AQVOCLIMA KNOWLEDGE GUIDE

Selection, application and document guidance for consultants, installers and distributors.

Prepared from the AQVOCLIMA website knowledge base and application structure

Inside this guide

- Application map and series fit
- How to read conditions and datasheets
- Residential heating, cooling and DHW notes
- Commercial, cascade and high-temperature logic
- Pool sizing guidance and installation checks
- Document workflow and support routes

Intended use

- Use the guide for early selection, document coordination and cleaner technical conversations.
- Confirm final project design with qualified engineering review or AQVOCLIMA support for a live project.

Use it with the website

- Start with Applications or Products
- Use Product Finder when the design load is not final
- Open the series page for model-level data and datasheets
- Use the Downloads hub and contact route for live projects

Residential   Commercial

DHW   Pool

Datasheets   Selection reports

WEBSITE WORKFLOW

How to use AQVOCLIMA quickly

The website is structured so consultants, installers, distributors and project teams can move from application review to model-level documents without digging through one long generic catalogue.

1. Start from the application

- Use Applications when the project type is already clear: residential, commercial, domestic hot water or pool.
- Use Products when you want to compare complete series and model coverage side by side.
- Use Product Finder when you need a guided starting point instead of a finished design load.

2. Confirm the technical basis

- Check climate, design ambient temperatures, emitter type, required leaving-water temperature and power supply.
- For DHW, use the peak usage period, the cold-water inlet temperature and the expected recovery period, not the full day demand.
- For pools, separate maintenance duty from heat-up duty and confirm whether the pool is covered, indoor or exposed to wind.

Note. AQVOCLIMA documents are intended to shorten the first technical review. Final project design should still be checked against the real building, hydraulic scheme and site conditions.

AQVOCLIMA heat pump families at a glance

Each series is positioned around a practical application group. Start from the application fit first, then compare capacity, operating temperature, refrigerant and electrical supply.

Series	Main application	Refrigerant	Typical project fit
AQ-Vento R290	Residential heating, cooling, DHW	R290	Homes, apartments, light commercial
AQ-Casa R32	Residential heating, cooling, DHW	R32	Homes, villas, retrofit projects
AQ-Impresa R32	Commercial heating, cooling, DHW	R32	Commercial buildings, shared systems
AQ-Forza HT R417	High-temperature heating and hot water	R417A	Retrofit plants, high-temperature hydronics
AQ-Mare Inverno -35	Pool heating / pool temperature control	R32	Residential pools, small commercial pools
AQ-Acqua Uno R290	Integrated domestic hot water	R290	All-in-one DHW projects

Note. This guide is not a replacement for the model tables or datasheets. Use the series page to confirm the actual model range, voltage and performance values before selection.

DATASHEET BASICS

How to read AQVOCLIMA technical data

Heat pump data becomes much easier to read when the operating condition is understood first. Compare models only at the same condition and the same leaving-water temperature range.

Read the condition code first

- A7/W35 means ambient air 7 C and leaving water 35 C.
- A7/W55 is a higher water temperature condition and normally shows lower efficiency than W35.
- Pool conditions are different again, so do not compare pool A26 ratings directly against space-heating ratings.

Then confirm the practical items

- Rated capacity, COP / SCOP, maximum leaving-water temperature and operating limits.
- Power supply and phase, because electrical availability often narrows the shortlist before capacity does.
- Noise reference, dimensions, refrigerant charge and installation clearances.

Note. A high catalogue number is not enough on its own. The useful question is whether the unit can cover the project at the real design condition and the real water temperature requirement.

RESIDENTIAL AND DHW

Residential heating, cooling and hot-water guidance

Residential projects usually depend on three linked questions: the real winter design ambient, the emitter type and the domestic hot-water strategy. All three affect the shortlist.

For space heating and cooling

- Underfloor systems usually favour lower leaving-water temperatures and therefore stronger efficiency potential.
- Fan coils require their own heating and cooling water temperature strategy and should not be treated as the same as underfloor loops.
- Radiator or retrofit projects should check output at the higher leaving-water temperature that the system actually needs.

For domestic hot water

- Do not size the tank or heat pump on the full daily DHW demand when the real project is governed by a shorter morning or evening peak.
- Integrated all-in-one products suit compact dedicated DHW projects, while separate heat pump plus tank layouts allow wider plant-room flexibility.
- Regional cold-water temperature matters. Colder inlet water increases the heating duty and shifts the storage requirement.

Note. Where heating and DHW are shared, only the DHW-available portion of heat-pump capacity should be counted during the DHW period, unless the system is designed for priority or full switching logic.

COMMERCIAL AND RETROFIT

Commercial, high-temperature and cascade notes

Commercial projects should not be approached as a scaled-up residential job. Redundancy, plant-room strategy, operational staging and water-temperature requirements normally decide the best platform.

When to keep one larger unit

- When one unit can meet the required duty with sensible margin, fits the power supply and suits the plant layout.
- When access, acoustic limits and maintenance planning do not push the project toward a split multi-unit arrangement.
- When the real leaving-water temperature is still within the platform the chosen series is designed to support.

When multiple units make sense

- When the design duty exceeds the most suitable single unit.
- When the project benefits from redundancy, plant-room flexibility or staged part-load operation.
- When service continuity matters and partial operation during maintenance is valuable to the client.

Note. High-temperature projects should confirm the real leaving-water requirement carefully. A unit selected for 35 C or 45 C duty is not automatically the right answer for 60 C or 75 C system demand.

POOLS AND WELLNESS

Pool heat-pump selection basics

Pool sizing is mostly driven by losses, not by water volume alone. Cover use, wind exposure, season, target heat-up time and design ambient can move the required duty sharply.

What usually changes the load most

- Outdoor exposure, especially wind-driven evaporation.
- Whether a cover is used consistently at night and during idle periods.
- Whether the client wants quick initial heat-up or only steady temperature maintenance.

Good practice for pool sizing

- Separate maintenance duty from heat-up duty instead of simply adding two full unrelated loads together.
- Use the real pool shape and dimensions, including cut-outs or L-shape offsets where applicable.
- When one unit cannot fully cover the design target, compare the next suitable model or a staged multi-unit layout rather than accepting under-capacity too early.

Note. Indoor pools usually behave very differently from outdoor pools. Ventilation, evaporation control and water-surface exposure can change the recommended capacity substantially.

INSTALLATION AND HYDRAULICS

Before you issue a quotation or submit a model

A technically correct shortlist still needs a realistic installation basis. Many field problems come from placement, hydraulics or water quality rather than from the refrigeration circuit itself.

Check these early

- Available voltage / phase, breaker capacity and cable route.
- Emitter type, hydraulic separation, water volume and whether a buffer is required for stable operation.
- Outdoor placement, airflow clearance, service access, condensate routing and expected noise path.

Do not ignore water quality

- Dirty or scaling water shortens life and can hide the real performance of the plant.
- Filters, strainers, flushing and treatment should be considered part of the heat-pump installation, not optional extras.
- Pool projects should also confirm exchanger compatibility and the expected water-chemistry regime.

Note. Always pair the selected unit with a practical document checklist: site location, design ambient, water-temperature target, power supply, hydraulic concept and any special operating schedule.

Best use of this guide

The AQVOCLIMA website, catalogue, series pages, Product Finder and datasheet export tools are intended to accelerate the early selection process and make discussions with clients, installers and dealers more efficient.

Recommended workflow

- Use this guide for orientation and for document coordination across the AQVOCLIMA website.
- Use the Product Finder when the project still needs an approximate selection basis from the entered data.
- Use the series page and datasheet export when the shortlist is already defined and model-level confirmation is required.

Important note

- The calculations and guidance routes on the website are approximate and depend directly on the data entered by the user.
- Final design should be checked by a qualified engineering firm or by AQVOCLIMA together with the nearest authorised dealer or project contact route.
- For a live project, the fastest path is usually to send the load basis, climate conditions, application type and available power supply through the AQVOCLIMA contact route.

Note. AQVOCLIMA and AQVOLUX Water Solution Company remain available for quotation support, document routing and contact guidance related to the nearest suitable dealer or project channel.