

Indoor Swimming Pool Dehumidifier Sizing & Specification Guide

A practical reference for sizing, specifying, and maintaining humidity control systems for indoor swimming pools, pool houses, and pool rooms across the UAE and GCC.

Prepared For	Villa owners, HVAC and pool contractors, facilities management companies, home renovation contractors, architects, and property developers across the UAE and GCC
Covers	Sizing methodology, wall-mount vs ducted vs heat recovery comparison, capacity reference table, and maintenance schedule for indoor pool dehumidification
Publisher	www.dehumidifier-uae.com

Why Humidity Control Matters for Indoor Pools

Continuous evaporation from a pool's water surface releases large volumes of moisture and chloramines (the by-product of chlorine reacting with organic matter) into the surrounding air. Without proper dehumidification, this combination drives condensation on windows, structural steel, and ceilings; accelerated corrosion of metal fixtures, door hardware, and HVAC components; mould and mildew growth in ceiling voids and wall cavities; and, over time, genuine structural damage to timber roof structures and steelwork that can run into hundreds of thousands of AED in remediation costs.

ASHRAE's natatorium guidelines, the World Health Organization's indoor pool water quality guidance, and the UK's Pool Water Treatment Advisory Group (PWTAG) all recognise humidity control as a core requirement for a safe, durable indoor pool environment — not an optional comfort feature.

Pool Dehumidifier Sizing Methodology

Unlike a warehouse or office dehumidifier, which is sized primarily against floor area, a pool dehumidifier must be sized against pool water surface area and water temperature — the two factors that directly determine the rate of evaporation. A larger room with a small plunge pool can need less dehumidification capacity than a smaller room with a large lap pool at an elevated water temperature.

CtrlTech sizes every pool dehumidification system using the ASHRAE evaporation-rate method, calculated from pool surface area, water temperature, air temperature, target relative humidity, and pool activity level (competitive swimming and water aerobics evaporate significantly more water than a still, unused pool). A free CtrlTech site assessment confirms the exact evaporation load and recommended capacity for your specific pool.

Choosing a System Type: Wall-Mount vs Ducted vs Heat Recovery

System Type	Best For	Key Advantage	Consideration
Wall-Mount	Small to medium villa pools, retrofit projects	Lowest install complexity, compact footprint	Visible unit in the pool room; limited capacity ceiling
Ducted	Medium to large pools, new-build projects	Concealed installation, even air distribution	Requires ceiling void or plant room space and ductwork design
Heat Recovery	Hotels, clubs, and year-round heated pools	Recovers dehumidification heat to warm pool water, lowering running costs	Higher upfront cost than standard wall-mount or ducted systems

Pool Category Sizing Reference

Use this table as a starting reference point. Actual capacity requirements depend on your pool's exact surface area, water temperature, and activity level — a free CtrlTech site assessment will confirm the precise specification and current pricing for your project.

Pool Category	Typical Pool Area	Recommended System Type
Small Villa Pool	15-30 m ²	Wall-mount

Pool Category	Typical Pool Area	Recommended System Type
Medium Villa Pool	30-60 m ²	Wall-mount or ducted
Hotel Leisure Pool	50-150 m ²	Ducted, heat recovery recommended
Club / Competition Pool	100-250 m ²	Ducted with heat recovery
Hotel Spa Pool	Varies	Heat recovery recommended
Hospital Hydrotherapy Pool	Varies	Ducted, precise RH control

Note: pricing is intentionally not included in this table. Confirmed AED pricing is provided following a free site assessment, once your exact system type and capacity are determined.

Recommended Maintenance Schedule

- **Monthly:** Air filter inspection and cleaning — chlorinated pool air carries fine particulates that clog filters faster than a standard indoor environment.
- **Monthly:** Condensate drain line inspection — verify free drainage to prevent overflow near pool-side electrical fixtures.
- **Quarterly:** Coil and cabinet corrosion check — chloramine exposure accelerates corrosion faster than in non-pool applications; inspect protective coatings for wear.
- **Bi-Annually:** Full performance verification against original commissioning data, including capacity output test.
- **Annually:** Compressor and fan motor service inspection; refrigerant circuit check; electrical connection and control board check.
- **Annually:** Heat recovery circuit inspection (heat recovery systems only) — verify heat exchanger performance and pool water heating contribution.

UAE & GCC Delivery Coverage

CtrlTech supplies and installs indoor swimming pool dehumidification systems across the UAE (Dubai, Abu Dhabi, Sharjah, and all Emirates) and the wider GCC, including Saudi Arabia (Riyadh, Jeddah), Qatar (Doha), Oman, Bahrain, and Kuwait. Free site assessments are available across all these territories for villa, hotel, club, and hospital pool projects.

Get a Free Site Assessment

Contact CtrlTech via WhatsApp for a free indoor pool humidity assessment, or visit any of our websites below for full product ranges, technical specifications, and current AED pricing.

Pool & Application Guides	www.dehumidifier-uae.com
Industrial Dehumidifier Range	www.industrial-dehumidifier.ae
Full Product Catalogue	www.dehumidifier.ae
Corporate / Company Profile	www.ctrltechnologies.com

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