Plate
Nominal Flow Rate				50.8+50.8+25.4	50.8+50.8+50.8
Range of Flow Rate				66-158.5	79.2-190.2
Water Pressure Drop				14.4+14.4+8.9	14.4+14.4+14.4
Refrigerant	Refrigerant Type			R410A	R410A
	Charge		lbs	19.4+19.4+16.1	19.4+19.4+19.4
	Control			EEV	EEV
Maximum 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
Proplene 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



RECOMMENDED WATER QUALITY LEVELS

Items	Closed Type
	Circulating Water
pH [25 ° C]	7.0 -8.0
Conductivity [25 °C] (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 40 °C (104 °F) or above or when uncoated iron is exposed to the water, it can result in corrosion. Therefore adding 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 II 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 II system. Software: PRCTSL1 + Cables: PRCTFE1

Variable Valve Control Kit

(PRVC0)

The Variable Valve Control Kit allows Multi V Water II units to connect to a variable pumping condenser water loop. The kit includes a sub control board, transformer to 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 Support System

For support with VRF Multi V systems, contractors can contact LG at 1-888-865-3026.

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AHRI Standard 1230

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LG ELECTRONICS INC.

MULTI V™ WATER II

Inverter

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