PURESTREAM
MINI-CUBE
BY FRIULAIR ™

QBS Air Cooled Water Chiller

Cooling capacity from .31 Ton to .44

Mini-cube QBS chillers protect valuable electronic, laboratory and sensitive industrial equipment by maintaining constant and proper operating temperature. They are compact and self-contained, efficient, reliable and easily installed.

Frame and cabinet

All frame and cabinet components are made from galvanized steel with a powder coat paint finish. Fasteners are either stainless steel or electro-galvanized to withstand adverse environments. All components, including those requiring maintenance and cleaning, are easily and safely accessed without interfering with chiller operation.

Compressor

Mini-cube QBS chillers use reciprocating hermetic compressors that are mounted on antivibration rubber pads to reduce noise.

Fans

Fans combine a four-pole axial fan motor, a sickle shaped fan blade rotor and a protection grill. They are thermally protected and automatically reset.

Evaporator and Condenser

Each Mini-cube QBS unit includes an evaporator and condenser made of copper tubes and aluminum fins. The electronic controller's anti-freeze function maintains the evaporator's outlet water temperature to prevent freeze ups.

Refrigerant circuit

The refrigerant circuit is constructed from high quality materials by specially trained personnel following rigorous brazing procedures that conform with Pressure Equipment Directive (PED) 2014/68/EU (formerly 97/23/EC). The refrigeration circuit includes:

- Reciprocating compressor
- Copper pipes and aluminum fins
- Dehydration filter
- Capillary expansion device
- Manual reset high pressure switch
- Control and maintenance refrigeration pressure connections

Hydraulic circuit

- Thermally insulated stainless steel storage tank
- Thermally insulated electric pump
- Water level switch
- Water level indicator
- Drain valve
- Water filling port

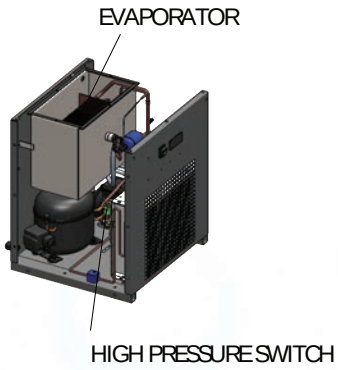
The storage tank on the unit outlet limits temperature variations due to the compressor switching on and off. All Mini-cube QBS models are fitted with an open hydraulic tank (not pressurized) and the hydraulic circuit is constructed with non-ferrous materials.

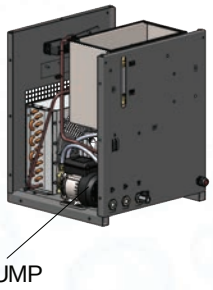
Safety and control devices

- Temperature probes control evaporator inlet and outlet water temperature to prevent the possibility of freezing.
- High pressure switch signals the chiller to stop operation if it senses irregular pressures on the refrigerant circuit's high-pressure side. Once the problem has been corrected, the unit can be manually reset.

Microprocessor controller

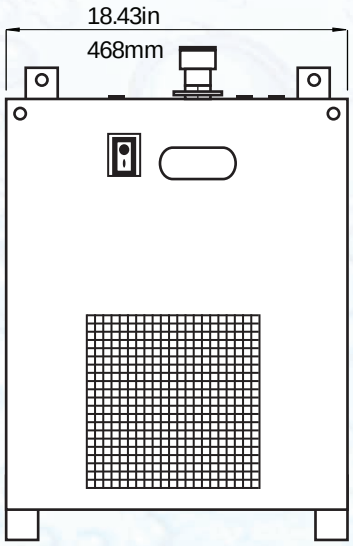
- Regulates the evaporator water outlet temperature
- Switches pump on and off with the right offset against the compressor
- Manages compressor's on and off cycles based on water required
- Guaranteeing minimum operating times to protect the compressor
- Measurement and display of water temperature
- Manages the following alarm messages:
  - o High refrigerant pressure switch
  - o Temperature probe failure
  - o Anti-freeze

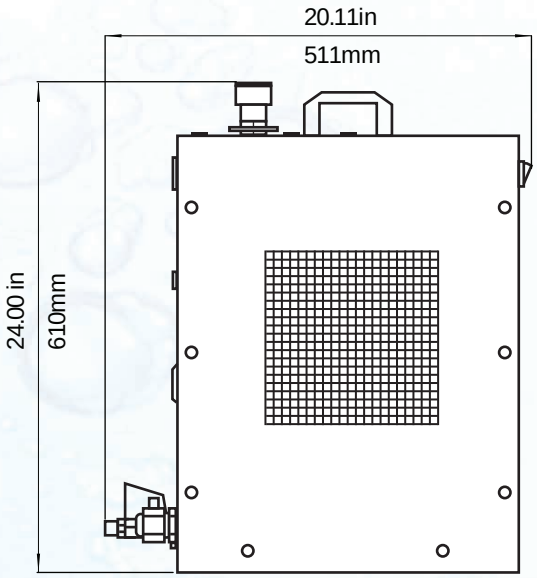


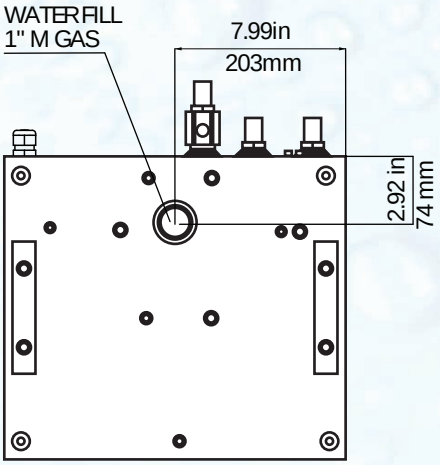


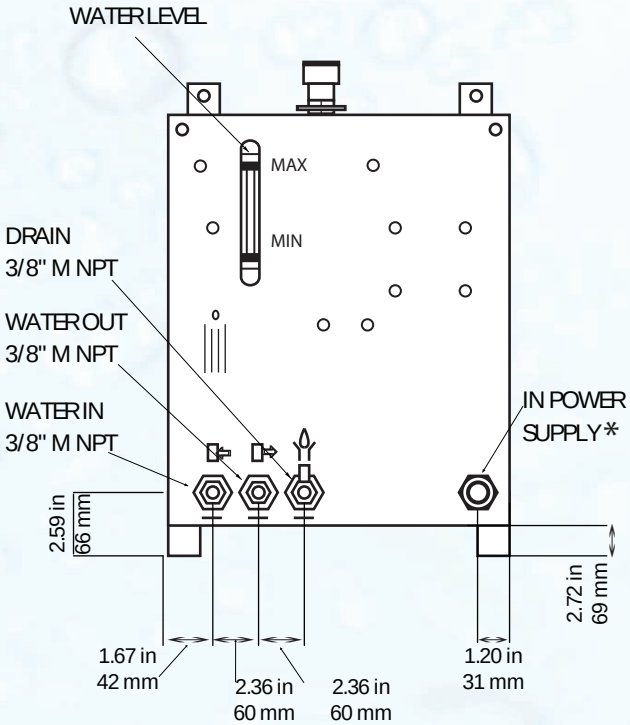
Optional Components

- Wheels









* POWER CORD & PLUG INCLUDED

		QBS 001	QBS 002
Pump		P2	P2
Ambient air temperature	[°C]	25	25
Inlet water temperature	[°C]	20	20
Outlet water temperature	[°C]	15	15
Ethylene glycol percentage	---	0%	0%
Cooling capacity / Heating capacity	[kW / Ton]	1.09/0.31	1.53/0.44
Compressor power input	[kW]	0.29	0.40
Total power input	[kW]	0.60	0.77
Total absorbed current	[A]	6.10	9.06
Energy efficiency (pump excluded)	[EER/COP]	3.31	3.07
Water flow	[l/h / gpm]	187/0.82	236/1.04
Evaporator pressure drop	[kPa]	---	---
Available pressure	[kPa / psig]	374/54	321/46

Electrical Data

Maximum power input (total)	[kW]	0.9	1.1
Maximum absorbed current (total)	[A]	9.5	11.6
Starting current	[A]	35.5	46.3
Fan power	[kW]	0.04	0.09
Fan current	[A]	0.50	0.78
Number of fans	---	1	1
Pump power input	[kW]	0.28	0.28
Pump absorbed current	[A]	2.49	2.49
Power supply	[V/Ph/Hz]	115/1/60	115/1/60
IP code	---	20	20

Technical Data

Refrigerant	---	R134a	R134a
Compressor type	---	Reciprocating	Reciprocating
Evaporator type	---	Tube & fins	Tube & fins
Condenser type	---	Tube & fins	Tube & fins
No. of compressors	---	1	1
No. of refrigerant circuits	---	1	1
Air flow	[m^3/h]	550	720
Sound pressure level at 10 m in free field	[dbA]	41	42
Water connections diameter	[inch]	3/8"	3/8"
Tank capacity	[dm^3]	15	15
Width	[mm]	468	468
Depth	[mm]	512	512
Height	[mm]	610	610
Weight	[kg]	37	37

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