

# OMEGA SKY

## 2017.12.05

# OMEGA SKY

444÷1589kW, 14 sizes



High efficiency water-source chillers.

Screw compressors.

Shell & tube heat exchangers.

Optimized for cooling.



## Strengths

- High **part-load efficiency**: ESEER up to 6,37. SEER up to 6,38.
- Ecodesign compliant, Regulation 2281/2016
- **R513A refrigerant: non flammable & GWP=573**. Reduced charge.
- Easy **handling**: depth ≤ 900 mm (xx.1 sizes)
- Easy **installation**: condenser manifolds and flanged connections (options)
- **Free-cooling no-glycol feature**
- **BlueThink** advanced control: integrated web server; Multilogic and Blueeye options



# OMEGA SKY

Lineup:

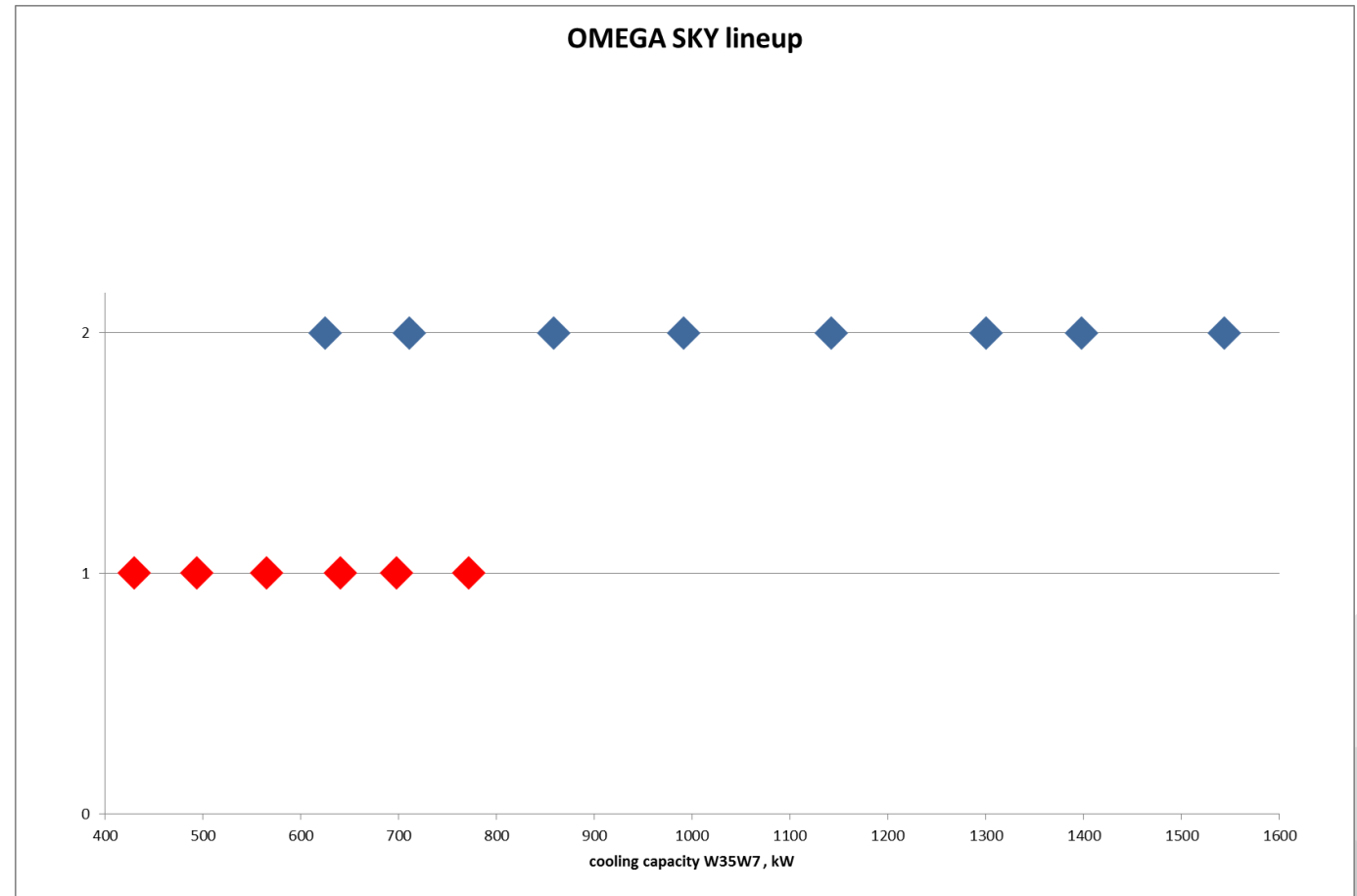
1 compressor:

- 6 sizes
- 431÷772 kW (R134 a)
- 444÷794 kW (R513 A)

2 compressors:

- 8 sizes
- 625÷1544 kW (R134 a)
- 645÷1589 kW (R513 A)

(ref. net W30/35 W12/7)



# OMEGA SKY –features



Refrigerant choice:

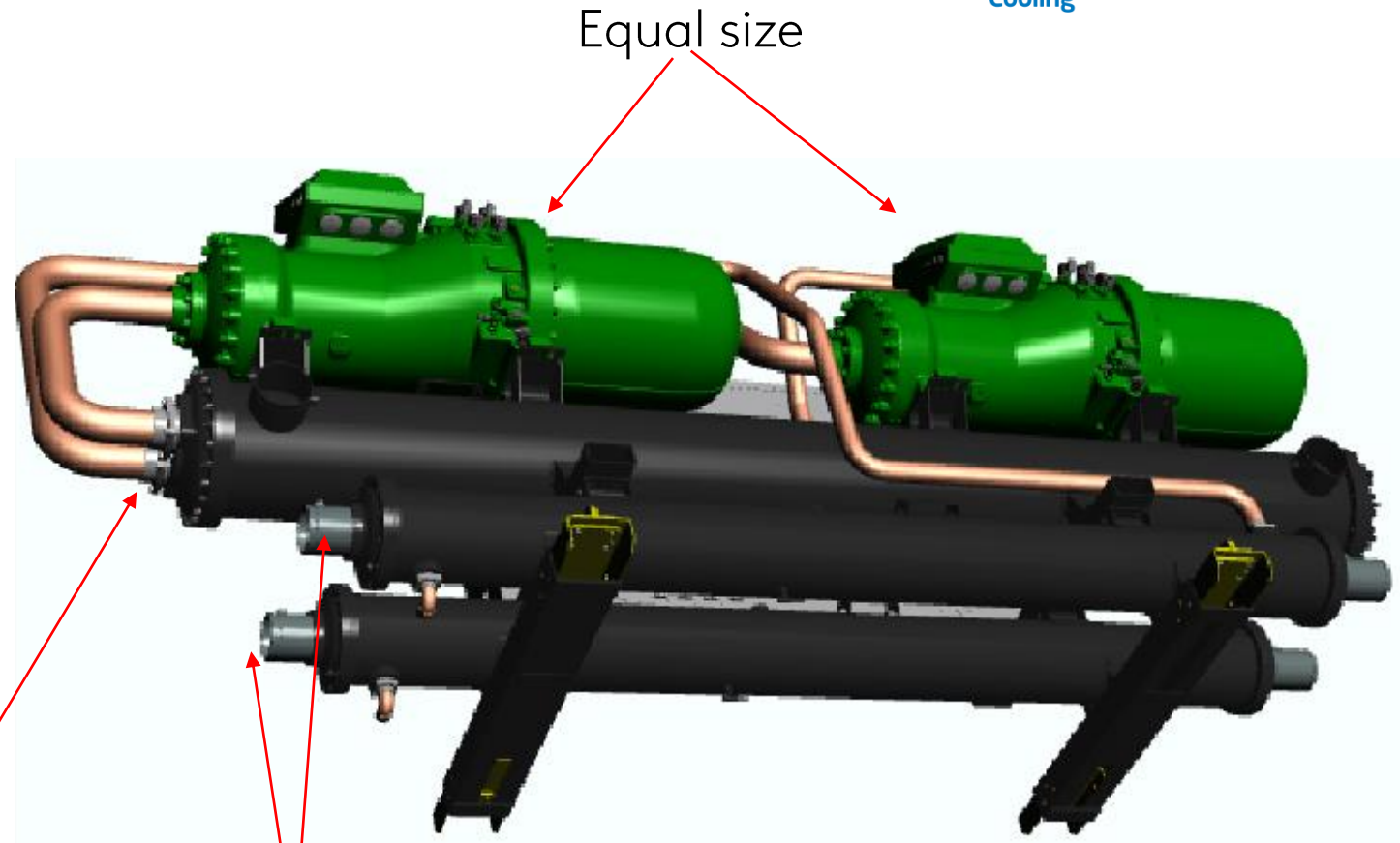
- R513A default
- R134a option

Compressor(s):

- Conventional stepless type
- Cooling optimized

Electronic expansion valve

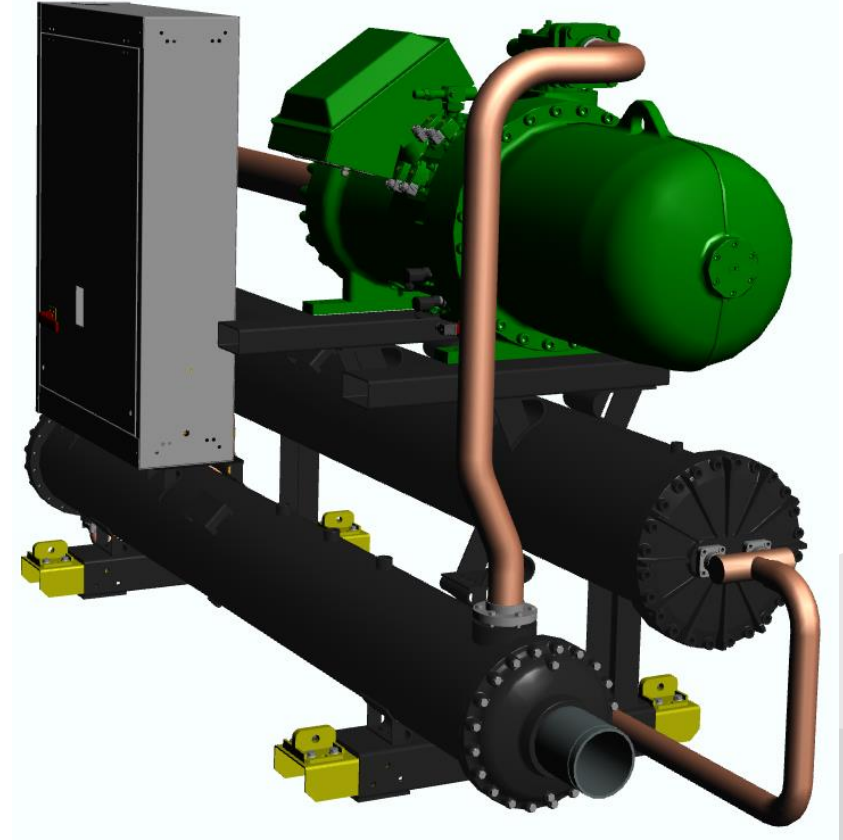
- Dry evaporator
- Condenser: single pass (1 per circuit)



# OMEGA SKY –versions

- LN – low noise
- XLN – super low noise
- OH – non-reversible heat pump
- HPW – reversible heat pump (water side)
- DC – total heat recovery
- LC – condenser-less execution for split system

**Swegon**  
Cooling

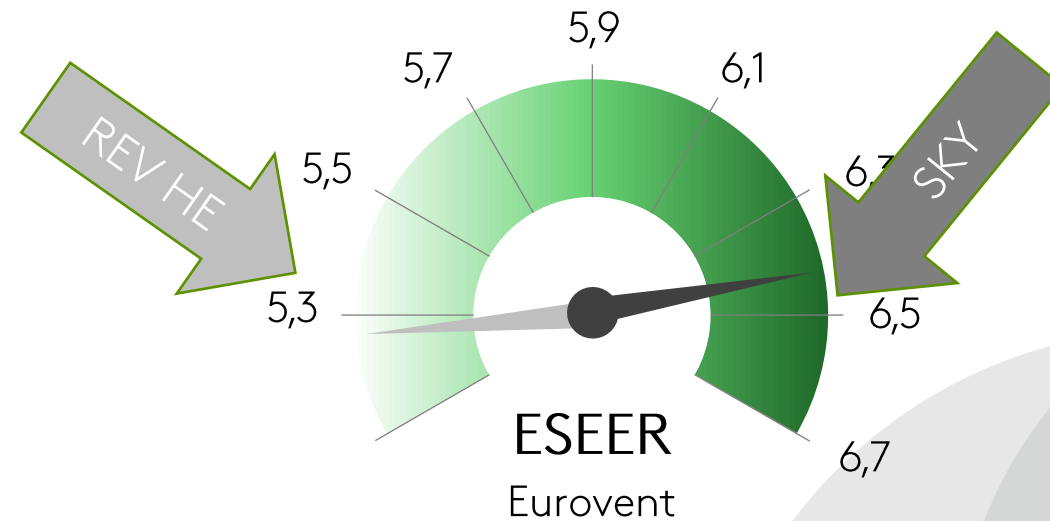
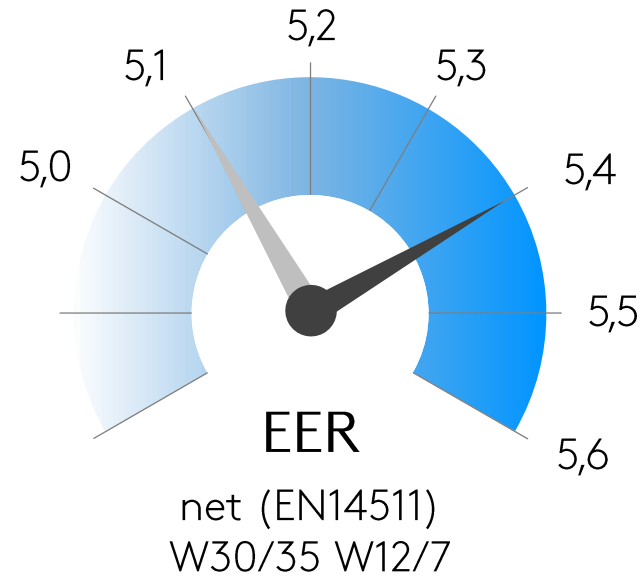


# OMEGA SKY



Efficiency:

- EER net 5,2÷5,4
- ESEER up to 6,37

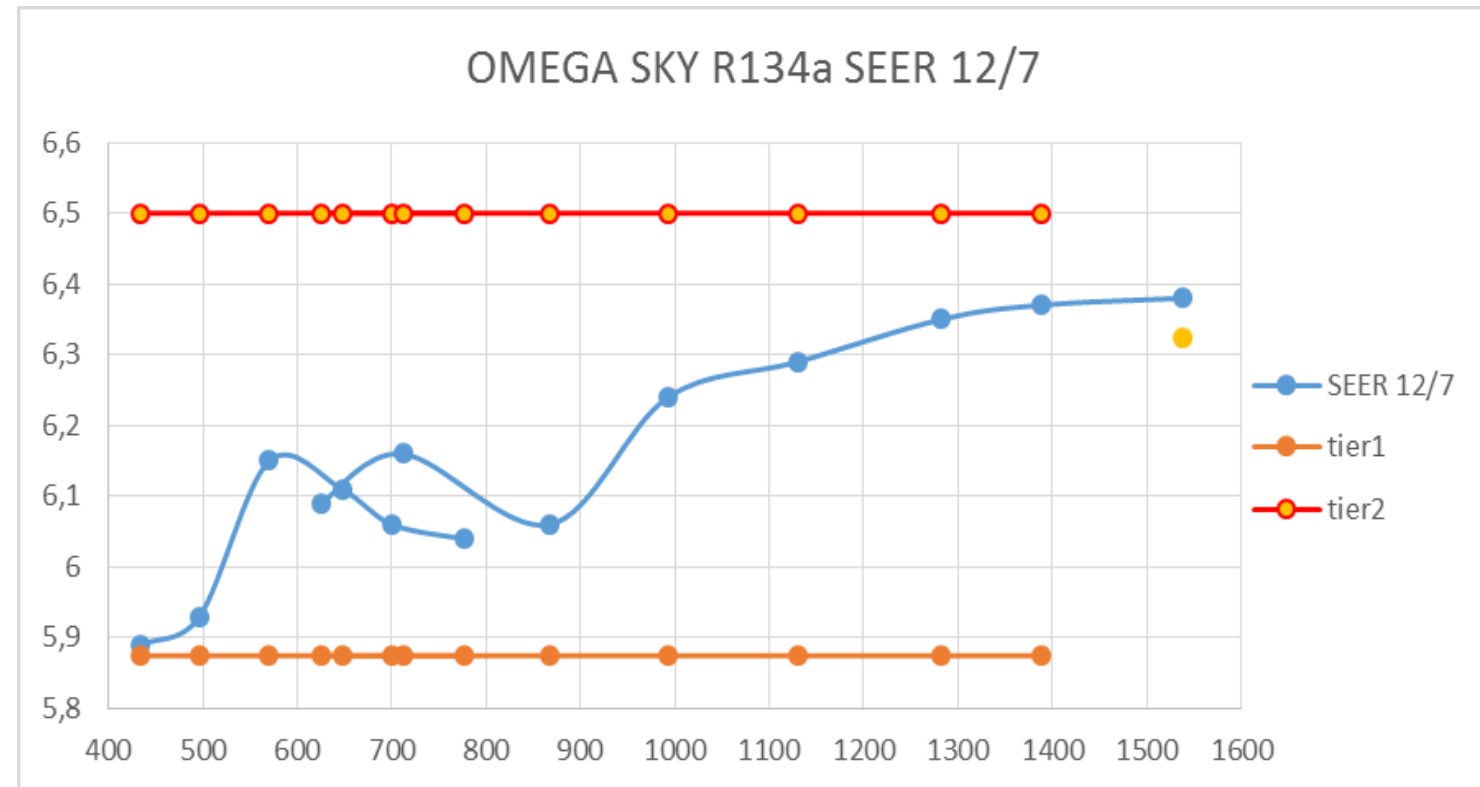


# OMEGA SKY Compliance – Ecodesign



Reg. 2281/2016 - SEER 12/7:

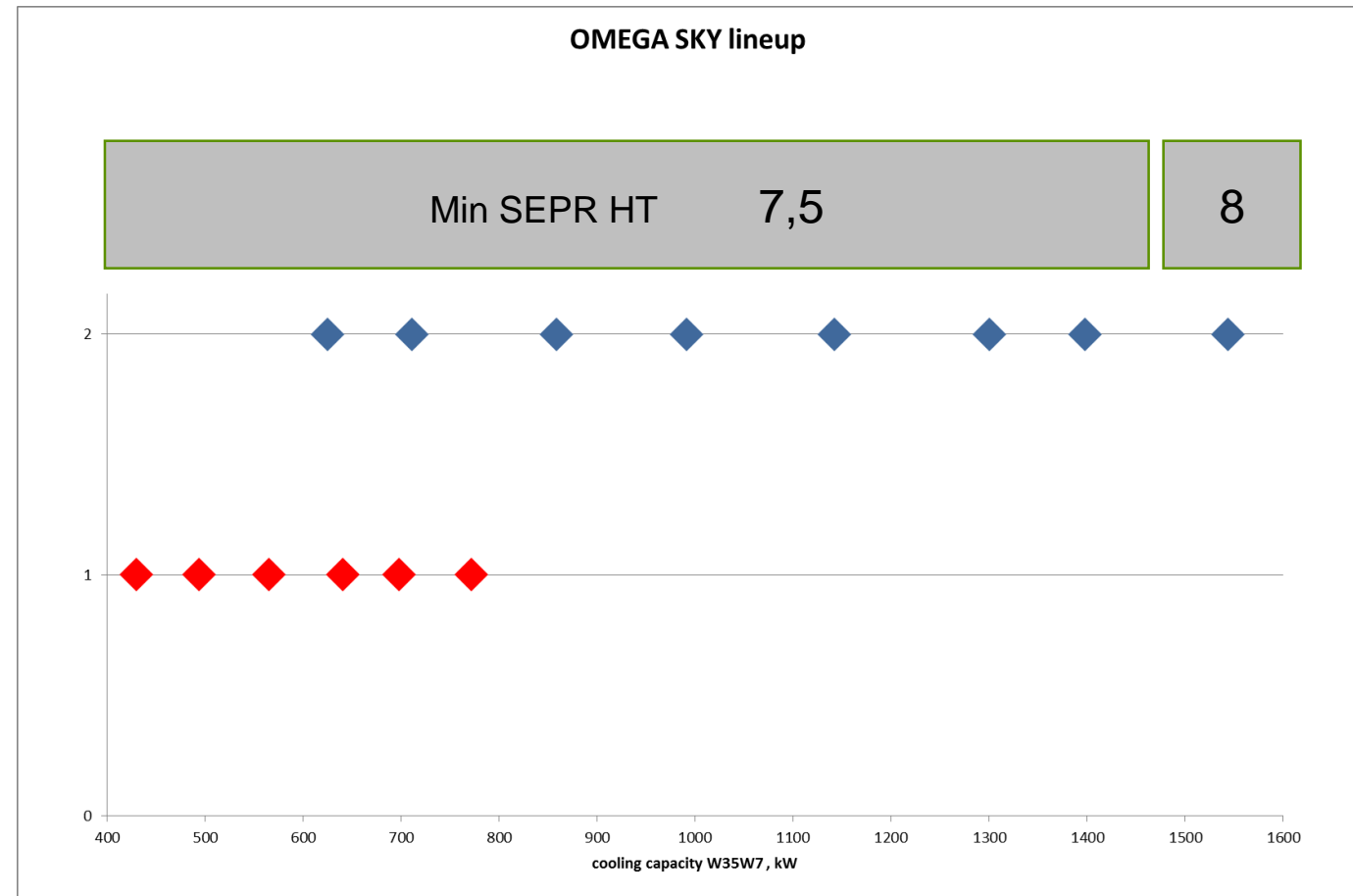
- All compliant to tier 1
- Also above 1500kW threshold
- SEER averaging 6.2 (xx.2 sizes)
- (also compliant at 23/18)



# OMEGA SKY Compliance – Ecodesign

Reg. 2281/2016 - SEPR:

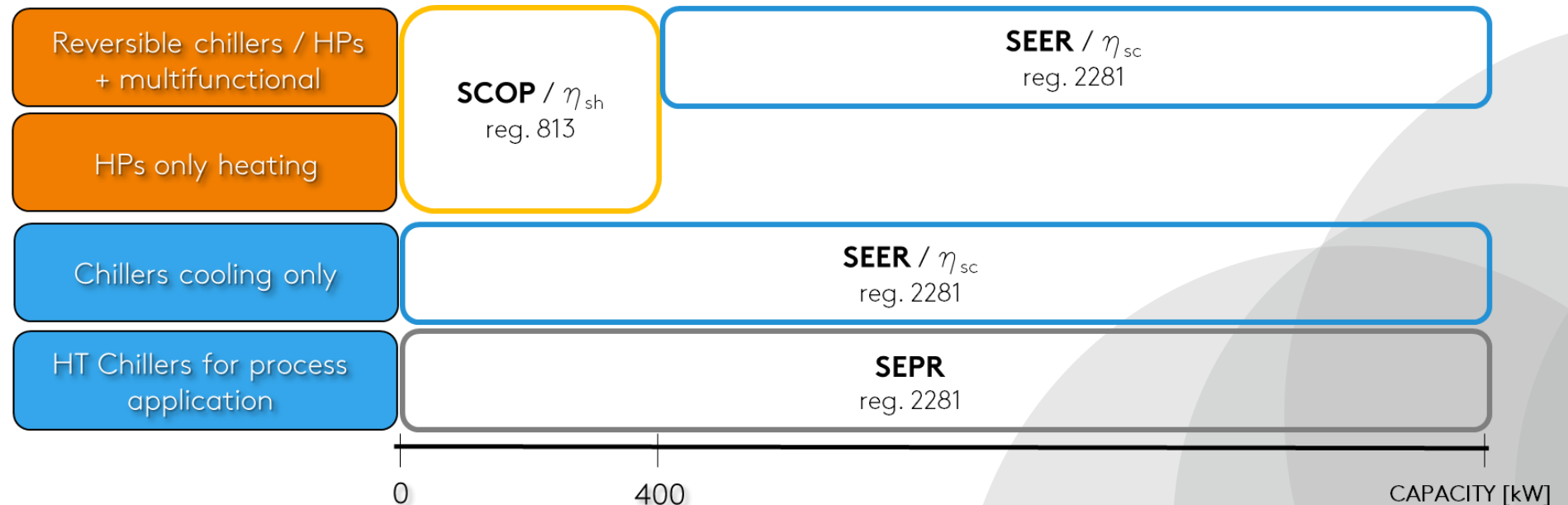
- All compliant to tier 1





# OMEGA SKY Compliance – Ecodesign

- OH: exempted ( $P_{design} > 400\text{kW}$ )
- HPW: SEER compliant (Reg. 2281)
  
- (LC: compliance depends on selection of remote condenser)



# OMEGA SKY



Efficiency also on the hydraulic circuit

- Heat exchangers selected to optimize **pressure drop**
- (average 30 kPa on evaporator, 40 on condenser)
- Downsizing of pumps
- Additional saving: condenser inverter-driven pump managed by Bluethink



# OMEGA SKY

## R513 A refrigerant



- Non flammable – category **A1**
- GWP 573 (\*)
- Mixture, R134a+R1234yf
- Not subject to shortage or price hikes (commissioning)
- Dry evaporator = low charge = possibly not subject to local taxation / bans
- Smart & future proof for tenders

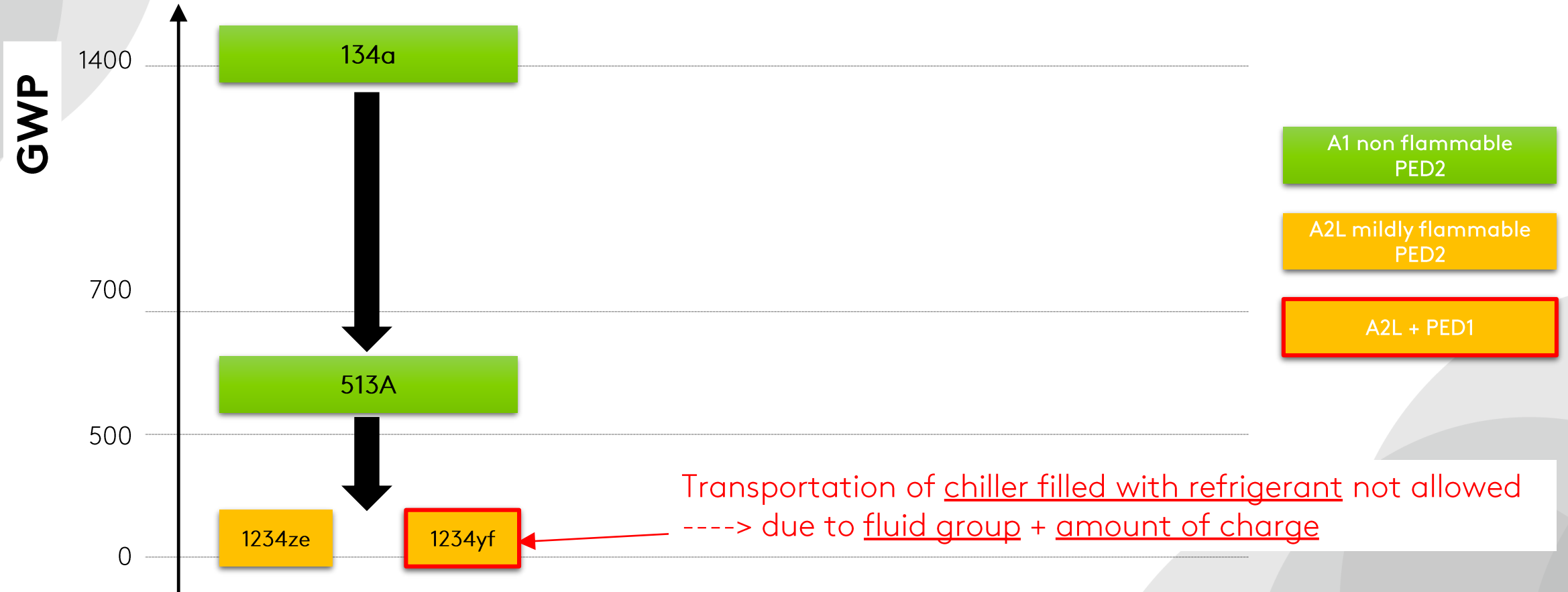
( \*) GWP (AR5) according to IPCC V time horizon 100 years; GWP (AR4) = 631



# OMEGA SKY R513 A refrigerant



Refrigerants' footprint



# OMEGA SKY R513 A refrigerant

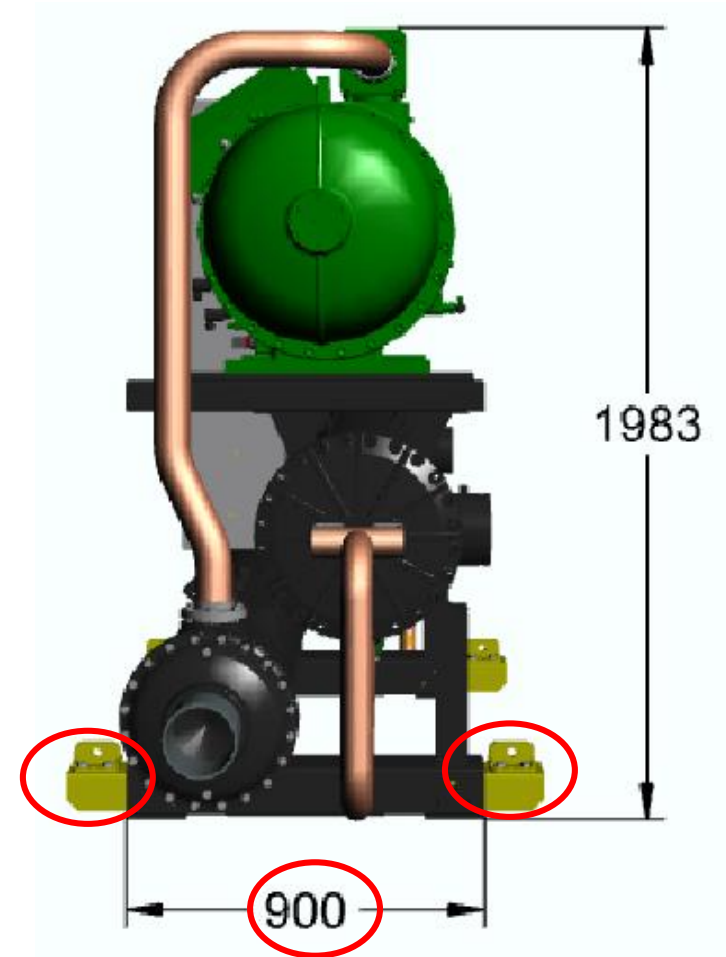
- Models with both R513A and R134a are EUROVENT certified
- (effective March 2018)



# OMEGA SKY

Easy commissioning and installation:

- Easier on-site handling
- 900 mm depth up to 770kW (xx.1 sizes)
- Lifting by eyebolts – all sizes

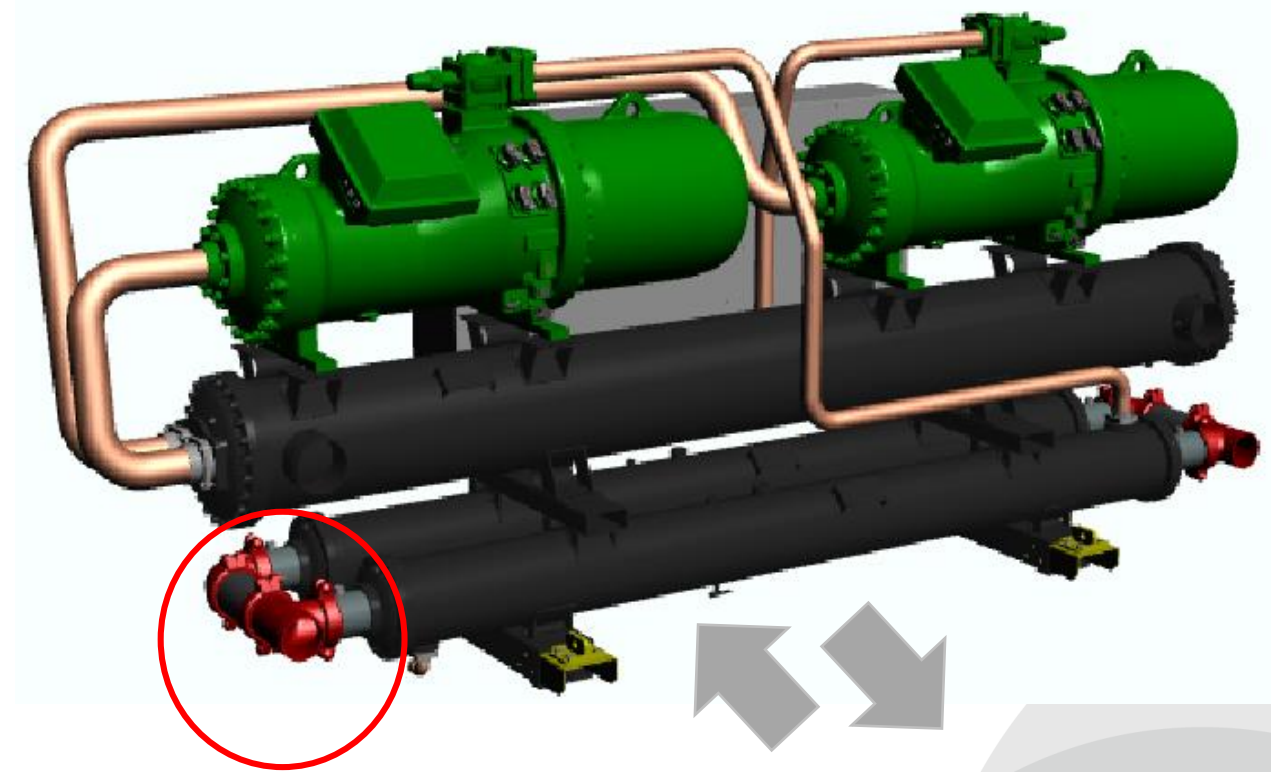


# OMEGA SKY



Easy commissioning and installation:

- Ability to manage external pumps
- Option, water manifold for condensers (xx.2 sizes) or fittings
- = piping on evaporator's side
- Flanged connections (opt.)



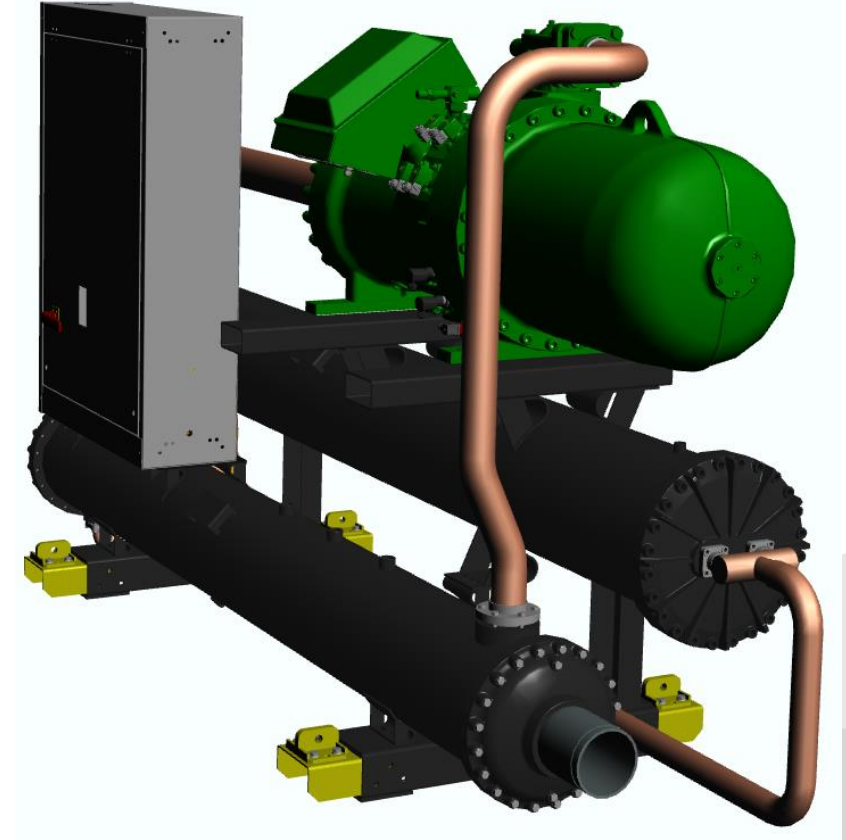
# OMEGA SKY – key options & versions

Low-noise:

- LN – low noise = compressor housing
- XLN – super low noise = housing + jacket



**Swegon**  
Cooling

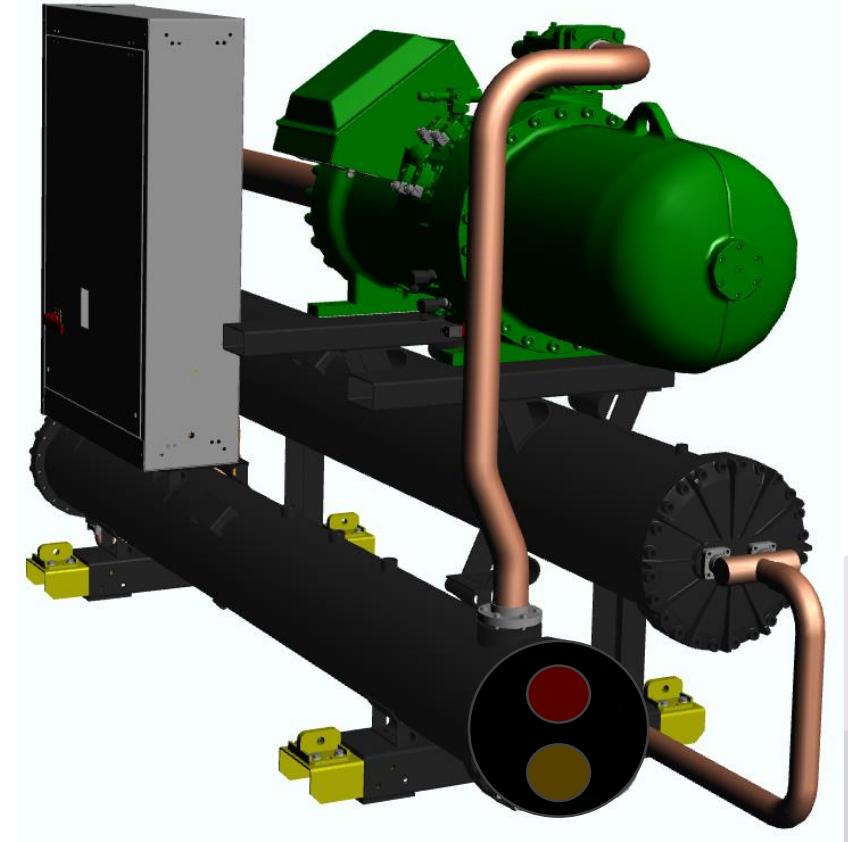
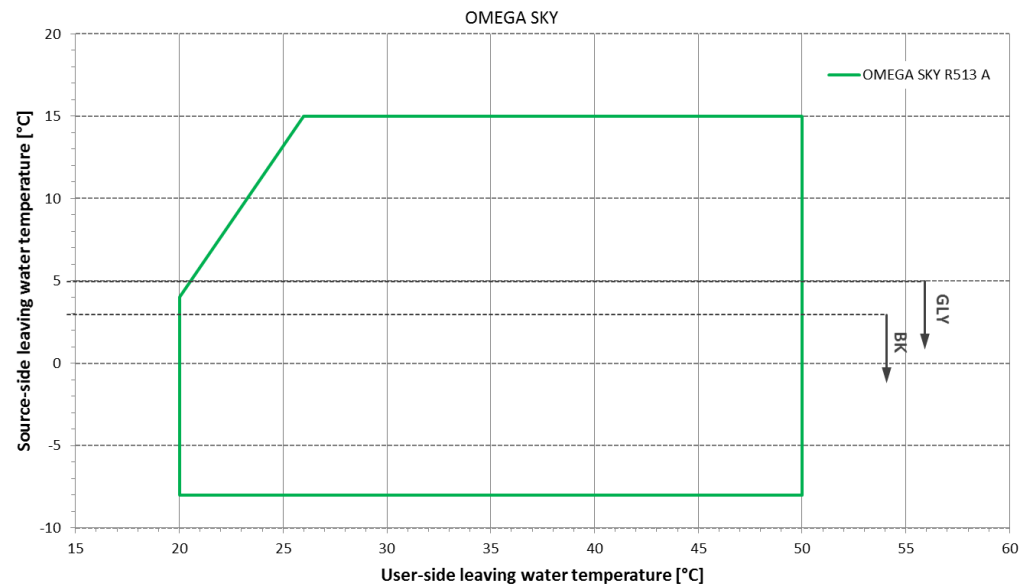




# OMEGA SKY –versions

DC

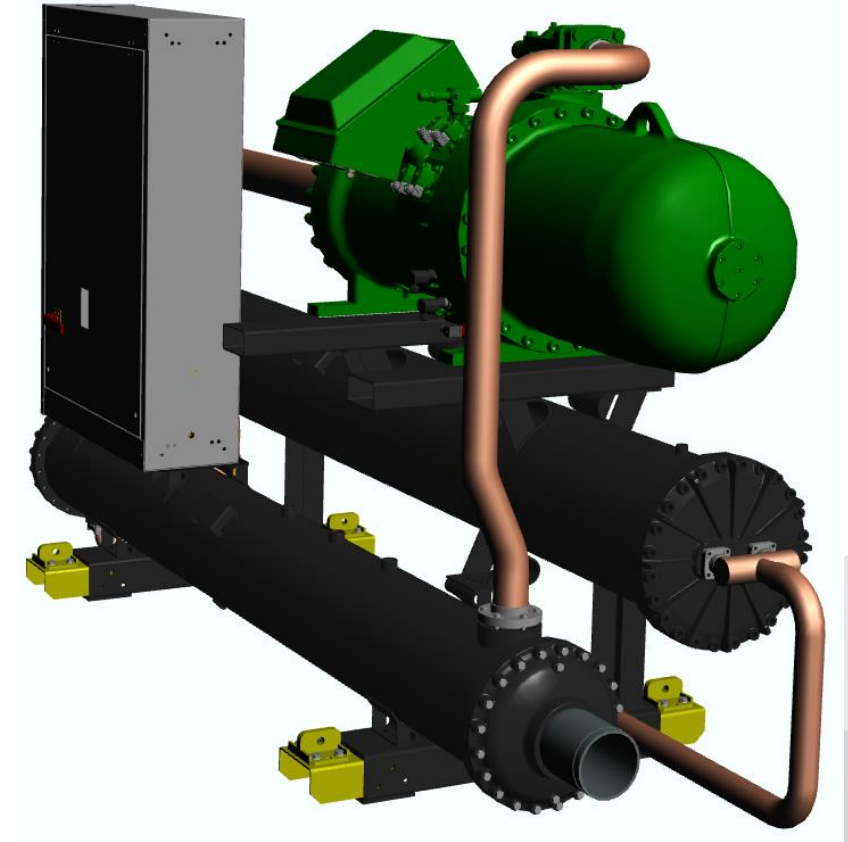
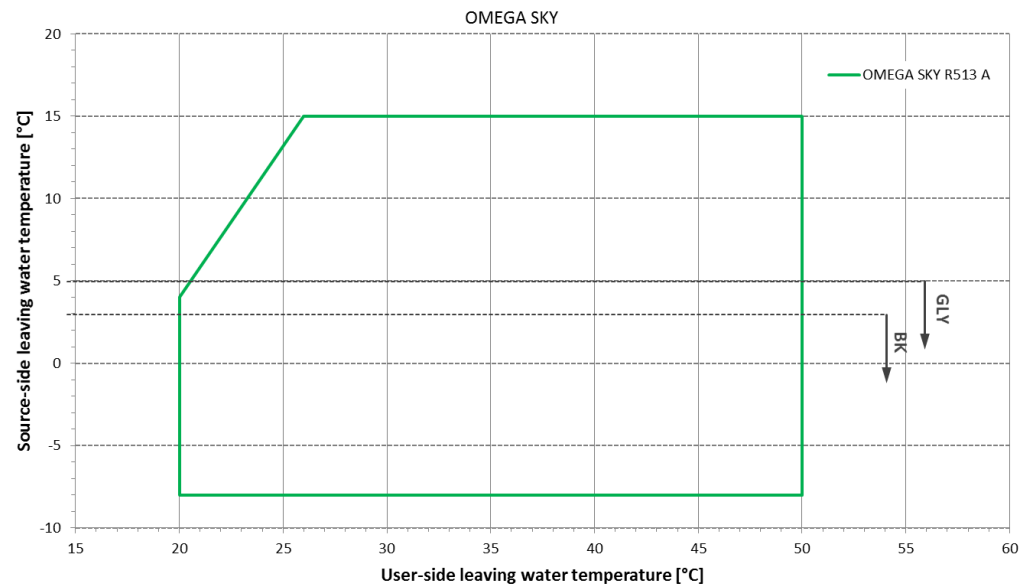
- total heat recovery
- via dedicated section on condenser



# OMEGA SKY –versions

Heat pump:

- OH – non-reversible
- HPW – reversible, water side



# OMEGA SKY – key new options

- Free-cooling no-glycol function
- managed by Bluethink
- (\*) additional 3<sup>rd</sup> party equipment required
- Boost on yearly energy savings
- Competing vs higher efficiency chillers

**Swegon**  
Cooling



# OMEGA SKY – Free-cooling no-glycol



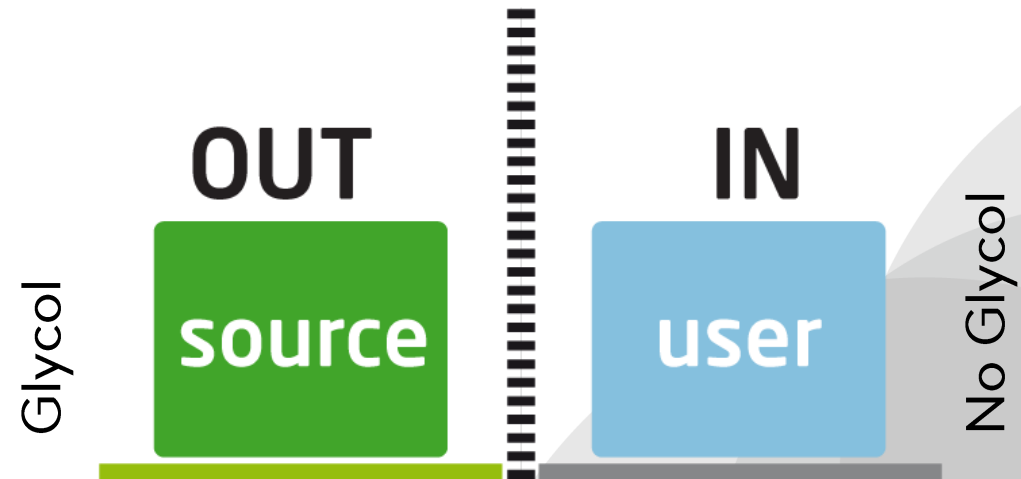
- Water-cooled indoor chillers = unique solution by Blue Box.
- Ideal for systems with year-round cooling load, e.g. industrial applications, data centers
- Plug-and-play, from selection to commissioning
- BlueThink: fully integrated management of all components
- Indoor installation allows to comply with architectural constraints.
- Selection of dry cooler easily matches noise requirements.
- Instead of on-site assemblies, FC/NG modules are supplied with full documentation / compliance.



# OMEGA SKY – Free-cooling no-glycol

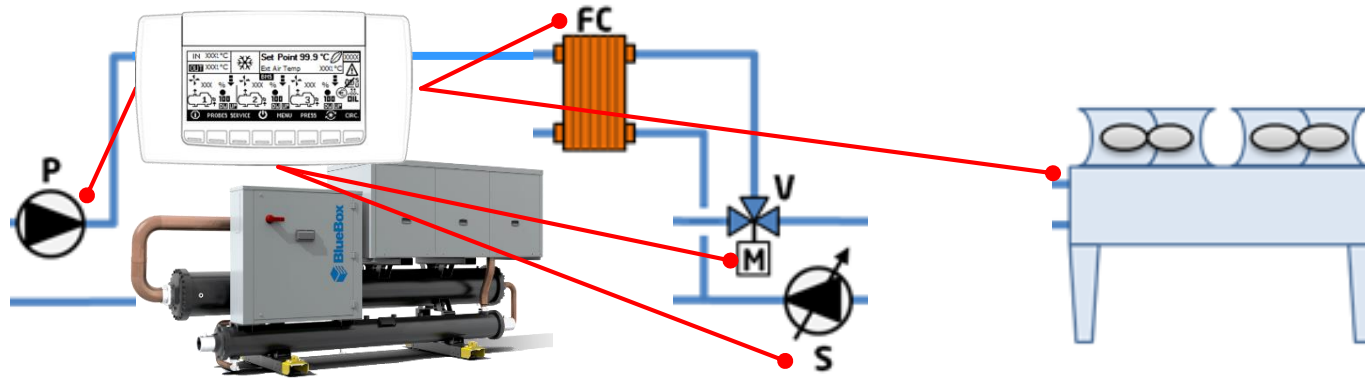


- FC/NG
- intermediate heat exchanger to operate indoor section without glycol
- better heat exchange properties and less energy for pumping
- suitable for systems where glycol mixtures are not allowed
- safe operation e.g. in case of leakages
- cost saving from circuit's filling and safety arrangements



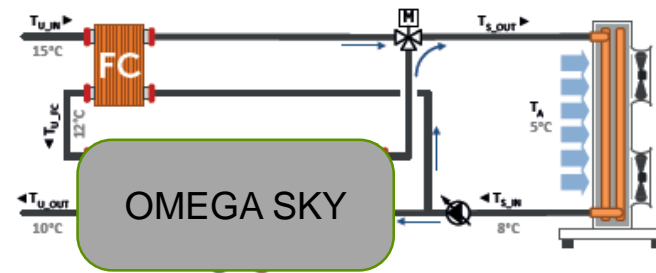
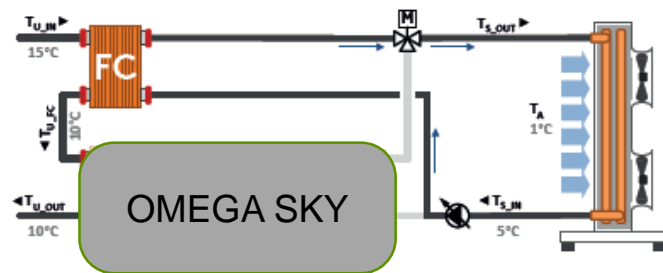
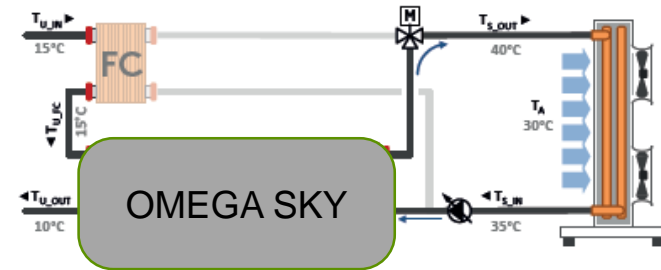
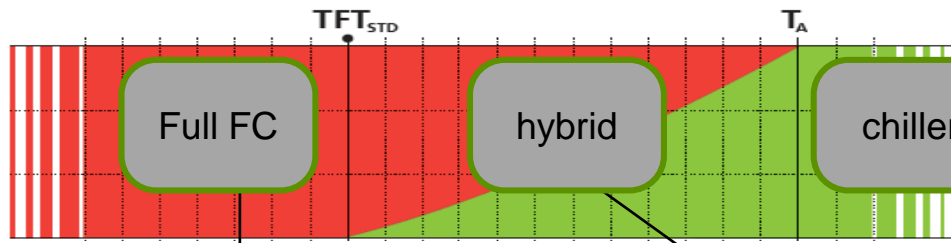
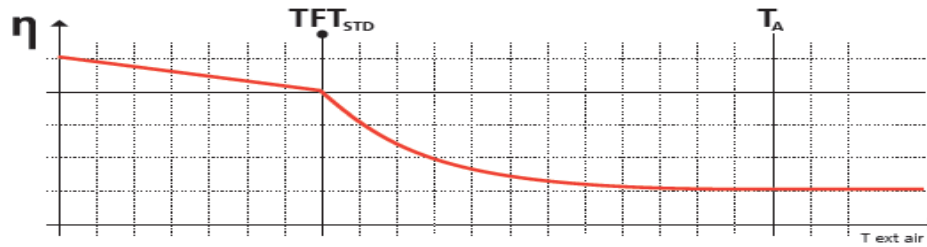
# OMEGA SKY – Free-cooling no-glycol

- BlueThink: fully integrated management of all components



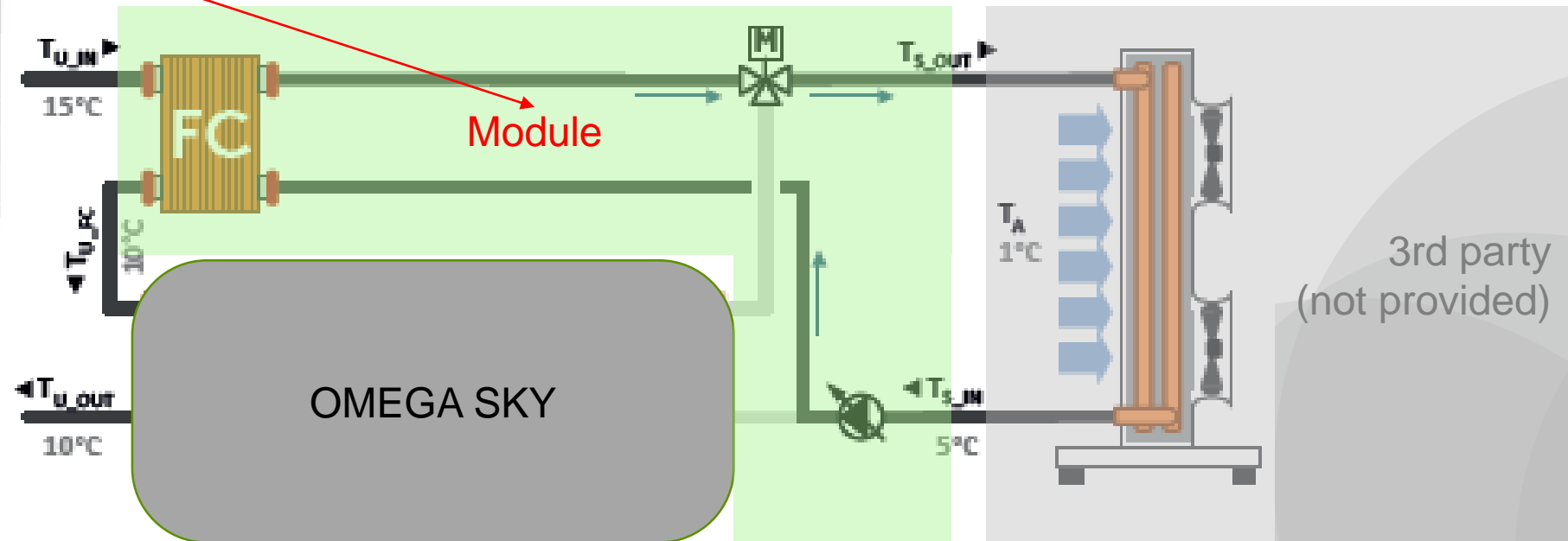
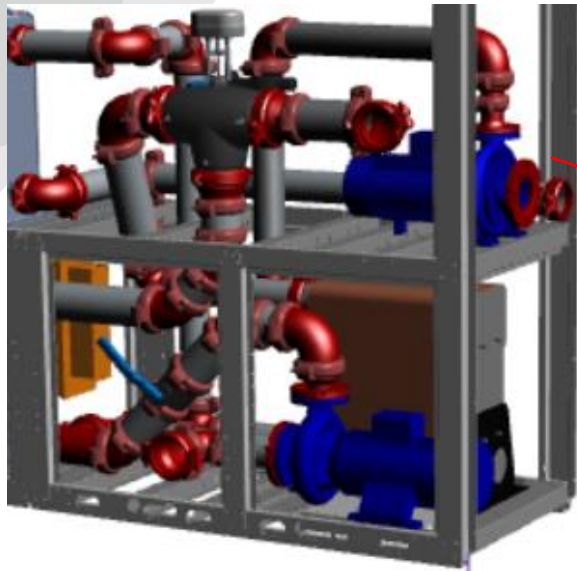
# OMEGA SKY – Free-cooling no-glycol

- Operation modes:



# OMEGA SKY – Free-cooling no-glycol

- Function + **Module** (= 3 way valve, heat exchanger, pump)
- for 3 sizes: 43.1÷58.1





# OMEGA SKY – options

- Management of **inverter driven pumps** source side
  - via analogue signal
- (\*) additional 3<sup>rd</sup> party equipment required

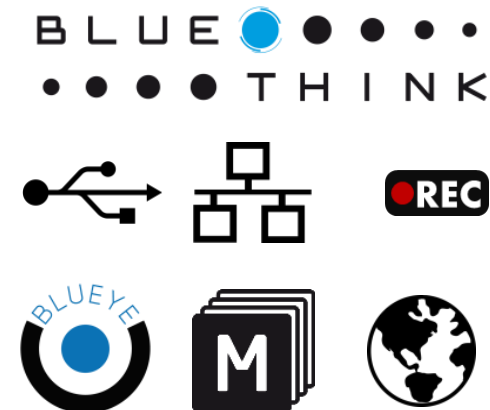
**Swegon**  
Cooling



# OMEGA SKY Bluethink



- Proprietary platform
- Bluethink advanced control (programmable) as standard
- Shared among most models - advantage for commissioning
- Integrated web server
- Multilogic and Blueeye options



# OMEGA SKY Bluethink



## Advanced control's features:

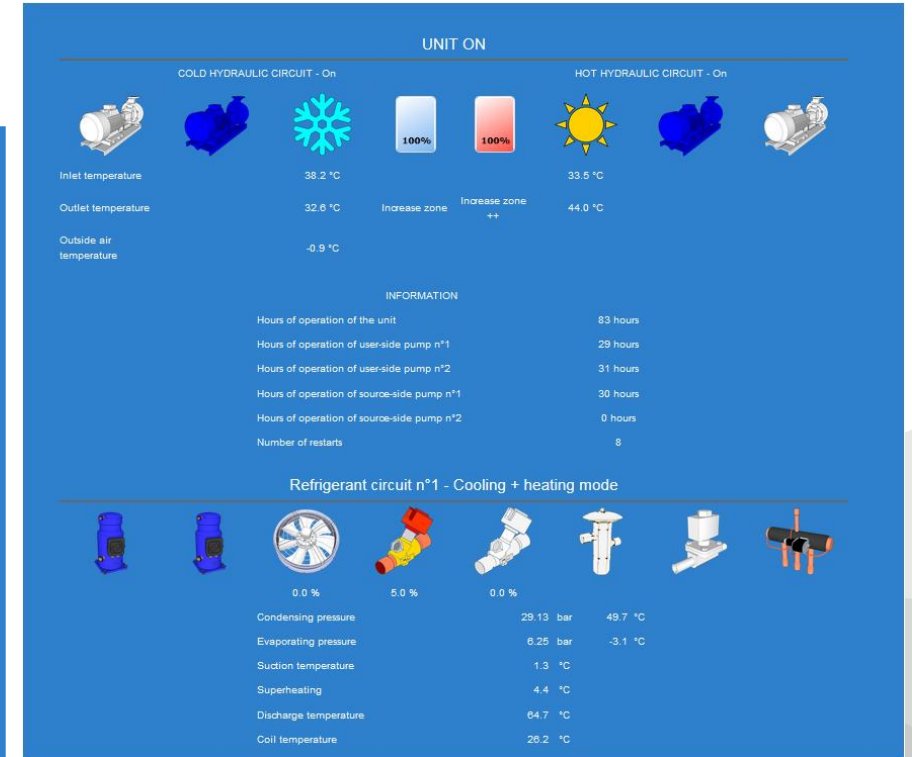
- Integrated web server
- Data logging
- Connectivity protocols
- Multilogic: management for multiple units' system (\*)
- Blueye®: supervision system (\*)



# OMEGA SKY Bluethink

## Integrated web server

- Easier access to unit's status



# OMEGA SKY Bluethink



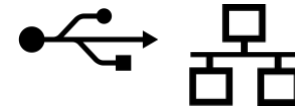
## Data Logging & Connectivity

### Data logging

- all parameters and alarms
- up to 22 days, with 15 seconds sampling

### Connectivity – serial protocols

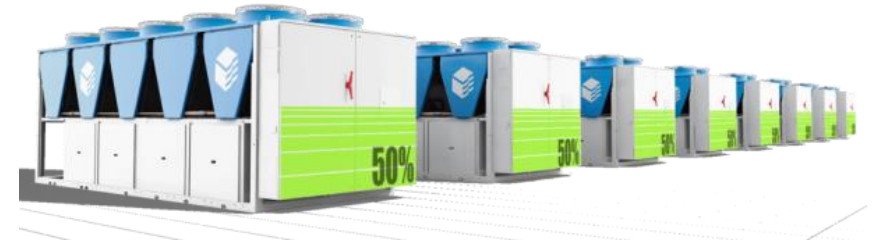
- Built-in ModBus (RS485 or USB / Ethernet)
- Options: BACnet/IP, Lon



# OMEGA SKY Bluethink

## Multilogic

- Management of multiple units of a system / hydraulic loop
- Up to 32 units connected even of different sizes / models
- (Multifree: specific logic for free-cooling units)
  
- Master/Slave logic
- Maximized energy efficiency at partial load grants top benefit in redundancy systems
- Fully embedded in the control resources and factory-preset
- Fast commissioning. Simple LAN connection between units
- **No external devices required**



Option. Number, type of units to be specified when ordering

# OMEGA SKY Bluethink



## Multilogic – regulation profiles

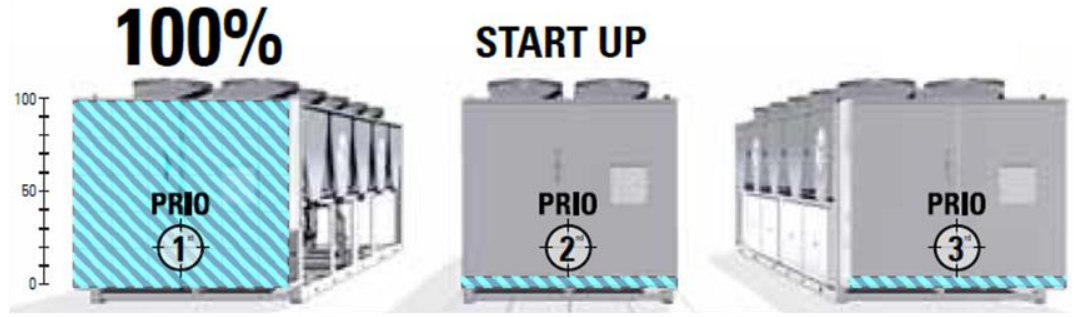
### BALANCED

Units work in parallel, with same priority



### SATURATED

Unit of higher priority reaches 100% then second unit starts



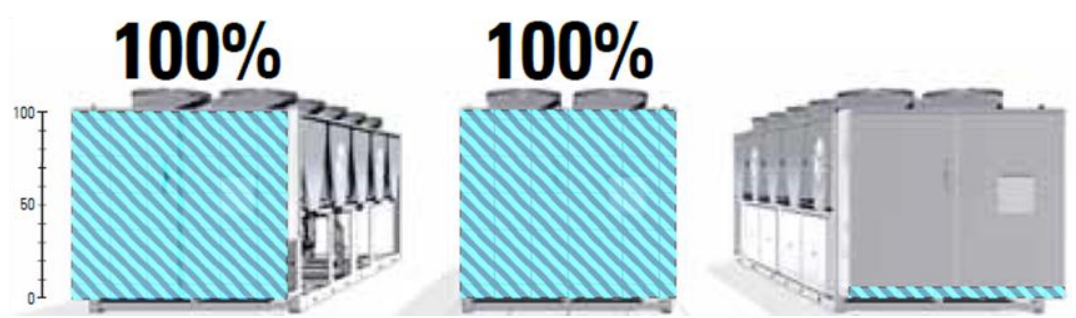
### OPTIMIZED

Combining Balanced + Saturated, to maximize efficiency  
(different models/sizes)



### BOOSTER / BACK-UP

Last unit only for back-up / demand peaks



# OMEGA SKY Bluethink

## Blueeye

Remote supervision system via **cloud**

- Operation status monitoring
- Record parameters / data in the cloud up to 3 months
- Monitoring up to 5 devices (e.g. units)
- Customizable reports: data, graphs
- Performances' analysis to anticipate potential failures / preemptive actions
- Access to unit's settings and parameters

