

CHILLERS & HEAT PUMPS



DYNACIAT

HIGH ENERGY  
PERFORMANCE within  
optimized footprint





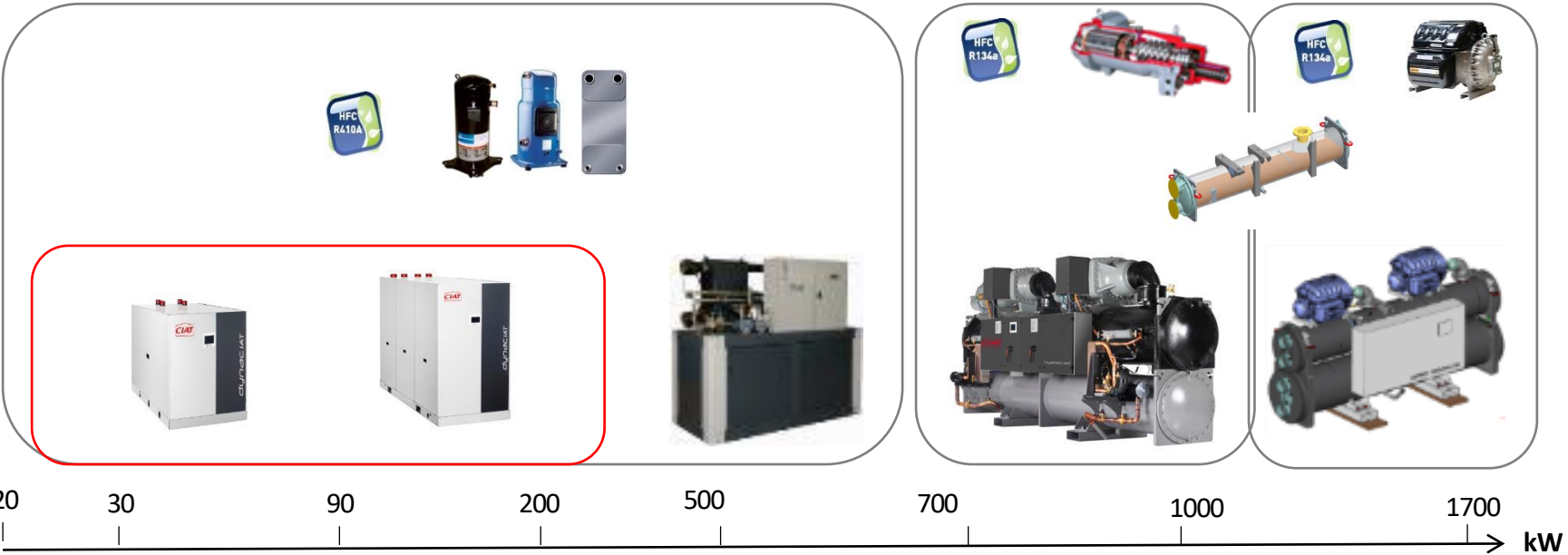
WC CO/HP

DYNACIAT LG

Condenserless

DYNACIAT LGN





+ Wide range: an answer adapted to each needs



OPERA

VEXTRA

- ▶ **Range overview**
- ▶ Product Features & Benefits
- ▶ Application range
- ▶ Performances
- ▶ Hydraulic
- ▶ Main options



Range with 17 models of **water cooled chiller & heat pump & Condenserless**



**Puissance froid de 25 à 190 kW**



**CHILLER LG**  
**Condenserless LGN**

**Puissance chaud de 35 à 230 kW**

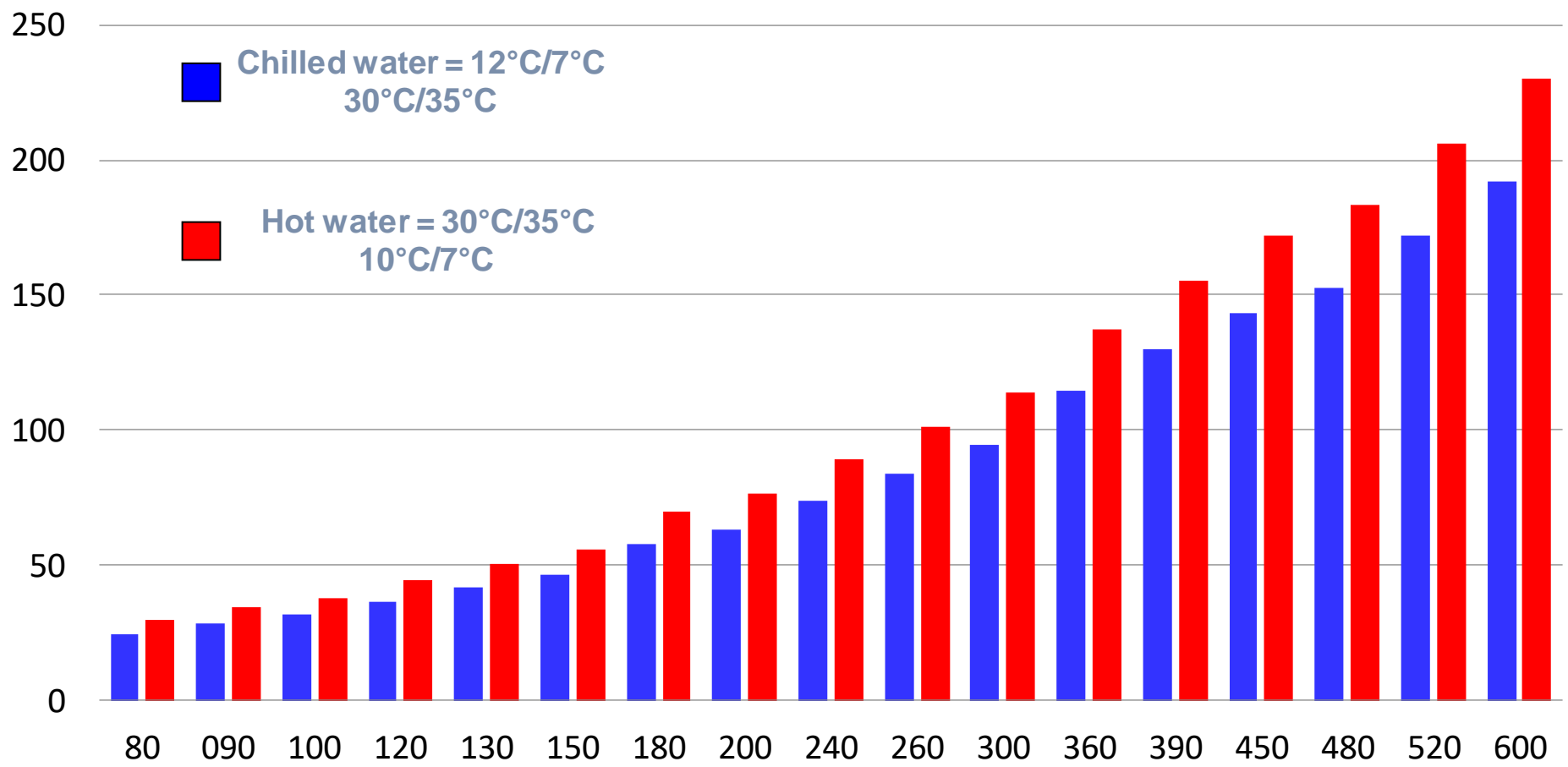


**HEAT PUMP LG**

LG	LG	LG	LG	LG	LG	LG	LG	LG	LG	LG	LG	LG	LG	LG	LG	LG
80	090	100	120	130	150	180	200	240	260	300	360	390	450	480	520	600



**VERSIONS HYDRAULIQUE**  
**Evap. or/and Cond.**



**Good staging**

- ▶ Range overview
- ▶ **Product Features & Benefits**
  - **Design, Architecture & dimension**
  - **Control**
- ▶ Application range
- ▶ Performances
- ▶ Hydraulic
- ▶ Main options



Common features: aesthetics



080-300



080-300  
Hydraulic



360-600



360-600  
Hydraulic

HIGH PERCIEVED QUALITY & VALUE





Sizes 080-300



Hydraulic module (option)  
Evap. & Cond.



Connect Touch Control



Scroll compressors



Brazed plate heat exchanger



Electronic expansion valve



Sizes 360-600



Connect Touch Control



Hydraulic module  
(option)  
Evap. & Cond.



Main Switch

Scroll compressors



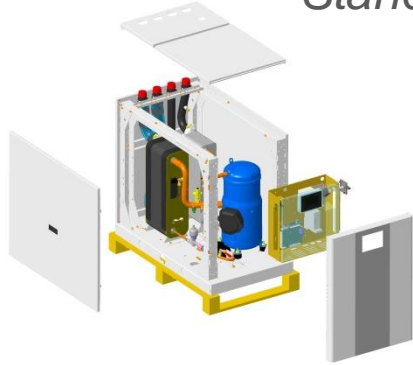
Electronic expansion valve

Brazed plate  
heat exchanger



## Common features: casing architecture

*Standard frame*

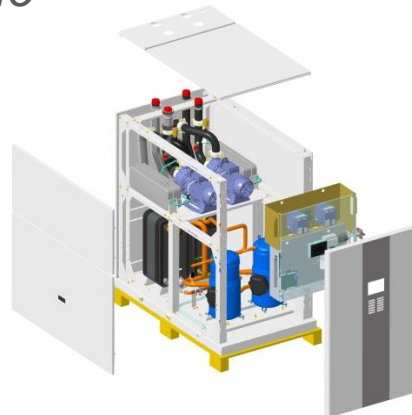
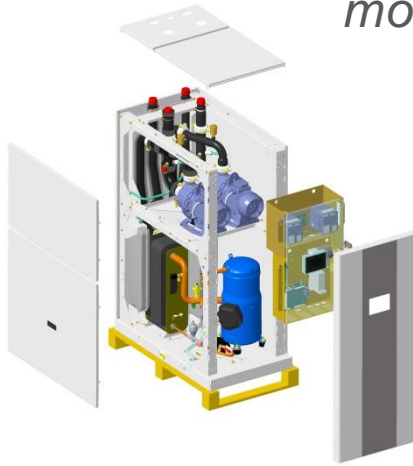


*Segment 1*  
Sizes 80 to 150



*Segment 2*  
Sizes 180 to 300

*Hydronic  
module frame*



### Standard

#### Description:

Casing size depending on number of compressor.  
Each size with 4 sides sliding panels.  
One single screw size and type

#### Advantage:

Easy Access for maintenance  
Cost containment and small foot print

**COMPACT & ACCESSIBLE**  
**Easy Installation / Easy Maintenance**



Quick Installation



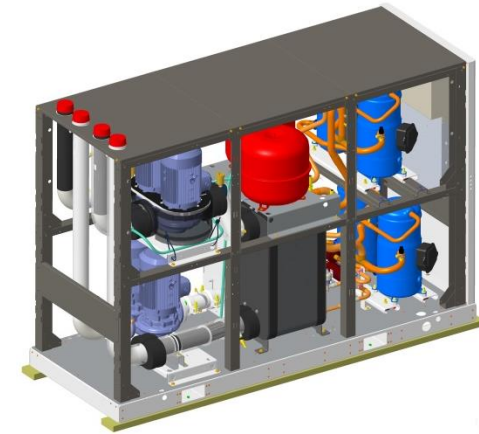
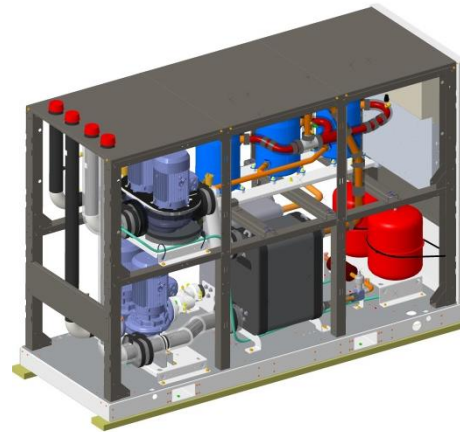
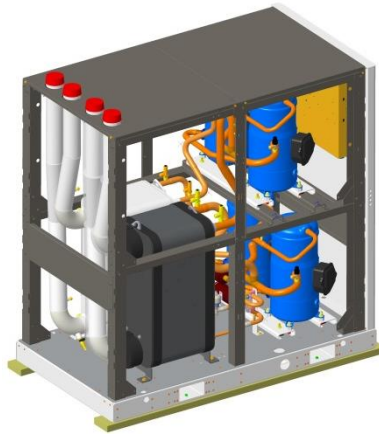
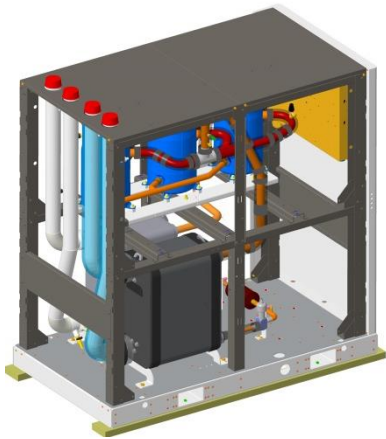
Easy Maintenance

MAJ 04-2021

## Common features: casing architecture

*Standard frame*

*Hydronic module frame*



*Segment 3*  
Sizes 360 to 450

*Segment 4*  
Sizes 480 to 600

*Segment 3*  
Sizes 360 to 450

*Segment 4*  
Sizes 480 to 600

**COMPACT & ACCESSIBLE**  
**Easy Installation / Easy Maintenance**



Quick Installation



Easy Maintenance

MAJ 04-2021

## Common features: casing architecture

Access to control panel



**COMPACT** but with **EASY ACCESS TO ALL COMPONENTS**

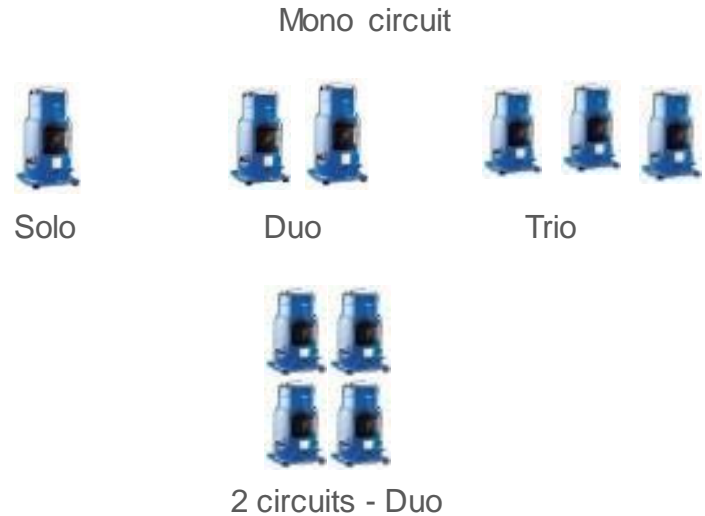


Quick Installation



Easy Maintenance

MAJ 04-2021



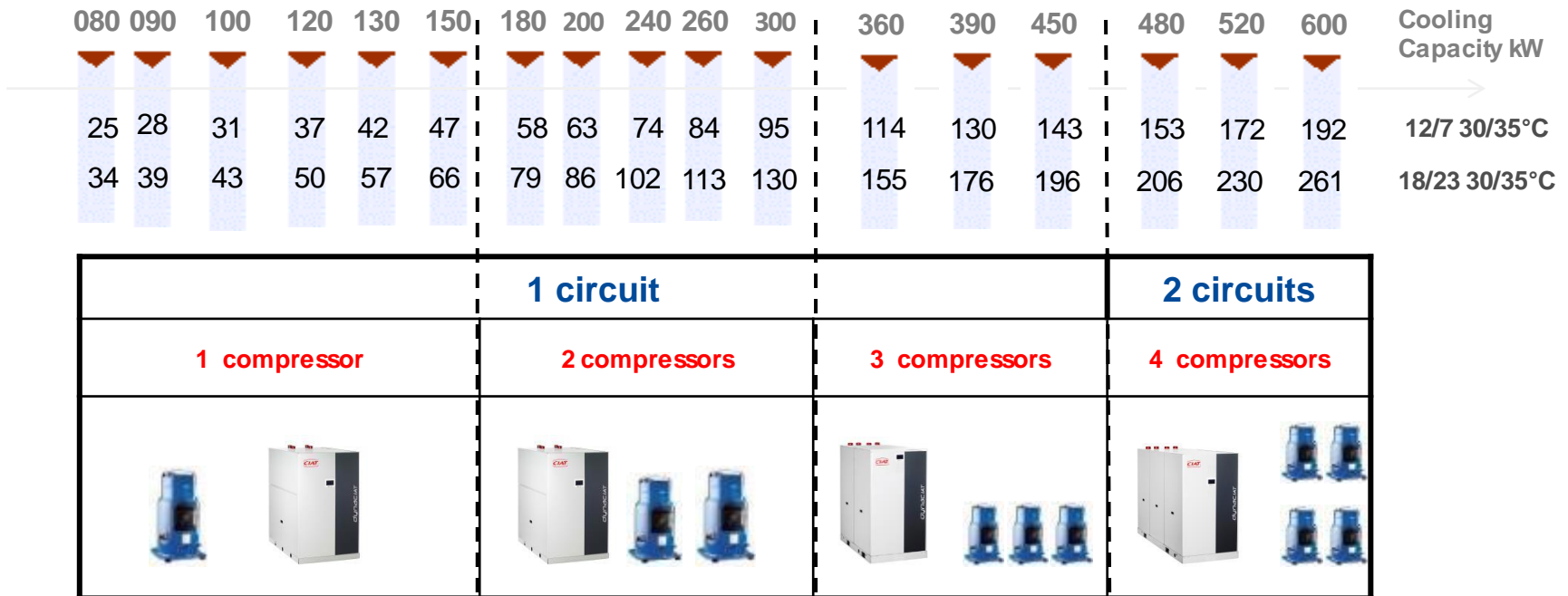
### **DYNACIAT** using Danfoss scroll compressors

- ▶ Designed for R410A
- ▶ Installed in Duo or Trio
- ▶ Identical compressors per circuit (Reliability)
- ▶ Electrical Terminal box ( Protection IP54)
- ▶ Phonic insulation (Option)

LG

17 Units

Cooling / Heating / Condenserless



Large range to match the need

## Common features: Electrical connections



Electrical cabinet open

**Standard:** in front of the unit

**Description:**

All Electrical components protected by panel and positioned in front side. Power cabling holes on the back of the side of the unit.

**Advantage:**

Easy and safe access to electrical components even if unit is compact

Sizes  
480-600



Sizes  
480-600  
Hydronic



**COMPACT UNIT BUT WITH EASY ACCESS TO ALL COMPONENTS AND SAFE**



## Common features: External main switch



**Standard :** External main switch

**Description:**

External main switch for hard stop by power shut down

**Advantage:**

Compliance with some local legal constraints  
No need of external switch  
Easy instalation

**Tips:**

Even with external main switch sliding panels remains

**EASY SLIDING PANELS AVAILABLE EVEN WITH EXTERNAL MAIN SWITCH**

## Common features: control



4.3"  
Tactile  
Color screen  
interface

**NEW**

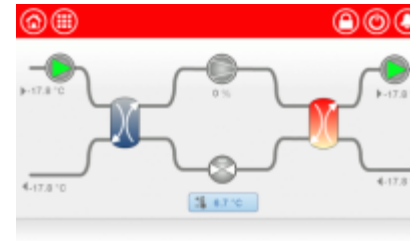
- ▶ 4.3" user-friendly touch screen
- ▶ 7 languages (FR-GB-DE-SP-IT-NL-PT +1 Free)
- ▶ All main parameters displayed on one screen (3 levels by password= User-Maintenance-Factory)
- ▶ **WEB connectivity (IP) in std**
- ▶ **Alarm** notification through **emails**
- ▶ Easy **remote monitoring via the internet**
- ▶ **2 Weekly schedule** On/off Set point ½ 16 holyday periods
- ▶ **1 Maintenance schedule**
- ▶ **1 Fgas alert Schedule**
- ▶ Modbus in standard
- ▶ Lon & Bacnet protocol (option)
- ▶ Twin Machine Control Lead/Lag (option)
- ▶ Direct access to **the unit's technical drawings and main service documents**
- ▶ **Black box**
- ▶ **Trending capability**

**TOUCH CONNECT USER FRIENDLY CONTROL**

## ConnectTOUCH



Advanced  
Connect' Pilot  
Control



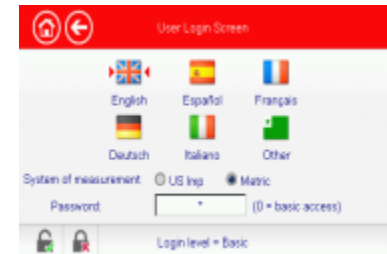
Synoptic



Schedule



Menu



Language



status



Trending

4"3 Intuitive Tactile Color Screen

## HOURLY Schedule

- ▶ **2 PROGRAMS** of eight occupancy periods
  - ▶ On/Off
  - ▶ Set Point 1/ Set Point 2
- ▶ **16 HOLYDAY PERIODS**
- ▶ **1 NIGHT MODE Schedule**
  - ▶ Limitation of noise during night schedule



<b>Night Mode Start Hour [nh_start]</b>
00:00 to 24:00
<b>Night Mode End Hour [nh_end]</b>
00:00 to 24:00
<b>Night Capacity Limit [nh_limit]</b>
0 to 100%                      100%

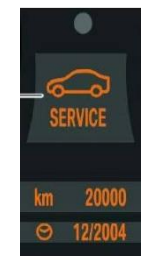
## Maintenance Alert Schedule

- ▶ The warranty of the continuity of the performance of our equipment depends on the follow-up maintenance carried out, a recall of maintenance can be activated (intervals skeletal in operating hours, days or month)



## Mandatory Leak detection alert

- ▶ In order to sensitize the user with their obligation to control the sealing of their refrigerant circuits (CE N° 842 /2006) an alarm informs of the deadline of this control.



## Customer contacts available

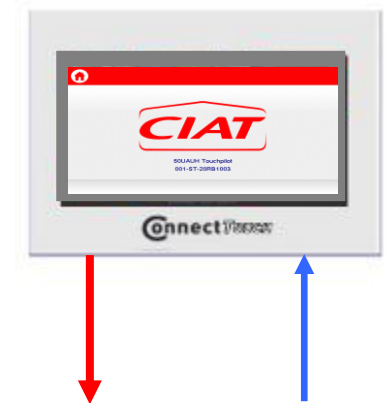


- **Available contacts inputs :**

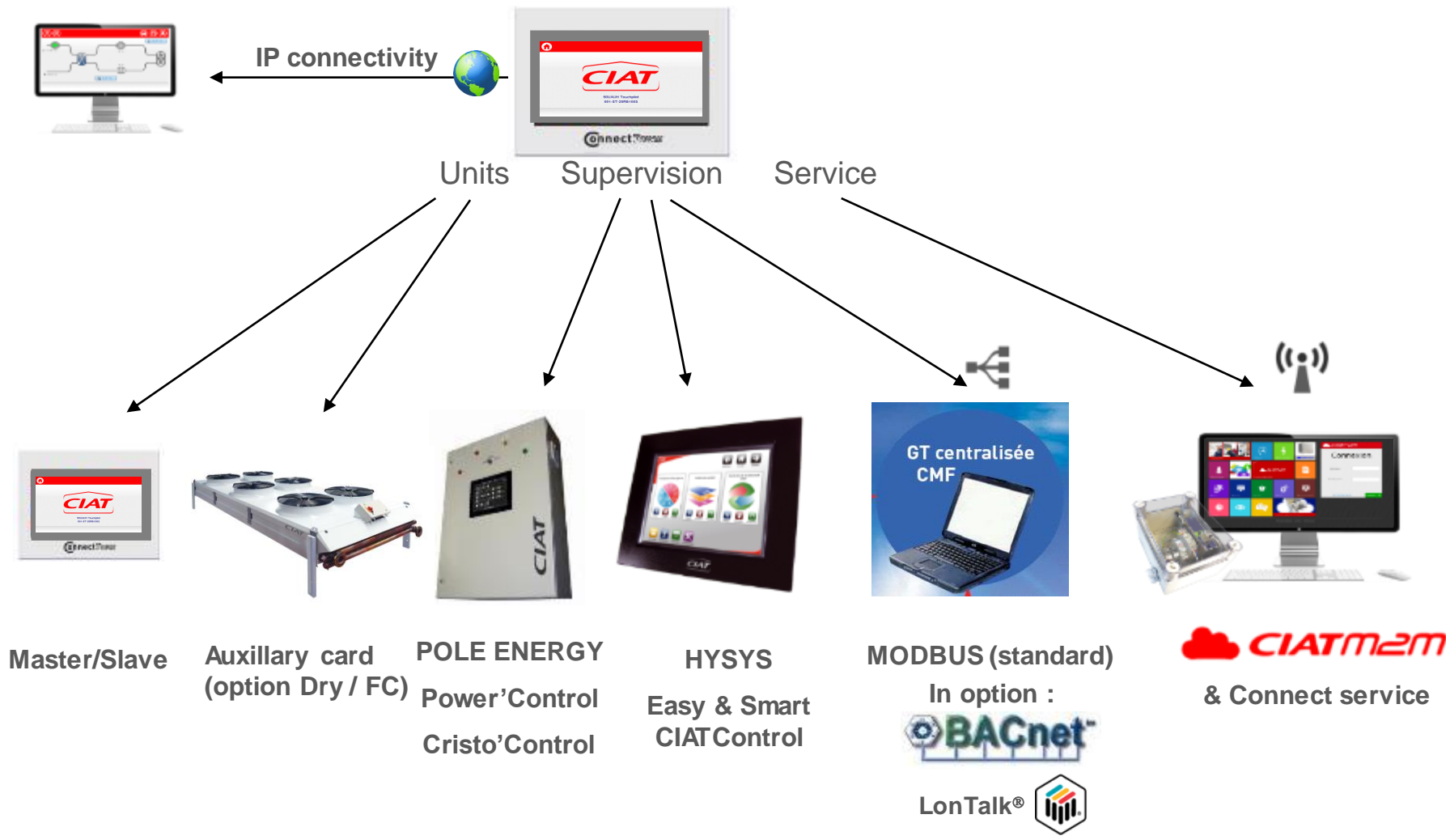
- ▶ Unit ON/OFF contact
- ▶ Set point 1/2 selection
- ▶ HEATING / COOLING mode selection
- ▶ Capacity limitation by 4-20mA Signal
- ▶ Set point control by 4-20mA Signal (**option**)

- **Available contacts outputs :**

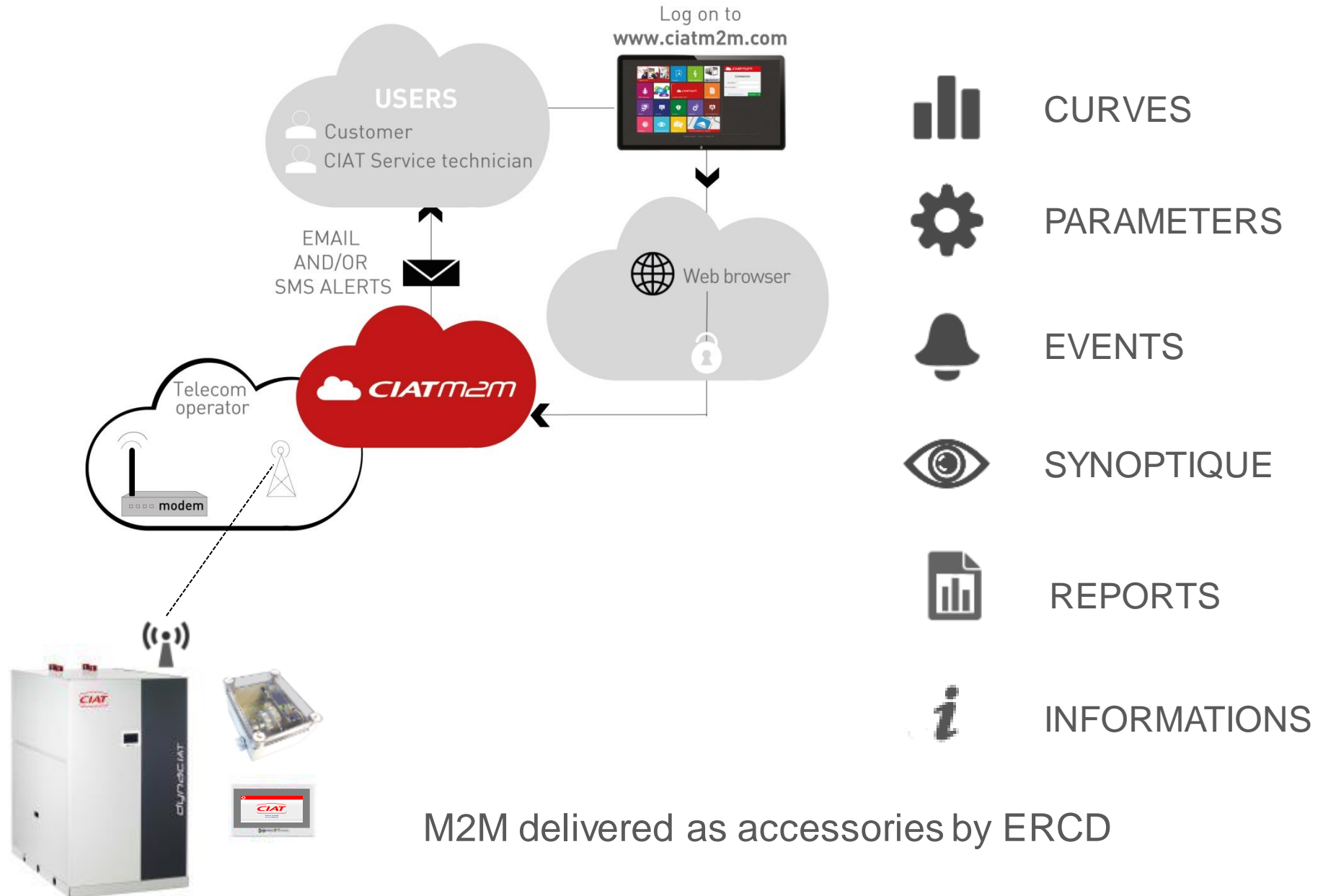
- ▶ Running relay
- ▶ Alarm relay
- ▶ User default
- ▶ Pump control Evap. Cond. (If option external pump control)
- ▶ Dry cooler management – FC management (**option**)
- ▶ Boiler remote control On/Off (**option** on Heat pump)
- ▶ 4 stages electrical heaters (**option** on heat pump)



## ConnectTOUCH System integration



Easy Integration on the system



M2M delivered as accessories by ERCD

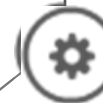
## Synoptic

Visualize the synoptic of the installation in real time, the status of each component, the temperatures, pressures, flows, operating mode,...



## Parameters

Set all the parameters as easily as you are in front of the system  
All parameters are order by categories for an easy use.



## Trends

Visualize the predefined trends or design your own trends (temperatures, pressures, modes, status,...)



## Information

See all details you need about the installation, the machine, the modem, the contract...



## Events

Visualize the list of events and the context of each event (status of the installation when the fault appears)



## Reports

Generate reports and visualize the efficiency of your installation, and optimize your system

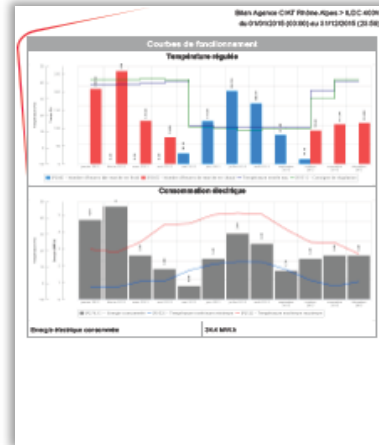
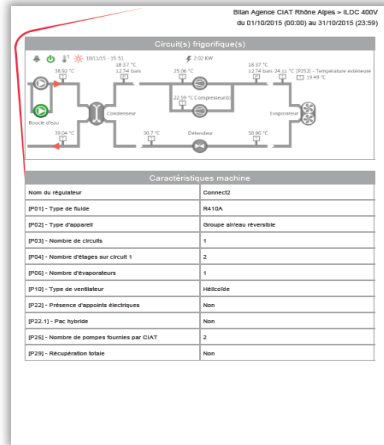


www.ciatm2m.com

Easy Service Maintenance



## Reports



**Installation**

Blau Agence CIAT Rhône Alpes - SDC 400V  
du 01/10/2015 (00:00) au 31/10/2015 (23:59)

Non	Agence CIAT Rhône Alpes
Adresse	Bâtiment 1, ZP Parc, 100 rue de novembre, Lyon Saint Exupéry aéroport
Ville	Colombier Saugrenu
Code postal	69124
Pays	France
Catégorie	Agence CIAT Rhône Alpes
Franche horaire	UTC+01:00 Bruxelles, Copenhague, Madrid, Paris
Date de mise en service de cet CIATM2M	14/04/2015
Type de contrat de service	Pas de contrat
Expéditeur de factures CIATM2M	1304-2017
Type de marche	Bureau

**Machine**

Modèle	SDC 400V
Numéro de série	18645190001
Type de régulateur	Connect2
Versions du packagage CIATM2M	17
N° DO	1200736
Adresse Modbus RTU	1
Adresse IP	192.168.117.91
Charge de réfrigérant	24 kg



### Content

- Trend
- Operating times
- Number of compressor starts
- Event reports
- Preventative maintenance actions
- Energy consumption (Electricity metering)

### Range

- Monthly**  
Available on CIATM2M website
- Annual**  
Sent by CIAT team
- On demand**  
Sent by CIAT team

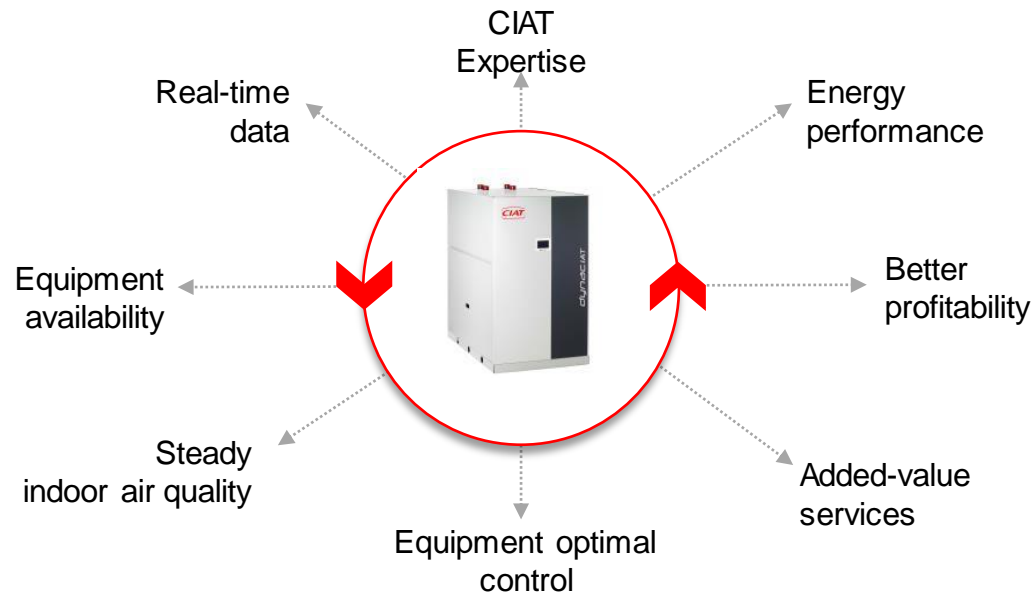
### Added Value

- Actionable reports
- Expert analysis

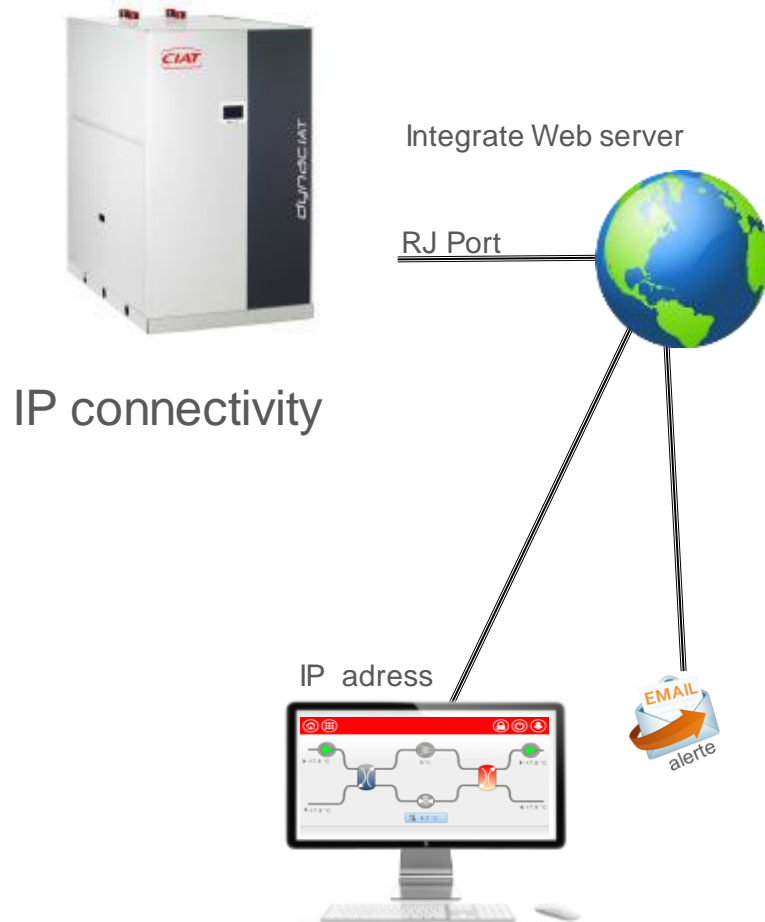


&

## Expertise and Analysis



## Communication



**Standard:** IHM available on any computer

### **Advantage:**

Remote control on Standard  
all IHM functionality on the PC

### **Tips:**

Verify user authorization to be connected on his  
Ethernet network  
If connected to user network- user authorisation  
needed for access

### **Service:**

Easy access for setting adjustment  
Alert through email (2 address)

A Simple & Modern Remote Control

## Communication

## BMS connectivity



### Standard

Modbus J-Bus protocol

### Option:

Lon or Bacnet over IP gateway

### Description:

Gateway to main communication protocol

### Advantage:

Connexion to main BMS

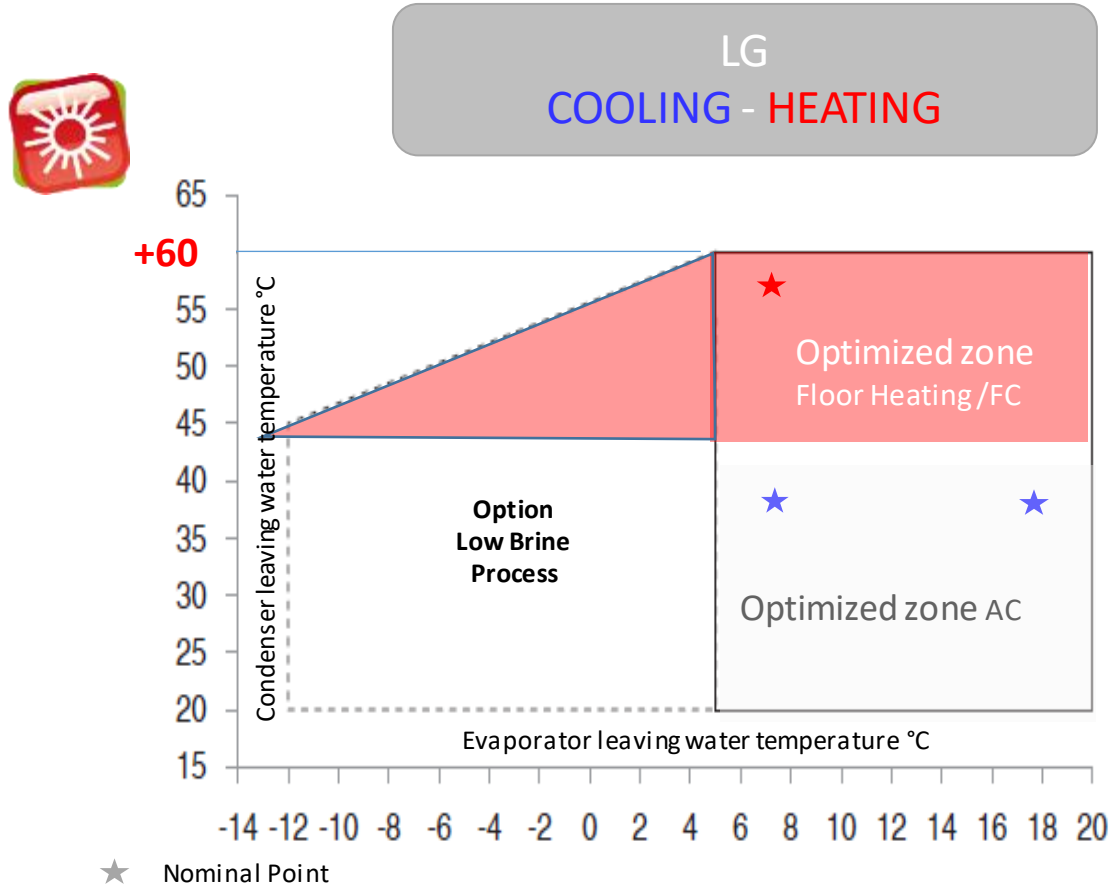
### Tips:

Give protocol table (Available on CIAT intranet Portal) to installers ASAP for integration preparation

Ready for main BMSprotocol

- ▶ Range overview
- ▶ Product Features & Benefits
- ▶ **Application range**
- ▶ Performances
- ▶ Hydraulic
- ▶ Main options





Radiators



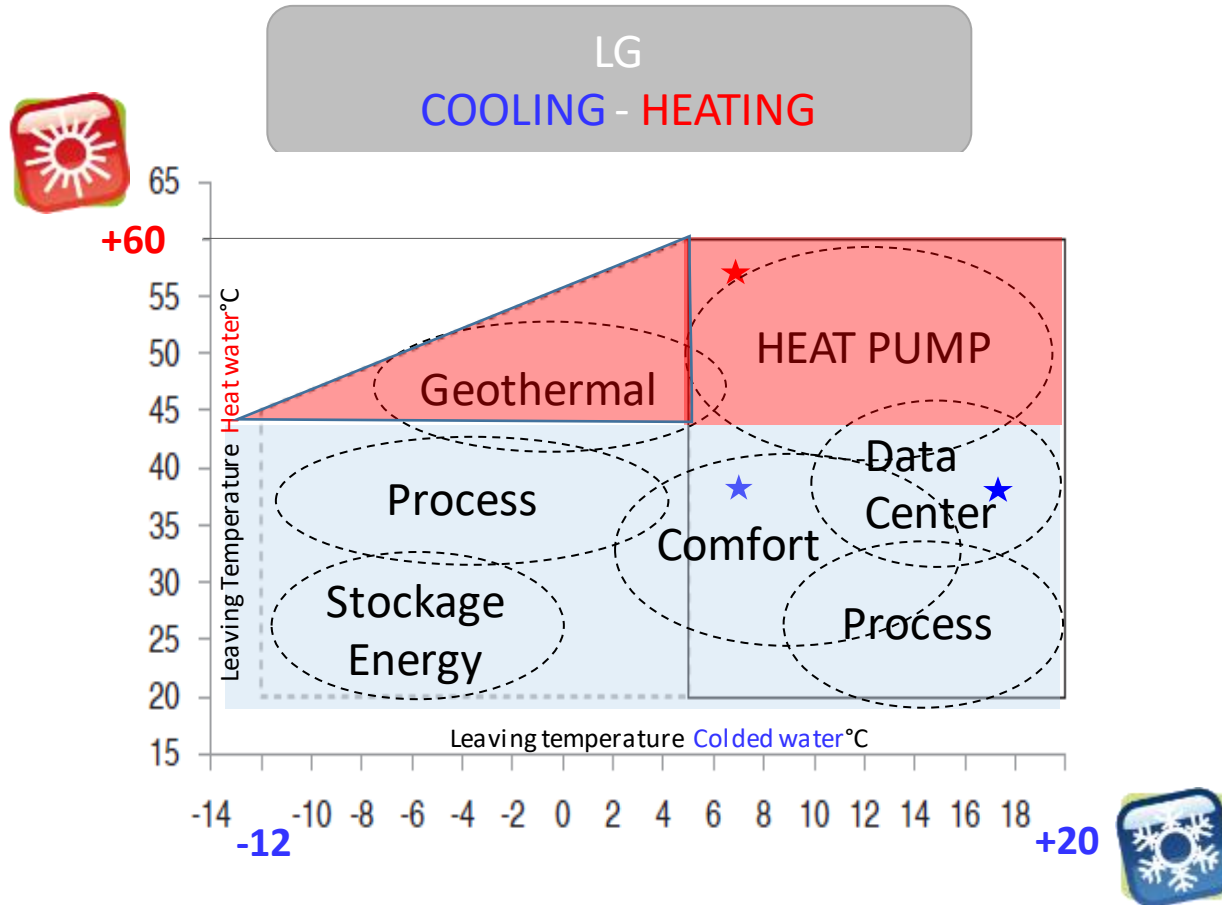
Fan Coil



Floor heating

Adaptable to different terminals systems

AMONGST WIDEST OPERATING MAP IN THE MARKET for mains HVAC & PROCESS APPLICATIONS



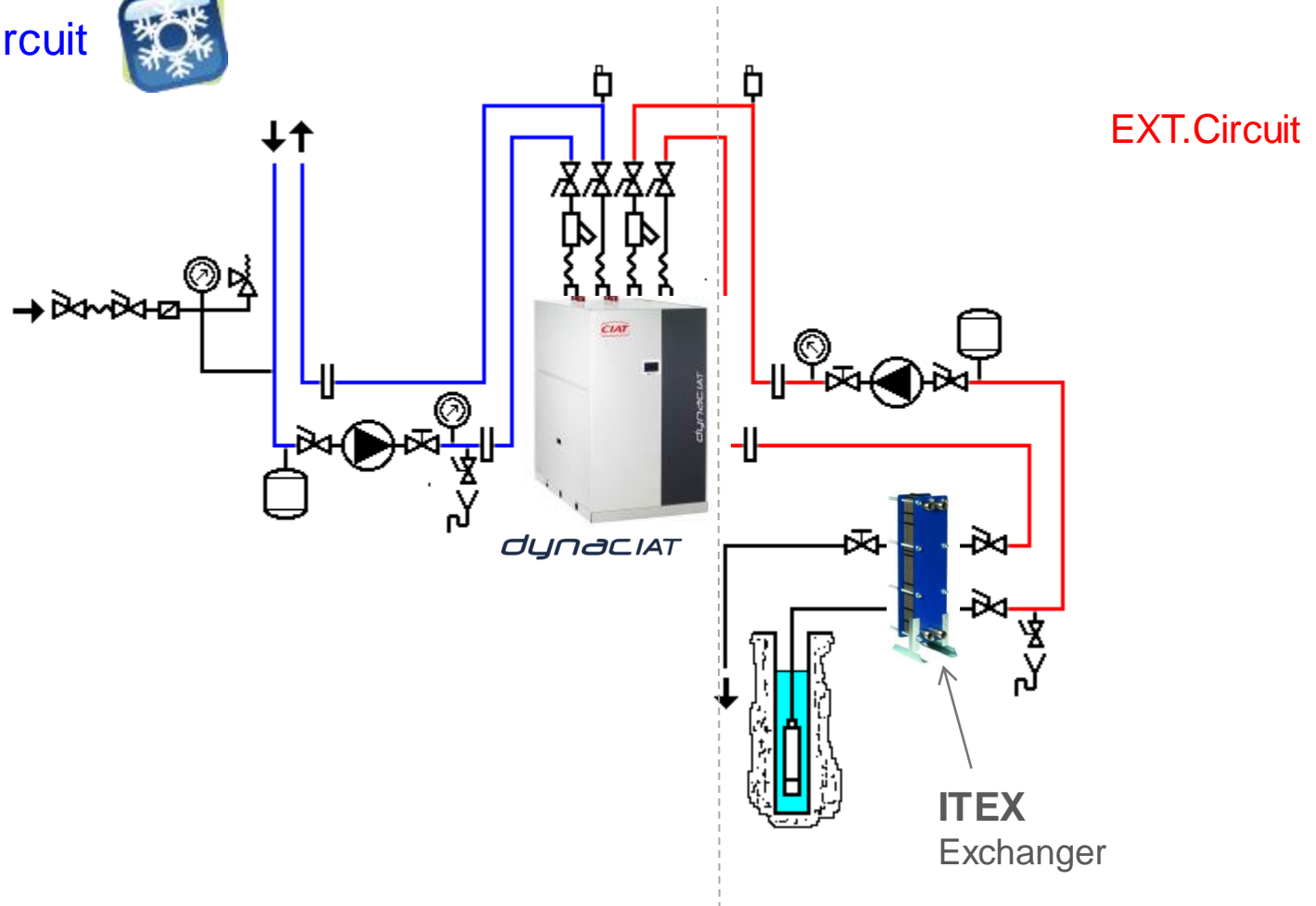
**AMONGST WIDEST OPERATING MAP IN THE MARKET for mains HVAC & PROCESS APPLICATIONS**

- EXAMPLE : piping installation for **COOLING** only system

## Chilled water circuit

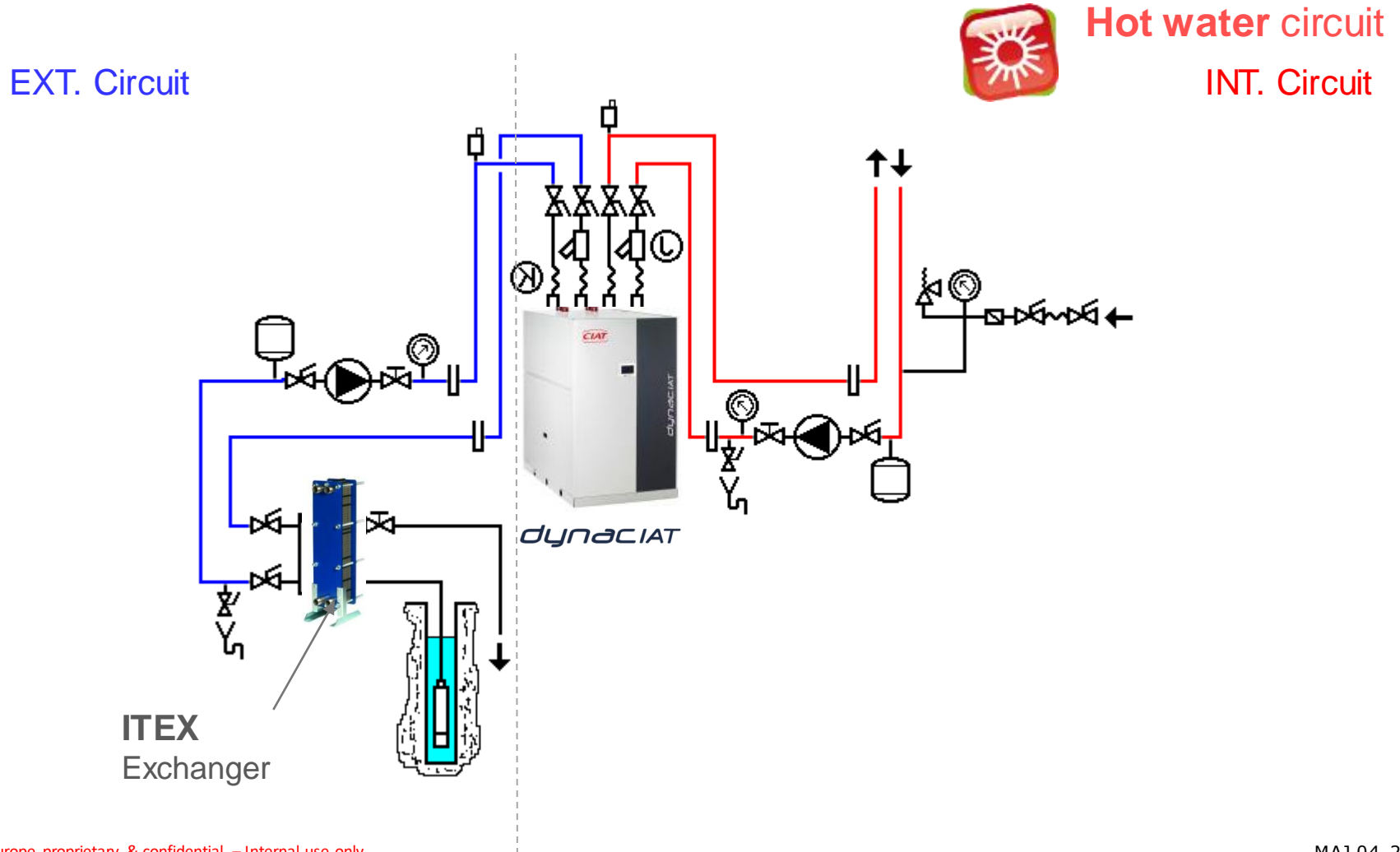


INT. Circuit

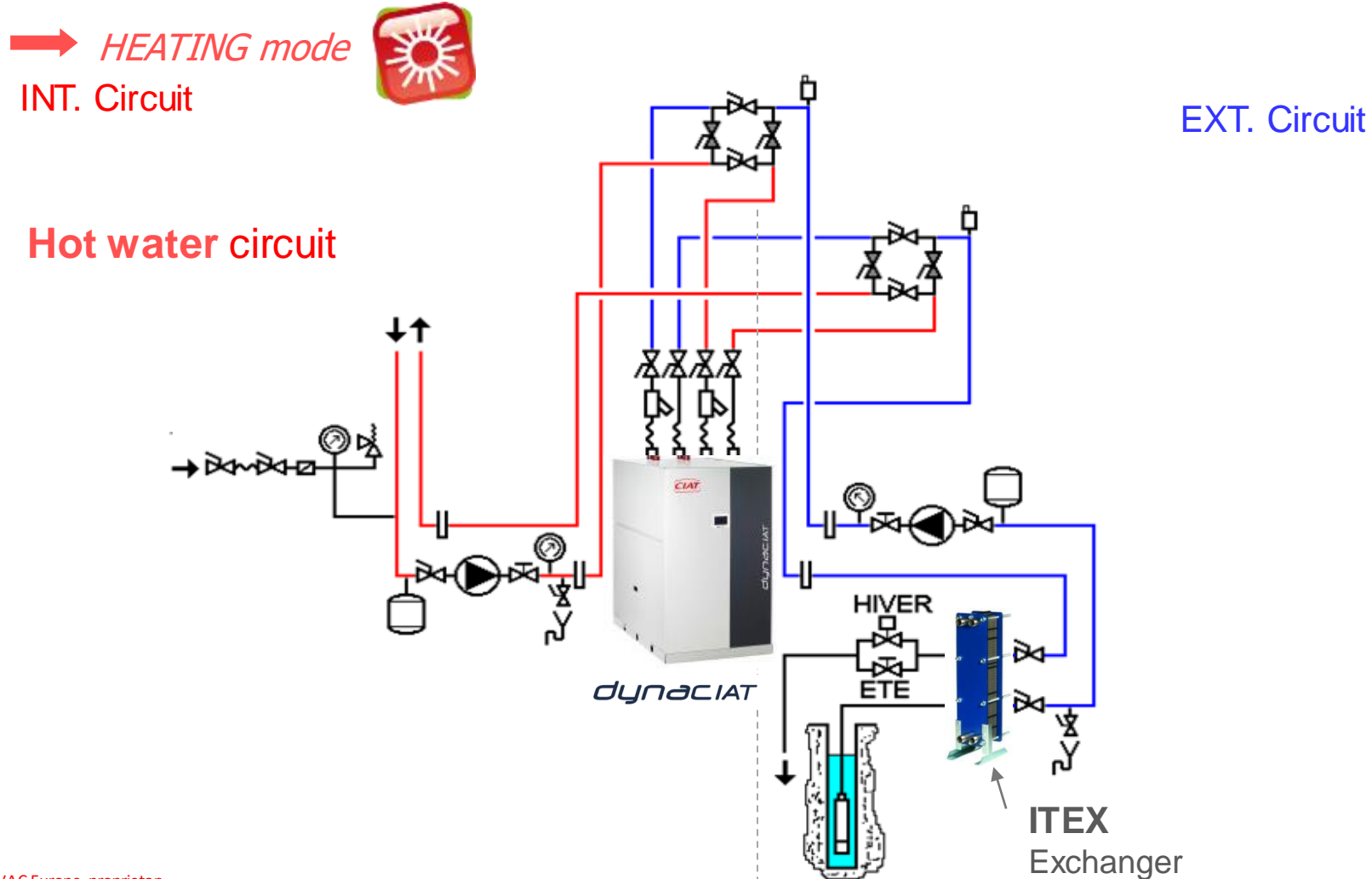




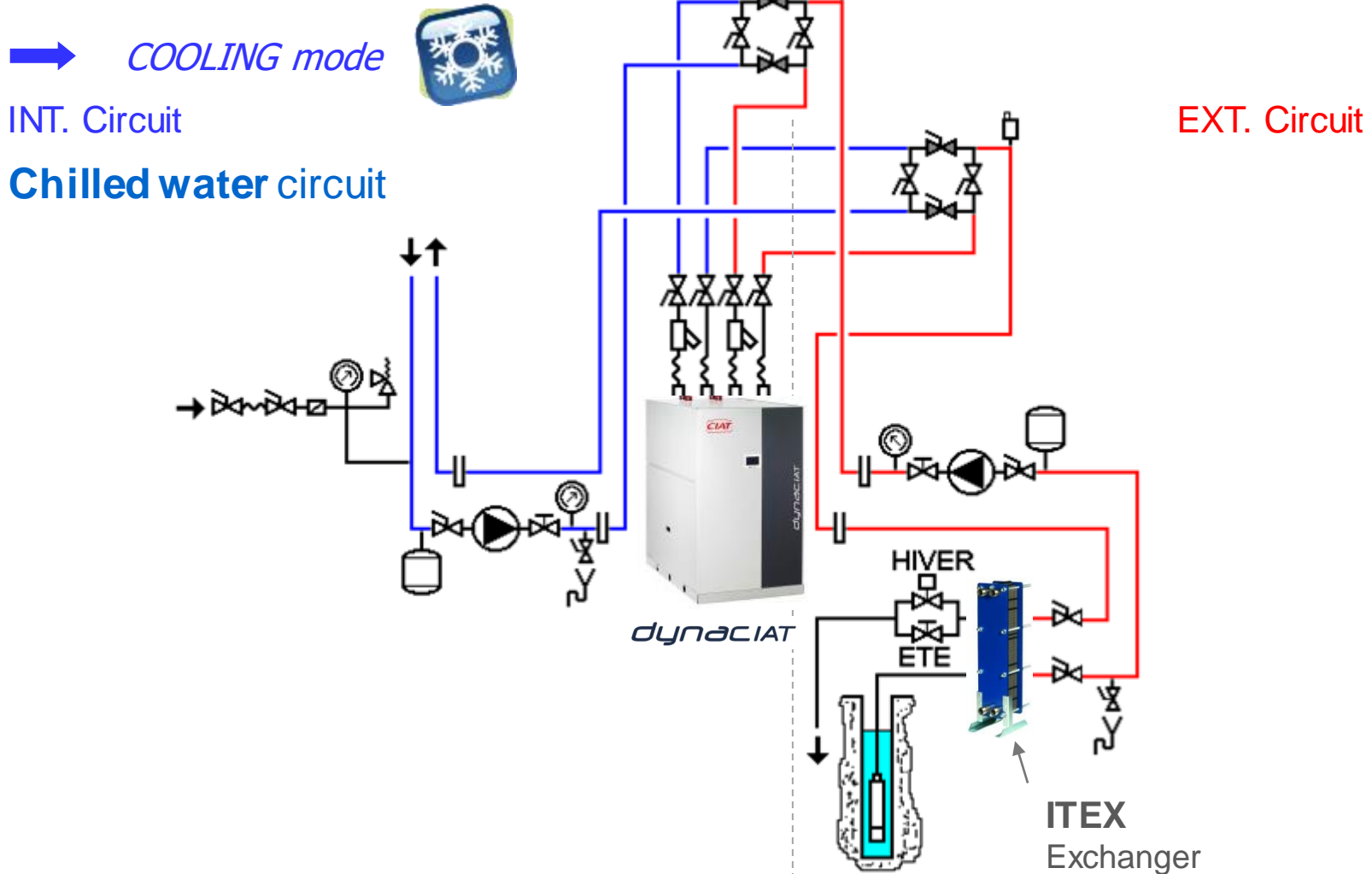
- EXAMPLE : piping installation for **HEATING** only system




- EXAMPLE : piping installation for **HEATING** or **COOLING** system with hydraulic changeover

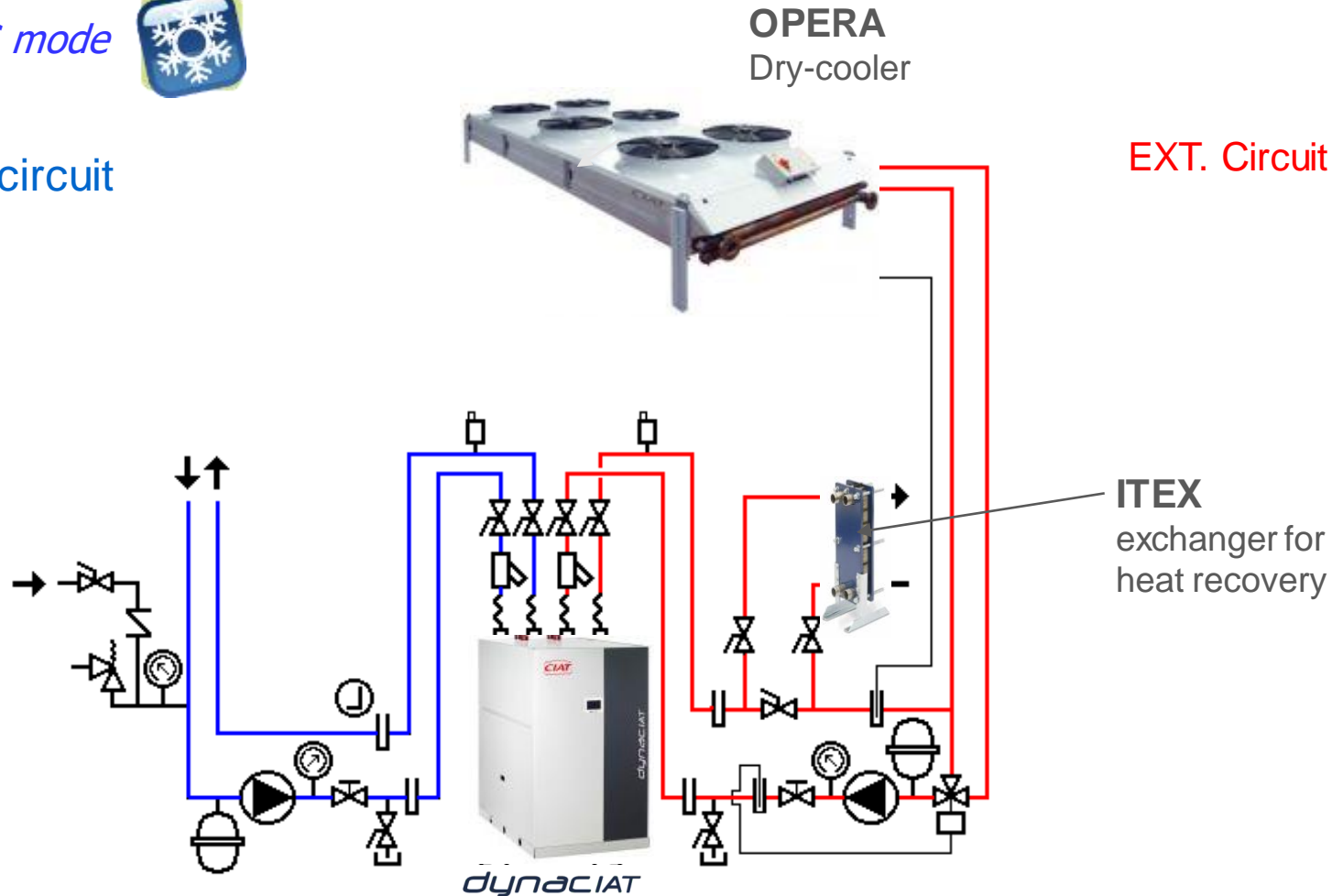


- EXAMPLE : piping installation for **HEATING** or **COOLING** system with hydraulic changeover



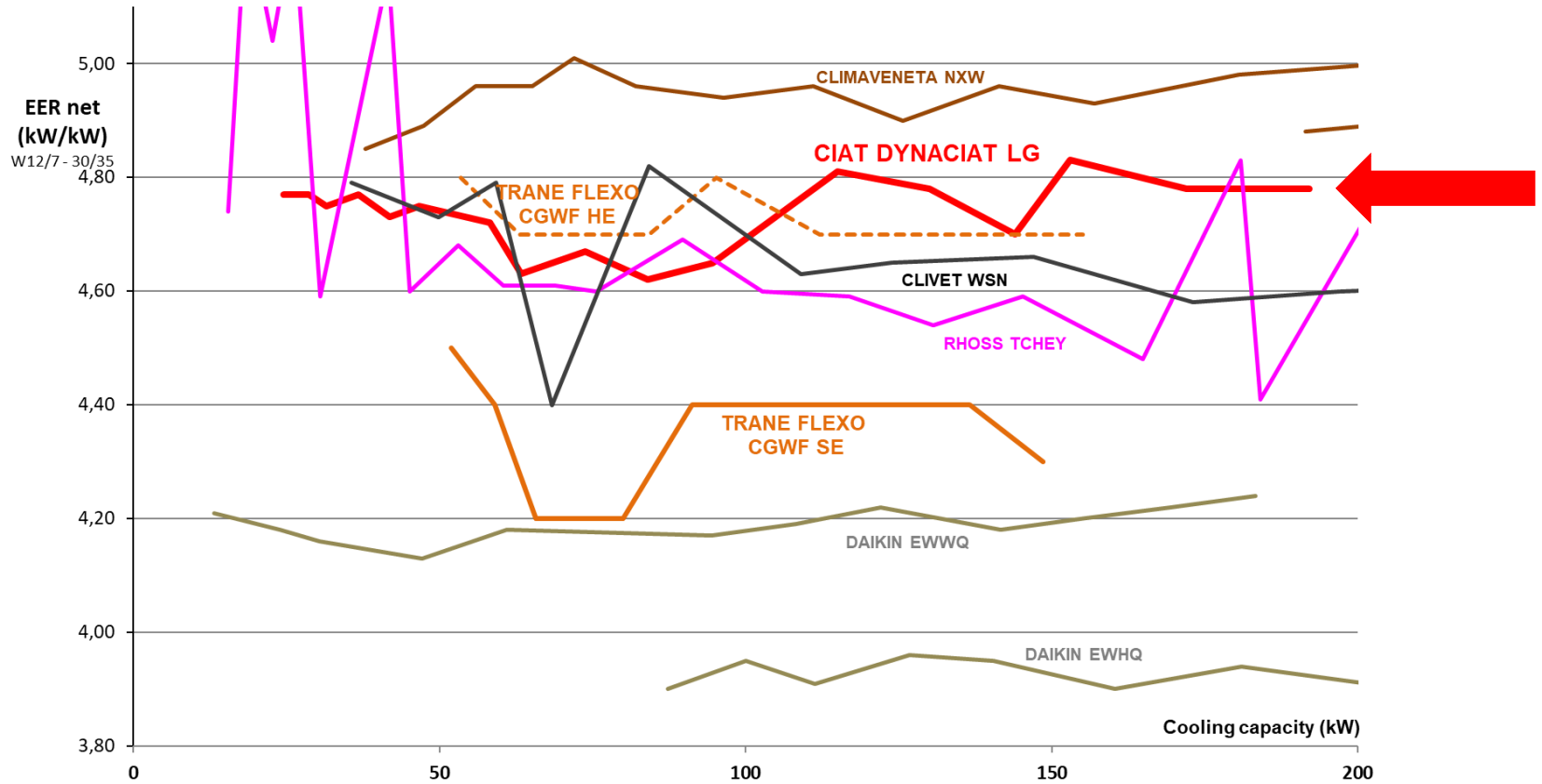
- EXAMPLE : piping installation for **COOLING** system with DRY-COOLER

➔ *COOLING mode*   
INT. Circuit  
**Chilled water circuit**



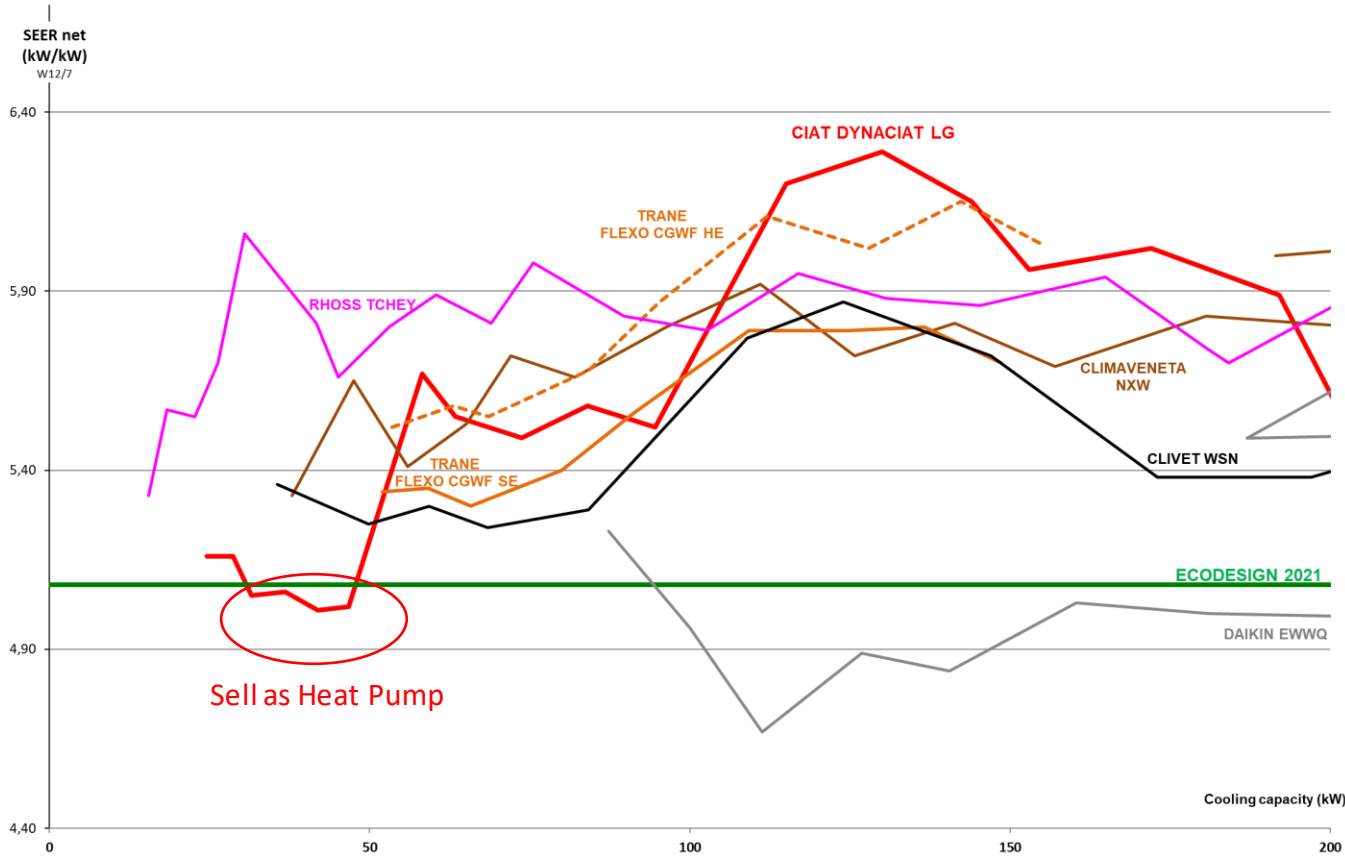
- ▶ Range overview
- ▶ Product Features & Benefits
- ▶ Application range
- ▶ **Performances**
  - **Cooling EER / ESEER**
  - **Heating COP / SCOP**
  - **Acoustic**
- ▶ Hydraulic
- ▶ Main options





## ON TOP 3

- Nominal Performances non representatives
- > compare the seasonal performances



**One of the BEST IN CLASS UNIT AVAILABLE  
> ENERGY CONSUMPTION REDUCEE**

## ECODESIGN regulation N° 813/2013

H/P < 400kW performance requirements

EFFICIENCY	Rating conditions		Tier 1, Sept 2015		Tier 2, Sept 2017	
	Outdoor	Indoor	$\eta_s$ heat %	SCOP	$\eta_s$ heat %	SCOP
Air to water	A7°(+6°wb)	W30/35° LT	115	2.95	125	3.20
		W47/55°	100	2.58	110	2.83
Water to water	W10°/7°	W30/35° LT	115	3.08	125	3.33
		W47/55°	100	2.70	110	2.95
Ground to water	W0°/-3°	W30/35° LT	115	3.08	125	3.33
		W47/55°	100	2.70	110	2.95

SOUND	≤ 6 kW		>6 kW ≤ 12 kW		>12 kW ≤ 30 kW		>30 kW ≤ 70 kW	
	Indoor	Outdoor	Indoor	Outdoor	Indoor	Outdoor	Indoor	Outdoor
Sound power dBA	60	65	65	70	70	78	80	88

Medium temperature heat pumps shall operate at air -7°, water 52°  
 SCOP as per EN14825 under average climate (Strasbourg)  
 Sound requirements, kW = Prated heating capacity

Efficiency requirements based on seasonal efficiency ONLY

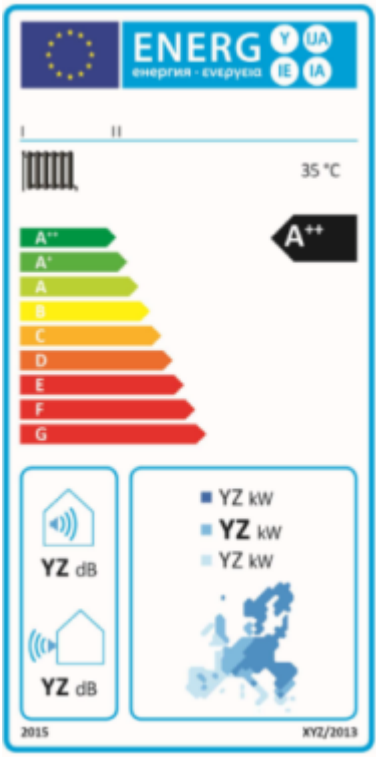
Full load COP is a thing of the past



## ENERGY LABELLING REGULATION N° 811/2013

H/P < 70kW information's requirements

Low temperature 35°C

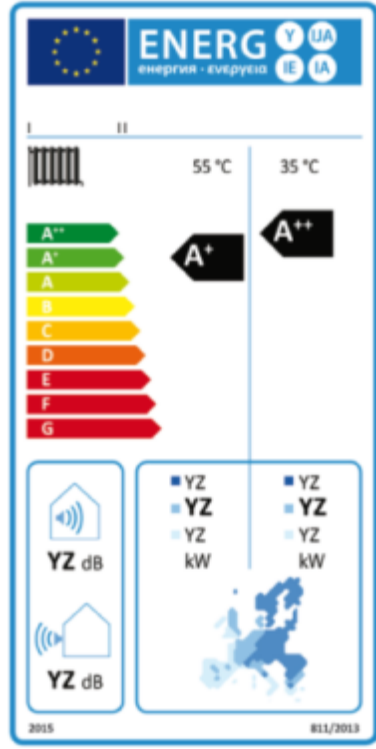


ENERGY CLASSES	
Low Temp heat pumps 30/35°	
A <sup>++</sup>	$\eta_s \geq 175$
A <sup>+</sup>	$150 \leq \eta_s < 175$
A	$123 \leq \eta_s < 150$
B	$115 \leq \eta_s < 123$
C	$107 \leq \eta_s < 115$
D	$100 \leq \eta_s < 107$
E	$61 \leq \eta_s < 100$
F	$59 \leq \eta_s < 61$
G	$55 \leq \eta_s < 59$

**A+++**  
**LG > 201**

ECODESIGNtie  
r2 26/09/17  
3.33 /  $\eta_{125}$

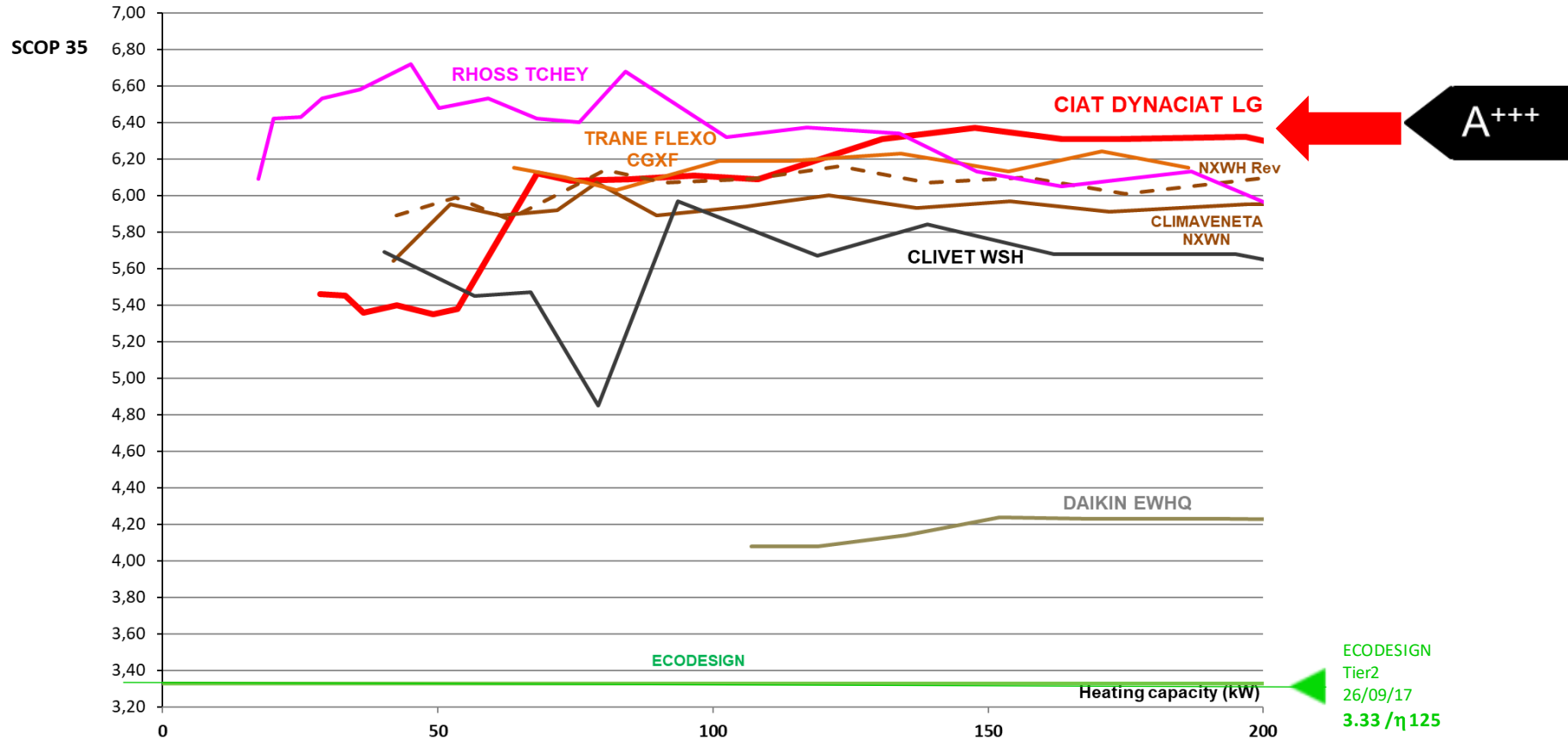
Medium temperature 55°C



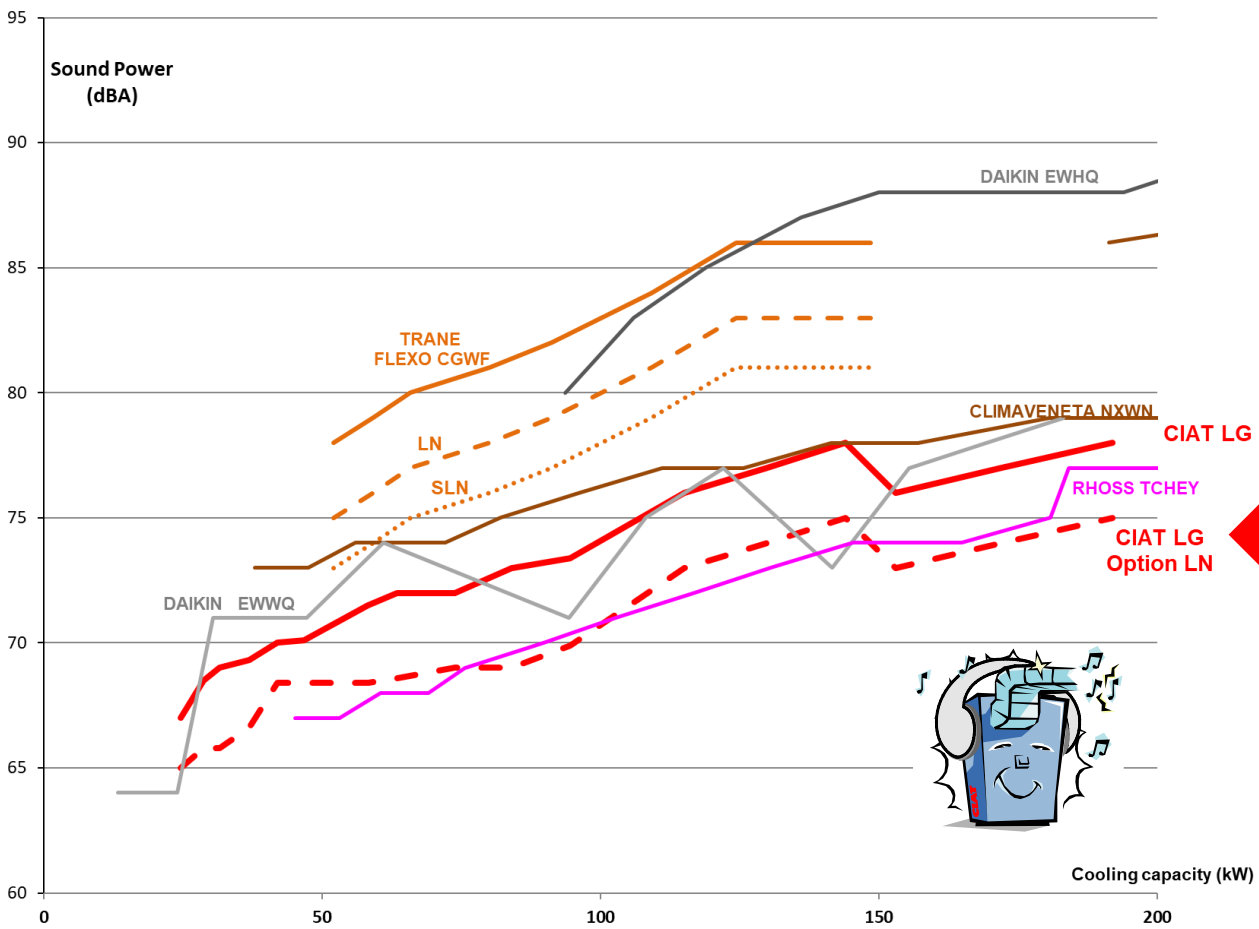
ENERGY CLASSES	
Mid Temp heat pumps 47/55°	
A <sup>++</sup>	$\eta_s \geq 150$
A <sup>+</sup>	$125 \leq \eta_s < 150$
A	$98 \leq \eta_s < 125$
B	$90 \leq \eta_s < 98$
C	$82 \leq \eta_s < 90$
D	$75 \leq \eta_s < 82$
E	$36 \leq \eta_s < 75$
F	$34 \leq \eta_s < 36$
G	$30 \leq \eta_s < 34$

**A+++**  
**LG > 163**

ECODESIGNtie  
r2 26/09/17  
2.93 /  $\eta_{110}$



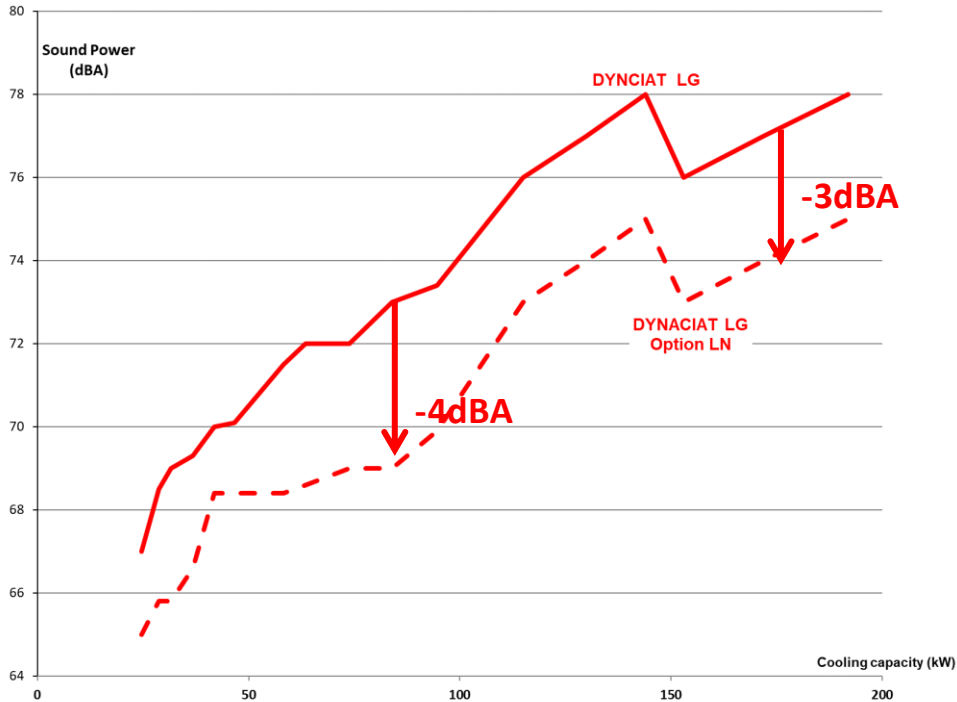
DYNACIAT range is designed to meet 2017 regulation requirements.



Keep in mind :  
3db = Double noise



**DYNACIAT = PERFECT solution for SENSIBLE SITE**



Keep in mind :  
3db = Double noise

**Option: Low Noise**  
-up to -4 dB(A)

**Description:**  
Specific compressor casing insulation

**Advantage:**  
Reduce unit noise level

**Tips:**  
Perfect for sensible site  
Low Noise = Quieter than Legacy range

**PERFECT for SENSIBLE SITE**

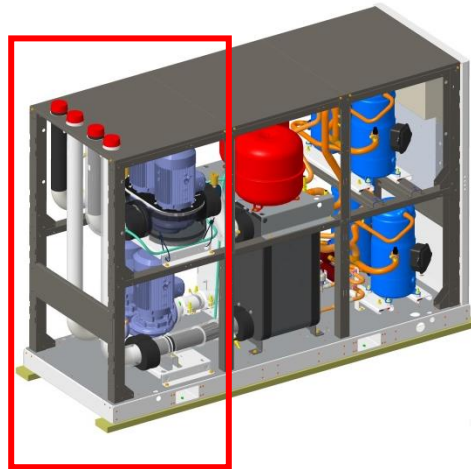
- ▶ Range overview
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- ▶ **Hydraulic**
- ▶ Main options



Sizes 080 to 300:  
Hydraulic **on top** (option)



Sizes 360 to 600:  
Hydraulic **on back**



## Option:

Evaporator and Condenser Hydraulic kit  
**Integrate**

## Description:

Top mounting on size 080 -300  
Back mounting on size 360-600

## Advantage:

Plug and play, **easy installation**  
**Space saving**

20-90 unit remains with small foot print given hydraulic kit position on top.

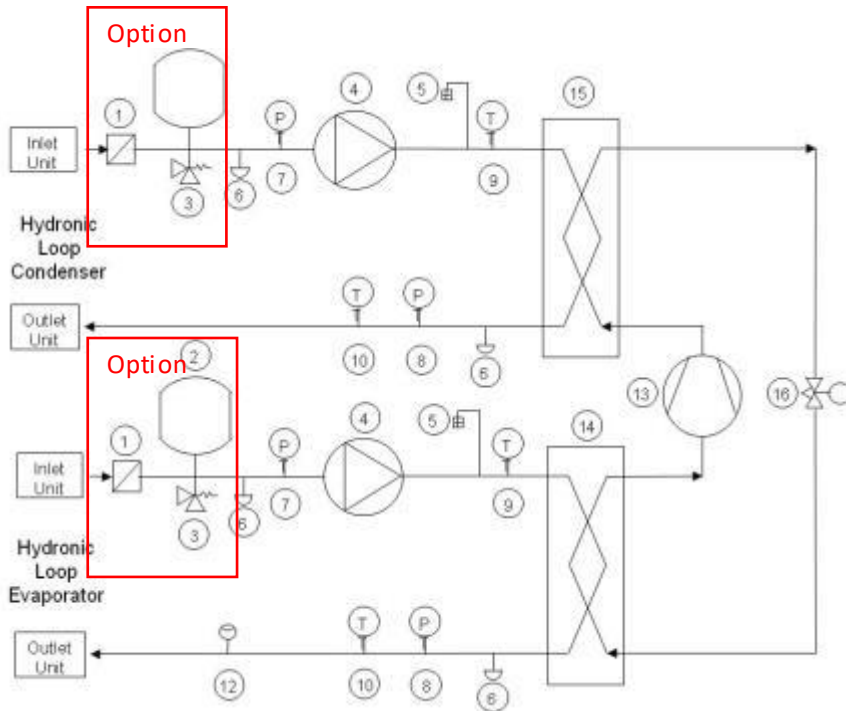
## Tips:

Victaulic connections in standard

On option :

Screwed connections (sizes 80-450)

**DYNACIAT remains with SMALL FOOT PRINT even with HYDRAULIC OPTION  
EASY installation, Installation cost REDUCE**



- |        |  |          |
|--------|--|----------|
| 1      | Victaulic screen filter                              | (option) |
| 2      | Expansion Tank                                       |          |
| 3      | Safety valve   |          |
| 4      | Water pump : 1 if single pump, 2 if dual pump option |          |
| 5      | Air vent   |          |
| 6      | Water drain valve                                    |          |
| 7 / 8  | Pressure sensor inlet / outlet                       |          |
| 9 / 10 | Temperature sensor inlet / outlet                    |          |
| 11     | Check Valve (only if dual pump)                      |          |
| 12     | Flow switch  |          |

## Option:

Safety devices (expansion tank...) in option

## Description:

Hydraulic components as describe on schema against.  
Water filter included.

## Advantage:

Plug and play  
unit remains with small foot print

## Tips:

In renovation expansion tank is often not needed

! With expansion vessel option  $P_{maxi} = 4\text{bars}$  instead of 10 bars

**SAME ARCHITECTURE as LD/ILD**

- According to the unit configuration & application the water flow is managed on different ways

	Water	Sizes 80-150	Sizes 180-600
<b>With Pump</b>	Fresh water	Pressure sensor	Pressure sensor
	Brine	Pressure sensor Electronic Flow switch	
<b>Without Pump</b>		Electronic Flow switch	Electronic Flow switch



Evaporator / Condenser		Single Pump		Dual Pump	
	Sizes	FS	VS	FS	VS
Low Pressure	080-300				
	360-600	✓	✓		
High Pressure	080-300		✓		
	360-600	✓	✓		✓

### Option:

Evaporator and Condenser Hydraulic kit,  
Or  
Power & control device (to manage external pump 0/1)

### Description:

Above table  
- fixed speed pump **high** or **low** available pressure  
- **variable** water flow pump

### Advantage:

Adaptation to all application

### Tips:

-In renovation option expansion vessel is often not needed  
-VS reduce the pumping energy

**ENLARGE PUMP OPTIONS**

## hydronic kit VWF



**Option: HP High Pressure Variable Water Flow pump (Inverter)**

### Description:

Inverter drive pumps with high available pressure.

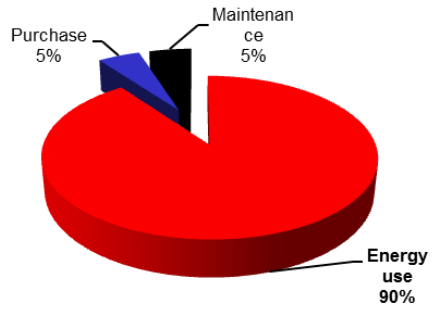
- Adjustment flow
- Constant Delta P
- Constant Delta T

### Avantage:

Reduce system energy consumption

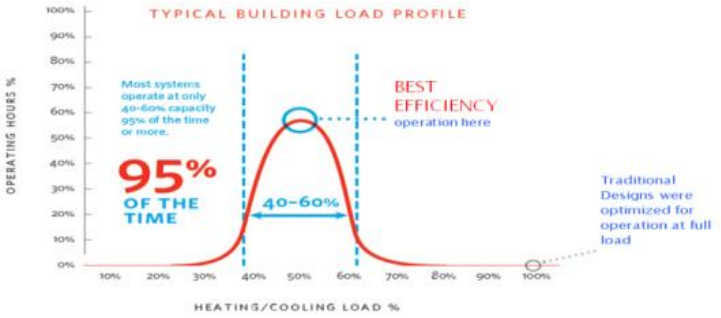
**VWF FOR MORE ENERGY EFFICIENCY AND DRYCOOLER MODE WITH NO 3WV**

### Typical Pump Life Cycle Cost\*

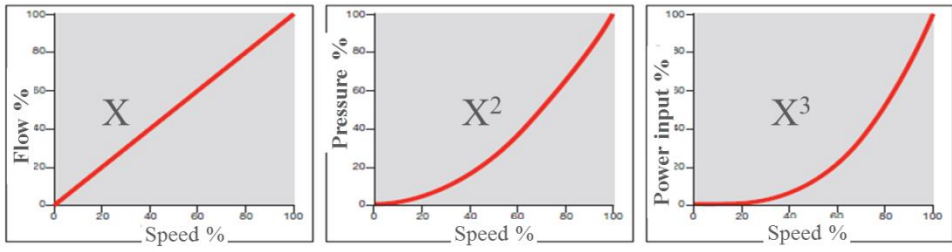


\*Source: Hydraulic Institute www.pumps.org

### Building Load Profile



### Affinity law



## Variable Water Flow

TYPICAL PUMP life cycle COSTS

Energy Use Represents Around **90%** of Pump Life Cycle Cost

=

**Energy Savings opportunities**

Majority of HVAC installations are **running at partial-load.**

There are significant saving opportunities which are a direct result of good hydraulic design and control logic.

AFFINITY LAWS applied to pumps  
**Relation between Speed & Energy use**

**Pump power** input varies as the **cube** of the pump speed or **water flow**

$$P1/P2 = (W1/W2)^3$$

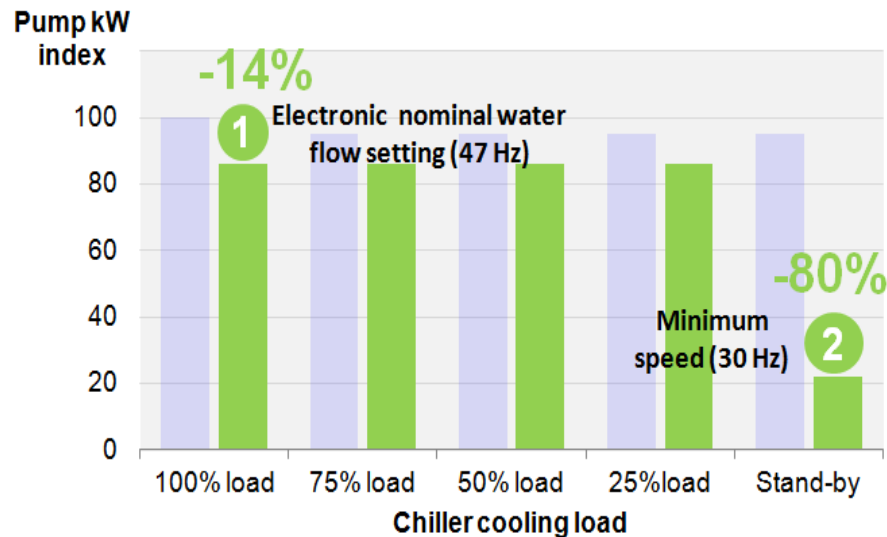
## Variable Water Flow

- Variable flow option on Dt or on DP

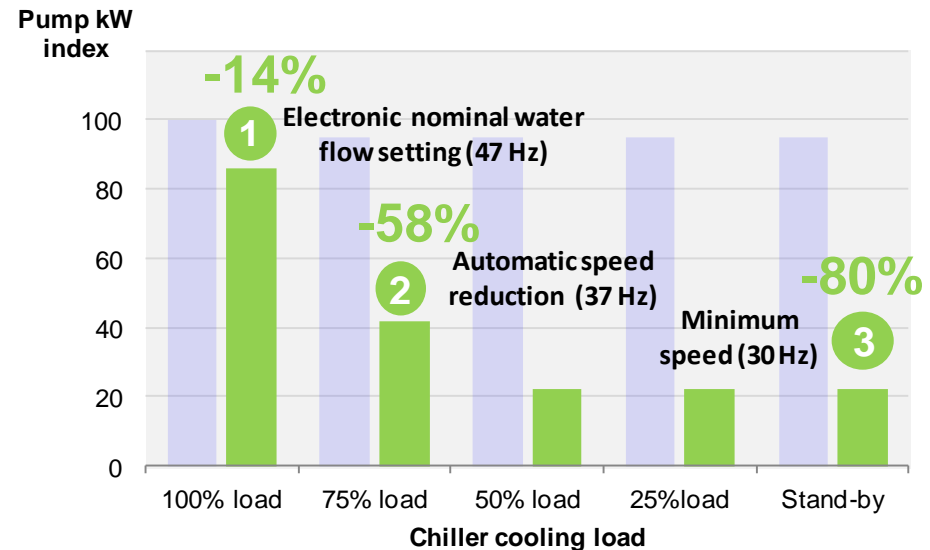
Pump power input varies as the cube of the pump speed = cube of water flow.

20% water flow reduction = 40% energy reduction  
 40% = 80%

### In Constant Primary Flow (CPF) system



### In Variable Primary Flow (VPF) system



CPF  
Pumping  
Energy  
- 1/3

Variable Speed Pump = Reduction of energy consumption link to pump

VPF  
Pumping  
Energy  
- 2/3

- ▶ Range overview
- ▶ Product Features & Benefits
- ▶ Application range
- ▶ Performances
- ▶ Hydraulic
- ▶ **Main options**





**DYNACIAT  
LG Only**

**Standard :** Top water connection Victaulic

**Description:**

Condenser and evaporator connection from the top  
Free direction for connection

**Advantage:**

Unit **can be installed close to the wall** to fit plant room dimensional constraints  
**Saving place**

**Tips:**

Victaulic connections in standard

**On option :**

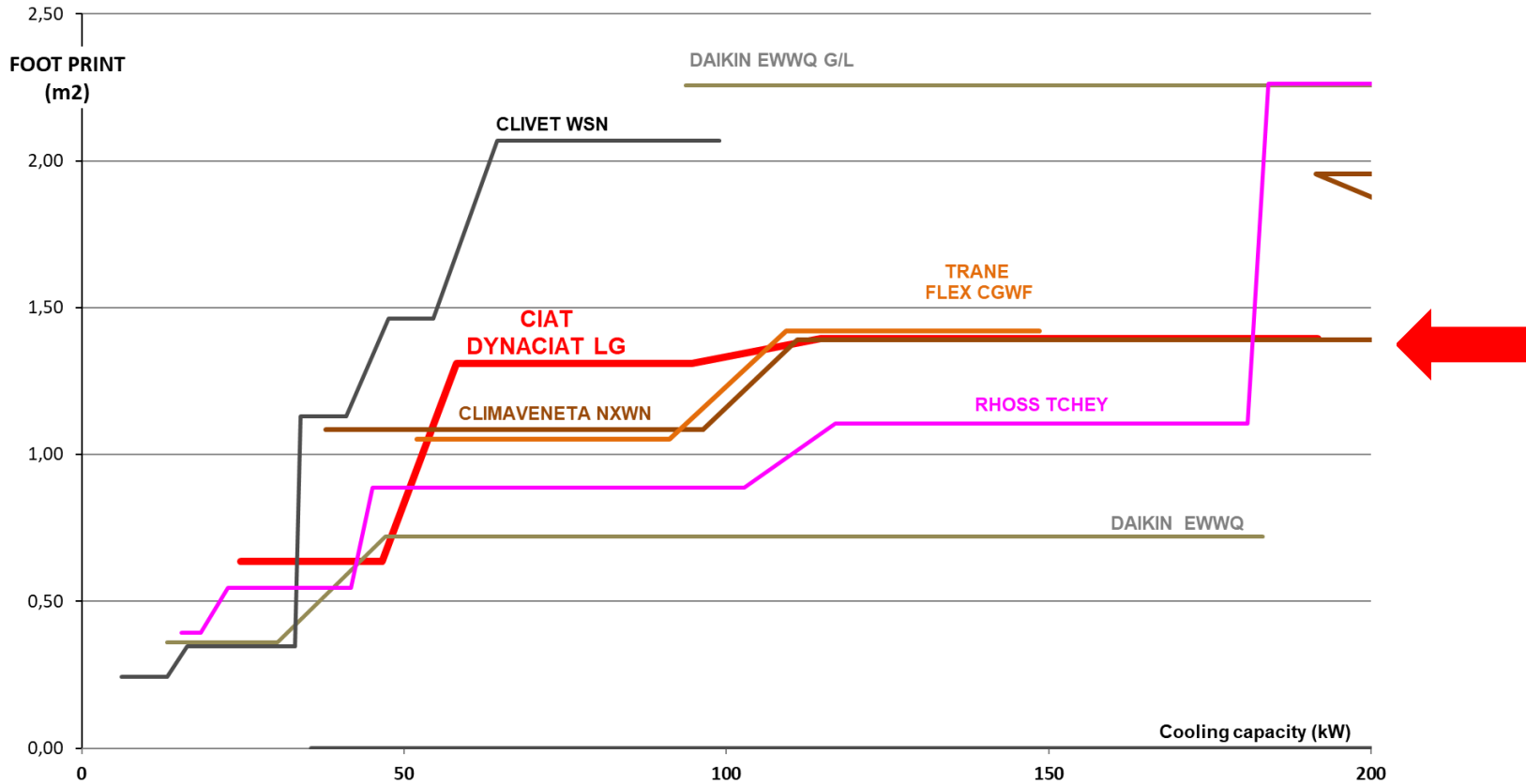
Screwed connections  
Flexibles connections

**TOP Connection WITH or WITHOUT Hydraulic Kit  
Adaptation to different installations configuration  
Saving place**

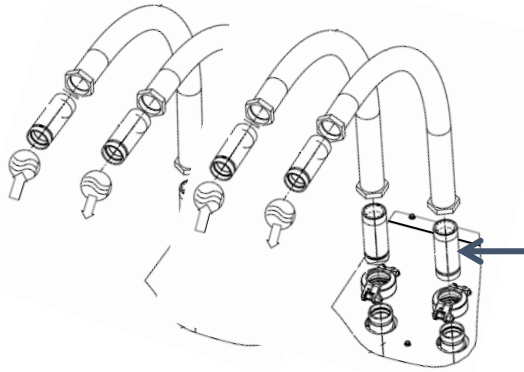


Quick & Easy  
Installation

## Common features: Foot Print w/o hydronic

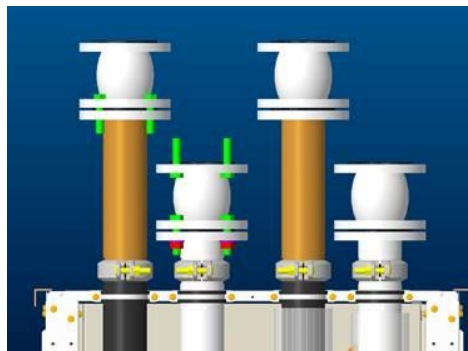


**ON THE MARKET**  
**COMPACT** : Reduce space need / Space reserve for service or others equipment's  
 Take care of service footprint with connexion on competitors offer



Adaptation pieces  
Victaulic/Screw

Sizes 80 to 300



Sizes 360 to 600

## Option :

Screw connexions  
Flexibles

## Description:

Screw connexions: adaptation piece from  
Victaulic to Screw  
Flexibles : included screw connexions + flexibles

## Advantage:

Easy installation  
**Avoid transmission of vibrations on the water  
loop network**

## Remind:

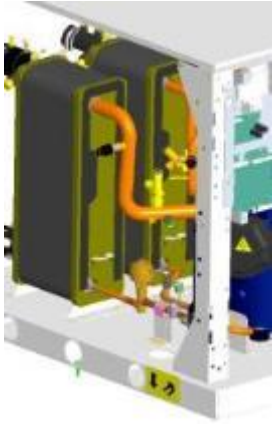
Option included the 4 connexions (I/O  
Evap./Cond.)  
Antivibratils mounts options is recommended in  
case of flexibles connexions



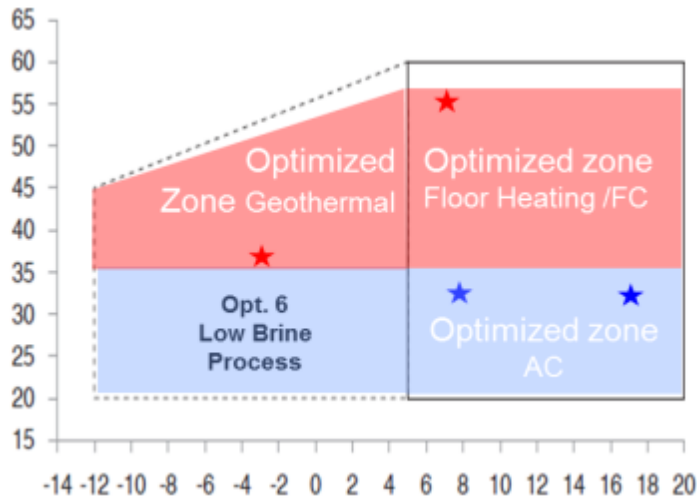
Installation

Facile et Rapide





Suction line insulated



**Option:** Low brine LWT -12°C

### Description:

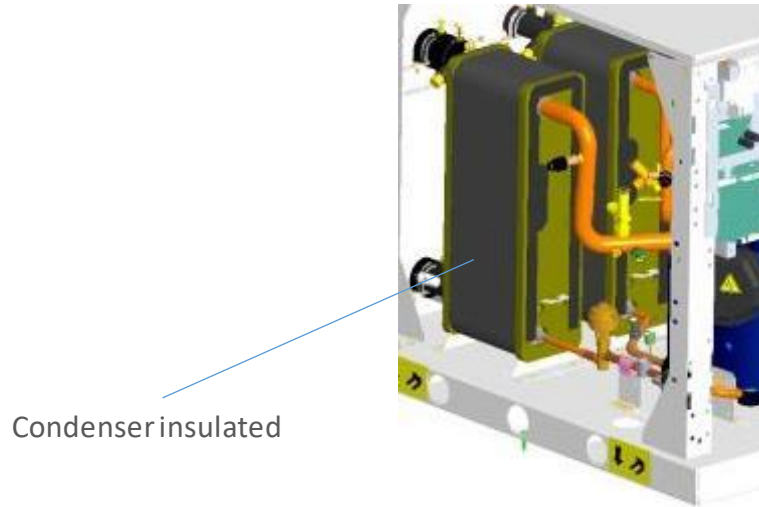
Insulation of suction line and different refrigerant weight

### Advantage:

Extend unit operating map to **process cooling applications** down to -12°C

	DYANCIAT LG		
Heat Exchanger	Evaporator	Condenser	Suction Line
Insulation	Standard	Optional	With brine

**OPERATING MAP EXTENSION for PROCESS COOLING**



**Option:** Opt\_Condenser insulation

**Description:**  
Insulation of condenser BPHE

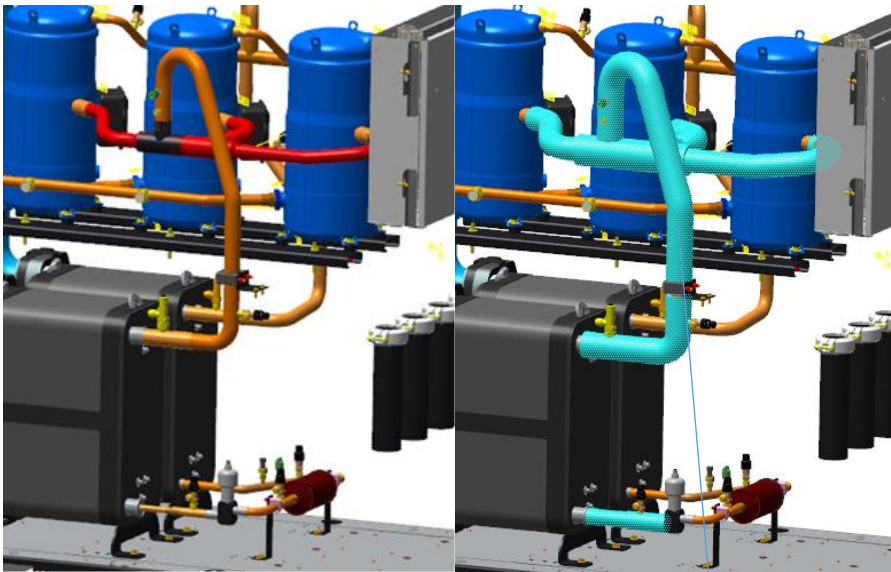
**Advantage:**  
Avoid loose of energy on condenser

**Tips:**  
Recommended on Heat Pump application

	DYANCIAT LG		
Heat Exchanger	Evaporator	Condenser	Suction Line
Insulation	Standard	Optional	With brine
Heat Exchanger	Evaporateur	Condenseur	Ligne Liquide
Isolation	Standard	Optional	Avec option Brine

**OPTIMIZED HEATING OPERATION**

## Suction line insulation



Standard unit

Suction line insulated

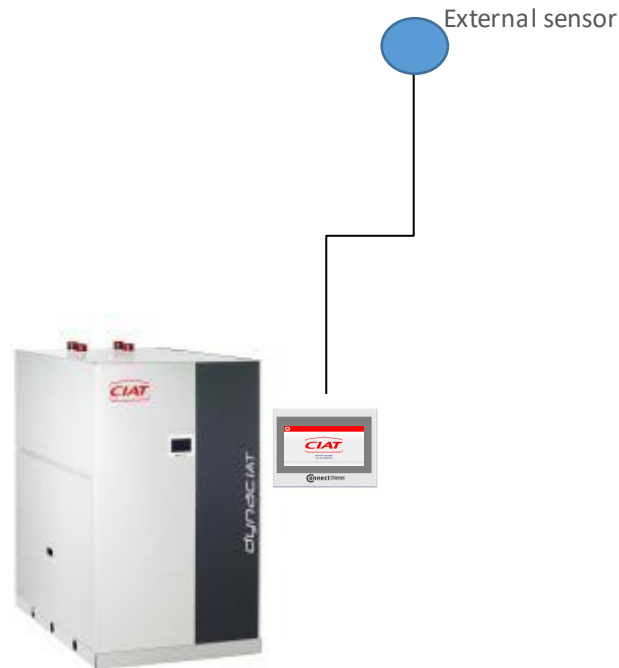
Option: Suction line insulation

Description:  
Insulation of the suction line

Advantage:  
Avoid condensation on the unit

Tips:  
**Included in Brine option**

**AVOID CONDENSATION & WATER on the unit**



**Option:** Opt. External sensor

**Description:**

External sensor to install on site

**Advantage:**

Set point adjustment according to external temp.

Energy saving

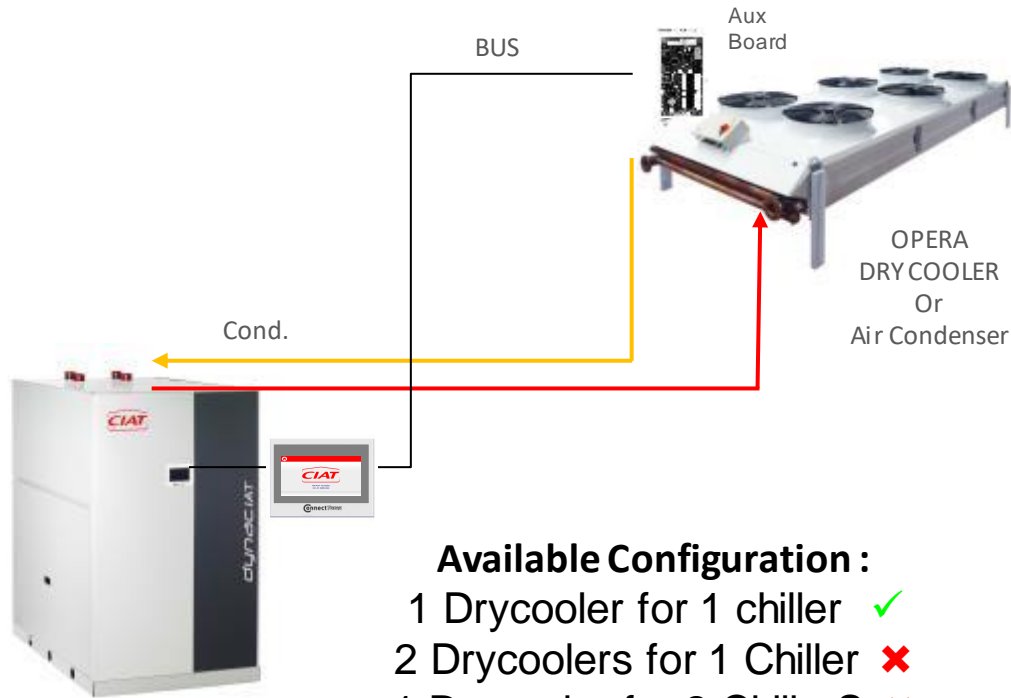
**Tips :**

Recommended on Heat Pump application

OPTIMIZED HEATING OPERATION

## Dry Cooler Management

(COLG units / Condenserless LGN)



- Available Configuration :**
- 1 Drycooler for 1 chiller ✓
  - 2 Drycoolers for 1 Chiller ✗
  - 1 Drycooler for 2 ChillerS ✗
  - Misting ✗
  - Dry AC + 1 stage EC ✗
  - Dry all EC or all AC ✓

## Dry Cooler Controls

**Option:** Dry Cooler management

### Description:

- Soft & Bus connexion for drycooler aux. board will be factory mounted on the OPERA drycooler Control box panel (option).
- Simple Bus connection

### Advantage:

Plug and play control of **CIAT OPERA** dry cooler  
System offer

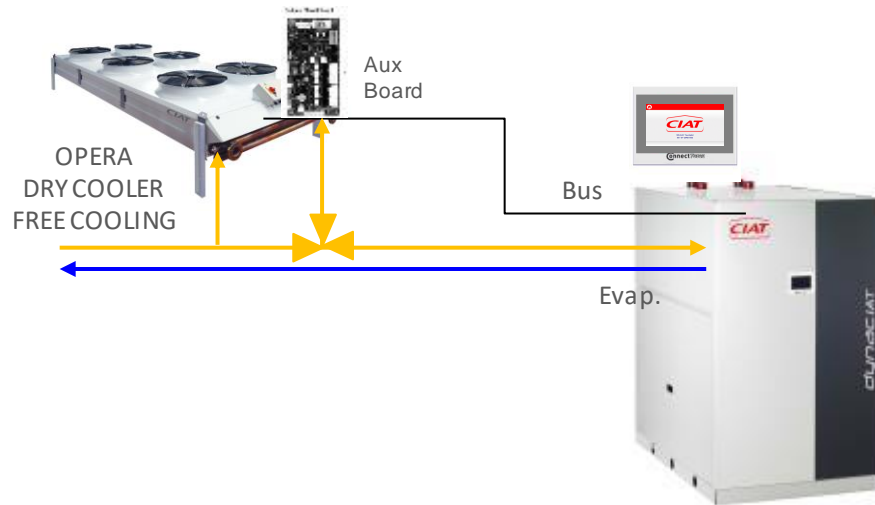
### Tips:

Complete system Chiller + Dry offer  
Select right options on dry cooler

**PLUG AND PLAY System ENERGY EFFICIENCY**

## Dry Free-Cooling Management

(CO LG units)



### Available Configuration :

- 1 Drycooler for 1 chiller ✓
- 2 Drycoolers for 1 Chiller ✗
- 1 Drycooler for 2 ChillerS ✗
- Misting ✗
- Dry AC + 1 stage EC ✗
- Dry all EC or all AC ✓

**Option:** Dry cooler on free-Cooling management

### Description:

- Management of Opera Dry cooler for Free-Cooling application
- Aux board to be order on Opera dry cooler
- Simple Bus connection
- 3 Ways valves & OAT sensors in option on Opera

### Advantage:

- Energy saving
- System offer

### Tips:

Select right options on dry cooler

**SYSTEM OFFER**

## STRONG POINTS

▶ **High energy efficiency** = *Energy savings - Cost*



▶ **Low refrigerant weight** = *Environment care*



▶ **Wide range of use -12°C/+60°C** = *Different market & applications*

▶ **One of the most silent on the market** = *Discretion -comfort*



▶ **Compactness** = *Space savings - Integration*



▶ **Many options** = *Time savings - Easy installation*

▶ **Easy & large access** = *Easy maintenance*



▶ **Compatible OPERA** = *System Offer*



## Compliance :

To European regulations and directives



## Guaranty :

EUROVENT certified performances



## Quality :

Design and manufacture as per ISO 9000 - 14000 quality management system



Quality and Environment  
Management Systems  
Approval

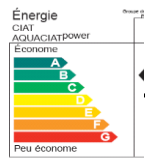


2 versions  
Monobloc  
**Condenserless**

17 sizes  
25 to 190 kW

High efficiency

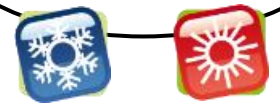
Average  
EER : 4.72  
ESEER : 5.67  
COP: 5.54  
SCOP : 5.92



Easy Acces



All applications  
**-12°C / +20°C**



Hydraulic  
versions



Connectivity

2 acoustics  
design



# Thank you for your attention

