

Agam

AGAM ENERGY SYSTEMS LTD.

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VLHC Dehumidifier for Cold-Climate Greenhouses

Environmentally-friendly, energy-conserving elimination of humidity-related problems in heated greenhouses.

Agam's Ventilated Latent Heat Converter (VLHC) is a revolutionary patented, field-tested dehumidification system for cold-climate greenhouses. It solves humidity-related problems, including yield-damaging botrytis, while actually lowering energy and fungicide expenses.

The VLHC takes in humid air from inside the greenhouse, optionally along with fresh air. It converts water vapor into water and heat by blowing the air through a matrix of desiccant-filled elements in a compact cooling tower. In this process, vapor condensation naturally warms up the desiccant, and this heat is released by the unit into the greenhouse as warm, dry air.

The VLHC thus efficiently converts the latent heat stored in the water vapor to usable heat, a welcome by-product in cold-climate greenhouses – dramatically reducing energy consumption.

In addition to helping maintain healthy and high-volume yields, the Agam VLHC dehumidifier also reduces the need for intensive fungicide use - saving money and helping conventional and organic growers conform to local and international regulations.

Further, the VLHC cost-effectively cleans and filters greenhouse air, without expelling costly CO₂-enriched air – reducing the need for external cold air input – further lowering heating expenses.

Patented, Field-Tested Technology

Agam's patented VLHC technology has been successfully used in greenhouses and spas for over four years.

Agam VLHC Advantages

- Reduces humidity
- Prevents botrytis without chemicals
- Cleans and filters air
- Saves 30-70% energy
- Reduces expenses for CO₂ enrichment
- Facilitates chemical-free and "organic" agriculture

VLHC 1020

Heat: 20,000 kcal=23kW
Power input: 2 kW
Total input: 25kW

Input



Output

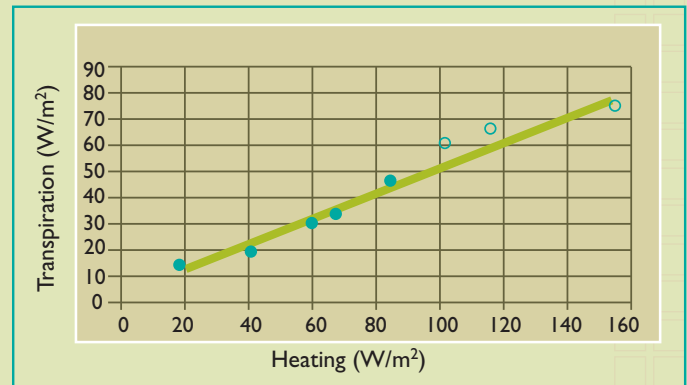
Total output: 95kW
Input: 25 kW
Surplus: 70 kW



Scientifically Proven Efficiency and Savings

Agam's energy-efficient VLHC dehumidification technology has been proven in scientific studies of greenhouse humidity – heat dynamics. Studies examining the correlation between heating and plant transpiration have shown that in greenhouses where humidity was removed by VLHC (filled circles), both heating and transpiration were at least 50% lower than in ventilated greenhouses in the same ambient conditions (empty circles). Thus, the VLHC both reduces the amount of water vapor that needs to be removed and removes it very efficiently.

As evidenced above, an Agam VLHC unit operating at 20 liters/hr will consume 20000 kCal/hr (the equivalent of 23kW) of heat, and require direct power input of 2kW - for a total input of 25kW. This same unit will produce heat equivalent to 95kW, a direct surplus of 70kW.



About Agam Energy Systems

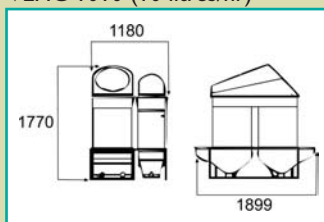
Founded in 1998 by industry veterans, Agam develops and produces innovative, energy-conserving and environmentally-friendly cooling, heating and dehumidification systems. Agam's solutions serve the needs of the industrial and agricultural sectors, including greenhouses, and seed and grain warehouses. Based on patented heat-exchange technology, Agam's products are highly cost-effective and field proven, often saving more than 70% of energy expenses.

Model	Condensation Capacity (L/hr)	Dehumidification Capacity* (kg/hr)	Greenhouse Area** (m ²)	Fuel Savings (m ³ gas/hr)
VLHC 1010	10	20	1000	3.5
VLHC 1020	20	40	2000	7
VLHC 1100	100	200	10000	35

* Based on Fresh Air mode - with a mixture of greenhouse air and external fresh air as input.

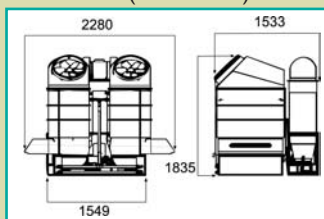
** Actual coverage area depends on the canopy and the plant. Figures are for roses. Tomatoes transpire twice as fast, and herbs transpire half as fast.

VLHC 1010 (10 litres/hr)



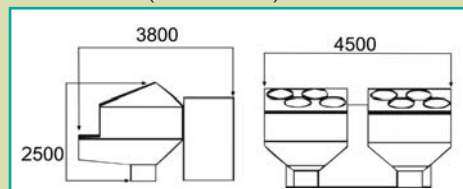
Weight: 150 Kg

VLHC 1020 (20 litres/hr)



Weight: 350 Kg

VLHC 10100 (100 litres/hr)



Weight: 1200 Kg

Dimensions: mm



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