ARIES G FC

ErP

R454B

Air-cooled chillers with integrated free-cooling
Nominal cooling capacity 160 – 340 kW

Cooling your industry,
optimising your process.

MTA®

ARIES G FC

ENERGY EFFICIENCY AND SUSTAINABILITY

ARIES G FC combines a chiller and a free cooling section within a compact and ready to use all-in-one system. The robust design and fully packaged configuration are ideal within the most varied industrial applications.

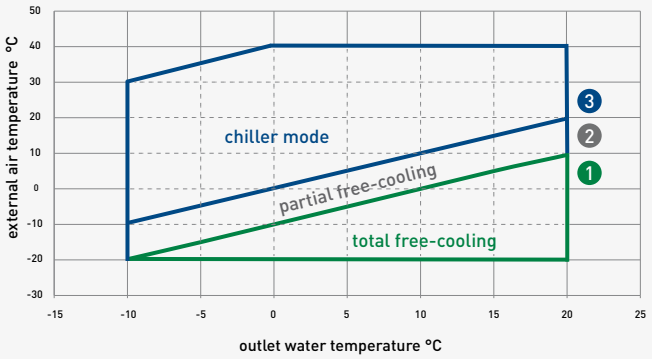
The combination of low GWP refrigerant R454B and reduced refrigerant charge microchannel condensers contribute to a significantly reduced carbon footprint.

INTEGRATED FREE COOLING

By exploiting the potential of the external air temperature, free cooling offers liquid cooling without the application of the compressors, reducing power consumptions and significantly increasing energy savings.

ARIES G FC operates in three differing operating modes to maximize efficiency:

1) **TOTAL FREE-COOLING:** when the external air temperature allows the entire cooling capacity to be satisfied (external air temperature is at least 10 °C below the process fluid temperature).
2) **PARTIAL FREE-COOLING:** when the external air temperature, combined with the partial application of the compressors, allows the entire cooling capacity to be satisfied (external air temperature is at least 2 °C below the process fluid temperature).
3) **CHILLER MODE:** when the external air temperature does not allow free cooling, with the entire cooling load guaranteed by the compressors.



FREE COOLING: THE BENEFITS

> **INCREASED LONGEVITY:** by reducing the chiller mode's working time its operational life can be significantly extended and maintenance needs and costs can be reduced.

> **ENERGY SAVINGS:** the reduced chiller operation ensures a notable decrease in power consumption, guaranteeing exceptional energy savings.

> **REDUCED PAYBACK TIMES:** the energy savings allow rapid returns on the capital investment.

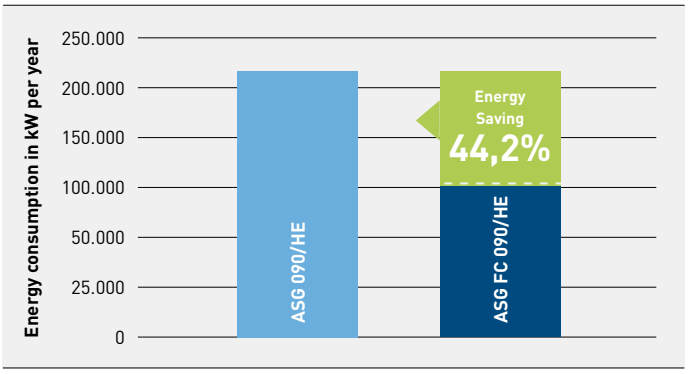
ENERGY SAVING CALCULATION

Project data

Cooling capacity	257 kW
Chilled water temperature	15 °C
Water flow	48,3 m³/h
Existing chiller	ASG 090/HE
Working hours per day	16
Working days per week	5
Working weeks per year	45
Reference city	Berlin

ARIES G free-cooling	**ASG FC 090/HE**
Energy Saving	**44,2 %**
Payback time:	**24 months**

Energy consumption comparison





Electronic expansion valve

High adaptability to load changes.

Double on/off regulation valves

Precise management of free-cooling operation.

Overlapped modular coils

Aluminum microchannel condensing and free-cooling coils.

EC brushless fans

Energy efficient, accurate condensing pressure control.

Scroll compressors

Tandem or trio configuration.

Evaporator

Shell & tube with single hydraulic circuit and double refrigerant circuit.

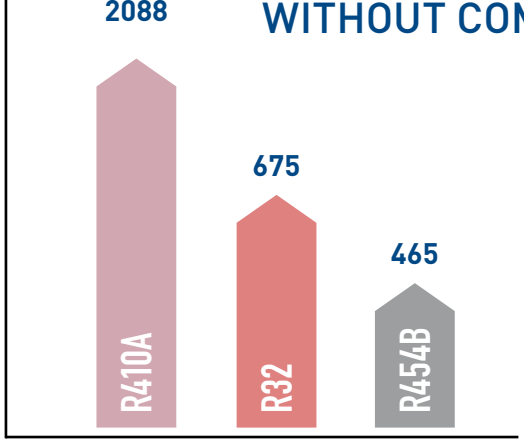
Integrated hydraulic module

Available with pump/s and sotrage tank mounted on-board.

Electrical panel

- IP54 protection rating;
- Programmable controller with touch-screen user display;
- Phase monitor;
- Electrical power supply 400/3/50.

GWP



THE SUSTAINABLE COOLING SOLUTION FOR YOUR INDUSTRY, WITHOUT COMPROMISING ENERGY EFFICIENCY

ECOLOGICAL REFRIGERANT R454B

R454B -78%

GWP versus R410A

- Composition 69% R32 + 31% R1234yf;
- Low GWP 465 (AR4 + AR6);
- A2L low-toxicity, mildly flammable (ISO 817);
- Non-Ozone depleting.

Options

- Low ambient temperature (down -20 °C);
- Integrated hydraulic module (single or double pump with or without storage tank);
- Compressor soft-starter;
- IN/OUT compressors valves;
- Protective paint for condensing coils;
- Soundproofing compressor jackets and enclosures;
- Complete soundproofing housing for lower section.

Kits

- Antivibration mounts;
- Remote display;
- Supervision and monitoring (xWEB300D PRO).

Versions

- HE: standard efficiency;
- SSN: standard efficiency, extra low noise.

ASG2 FC		065		075		090		105		115		140	
		HE	SSN	HE	SSN	HE	SSN	HE	SSN	HE	SSN	HE	SSN
Nominal cooling capacity (1)	kW	153,87	146,10	168,61	161,10	206,34	193,90	251,31	239,90	277,26	263,30	331,08	310,10
EER (1)	-	2,65	2,47	2,60	2,50	2,59	2,36	2,80	2,71	2,67	2,51	2,63	2,37
SEPR HT (2)	-	5,47	5,43	5,23	5,30	5,26	5,37	5,62	5,72	5,34	5,45	5,53	5,53
Nominal FC cooling capacity (3)	kW	246,40	186,10	285,20	217,00	285,20	217,10	428,20	325,70	428,20	325,70	428,30	325,90
Power supply	V/ph/Hz	400 ± 10% / 3-PE / 50											
Circuits / Compressors	n°	2/4		2/4		2/4		2/4		2/4		2/4	
Sound Power (4)	dB(A)	91	79	93	81	94	81	95	81	96	83	96	81
Length	mm	3091		3091		3091		3439		3439		3465	
Width	mm	2191		2191		2191		2191		2191		2191	
Height	mm	2424		2424		2424		2424		2424		2424	
Operating weight (5)	kg	1950	2242	2047	2339	2165	2457	2642	2940	2699	2998	3002	3298

Data declared according to UNI EN 14511, and they refer to units without options which require an electrical feeding source and in nominal working conditions

(1) Evaporator ethylenic glycol 30% inlet/outlet temperature 12/7 °C, external air temperature 35 °C;

(2) Data declared in compliance with the European Regulation (EU) 2016/2281 with regard to ecodesign requirements for cooling products and high temperature process chillers;

(3) Evaporator ethylenic glycol 30% inlet/outlet temperature 20/15 °C, external air temperature 0 °C;

(4) Sound power is determined on the basis of measurements taken in accordance with the standard ISO 3744.

(5) Operating weight refers to the unit without options, and according to the chosen configuration the weights could vary up to +20%.