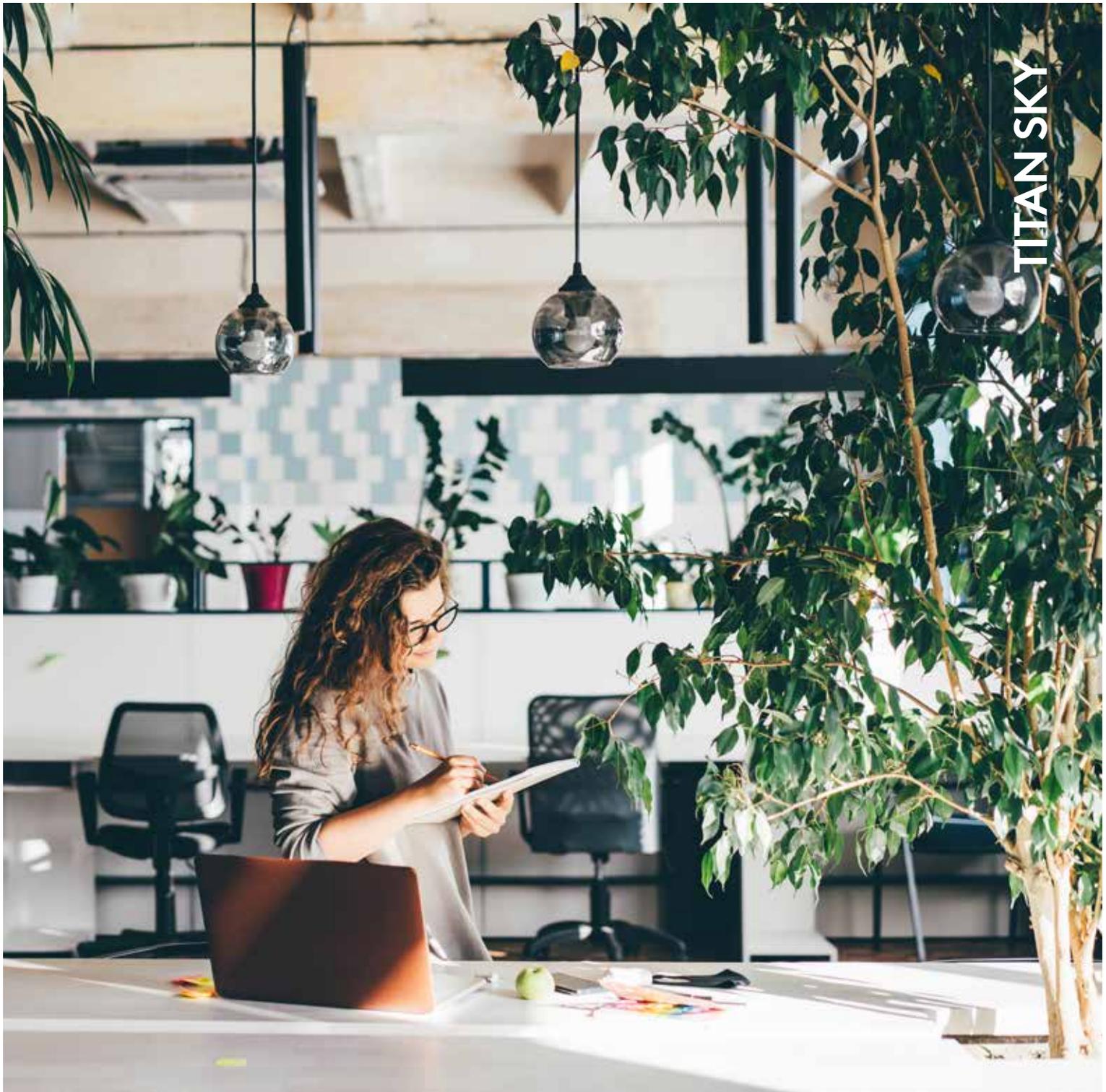# TITAN SKY

Full inverter reversible heat pump
with natural refrigerant
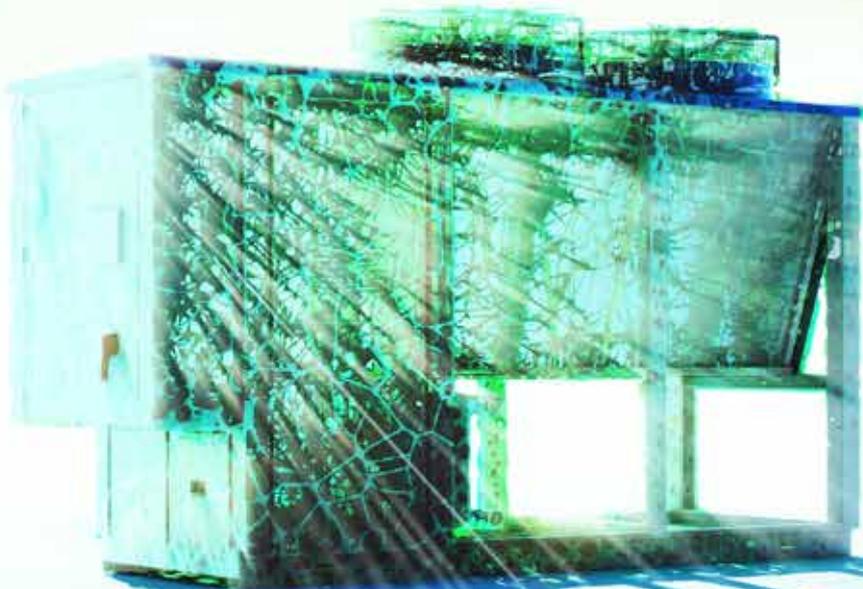**30÷200** kW

BlueBox
by Swegon

TITAN SKY

THE NATURAL CHOICE

THE MOST SUSTAINABLE COMMERCIAL AIR SOURCE HEAT PUMP

Air Source Inverter Heat pump
Natural refrigerant (R290)
Lowest TEWI (Total Equivalent Warming Impact)

Unbeatable use of Primary energy thanks to Inverter technology • No Ozone Layer impact & Nearly Zero Global warming potential • Optimized Low Refrigerant Charge design • Meets the highest seasonal efficiency standard (European Ecodesign Erp) • Eurovent certification soon available

30-200 kW • Max Hot water: +63°C • Min T_{air}: -20°C • SCOP: up to 4.12

R 290

INVERTER

BLUE THINK

Natural refrigerant   **Inverter technology**   **Advanced control**

CLIMATE CHANGE FIGHT

EUROPEAN CLIMATE STRATEGY IS GOING TO BE UPDATED AND REINFORCED

TARGET ▼

Reduction of **55%** Greenhouse Gas emission by **2030**

Increased **renewable energy** (above **32%**) by **2030**

Net-zero Greenhouse Gas Emission by **2050**

HOW? ▼

F-gas regulation Regulation

Renewable Energy Directive

European Performance of Buildings Directive (**EPBD**)

Ecodesign **ERP** Directive

Keep temperature increase below 1.5°C — **Become a climate neutral economy**

R290
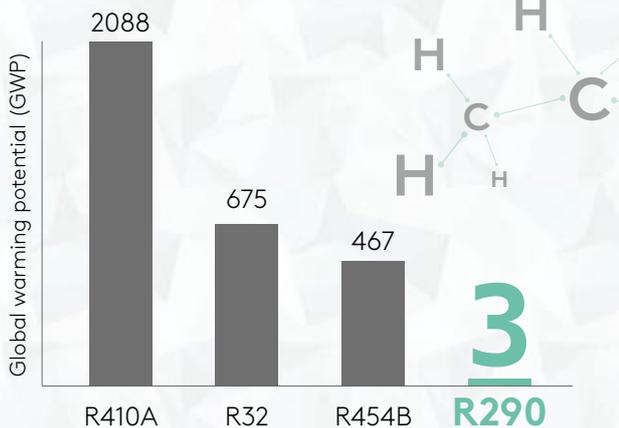## NATURAL REFRIGERANT

$C_3 H_8$

SUSTAINABLE CHOICE
- Nearly zero Global Warming Potential (GWP=3)
- Natural fluid
- Natural non toxic refrigerant
- No Ozone Layer impact
- -40% gas charge compare to R410A

RELIABLE CHOICE
- Availability of optimized, long run reciprocating inverter technology
- Implementation of the highest safety standard

SMART CHOICE
- No carbon tax
- Pushed by incentivation schemes
- Future-proof natural solution. On going HFC phase-out

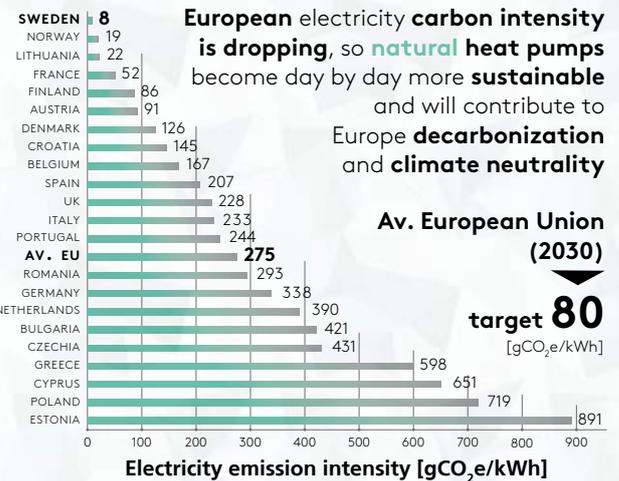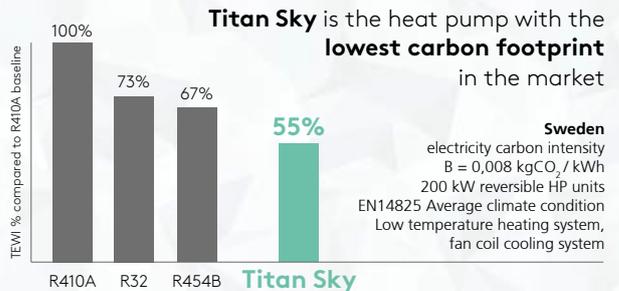**Global warming potential (GWP)**

R410A	R32	R454B	R290
2088	675	467	**3**

TEWI
TOTAL EQUIVALENT WARMING IMPACT

TEWI [tons CO_2 eq.]

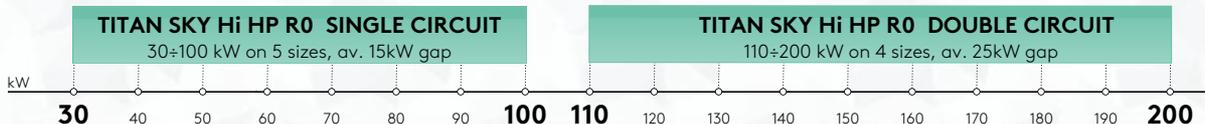**Direct emissions** + **Indirect emissions**

Leakage rate per year
Service life (years)
Leftover refrigerant after disposal
Global Warming Potential

Plant cooling / Heating load
Heat pump efficiency
Electricity consumption
CO_2 emission intensity

Titan Sky is the heat pump with the **lowest carbon footprint** in the market

TEWI % compared to R410A baseline

R410A	R32	R454B	Titan Sky
100%	73%	67%	**55%**

Sweden
electricity carbon intensity
B = 0,008 kgCO_2 / kWh
200 kW reversible HP units
EN14825 Average climate condition
Low temperature heating system,
fan coil cooling system

European electricity **carbon intensity is dropping**, so **natural heat pumps** become day by day more **sustainable** and will contribute to Europe **decarbonization** and **climate neutrality**

Av. European Union (2030) ▼

target 80 [gCO_2e/kWh]

	Electricity emission intensity [gCO_2e/kWh]
SWEDEN	**8**
NORWAY	19
LITHUANIA	22
FRANCE	52
FINLAND	86
AUSTRIA	91
DENMARK	126
CROATIA	145
BELGIUM	167
SPAIN	207
UK	228
ITALY	233
PORTUGAL	244
AV. EU	**275**
ROMANIA	293
GERMANY	338
NETHERLANDS	390
BULGARIA	421
CZECHIA	431
GREECE	598
CYPRUS	651
POLAND	719
ESTONIA	891

Electricity emission intensity [gCO_2e/kWh]

2019 data, Source EEA

CAPACITY RANGE

TITAN SKY Hi HP R0 SINGLE CIRCUIT	TITAN SKY Hi HP R0 DOUBLE CIRCUIT
30÷100 kW on 5 sizes, av. 15kW gap	110÷200 kW on 4 sizes, av. 25kW gap

kW

30 40 50 60 70 80 90 **100** 110 120 130 140 150 160 170 180 190 **200**

Reversible heat pump with **reciprocating full inverter compressors** optimized for R290

▶▶▶ SCOP UP TO **4.12*** ◀◀◀

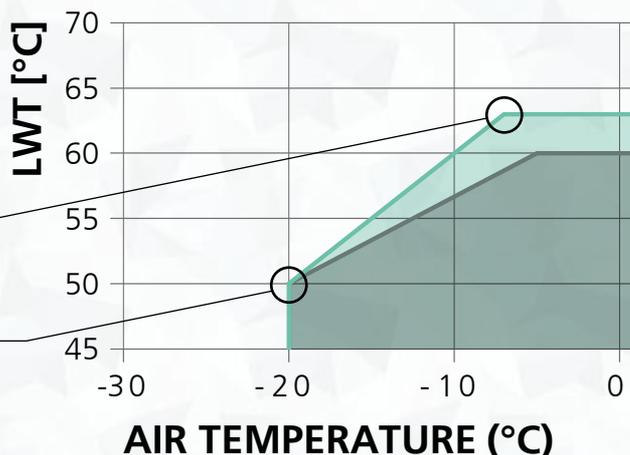* with EC fans and inverter driven pumps

EN14511 / EN14825

OPERATING LIMITS

Leaving water T°
▼

63°C at -7°C outside air T°

50°C at -20°C outside air T°

■ **Titan Sky Hi HP R0**
■ R290 heat pumps market

LWT [°C] vs **AIR TEMPERATURE (°C)**

COMPACT

1130

COMPACT AND NARROW FRAME
(1130 mm full range)

PLENTY OF ROOM
for hydronics circuits and recovery exchangers below the coils

TOTALLY INDEPENDENT CIRCUITS

- Management of independent defrost on each circuit for higher supplying stability
- Aeraulic separation provides complete redundancy of the refrigeration circuits

Only for double circuit units

BLUE●○●●● ●●●○●THINK

Monitoring, performance reports, full management.
Blue Box control platform allows a total access to the machine from any device, in complete autonomy.

Integrated web server

SET POINT
operating set point

MODE
unit mode (heating, cooling)

UNIT
visual status of unit (circuits, compressors..)

GRAPHS
real time diagrams of main variables (temperatures, pressure..)

INPUT/OUTPUT
status of inputs / outputs (digital and analogic)

MULTILOGIC
management of multiple units

LOGS
download and analyze unit data history

BLUEYE CONNECT
REMOTE ACCESS TO UNIT

SAVE MONEY
FAST SERVICE

BLUEYE CLOUD
CLOUD RECORDING DATAPOINTS

PREDICTIVE MAINTENANCE
CUSTOMER REPORTING
ANALYSIS

FLOWZER
INVERTER-DRIVEN PUMPS CONTROL MANAGEMENT FOR DIFFERENT SYSTEM LAYOUTS

CONSTANT FLOW
- Simpler site's settings to achieve a real constant flow

CONSTANT HEAD PRESSURE
- The right pressure to the users in any condition

VARIABLE FLOW
- Full control of one unique hydraulic loop
- Primary/Secondary Loop, the right solution for any layout

UP TO **-53%**

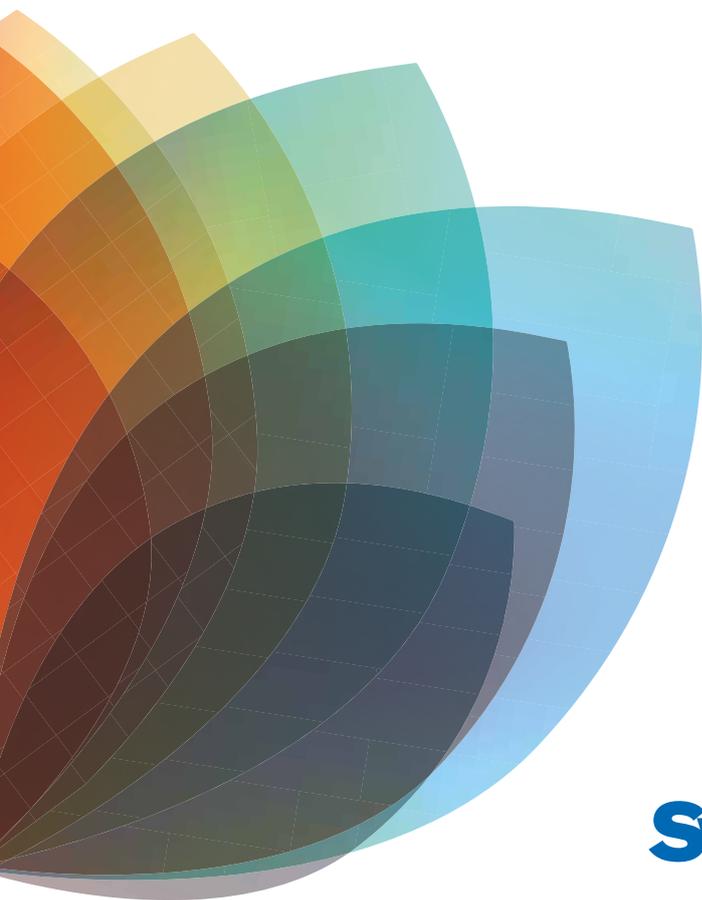compared to nowadays common layout: primary fixed + secondary variable

HYZER
HYDRONIC OPTIMIZER

BLUETHINK solution to manage several units, components and devices and build an optimized System.

- **Advanced algorithms** to maximize system total efficiency
- **Less Opex** thanks to lower energy consumption
- **Flexible management** of multi units, variable water flow and external devices (drycoolers, cooling towers, boilers,..)
- **Real time** energy consumption to obtain advanced structured data analysis
- **Modular design** to perfectly suit any project requirements in terms of application, size and complexity

Feel good **inside**

Swegon