

Bouygues Challenger

LG MULTI V Water Solution with Geothermal Application.



Site Information

The industrial group Bouygues was established in France in 1952. It now maintains operations in 80 countries and employs more than 131,000 people. In 1988, after two years of construction, the new headquarters for Bouygues Construction was officially opened for business. Named Challenger, the complex became a technological showcase for late 20th century architecture.

LG Solution

Bouygues decided to convert their headquarters into an eco-conscious building by significantly reducing its energy footprint. The LG MULTI V Water system was chosen as the ideal HVAC solution for this project. The system not only saves energy but also reduces water usage as it recycles water in order to regulate the temperature of the building. With LG's advanced technology, the building's water consumption was reduced by more than 70 percent.

ARWM080LAS5 / ARWM100LAS5 ARWM120LAS5



HP		8	10	12	
Model Name	Combination Unit	ARWM080LAS5	ARWM100LAS5	ARWM120LAS5	
	Independent Unit (1)	ARWM080LAS5	ARWM100LAS5	ARWM120LAS5	
	Independent Unit (2)	-	-	-	
	Independent Unit (3)	-	-	-	
	Independent Unit (4)	-	-	-	
Capacity	Cooling (Rated) kW	22.4	28.0	33.6	
	Heating (Rated) kW	25.2	31.5	37.8	
Input	Cooling (Rated) kW	3.25	4.19	5.14	
	Heating (Rated) kW	3.50	4.57	5.56	
EER	Rated	6.90	6.68	6.54	
COP	Rated	7.20	6.90	6.80	
Exterior	Color	Morning Gray / Dawn Gray	Morning Gray / Dawn Gray	Morning Gray / Dawn Gray	
	RAL (Classic)	RAL 7038 / RAL 7037	RAL 7038 / RAL 7037	RAL 7038 / RAL 7037	
Heat Exchanger	Type	Stainless Steel Plate	Stainless Steel Plate	Stainless Steel Plate	
	Maximum Pressure Resistance	kgf/cm ²	45	45	45
	Head Loss	kPa	10.6	15.9	22.1
	Rated Water Flow	LPM	77	96	115
Compressor	Type	Hermetically Sealed Scroll	Hermetically Sealed Scroll	Hermetically Sealed Scroll	
	Combination x No.	(Inverter) x 1	(Inverter) x 1	(Inverter) x 1	
	Motor Output x Number	W x No.	5,300 x 1	5,300 x 1	5,300 x 1
	Oil Type	FVC68D (PVE)	FW68D (PVE)	FW68D (PVE)	
Refrigerant Connecting Pipes	Oil Charge	cc	3,400	3,400	3,400
	Liquid Pipe	mm (inch)	Ø9.52 (3/8)	Ø9.52 (3/8)	Ø12.7 (1/2)
Water Connecting Pipes	Gas Pipe	mm (inch)	Ø19.05 (3/4)	Ø22.22 (7/8)	Ø28.58 (1-1/8)
	Inlet	mm	PT 40 (Internal Thread)	PT 40 (Internal Thread)	PT 40 (Internal Thread)
	Outlet	mm	PT 40 (Internal Thread)	PT 40 (Internal Thread)	PT 40 (Internal Thread)
Dimensions (W x H x D) - Net	Drain Outlet	mm	PT 20 (External Thread)	PT 20 (External Thread)	PT 20 (External Thread)
	mm	772 x 1,120 x 547	772 x 1,120 x 547	772 x 1,120 x 547	
Dimensions (W x H x D) - Shipping	mm	820 x 1,245 x 645	820 x 1,245 x 645	820 x 1,245 x 645	
	mm	820 x 1,245 x 645	820 x 1,245 x 645	820 x 1,245 x 645	
Net Weight	kg	149 x 1	149 x 1	149 x 1	
Shipping Weight	kg	157 x 1	157 x 1	157 x 1	
Sound Pressure Level	Cooling / Heating	dB(A)	45.0 / 48.0	48.0 / 48.0	48.0 / 51.0
	dB(A)	57.0 / 60.0	60.0 / 60.0	60.0 / 63.0	
Sound Power Level	Cooling / Heating	dB(A)	57.0 / 60.0	60.0 / 60.0	60.0 / 63.0
	dB(A)	57.0 / 60.0	60.0 / 60.0	60.0 / 63.0	
Communication Cable	mm ² x No. (VCTF-SB)	1.0 - 1.5 x 2C	1.0 - 1.5 x 2C	1.0 - 1.5 x 2C	
	mm ² x No. (VCTF-SB)	1.0 - 1.5 x 2C	1.0 - 1.5 x 2C	1.0 - 1.5 x 2C	
Refrigerant	Refrigerant Name	-	R410A	R410A	R410A
	Precharged Amount in Factory	kg	3.5	3.5	3.5
	t-CO ₂ eq	-	7.306	7.306	7.306
	Control	-	Electronic expansion valve	Electronic expansion valve	Electronic expansion valve
Power Supply	Ø, V, Hz	3, 380-415, 50	3, 380-415, 50	3, 380-415, 50	
Number of Maximum Connectable Indoor Units		13 (20)	16 (25)	20 (30)	

Note

- Maximum numbers are prepared based on assumption that all 2.2kW indoor units are connected. The numbers in parentheses means maximum connectable indoor units in accordance with outdoor units combination (160% - 200%). The recommended ratio is 130%.
- Due to our policy of innovation some specifications may be changed without notification.
- Performances are based on the following conditions:
 - Cooling : Indoor temp 27°C (80.6°F) DB / 19°C (66.2°F) WB, Water inlet temp 30°C (86°F)
 - Heating : Indoor temp 20°C (68°F) DB, Water inlet temp 20°C (68°F)
 - Interconnected Pipe Length is 7.5m and difference of Elevation (Outdoor - Indoor Unit) is 0m.
- Sound pressure level is measured on the rated condition in the anechoic rooms by ISO 3745 standard. Sound power level is measured on the rated condition in the reverberation rooms by ISO 3741 standard. Therefore, these values can be increased owing to ambient conditions during operation.
- This product contains Fluorinated Greenhouse Gases. (R410A, GWP (Global warming potential) = 2,087.5)
- Add an anti freeze to circulation water when outdoor unit is operating under 10°C (50°F), and change the DIP switch on main PCB. (For more information on installation section.)

ARWM140LAS5 / ARWM160LAS5
ARWM180LAS5



HP		14	16	18
Model Name	Combination Unit	ARWM140LAS5	ARWM160LAS5	ARWM180LAS5
	Independent Unit (1)	ARWM140LAS5	ARWM160LAS5	ARWM180LAS5
	Independent Unit (2)	-	-	-
	Independent Unit (3)	-	-	-
	Independent Unit (4)	-	-	-
Capacity	Cooling (Rated) kW	39.2	44.8	50.4
	Heating (Rated) kW	44.1	50.4	56.7
Input	Cooling (Rated) kW	6.22	7.32	8.40
	Heating (Rated) kW	6.78	8.06	8.72
EER	Rated	6.30	6.12	6.00
COP	Rated	6.50	6.25	6.50
Exterior	Color	Morning Gray / Dawn Gray	Morning Gray / Dawn Gray	Morning Gray / Dawn Gray
	RAL (Classic)	RAL 7038 / RAL 7037	RAL 7038 / RAL 7037	RAL 7038 / RAL 7037
Heat Exchanger	Type	Stainless Steel Plate	Stainless Steel Plate	Stainless Steel Plate
	Maximum Pressure Resistance	kgf/cm ²	45	45
	Head Loss	kPa	29.6	37.7
	Rated Water Flow	LPM	135	154
Compressor	Type	Hermetically Sealed Scroll	Hermetically Sealed Scroll	Hermetically Sealed Scroll
	Combination x No.	(Inverter) x 1	(Inverter) x 1	(Inverter) x 1
	Motor Output x Number	W x No.	5,300 x 1	5,300 x 1
	Oil Type	FW68D (PVE)	FW68D (PVE)	FW68D (PVE)
	Oil Charge	cc	3,400	3,400
Refrigerant Connecting Pipes	Liquid Pipe	mm (inch)	Ø12.7 (1/2)	Ø12.7 (1/2)
	Gas Pipe	mm (inch)	Ø28.58 (1-1/8)	Ø28.58 (1-1/8)
Water Connecting Pipes	Inlet	mm	PT 40 (Internal Thread)	PT 40 (Internal Thread)
	Outlet	mm	PT 40 (Internal Thread)	PT 40 (Internal Thread)
	Drain Outlet	mm	PT 20 (External Thread)	PT 20 (External Thread)
Dimensions (W x H x D) - Net	mm	772 x 1,120 x 547	772 x 1,120 x 547	772 x 1,120 x 547
Dimensions (W x H x D) - Shipping	mm	820 x 1,245 x 645	820 x 1,245 x 645	820 x 1,245 x 645
Net Weight	kg	149 x 1	149 x 1	158 x 1
Shipping Weight	kg	157 x 1	157 x 1	166 x 1
Sound Pressure Level	Cooling / Heating	dB(A)	52.0 / 53.0	52.0 / 56.0
Sound Power Level	Cooling / Heating	dB(A)	64.0 / 65.0	64.0 / 68.0
Communication Cable		mm ² x No. (VCTF-SB)	1.0 - 1.5 x 2C	1.0 - 1.5 x 2C
Refrigerant	Refrigerant Name	-	R410A	R410A
	Precharged Amount in Factory	kg	3.5	3.5
	t-CO ₂ eq	-	7.306	7.306
	Control	-	Electronic expansion valve	Electronic expansion valve
Power Supply		Ø, V, Hz	3, 380-415, 50	3, 380-415, 50
Number of Maximum Connectable Indoor Units			23 (35)	26 (40)

Note
 1. Maximum numbers are prepared based on assumption that all 2.2kW indoor units are connected. The numbers in parentheses means maximum connectable indoor units in accordance with outdoor units combination (160% - 200%). The recommended ratio is 130%.
 2. Due to our policy of innovation some specifications may be changed without notification.
 3. Performances are based on the following conditions:
 - Cooling : Indoor temp 27°C (80.6°F) DB / 19°C (66.2°F) WB, Water inlet temp 30°C (86°F)
 - Heating : Indoor temp 20°C (68°F) DB, Water inlet temp 20°C (68°F)
 - Interconnected Pipe Length is 7.5m and difference of Elevation (Outdoor - Indoor Unit) is 0m.
 4. Sound pressure level is measured on the rated condition in the anechoic rooms by ISO 3745 standard.
 Sound power level is measured on the rated condition in the reverberation rooms by ISO 3741 standard.
 Therefore, these values can be increased owing to ambient conditions during operation.
 5. This product contains Fluorinated Greenhouse Gases. (R410A, GWP (Global warming potential) = 2,087.5)
 6. Add an anti freeze to circulation water when outdoor unit is operating under 10°C (50°F), and change the DIP switch on main PCB. (For more information on installation section.)

ARWM200LAS5 ARWM220LAS5
ARWM240LAS5



HP		20	22	24
Model Name	Combination Unit	ARWM200LAS5	ARWM220LAS5	ARWM240LAS5
	Independent Unit (1)	ARWM200LAS5	ARWM220LAS5	ARWM240LAS5
	Independent Unit (2)	-	ARWM100LAS5	ARWM120LAS5
	Independent Unit (3)	-	-	-
	Independent Unit (4)	-	-	-
Capacity	Cooling (Rated) kW	56.0	61.6	67.2
	Heating (Rated) kW	63.0	69.3	75.6
Input	Cooling (Rated) kW	10.69	9.33	10.28
	Heating (Rated) kW	11.05	10.13	11.12
EER	Rated	5.24	6.60	6.54
COP	Rated	5.70	6.84	6.80
Exterior	Color	Morning Gray / Dawn Gray	Morning Gray / Dawn Gray	Morning Gray / Dawn Gray
	RAL (Classic)	RAL 7038 / RAL 7037	RAL 7038 / RAL 7037	RAL 7038 / RAL 7037
Heat Exchanger	Type	Stainless Steel Plate	Stainless Steel Plate	Stainless Steel Plate
	Maximum Pressure Resistance	kgf/cm ²	45	45
	Head Loss	kPa	29.9	22.1 + 15.9
	Rated Water Flow	LPM	192	115 + 96
Compressor	Type	Hermetically Sealed Scroll	Hermetically Sealed Scroll	Hermetically Sealed Scroll
	Combination x No.	(Inverter) x 1	(Inverter) x 2	(Inverter) x 2
	Motor Output x Number	W x No.	5,300 x 1	5,300 x 2
	Oil Type	FW68D (PVE)	FW68D (PVE)	FW68D (PVE)
	Oil Charge	cc	3,400	6,800
Refrigerant Connecting Pipes	Liquid Pipe	mm (inch)	Ø15.88 (5/8)	Ø15.88 (5/8)
	Gas Pipe	mm (inch)	Ø28.58 (1-1/8)	Ø28.58 (1-1/8)
Water Connecting Pipes	Inlet	mm	PT 40 (Internal Thread)	PT 40 + PT 40 (Internal Thread)
	Outlet	mm	PT 40 (Internal Thread)	PT 40 + PT 40 (Internal Thread)
	Drain Outlet	mm	PT 20 (External Thread)	PT 20 (External Thread)
Dimensions (W x H x D) - Net	mm	772 x 1,120 x 547	(772 x 1,120 x 547) x 2	(772 x 1,120 x 547) x 2
Dimensions (W x H x D) - Shipping	mm	820 x 1,245 x 645	(820 x 1,245 x 645) x 2	(820 x 1,245 x 645) x 2
Net Weight	kg	158 x 1	149 x 2	149 x 2
Shipping Weight	kg	166 x 1	157 x 2	157 x 2
Sound Pressure Level	Cooling / Heating	dB(A)	55.0 / 56.0	51.0 / 53.0
Sound Power Level	Cooling / Heating	dB(A)	67.0 / 68.0	64.0 / 66.0
Communication Cable		mm ² x No. (VCTF-SB)	1.0 - 1.5 x 2C	1.0 - 1.5 x 2C
Refrigerant	Refrigerant Name	-	R410A	R410A
	Precharged Amount in Factory	kg	4.5	3.5 + 3.5
	t-CO ₂ eq	-	9.394	14.613
	Control	-	Electronic expansion valve	Electronic expansion valve
Power Supply		Ø, V, Hz	3, 380-415, 50	3, 380-415, 50
Number of Maximum Connectable Indoor Units			32 (50)	35 (44)

Note
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