

WATER CHILLER / HEAT PUMP

AQUACIAT / AQUACIAT^{POWER}

THE HIGH PERFORMANCE
PACKAGED SOLUTIONS FOR ALL YOUR NEEDS





THE AQUACIAT RANGE: THE VERSATILE WAY TO SUSTAINABLE COMFORT

Available in air-cooled chiller and reversible heat pump versions, the new **AQUACIAT** and **AQUACIAT^{POWER}** offer you optimised energy efficient solutions combining 5 major advantages in a compact package.

5 REASONS TO CHOOSE THE AQUACIAT RANGE



PLUG & PLAY SYSTEMS



ADVANCED SYSTEM MANAGEMENT



ENVIRONMENTALLY SUSTAINABLE



OPTIMISED ENERGY EFFICIENCY



EXTENSIVE SCOPE



THE AQUACIAT RANGE: THE SOLUTION FOR EVERY MARKET NEED



OFFICES



ADMINISTRATION



HEALTHCARE



INDUSTRIES



SHOPPING
CENTRES



COLLECTIVE
HOUSING



5 KEY ADVANTAGES OF THE AQUACIAT RANGE



PLUG & PLAY SYSTEMS

The AQUACIAT range provides an all-in-one solution thanks to the integrated hydraulic module which contains all the water circuit components needed for the system to operate correctly.

Designed to answer all technical requirements

With the AQUACIAT range you can choose among a variety of versions:

- Integrated hydraulic module with or without buffer tank.
- Wide choice of pumps:
 - Single or twin with automatic switchover to the emergency pump
 - High or low pressure
 - Fixed or variable speed allowing for automatic adjustment of water flow according to water loop requirements
 - Fixed or variable flow for increased energy savings
- A wide selection of hydraulic couplings to fit site configuration.



HYDRAULIC MODULE

Easy to install, reduced footprint

AQUACIAT is installed quickly and space requirements are kept to a minimum.

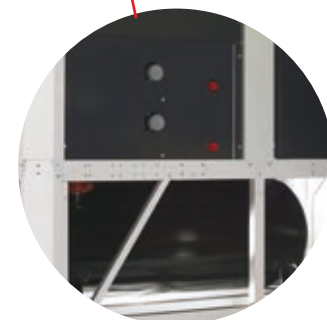
- No technical room required to house pumps and other accessories.
- Optimum use of the surface area for easy integration into an existing building.
- Quick, easy and cost-effective installation and commissioning.



Peace of mind

Benefit from the advantages of a packaged solution, which saves you time and increases your installation's reliability.

The components in the hydraulic system are carefully selected, factory assembled and tested, limiting risks and facilitating installation on site.



BUFFER TANK



ADVANCED SYSTEM MANAGEMENT

With CIAT's intuitive systems for management and real time monitoring and supervision, you really are in control.

@connect*TOUCH*

Manage your installation intuitively with Connect Touch's smart monitoring.

- User-friendly, touch sensitive multilanguage control panel.
- Lead/lag management of 2 units in series or in parallel, with runtime balancing and automatic changeover to ensure consistent run times.
- Pumping consumes a significant amount of energy in an air conditioning system. In order to reduce electricity costs, Connect Touch ensures intelligent management of the pump, stopping or slowing it during stand-by mode and saving up to a third of pumping energy. With the variable speed pump, the variable water flow reduces the pumping energy by nearly two thirds.
- Diagnosis of fault and operating statuses, email alerts, supervision and follow-up of any incidents.
- Maintenance is the key to ensuring a long unit life. Connect Touch provides automatic reminders of maintenance operations (periodicity can be adjusted according to site needs) and compulsory periodic sealing detection, according to F-Gas regulations.
- Communication with all types of Building Management System (BMS) via Modbus protocol available as standard, LON or BACNET as option.
- Connect Touch includes as standard a webserver for full connectivity and remote access using a computer and internet connection.



AQUACIAT^{POWER}

Connect Touch integrates additional features to facilitate use and service operation, such as:

- Instructions and user technical information, electrical diagram integrated on the controller.
- Trend curve to follow main sensor progression.
- Black box recording of all parameters and values for quick investigation in case of fault.



CIATM2M

CIATM2M is an advanced monitoring solution, which enables customers from all applications to track and monitor their CIAT equipment.

- Real-time data retrieve through a custom access to the CIATM2M website (synoptic, controller dashboard, event and temperature curve, alert & fault memory, black box and parameters log).
- Email alert at any event on the equipment.
- Monthly and annual reports with analysis and recommendations from CIAT experts.





ENVIRONMENTALLY SUSTAINABLE

AQUACIAT and AQUACIAT^{POWER} introduce new features anticipating the shape of units to come for improved sustainability.

Ecodesign compliant

The European Ecodesign Directive defines mandatory energy efficiency requirements for water chillers, heat pumps and their components, taking into account the product's environmental impact throughout its life cycle.

AQUACIAT and AQUACIAT^{POWER} have been developed in compliance with current Ecodesign standards and the different European regulations, while also anticipating future constraints.

All-aluminium micro-channel coil technology and brazed plate heat exchanger

Designed for durability, reliability and a longer service life, AQUACIAT:

- Uses up to **50%** less refrigerant than a standard copper/aluminium coil with better thermal performance: anticipating the F-Gas regulation to reduce by 2030 the tCO₂ equivalent on the market by **79%**.
- Offers greater resistance to corrosion.
- Has fewer brazing points for increased endurance.
- Is easy to recycle for less impact on the environment.
- Is robust allowing for easy maintenance and cleaning of the coil thus extending its service life.
- Is lighter and more compact so therefore easier to handle, transport and install on site.



ALL-ALUMINIUM
MICRO-CHANNEL COIL

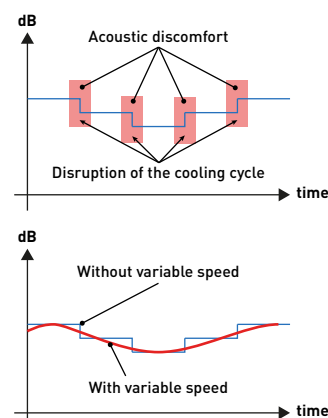


COMPRESSORS HOUSED
IN SOUND BOXES

"Silent" design

Thanks to different acoustic versions, the units integrate easily into all environments with minimum disruption to users and the neighbourhood.

- "Noiseless" assembly techniques reduce noise sources: latest scroll compressors encased in acoustic housing, latest generation silent fans, anti-vibration mounts...
- "Night Mode" limits sound levels when the building is unoccupied by controlling output and fan rotation speed.
- Variable speed control can be used to soft start the fans which avoids an increase in noise linked to on/off sequences and reduces the overall noise disturbance generated by the unit.





OPTIMISED ENERGY EFFICIENCY

With outstanding certified ESEER⁽¹⁾ and SCOP⁽²⁾ ratings, the AQUACIAT range offers the best of technology with consistent energy savings all year round.

Self-adjusting operation to adapt to seasonal variations

Due to climate variations and the different needs of buildings, water chillers and heat pumps run most of the time on part load.

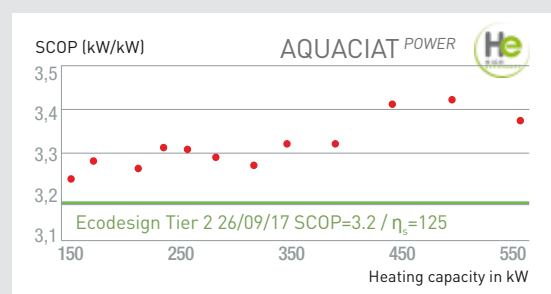
With compressors connected in parallel on the refrigerating circuit, AQUACIAT & AQUACIAT^{POWER} automatically adjust cooling capacity, anticipating variations in load and starting only the number of compressors needed to ensure optimum operation and energy efficiency. Optional variable speed fan motors ensure even better results.

ESEER and SCOP measure the seasonal efficiency of chillers and heat pumps by taking into account their efficiency under partial load.

With exceptional thermodynamic performance due to strict selection of the components and electronic expansion valve (EXV), standard AQUACIAT and AQUACIAT^{POWER} units reach a high level of ESEER in cooling mode and SCOP in heating mode.

AQUACIAT^{POWER}

- The AQUACIAT^{POWER} High Efficiency (HE) version is a high tier solution that increases seasonal performance by up to **5%** and optimises return on investment.
- The HE version is particularly suited to meeting varying seasonal needs and is ideal for office, administration and healthcare applications.
- The Heat Pump ILD HE version already meets the September 2017 Ecodesign European Minimum Energy Performance Standard.
- On a traditional heat pump, the defrosting period requires the cooling down of the loop which is a source of energy loss, vibration and noise. AQUACIAT^{POWER} integrates the Free Defrost algorithm. This avoids having to reverse the defrosting circuit in a broad range of external temperatures. This function not only increases the efficiency and reliability of the unit but also reduces noise.



Free hot water production all year round

Using heat recovery to produce domestic hot water is the ecological solution for maximum savings.

The AQUACIAT range, with the partial recovery option, enables hot water to be produced at a temperature of **65°C**, fully meeting the demand for domestic hot water in hotels, for example.



⁽¹⁾ ESSER: European Seasonal Energy Efficiency Ratio

⁽²⁾ SCOP: Seasonal Coefficient Of Performance



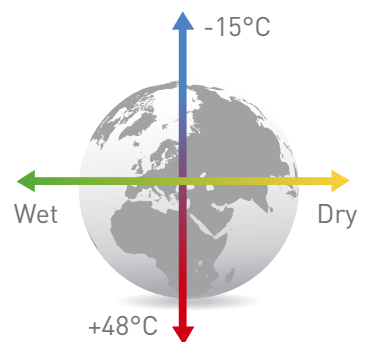
EXTENSIVE SCOPE

With chillers and heat pumps operational in all climatic conditions, the AQUACIAT range is remarkably versatile and suited to all sectors of activity worldwide.

Multi-climate: Central Europe, Africa, Nordic countries...

The AQUACIAT range is fitted as standard with all the components and control algorithms necessary for year-round operation, whatever the climate and wherever the location.

- Cooling mode: external temperatures from **-20°C** to **+48°C** at full load.
- Heating mode: external temperatures from **-10°C** to **+35°C**.



Multi-application: air conditioning, heating, industrial processes...

- Broad chilled water range from **-15°C** to **+20°C**.
- Hot water production up to **55°C** for external temperatures up to **+35°C**.

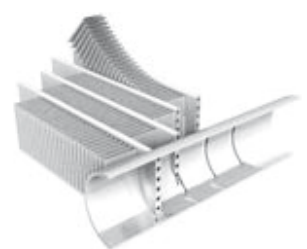


Multi-atmosphere: operates even in the most demanding environments

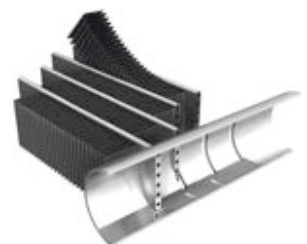
Thanks to its all-aluminium micro-channel coil design, galvanic currents between different metals are eliminated providing increased resistance to corrosion.

Two optional levels of protection are available:

- Optional Protect2 treatment is the ideal solution for moderately corrosive urban environments, doubling resistance to corrosion. The coil is immersed in a bath to ensure 100% coverage and protection, as the aluminium surface undergoes a chemical change by a nano scale conversion process.
- For highly corrosive industrial and marine environments, the Protect4 treatment increases resistance to corrosion fourfold. The coil is e-coated in polymer epoxy and a top layer of anti-UV protection is applied.



PROTECT2
CORROSION RESISTANCE X2



PROTECT4
CORROSION RESISTANCE X4

AQUACIAT AND AQUACIAT^{POWER}

TO MEET THE MOST DEMANDING TECHNICAL REQUIREMENTS

AQUACIAT

11 models of chillers and 12 models of heat pumps. 3 hydraulic versions
2 acoustic levels (Standard, Xtra Low Noise)



AQUACIAT LD									
Sizes	Performances ⁽¹⁾			Sound power level		Dimensions mm			Weight kg
	P _f ⁽²⁾ kW	EER ⁽²⁾ kW/kW	ESEER kW/kW	Lw dB(A)		Length	Width	Height ⁽¹⁾	Standard unit without hydraulic
				Standard	Xtra Low Noise				
150A	40	2,87	3,75	80	79	1090	2109	1440	422
180A	44	2,76	3,88	81	80	1090	2109	1440	430
200A	51	2,67	3,95	81	80	1090	2109	1440	436
240A	58	2,66	3,80	81	80	1090	2109	1440	449
260A	67	2,72	3,62	87	80	1090	2109	1440	445
300A	79	2,70	3,67	87	80	1090	2109	1440	463
360A	87	2,73	3,91	84	83	2270	2123	1440	753
390A	97	2,73	3,94	84	83	2270	2123	1440	762
450A	114	2,67	3,83	84	83	2270	2123	1440	771
520A	135	2,70	3,68	90	83	2270	2123	1440	829
600A	156	2,65	3,87	90	83	2270	2123	1440	854

AQUACIAT^{POWER}

12 models of chillers and heat pumps. 3 hydraulic versions
3 acoustic levels (Standard, Low Noise, Xtra Low Noise)



AQUACIAT ^{POWER} LD											
Sizes	Performances ⁽¹⁾				Sound power level			Dimensions mm			Weight kg
	Pf ⁽²⁾ kW	EER ⁽²⁾ kW/kW	ESEER kW/kW		Lw dB(A)			Length ^(*)	Width	Height	Standard unit without hydraulic
			ST	HE	Standard	Low Noise	Xtra Low Noise				
602C	168	3,04	4	4,18	91	89	85	2410	2253	2297	1252
650C	181	3,12	4,07	4,21	92	90	85	2410	2253	2297	1293
750C	198	2,98	4,01	4,14	92	90	85	2410	2253	2297	1293
800C	216	2,97	4	4,18	92	90	86	2410	2253	2297	1423
1000C	261	2,90	4	4,15	92	90	86	2410	2253	2297	1445
1100C	300	2,97	4,07	4,37	93	91	86	3604	2253	2297	1901
1250C	331	2,92	4,08	4,28	93	91	86	3604	2253	2297	1937
1350C	365	2,95	4,1	4,37	93	92	87	3604	2253	2297	2105
1500C	397	2,90	4,05	4,26	93	92	87	3604	2253	2297	2612
1600C	430	2,94	4,07	4,36	94	93	88	4797	2253	2297	2603
1750C	464	2,90	4,04	4,44	94	93	88	4797	2253	2297	2621
2000C	523	2,90	4,03	4,30	94	93	88	4797	2253	2297	2827

⁽¹⁾ In accordance with EN 14511-2013 EUROVENT ⁽²⁾ Chilled water = 12°C/7°C Outdoor air = 35°C ⁽³⁾ Hot Water = 40°C/45°C

⁽⁴⁾ In accordance with EN 14825-2013 EUROVENT, hot water = 30°C/35°C, average climate conditions

Pf = Cooling capacity - Pc = Heating Capacity - EER/COP = Performance coefficient in full load - ESEER/SCOP = Seasonal

[*] +600 mm if hydraulic module with buffer tank - [**] +1194 mm if hydraulic module with buffer tank

Cooling Cooling and heating Hydraulic module Heat recovery



AQUACIAT ILD

Sizes	Performances COOLING mode ⁽¹⁾			Performances HEATING mode					Sound power level		Dimensions mm			Weight kg
	Pf ⁽²⁾ kW	EER ⁽²⁾ kW/kW	ESEER kW/kW	Pc ⁽³⁾ kW	COP ⁽³⁾ kW/kW	Pc ⁽⁴⁾ kW	COP ⁽⁴⁾ kW/kW	SCOP ⁽⁵⁾ kW/kW	Lw dB(A)		Length	Width	Height ⁽¹⁾	Standard unit without hydraulic
									Standard	Xtra Low Noise				
150A	38	2,84	3,8	42	3,08	43	3,72	3,07	80	79	1090	2109	2109	497
180A	43	2,7	3,77	47	3,05	47	3,72	3,1	81	80	1090	2109	2109	506
200A	50	2,65	3,81	53	3,03	55	3,76	3,21	81	80	1090	2109	2109	543
240A	59	2,77	3,61	61	3,03	63	3,73	3,07	86	80	1090	2109	2109	549
260A	64	2,7	3,61	70	3,06	71	3,72	3,1	87	80	1090	2109	2109	559
300A	74	2,58	3,57	78	2,87	80	3,47	2,96	87	80	1090	2109	2109	564
302A	78	2,79	3,84	80	3,08	83	3,74	3,14	84	83	2270	2123	2123	777
360A	86	2,7	3,77	93	3,02	95	3,74	3,17	84	83	2270	2123	2123	896
390A	96	2,7	3,88	101	3,09	103	3,77	3,23	84	83	2270	2123	2123	905
450A	113	2,69	4,04	117	3,06	121	3,73	3,23	84	83	2270	2123	2123	979
520A	132	2,77	3,75	138	3,07	141	3,73	3,14	90	83	2270	2123	2123	1053
600A	149	2,58	3,67	158	2,97	162	3,59	3,13	90	83	2270	2123	2123	1057



AQUACIAT^{POWER} ILD

Sizes	Performances COOLING mode ⁽¹⁾				Performances HEATING mode						Sound power level			Dimensions mm			Weight kg
	Pf ⁽²⁾ kW	EER ⁽²⁾ kW/kW	ESEER kW/kW		Pc ⁽³⁾ kW	COP ⁽³⁾ kW/kW	Pc ⁽⁴⁾ kW	COP ⁽⁴⁾ kW/kW	SCOP ⁽⁵⁾ kW/kW		Lw dB(A)			Length ^(*)	Width	Height	Standard unit without hydraulic
			ST	HE							ST	HE	Standard				
602C	156	2,8	3,85	4,05	173	2,94	179	3,69	3,07	3,24	90	89	84	2410	2253	2297	1426
650C	170	2,91	3,87	4,09	189	3	196	3,73	3,12	3,28	91	90	85	2410	2253	2297	1505
800C	203	2,76	3,9	4,1	230	3	238	3,75	3,11	3,26	91	90	86	2410	2253	2297	1633
900C	228	2,79	3,96	4,14	242	2,87	213	3,51	3,13	3,31	91	90	86	2410	2253	2297	1656
902C	236	2,93	3,89	4,14	259	3,08	270	3,81	3,14	3,31	92	91	86	3604	2253	2297	2068
1000C	268	2,91	3,97	4,14	279	2,92	290	3,7	3,13	3,29	92	91	87	3604	2253	2297	2216
1150C	301	2,9	4,01	4,19	326	2,95	339	3,69	3,09	3,27	93	91	87	3604	2253	2297	2341
1200C	326	2,91	4,02	4,19	342	3	355	3,77	3,13	3,32	93	92	87	3604	2253	2297	2572
1400C	376	2,9	4,05	4,27	396	2,92	411	3,68	3,2	3,33	94	92	88	4797	2253	2297	3040
1600C	424	2,9	4,06	4,28	456	2,97	473	3,72	3,31	3,42	94	93	89	4797	2253	2297	3289
1800C	459	2,75	4,05	4,26	498	2,94	456	3,62	3,32	3,43	94	93	89	4797	2253	2297	3302
2000C	511	2,74	4,02	4,2	537	2,94	434	3,57	3,29	3,38	94	93	89	4797	2253	2297	3342

C Outdoor air = 7°CBS/6°CBBH ⁽⁴⁾ Hot water = 30°C/35°C Outdoor air = 7°CBS/6°CBBH

al performance coefficient



CIAT participates in the ECP program for Liquid Chilling Packages and Hydronic Heat Pumps. Check ongoing validity of certificate: www.eurovent-certification.com

EQUIPMENT LIST	AQUACIAT ^{POWER}	
	CHILLER LD	HEAT PUMPILD
Disconnect safety switch	✓	✓
Control circuit transformer	✓	✓
Water flow controller	✓	✓
Electronic expansion valve	✓	✓
Multi language touch sensitive controller	✓	✓
Modbus-Jbus communication	✓	✓
Web server	✓	✓
LON communication	•	•
BACnet / IP communication	•	•
Low Noise	•	•
Xtra Low Noise	•	•
Soft starter	•	•
Winter operation down to -20°C	•	•
Antifreeze protection	•	•
Low temperature glycol water down to -15°C	•	•
Partial heat recovery with desuperheater	•	•
Coil anti-corrosion treatment	•	•
High pressure single or dual pump hydraulic module	•	•
Low pressure single or dual pump hydraulic module	•	•
High pressure variable speed single or dual pump hydraulic module	•	•
Expansion vessel ⁽¹⁾	•	•
Buffer tank module ⁽¹⁾	•	•
Exchanger water filter ⁽²⁾	•	•
Exchanger flexible connection	•	•
Anti-vibration mounts	•	•
Lead / Lag operation	•	•
Adjustable set point via 4-20 mA signal	•	•
Free cooling drycooler management	•	-
External management of boiler or electric heaters	-	•
CIATM2M supervision 1 to 3 units	•	•

✓ Supplied as standard

• Option

(1) With hydraulic module only

(2) Standard with hydraulic module

CIAT SYSTEM SOLUTIONS

FULL EQUIPMENT COMPATIBILITY FOR IMPROVED PERFORMANCE

CIAT offers a complete range of equipment designed to work together for the best possible results providing first rate performance and optimised energy efficiency.



SMART CIATCONTROL THE ENERGY MANAGEMENT SYSTEM

Connected to all HVAC components (refrigeration, comfort units, air handling unit) and using a patented algorithm that can be programmed according to building occupancy and weather conditions, Smart CIATControl adapts the efficiency of the thermodynamic producer to the needs of the emitters in real time. Features include:

- Automatic system changeover based on calculation requirements.
- Optimal Stop & Start: predictive function which anticipates the stop and start times of the HVAC system.
- Optimal Water®: allows the temperature of the chiller or heat pump to be controlled according to the demand from the emitters.
- Night cooling: charges the building with fresh air during the night and delays the activation of the refrigeration request during the day.
- Epure Dynamics®: patented process which ensures a particulate level for the building that is beneath the fixed WHO recommendation of 10µg/m³

The optimisations offered by Smart CIATControl allow an average energy saving of **40%** for the building.



THE CIAT CHILLER AND HEAT PUMPS RANGE A COMPREHENSIVE SOLUTION FOR EVERY APPLICATION

AIR-COOLED	AQUACIAT 40-160 kW	AQUACIAT ^{POWER} 160-660 kW	POWERCIAT 270-1480 kW
WATER-COOLED	DYNACIAT 20-190 kW	DYNACIAT ^{POWER} 220-710 kW	HYDROCIAT 270-1750 kW

SUPPORT THROUGHOUT YOUR PROJECT

CIAT makes a long-term commitment as a partner by your side: from the specifications stage right through to installing the equipment, experts analyse your requirements to provide you with the best possible solution. The integrated engineering department, the ultramodern research and design centre and the cutting-edge industrial facilities, from which we manage the entire production process, allow us to adapt to your specific needs.



SPECIFICATIONS



SOLUTIONS



INDUSTRIAL
FACILITIES



INSTALLATION



SERVICE



CIAT AT YOUR SERVICE

At CIAT, our objective is to provide high quality service and develop partnerships with you throughout the lifecycle of your HVAC system. We understand your changing needs, develop smart services and energy solutions that optimise energy performance and enable savings.

We provide the support you need to get the most out of your solution:

- Preventive and corrective service maintenance.
- On-site inspection by experts close at hand
- Online parts shop.
- Dedicated hotline for off-site technical support.

We also offer you a comprehensive range of smart services:

- Consultancy service on energy performance upgrade.
- Advanced monitoring and plant system management solutions.
- Equipment and system modernization.

PRESENT
IN
OVER 50 countries
OVER 80 years OF EXPERIENCE
AVAILABLE 24/7



www.ciat.com

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