

## GEA Grasso chillers

Chillers for the industrial refrigeration and air conditioning

Whether it's in the food industry, chemical industry, in offices or in shipping, they all need refrigeration. GEA Refrigeration Technologies has the optimal cooling and air conditioning solutions for your requirements. We place particular value on energy efficiency, reliability, cost efficiency and sustainability.

## First class work based on proven developments



GEA Refrigeration Technologies, part of the global GEA Group, is synonymous with industrial cooling technology. We have been in the business of cooling processes and products for decades. The first class quality of our chillers is the product of years of experience in cooling technology. Everything is focused on value and functionality from development in our research labs to the production processes and quality assurance.

Both our products and our customer service are first class. With a global sales and service network we can be on site almost anywhere in the world where you need us. Our software tools also support you in selecting the optimal solution as well as in the search for the right spare parts.



Refrigeration technology covers a wide range of temperatures. We offer an extensive range of chillers tried and tested both in industrial cooling and air conditioning. In addition we also offer our customers solutions tailored to fit their needs. Our chillers can be used both for cooling as well as heat pumps. For example, our machines are used for freezing food products, process cooling in the chemical industry, air conditioning in office complexes, heating greenhouses and hot water.



In doing so GEA Refrigeration Technologies primarily uses natural refrigerants particularly ammonia (R717), thus combining its excellent thermodynamic characteristics with its ecological advantages. Upon request we will supply additional safety components such as the GEA Grasso Ammonia Dryer. We offer our advice and expertise founded on years of experience for any questions about ammonia as a refrigerant.

# Special highlights

## Energy efficient & cost effective

- High energy efficiency: Best EER and COP values (Energy Efficiency Ratio, Coefficient of Performance)
- Variable internal volume ratio & stepless capacity
- Low operating costs

## Sustainable

- Utilizing natural refrigerant ammonia (R717)
- Optimal TEWI value (Total Equivalent Warming Impact)
- GWP = 0 (Global Warming Potential)

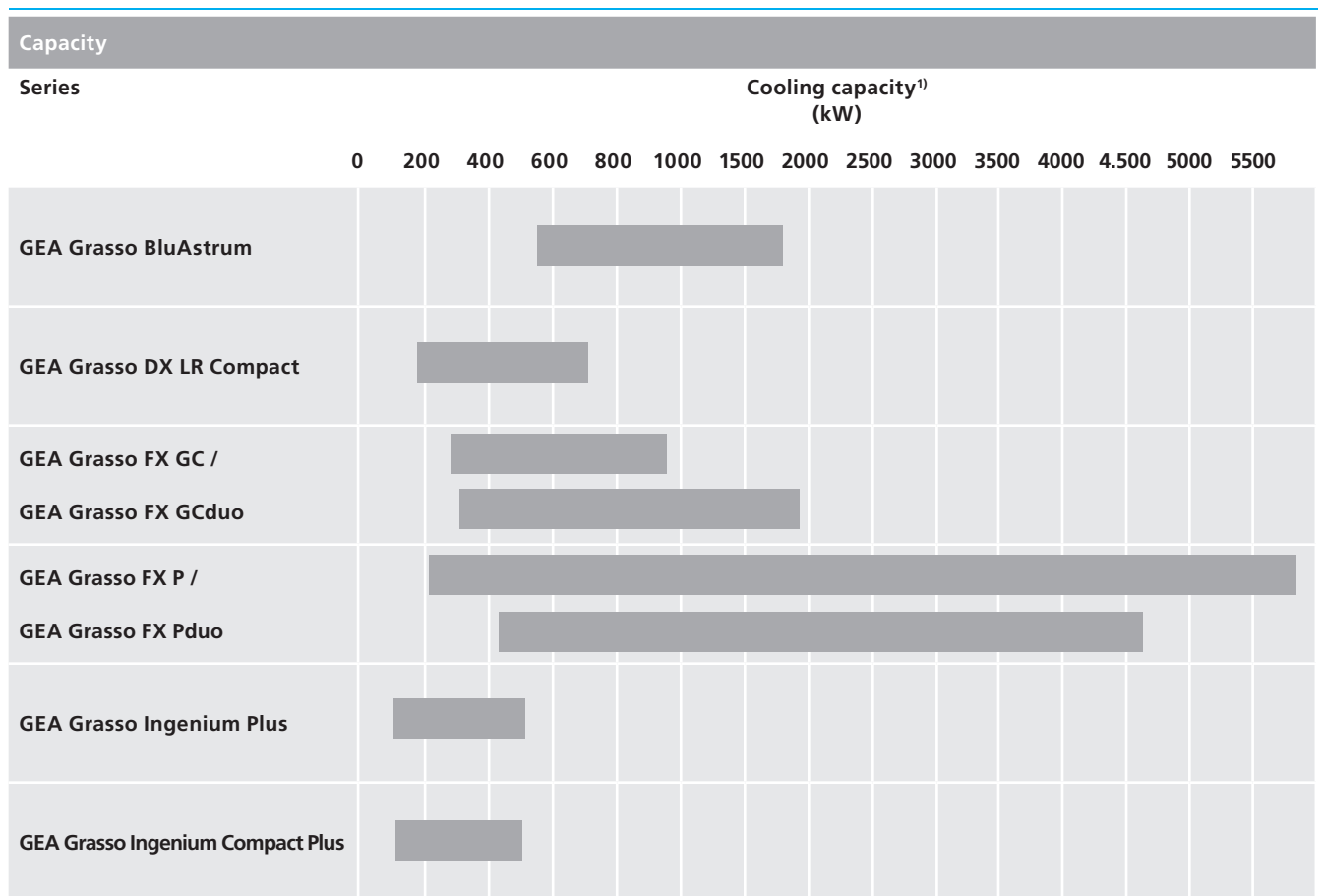
## Reliable & safe

- Low noise and vibration level by using approved components

## Versatile

- Broad field of applications within industrial cooling and air conditioning
- Modular and flexible construction
- Suitable to use as heat pump
- Models for indoor and roof top installations

# Product overview



1) Secondary refrigerant temperature 12/6 °C, cooling medium temperature 27/32 °C

# GEA Grasso BluAstrum

GEA Grasso BluAstrum is our new range of chillers combining high efficiency with compact dimensions. One key component is the new generation of screw compressors, which generate excellent levels of efficiency under full and part loads thanks to

the speed controls and the Vi control slide. The models in this range are suitable for applications with refrigerant temperatures ranging from -15 °C to +15 °C.



## Technical data

- Flooded expansion
- Fully welded plate heat exchanger as evaporator
- Single screw compressor optimized for variable speed drive
- Variable speed drive for best ESEER values (European Seasonal Energy Efficiency Ratio)
- Expansion control system for minimum refrigerant charge
- All condensers suitable (water cooled, air cooled, evaporative condenser)
- Optional: Enclosure

## GEA Grasso BluAstrum

Types		Capacity <sup>1)</sup> (kW)	Electric power (kW)	EER <sup>2)</sup>	Dimensions (mm)			Weight (kg)
					L	W	H	
GEA Grasso BluAstrum	500	550	110	5.00	4700	1000	2100	5500
	800	740	153	4.84	5000	1000	2100	6000
	900	880	172	5.12	5000	1000	2100	6500
	1000	1100	217	5.07	5000	1000	2100	7000
	1500	1450	266	5.45	6500	1200	2400	8000
	1800	1730	323	5.36	6800	1200	2400	8500

1) Secondary refrigerant temperature 12/6 °C, cooling medium temperature 27/32 °C, 2) Energy Efficiency Ratio

# GEA Grasso DX LR Compact

The GEA Grasso DX LR series is the clean solution for your air conditioning needs. The cooling capacity for air conditioning applications extends from 200 to 800 kW. This range combines the

use of the natural refrigerant ammonia with dry expansion and has a low refrigerant charge.



## Technical data

- Dry expansion
- Shell & tube evaporator
- Single screw compressor
- Expansion control system for minimum refrigerant charge
- Built-in air cooled condenser
- Designed for roof top installation
- Optional: Variable speed drive

GEA Grasso DX LR Compact							
Types		Compressor	Capacity <sup>1)</sup> (kW)	Dimensions (mm)			Weight (kg)
				L	W	H	
GEA Grasso DX LR Compact	200 c	GEA Grasso SH-C	181	6420	2400	2300	3893
	250 c	GEA Grasso SH-D	215	6420	2400	2300	4003
	300 c	GEA Grasso SH-E	260	8320	2400	2300	4745
	350 c	GEA Grasso SH-G	308	9520	2400	2300	5132
	450 c	GEA Grasso MC-H	402	10020	2400	2300	6491
	500 c	GEA Grasso MC-L	464	10720	2400	2300	7147
	600 c	GEA Grasso MC-M	595	13120	2400	2300	8680
	800 c	GEA Grasso MC-N	724	13120	2400	2300	8980

1) Secondary refrigerant temperature 12/6 °C, cooling medium temperature 27/32 °C

# GEA Grasso FX GC / GEA Grasso FX GCduo

The GEA Grasso FX GC and GEA Grasso FX GCduo series have a capacity ranging from 300 to 2,000 kW. This series is suitable for all applications where the temperature difference between the evaporation and condensation is up to 40 K and maximum

condensation temperature is 50 °C. The chillers in this range are characterized by very high part load efficiency even without frequency inverters.



## Technical data

- Flooded expansion
- Plate heat exchanger as evaporator
- Single or two reciprocating compressors
- Good part load efficiency
- All condensers suitable (water cooled, air cooled, evaporative condenser)
- Suitable as heat pump
- Optional: Variable speed drive

GEA Grasso FX GC / GEA Grasso FX GCduo

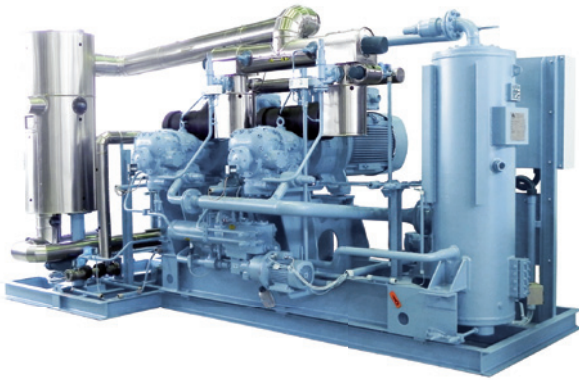
Types		Compressor	Capacity <sup>1)</sup> (kW)	Dimensions (mm)			Weight (kg)
				L	W	H	
GEA Grasso FX GC (1 compressor)	260	GEA Grasso V300	277	3200	2000	2300	3100
	400	GEA Grasso V450	415	3600	2000	2400	4200
	525	GEA Grasso V600	554	3700	2000	2600	4950
	600	GEA Grasso V700	638	4400	2300	2800	5985
	900	GEA Grasso V1100	957	4700	2300	3300	8400
GEA Grasso FX GCduo (DuoPack with 2 compressors)	520	GEA Grasso V300 / V300	302	4100	2000	2600	5200
	650	GEA Grasso V300 / V450	690	4400	2200	2800	6350
	800	GEA Grasso V450 / V450	830	4600	2200	2800	7600
	900	GEA Grasso V450 / V600	969	5200	2200	3300	9050
	1050	GEA Grasso V600 / V600	1108	5600	2200	3300	10450
	1200	GEA Grasso V700 / V700	1276	5600	2300	3500	11500
	1500	GEA Grasso V700 / V1100	1595	6200	2300	3700	13400
1800	GEA Grasso V1100 / V1100	1914	6500	2300	3800	14500	

1) Secondary refrigerant temperature 12/6 °C, cooling medium temperature 27/32 °C

# GEA Grasso FX P / GEA Grasso FX Pduo

The GEA Grasso FX P and GEA Grasso FX Pduo series are the industrial standard for applications with the largest temperature difference between evaporation and condensation. Whether for freezing or as heat pumps, the range covers almost all concei-

vable applications with a capacity between 200 and 5800 kW. The DuoPack version with two screw compressors has significantly increasing part load efficiency and redundancy.



## Technical data

- Flooded expansion
- Plate heat exchanger as evaporator
- Single or two screw compressors
- Expansion control system for minimum refrigerant charge
- Good part load efficiency
- All condensers suitable (water cooled, air cooled, evaporative condenser)
- Suitable as heat pump
- Optional: Variable speed drive, economizer

GEA Grasso FX P / GEA Grasso FX Pduo

Types		Compressor	Capacity <sup>1)</sup> (kW)	Dimensions (mm)			Weight (kg)
				L	W	H	
GEA Grasso FX P (1 compressor)	200	GEA Grasso SH-C	209	2100	1700	2200	3200
	250	GEA Grasso SH-D	245	2100	1700	2200	3250
	300	GEA Grasso SH-E	294	2100	1700	2200	3350
	350	GEA Grasso SH-G	348	2100	1700	2200	3500
	450	GEA Grasso MC-H	445	3400	2000	2300	5200
	550	GEA Grasso MC-L	525	3400	2000	2300	5400
	650	GEA Grasso MC-M	646	3700	2100	2650	6800
	800	GEA Grasso MC-N	795	4000	2100	2650	7800
	900	GEA Grasso LT-P	855	3950	2200	2650	8100
	1100	GEA Grasso LT-R	1027	4200	2200	2650	9000
	1300	GEA Grasso LT-S	1274	4200	2200	2650	9600
	1500	GEA Grasso LT-T	1394	4200	2200	2650	10300
	1700	GEA Grasso LT-V	1647	4600	2500	2900	11000
	2000	GEA Grasso LT-W	1900	4800	2600	2900	12000
	2400	GEA Grasso LT-Y	2306	5000	2500	3650	12800
	2800	GEA Grasso LT-Z	2761	6500	2800	3650	14900
	GEA Grasso FX Pduo <sup>2)</sup> (DuoPack with 2 compressors)	2x200	2 x GEA Grasso SH-C	418	4500	2400	2300
2x250		2 x GEA Grasso SH-D	490	4500	2400	2300	4900
2x300		2 x GEA Grasso SH-E	588	4500	2400	2300	5180
2x350		2 x GEA Grasso SH-G	696	4500	2400	2300	5480
2x450		2 x GEA Grasso MC-H	890	5200	2500	2650	10000
2x550		2 x GEA Grasso MC-L	1050	5700	2750	2650	10600
2x650		2 x GEA Grasso MC-M	1292	6000	2750	2650	11150
2x900		2 x GEA Grasso MC-N	1710	6200	3000	2650	12200

1) Secondary refrigerant temperature 12/6 °C, cooling medium temperature 27/32 °C, 2) available up to 4612 kW capacity (GEA Grasso FX Pduo 2x2400)

# GEA Grasso Ingenium Plus

GEA Grasso Ingenium Plus is the range for lower cooling capacities of up to 500 kW. In addition to air conditioning, the

range is also suitable for normal cooling of up to -15 °C (chilled water temperature).



## Technical data

- Flooded expansion
- Shell & tube evaporator
- Single reciprocating compressor
- Compact design with optimized evaporator-separator-unit
- All condensers suitable (water cooled, air cooled, evaporative condenser)
- Optional: Variable speed drive

## GEA Grasso Ingenium Plus

Types		Compressor	Capacity <sup>1)</sup> (kW)	Dimensions (mm)			Weight (kg)
				L	W	H	
GEA Grasso Ingenium Plus	100	GEA Bock F14/1166	106	2150	960	2350	1100
	120	GEA Bock F14/1366	125	2350	960	2350	1200
	150	GEA Bock F16/1751	165	3550	960	2350	1440
	180	GEA Bock F16/2051	194	2750	960	2350	1500
	280	GEA Grasso V300	282	3775	1180	2500	2830
	400	GEA Grasso V450	407	3875	1180	2500	3360
	520	GEA Grasso V600	525	3875	1180	2500	3980

1) Secondary refrigerant temperature 12/6 °C, cooling medium temperature 27/32 °C



# GEA Grasso Ingenium Compact Plus

The GEA Grasso Ingenium Compact Plus series is especially designed for roof top installation and is primarily used in air conditioning. As with the GEA Grasso Ingenium Plus series, this

range is suitable as both for air conditioning and for standard cooling applications.



## Technical data

- Flooded expansion
- Shell & tube evaporator
- Single reciprocating compressor
- Compact design
- Built-in air cooled condenser
- Designed for roof top installation
- Optional: Variable speed drive

## GEA Grasso Ingenium Compact Plus

Types		Compressor	Capacity <sup>1)</sup> (kW)	Dimensions (mm)			Weight (kg)
				L	W	H	
GEA Grasso Ingenium Compact Plus	100	GEA Bock F14/1166	96	3550	2250	2500	1820
	120	GEA Bock F14/1366	114	3550	2250	2500	1920
	150	GEA Bock F16/1751	129	2850	2250	2500	1860
	180	GEA Bock F16/2051	159	3550	2250	2500	2140
	280	GEA Grasso V300	259	3950	2250	2660	2830
	400	GEA Grasso V450	391	6350	2250	2660	4700
	520	GEA Grasso V600	500	7750	2250	2660	5860

1) Secondary refrigerant temperature 12/6 °C, air inlet temperature  $t_{air}$  35 °C







*We live our values.*

Excellence • Passion • Integrity • Responsibility • GEA-versity

GEA Group is a global engineering company with multi-billion euro sales and operations in more than 50 countries. Founded in 1881, the company is one of the largest providers of innovative equipment and process technology. GEA Group is listed in the STOXX® Europe 600 Index.

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