

CHILLERS & HEAT PUMPS



# DYNACIAT

HIGH ENERGY PERFORMANCE  
WITHIN OPTIMISED FOOTPRINT





## **DYNACIAT: HIGH PERFORMANCE HEATING AND COOLING FOR MEDIUM-SIZED BUILDINGS**

To better meet customer needs and answer environmental concerns, DYNACIAT's new range offers increased performance and new features.

### **5 REASONS TO CHOOSE DYNACIAT**



**PLUG & PLAY SYSTEMS**



**OPTIMISED ENERGY EFFICIENCY & ENVIRONMENTAL RESPONSIBILITY**



**EXTENSIVE SCOPE**



**ADVANCED SYSTEM MANAGEMENT**



**QUIET OPERATION**



## **DYNACIAT: WATER TO WATER TECHNOLOGY FOR A VARIETY OF APPLICATIONS**



**OFFICES**



**ADMINISTRATION**



**HEALTHCARE**



**COLLECTIVE HOUSING**



**INDIVIDUAL HOUSING**



**INDUSTRIES**



**SHOPPING CENTRES**



# 5 KEY ADVANTAGES OF DYNACIAT



## PLUG & PLAY SYSTEMS

Thanks to the integrated hydraulic module, the DYNACIAT range provides an all-in-one solution. With its compact footprint and fully adaptable hydraulic couplings, it is also easy to install.

### Full adaptability

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

- An **integrated hydraulic module** which contains all the water circuit components needed for the system to operate correctly.
- A choice between **high and low pressure pump**.

### Compact and flexible

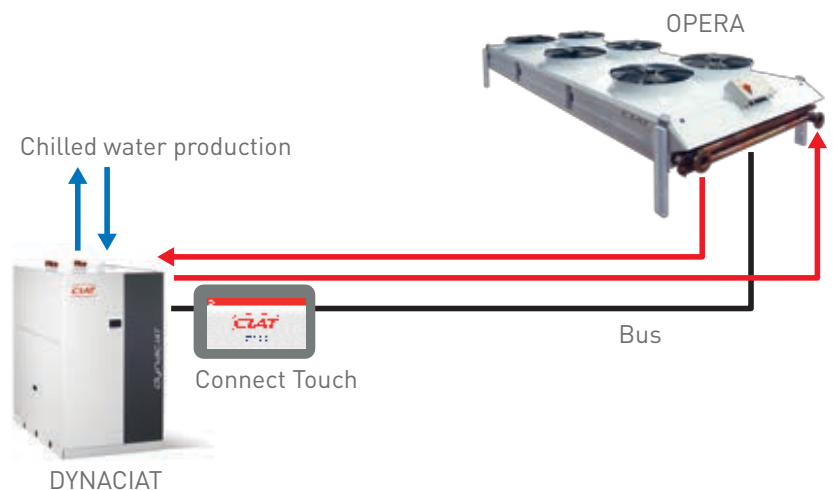
DYNACIAT facilitates commissioning and maintenance.

- A **1.30 sq.m footprint** ensures easy integration into an existing building.
- A **wide selection of hydraulic couplings** to fit site configuration
  - Couplings are located on the top of the machine. The unit can therefore be placed against a wall, in a corner, virtually anywhere.
  - Pipework routing can be vertical, horizontal, left- or right-hand.
- Wide, removable panels and door provide **fast and easy access to all parts** during installation and maintenance.
- A transformer for the control circuit is supplied. Electrical connection requires just one cable without a neutral wire.



### Global system compatibility

Dynaciat works with the Opera cooler ranges, for an optimised global solution: it manages the drycooler and ensures favourable all-round performance levels.





## OPTIMISED ENERGY EFFICIENCY & ENVIRONMENTAL RESPONSIBILITY

The DYNACIAT range continues to make sustainability a priority, maintaining the use of R410A refrigerant from former versions and lowering the refrigerant load. New features that anticipate environmental regulations and customer requirements have also been introduced.

### 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.

DYNACIAT has been developed in compliance with current Ecodesign standards and the different European regulations, while also anticipating future constraints.

### 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.

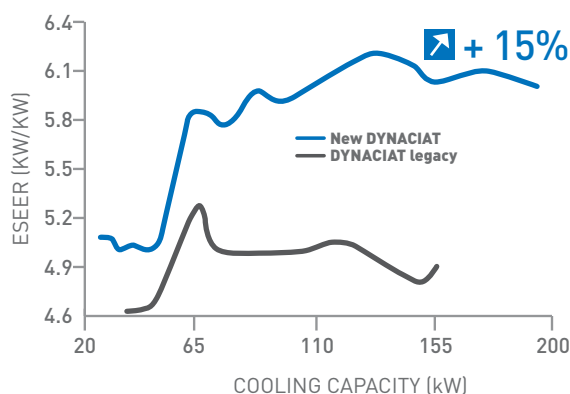
With compressors connected in parallel on the refrigerating circuit, the DYNACIAT range **automatically adjusts cooling capacity, anticipating variations in load and starting only the number of compressors needed** to ensure optimum operation and energy efficiency. Optional variable speed pump motors ensure even better results.

### Even greater efficiency and higher performance

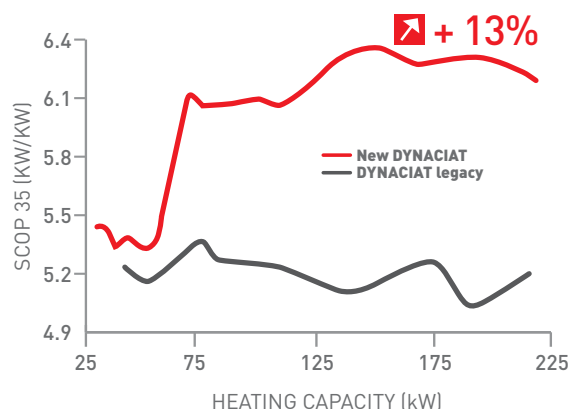
ESEER and SCOP measure the seasonal efficiency of chillers and heat pumps by taking into account their efficiency under partial load.

With exceptional thermodynamic performance due to strict selection of the components and electronic expansion valve (EXV), the new generation of the DYNACIAT range increases the ESEER coefficient by **15%** and SCOP by **13%**. Users benefit directly from the increased efficiency and the related reduction in power consumption **improves the return on investment**.

### ESEER up to 6.17



### SCOP up to 6.28





## EXTENSIVE SCOPE

The DYNACIAT range is designed to ensure flexible heating and cooling for diverse applications.

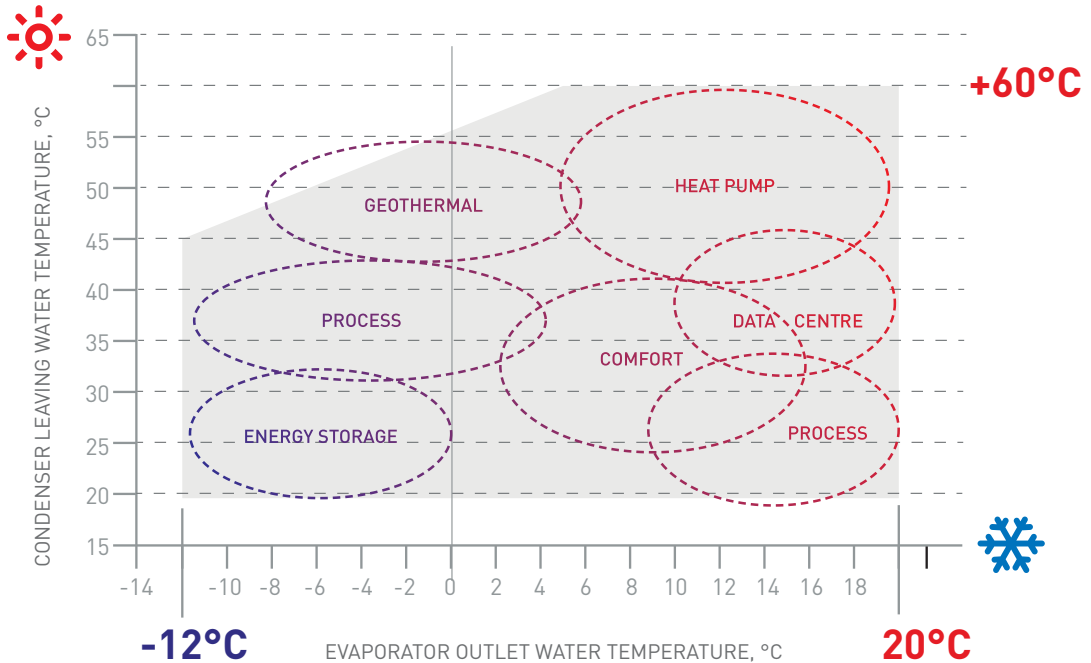
DYNACIAT large operating map addresses the specific needs of sectors such as storage, process and data centres, as well as other applications such as comfort and brine:

- Cooling temperatures between **-12°C** and **20°C**.
- Heating temperatures up to **60°C**.

The unit is designed to work with all emitters: comfort unit, floor heating, chilled beams, air handling units and radiators.

Moreover, DYNACIAT is fully adapted to different evacuation outlets such as dry coolers or cooling towers.

### Large operating map for numerous applications







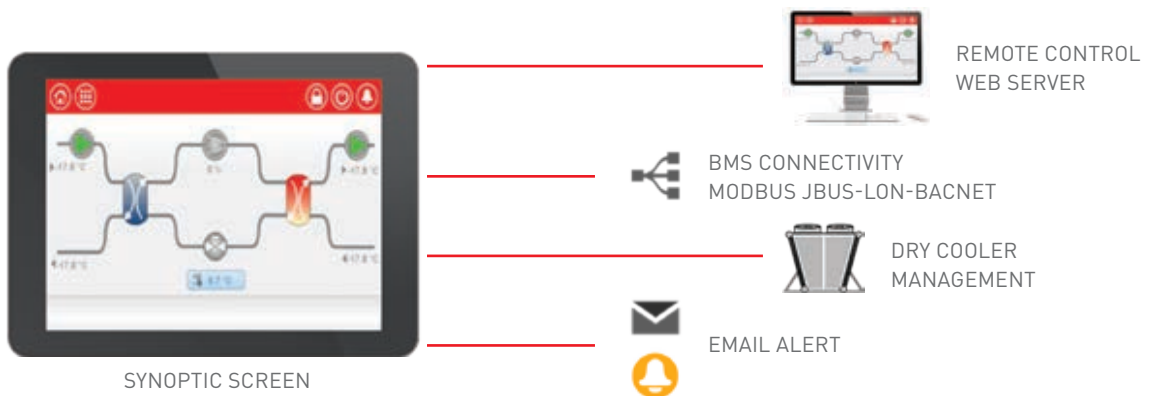
# ADVANCED SYSTEM MANAGEMENT

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

## ConnectTouch

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

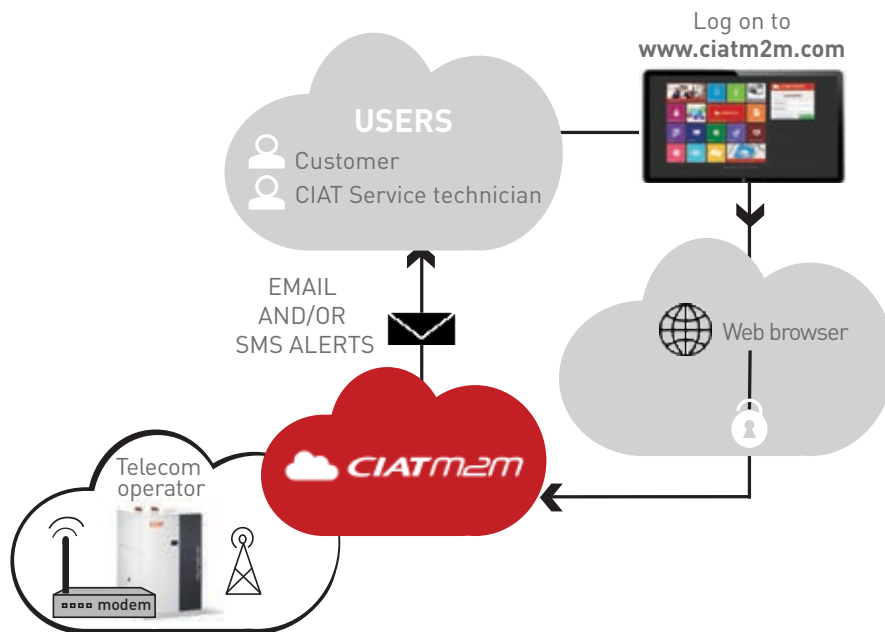
- User-friendly, touch sensitive multilanguage control panel.
- Lead/lag management of 2 units in series or in parallel, with runtime balancing and automatic changeover to ensure consistent run times.
- Pumping consumes a significant amount of energy in an air conditioning system. In order to reduce 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.





CIATM2M is **an advanced monitoring solution**, which enables customers for 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, and parameters log).
- Email alert at any event on the equipment.
- Monthly & annual reports with analysis and recommendations from CIAT experts.



## QUIET OPERATION

**DYNACIAT's specifically developed noiseless assembly is available in Standard and Low Noise.**

Fully encased in metal panels, the Standard version meets the majority of requirements for noise levels. For locations where there is a real need for as little noise as possible, such as residential use, the Low Noise version's compressors benefit from additional acoustic insulation.

# FLEXIBLE AND HIGH PERFORMANCE HEATING AND COOLING

Choose from one of 17 energy efficient models with a fully integrated water-condensed chiller, and benefit from CIAT's proven expertise and service.



## Water-cooled chillers and heat pumps



DYNACIAT LG													
Sizes	Performances COOLING mode <sup>(1)</sup>			Performances HEATING mode <sup>(1)</sup>				Sound power level		Dimensions mm			Weight kg
	Pf <sup>(2)</sup> kW	EER <sup>(2)</sup> kW/kW	ESEER kW/kW	Pc <sup>(3)</sup> kW	COP <sup>(3)</sup> kW/kW	SCOP <sup>(4)</sup> kW/kW	Energy Class	Lw dB(A)		Length	Width	Height	
								Standard	Low Noise				
080A	25	4.68	5.05	30	5.48	5.35	A+++	67	65	600	1044	901	191
090A	29	4.68	5.04	35	5.48	5.33	A+++	69	66	600	1044	901	200
100A	32	4.65	4.98	38	5.44	5.24	A+++	69	66	600	1044	901	200
120A	37	4.68	4.99	44	5.47	5.28	A+++	69	67	600	1044	901	207
130A	42	4.65	4.98	51	5.43	5.23	A+++	70	68	600	1044	901	212
150A	47	4.67	5.02	56	5.45	5.26	A+++	70	68	600	1044	901	220
180A	58	4.65	5.66	70	5.49	5.95	A+++	72	68	880	1474	901	386
200A	63	4.57	5.69	77	5.40	5.90	A+++	72	69	880	1474	901	392
240A	74	4.62	5.63	89	5.46	5.93	A+++	72	69	880	1474	901	403
260A	84	4.58	5.81	101	5.42	6.01	A+++	73	69	880	1474	901	413
300A	94	4.62	5.76	114	5.47	6.03	A+++	73	70	880	1474	901	441
360A	115	4.78	6.07	137	5.60	6.24	A+++	76	73	880	1583	1574	707
390A	130	4.75	6.17	156	5.57	6.28	A+++	77	74	880	1583	1574	733
450A	144	4.68	6.08	172	5.49	6.18	A+++	78	75	880	1583	1574	758
480A	153	4.81	6.01	183	5.64	6.24	A+++	76	73	880	1583	1574	841
520A	172	4.76	6.05	206	5.59	6.24	A+++	77	74	880	1583	1574	877
600A	192	4.77	5.96	230	5.56	6.08	A+++	78	75	880	1583	1574	908

<sup>(1)</sup> In accordance with EN 14511-3:2013 EUROVENT <sup>(2)</sup> Chilled water = 12°C/7°C Hot water = 30°C/35°C

<sup>(3)</sup> In accordance with EN 14511-3:2013 EUROVENT Chilled water = 10°C/7°C Hot water = 30°C/35°C

<sup>(4)</sup> In accordance with EN 14825-2013 EUROVENT Hot water = 30°C/35°C average climate conditions

Pf = Cooling capacity - Pc = Heating capacity / EER-COP = Full load performance coefficient  
ESEER-SCOP = Seasonal performance coefficient

 Cooling
  Heating
  Heat recovery
 Eurovent certified values



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



## Condenserless chillers



### DYNACIAT LGN

Sizes	Performances COOLING mode <sup>(1)</sup>		Sound power level		Dimensions mm			Weight kg
	P f <sup>(2)</sup> kW	EER <sup>(2)</sup> kW/kW	Lw dB(A)		Length	Width	Height	
			Standard	Low Noise				
080A	23	3,75	67	65	600	1044	901	164
090A	27	3,84	69	66	600	1044	901	171
100A	30	3,87	69	66	600	1044	901	171
120A	35	3,93	69	67	600	1044	901	177
130A	39	3,94	70	68	600	1044	901	180
150A	44	3,9	70	68	600	1044	901	185
180A	54	3,82	72	68	880	1474	901	321
200A	60	3,85	72	69	880	1474	901	324
240A	69	3,86	72	69	880	1474	901	332
260A	78	3,91	73	69	880	1474	901	339
300A	88	3,88	73	70	880	1474	901	354
360A	104	3,93	76	73	880	1583	1574	627
390A	117	3,94	77	74	880	1583	1574	653
450A	132	3,90	78	75	880	1583	1574	678
480A	139	3,94	76	73	880	1583	1574	741
520A	156	3,96	77	74	880	1583	1574	777
600A	176	3,92	78	75	880	1583	1574	808

<sup>(1)</sup> In accordance with EN 14511-3:2013

<sup>(2)</sup> Chilled water = 12°C/7°C Saturated condensing temperature = 45°C

EER = Full load performance coefficient

Preliminary product data for information only.

EQUIPMENTS	DYNACIAT	
	LG	LGN
Disconnect safety switch	✓	✓
Control circuit transformer	✓	✓
Water flow controller	✓	✓
Electronic expansion valve	✓	✓
Multi language touch sensitive controller 5"	✓	✓
Modbus-Jbus communication	✓	✓
Web server	✓	✓
Low Noise	•	•
Low temperature glycol water down -12°C	•	•
Condenser thermal insulation	•	-
Soft starter	•	•
Evaporator-condenser low pressure single pump <sup>(1)</sup>	•	•
Evaporator-condenser high pressure single pump <sup>(1)</sup>	Sizes 360A à 600A	Sizes 360A à 600A
Evaporator-condenser high pressure variable speed single pump <sup>(1)</sup>	•	•
Expansion vessel <sup>(2)</sup>	•	•
Exchangers water filter <sup>(3)</sup>	•	•
Exchangers flexible connection	•	•
Anti-vibration mounts	•	•
Lead / Lag operation	•	•
Lon communication	•	•
BACnet / IP communication	•	•
M2M supervision 1 unit or 3 units	•	•
Dry-cooler management	•	•
External boiler management	•	-
External electric heaters management	•	-
Compliance with Russian regulations	•	•

✓ Supplied as standard

• Option  
- No available

(1) Only evaporator side for LGN version

(2) Only with hydraulic module

(3) Standard with hydraulic module



# GLOBAL SYSTEM PROVIDER

## 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.



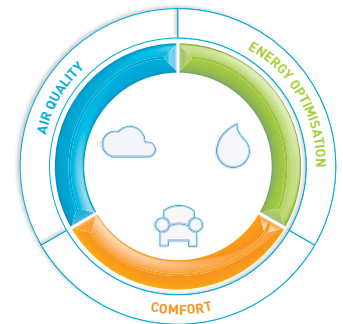


## SMART CIATCONTROL THE ENERGY MANAGEMENT SYSTEM

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 emitter needs 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 emitter demand.
- Night Cooling: Fills 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/m<sup>3</sup>

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	<b>AQUACIAT</b> 40-160 kW	<b>AQUACIAT<sup>POWER</sup></b> 160-660 kW	<b>POWERCIAT2</b> 600-1350 kW
WATER-COOLED	<b>DYNACIAT</b> 20-190 kW	<b>DYNACIAT<sup>POWER</sup></b> 220-710 kW	<b>HYDROCIAT</b> 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, our experts analyse your requirements to provide you with the best possible solutions. Our integrated engineering department, ultramodern research and design centre and 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

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At CIAT, our objective is to develop partnerships with you and provide high quality service throughout the lifecycle of your HVAC system. We understand your changing needs, and 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:

- Consulting 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](http://www.ciat.com)