

GAHP Line W LB Series

Ground Source Gas Fired Absorption Heat Pump

Heating and Cooling

Ground Source/Geothermal Heat Pump.

Robur GAHP-W LB is the only ground source heat pump operating on a gas fired water-ammonia absorption cycle which combines the advantages of geothermal systems' heat recovery with the advantages of

gas fired appliances. Foreseen for indoor installation, it is designed for heating/cooling applications with heat recovery from closed loop (vertical / horizontal) or open loop geothermal systems. Natural Gas/LPG fired, Robur GAHP-W LB supplies hot water

up to 140 °F and chilled water down to 23 °F, recovering renewable energy from the ground with heating efficiency up to 125%. Units may be piped into modular configurations to satisfy greater cooling and heating requirements.



Use Heating and Cooling alternatively, for ground source systems

Type Ground heat - water

Heat transfer fluid Water

Heating capacity 119,400 BTU/h

Cooling capacity 46,100 BTU/h

Renewable energy percentage contributing to the total heat output 28

Heating efficiency 125%

Cooling efficiency 48%

Outlet water temperature 23 °F / 140 °F

Main applications

- High efficiency low temperature heating, air conditioning water system;
- suitable for processes requiring low temperature water.

Main advantage Savings up to 40% in the geothermal borehole field in comparison with electric driven compression heat pumps.

Additional advantages

- **Single Phase Power.**
- **Suitable for Ice Storage System.**
- The prevailing use of gas **reduces the need of electric power by approximately 91%** in comparison with electric compression units (0.4 electrical kW for 119,400 BTU/h heating and 46,100 BTU/h cooling).
- **No need to increase electric power demand.**
- For application requiring standby power, the **electric generator size and electric output will be lower.**
- **High Reliability** due to few moving parts inside the unit.
- **Easy Maintenance**, similar to gas fired boilers.
- **No use of Harmful Refrigerants.**
- **Indoor Installation.**

Features

- **Patented absorption cycle.**
- **Refrigerant circuit** made of low carbon steel and completely sealed; externally coated with epoxy paint.
- **Evaporator/Condenser-Absorber** tube and shell tower geometry made of stainless steel.
- **Refrigerant accumulator** to optimize refrigerant volume inside the evaporator relative to operational conditions.
- **Pre mixed gas burner.** Stainless steel multiple gas type with Ignitor and flame sensor device controlled by an electronic ignition box.
- **Microprocessor Control.** Printed resin electronic circuit with LED display. Ensures optimum operation of the absorption cooling process

while allowing easy access of unit data for preventative maintenance and diagnostics.

- **Optional Direct Digital Controller (DDC).** A single device to fully manage and control Robur units.
- **Built-in safety and control devices**, comprised of water flow switch; sealed circuit safety valve and by-pass valve between high and low pressure side; generator high temperature limit switch with manual reset; antifreeze control system; redundant gas valve; microprocessor control with LED readout to assist with maintenance and service diagnostics; flue temperature limit switch with automatic reset to avoid overheating.

PERFORMANCE RATINGS - HEATING ⁽¹⁾

		GAHP-W-LB	
Heating capacity ⁽²⁾		BTU/h	119,400
Gas input		BTU/h	95,500
Ambient operating temperature	maximum	°F	113
	minimum	°F	10.4
Hot water temperature	maximum outlet (to hydronic system)	°F	140
	maximum inlet (to unit)	°F	113
Water flow	nominal	GPM	13.2
Internal pressure drop at nominal water flow		Feet of Head	10.5
		psi _g	4.5

PERFORMANCE RATINGS - COOLING ⁽¹⁾

Cooling capacity ⁽²⁾		BTU/h	46,100
Gas input		BTU/h	95,500
Chiller water temperature	minimum outlet (to hydronic system)	°F	23
	maximum inlet (to unit)	°F	113
Chilled water flow	nominal	GPM	11
Internal pressure drop at nominal water flow		Feet of Head	15.4
		psi _g	6.67

ELECTRICAL RATINGS ⁽¹⁾

Required voltage, 60 Hz, single phase ⁽³⁾	V	208-230
Operating consumption, chiller + heater ⁽⁴⁾	kW	0.4

PHYSICAL DATA ⁽¹⁾

Operating weight		pounds	630
Dimensions	width	inches	33 1/2
	length	inches	25 3/4
	height	inches	50 3/4

⁽¹⁾ All illustrations and specifications contained herein are based on the latest information available at the time of publication.

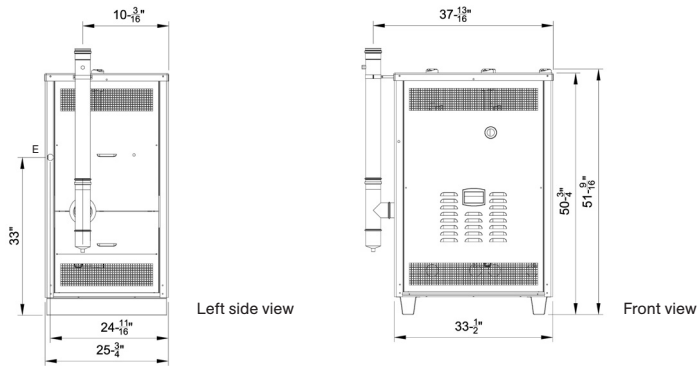
⁽²⁾ GAHP-W LB standard test conditions: B32/W122.

⁽³⁾ Units are factory-wired for 208-230 volts operation.

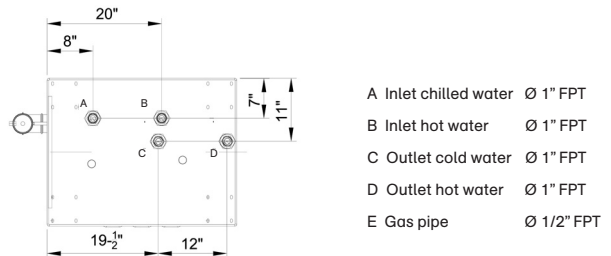
⁽⁴⁾ May vary by ± 10% as function of both power supply and electrical motor input tolerance.

Due to continuous product innovation and development, Robur reserves the right to change product specifications without prior notice.

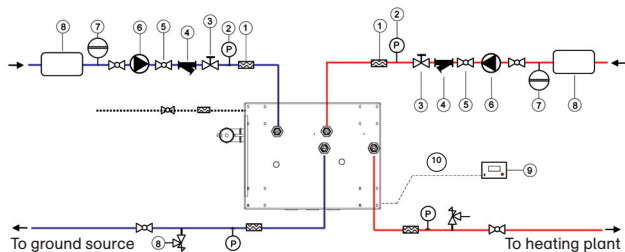
GAHP-W LB Dimensions



GAHP-W LB Connection Panel



GAHP-W LB Hydronic System (heating application example): Typical Installation Arrangement (External Components not included with Robur Unit)



- 1 Antivibration Flexible hose
- 2 Pressure gauge
- 3 Flow regulating valve
- 4 Water filter
- 5 Shut-off valve
- 6 Circulating water pumps
- 7 Expansion tank
- 8 Water storage
- 9 DDC (optional from Robur)
- 10 Can Bus cable (optional from Robur)