



FRIGOR TEC
Cooling to the point

Genuine for over 50 years!



GRANIFRIGOR™ – ecological grain conservation

www.frigortec.com



GRANIFRIGOR™	GRANIVENT™ 200/280 SL	GC 40 Europe	GC 60 / 80 Europe Tropic
Cooling performance in 24 hours ^{1) 2)} [t/day]		30 – 60	55 – 120
Chilled air fan			
Volume flow [m ³ / h] ³⁾	10.800 / 15.200	2.400	4.600
Pressure [Pa] maximum ⁵⁾	6.000 / 6.000	3.200	3.400
Refrigerating capacity compressor [kW] ^{6) 7)}	-	10	20 25
Electrical data ⁹⁾			
Output (average) [kW]	11 / 15	4.2	9
Max. current consumption [A]		18	32 23
Electrical connection ⁴⁾ [A]	32	32	32
Connections			
Ø Connection cold air hose [mm]	400	300	300
Condensation water runoff average [l / h]	-	6	15
Ø Condensation water runoff hose [inch]	-	³ / ₄	³ / ₄
Dimensions [L x W x H in mm] / weight [kg]			
with tyres	3.580 x 1.640 x 1.660 / 700	3.450 x 1.350 x 1.750 / 600	3.570 x 1.320 x 1.880 / 700
with swivelling casters	2.200 x 1.400 x 1.450 / 600	2.050 x 950 x 1.570 / 550	2.230 x 990 x 1.695 / 650

All specifications are valid for 400 V-3 Ph-50 Hz

- 1) Cooling of air to 10 °C
- 2) At an average outside temperature (daily median) of 20 °C, an average relative air humidity (outside air) of 52%, and an average grain humidity of 16% and 1000 Pa counter pressure
- 3) At 1000 Pa counterpressure
- 4) acc. CEE
- 5) Higher pressures are possible upon request
- 6) Europe version at 0 °C evaporation temperature and 30 °C condensation temperature
- 7) Subtropic/Tropic/Desert versions at 10°C evaporation temperature and 40 °C condensation temperature
- 8) HP version (high pressure)
- 9) HYGROMAT™ is included as a standard feature

Subject to technical change.

GRANIVENT™:

The GRANIVENT™ is ideal for aerating immediately after bringing in the harvest. The subsequent cooling with a GRANIFRIGOR™ ensures that insects and moulds do not damage the grain.

- Suitable for tower silos and flat storage
- Humidistat and thermostat for safe aerating
- Robust and sound-proof



GC 140 Europe

140 – 220

7.700

4.700

32

16

56

63

300

20

$\frac{3}{4}$

3.620 x 1.330 x 2.265 / 950

2.520 x 1.130 x 2.085 / 860

GC 180 Europe

170 – 280

10.800

6.000 / 8.000⁸⁾

43

20

63

63

400

30

$\frac{3}{4}$

3.800 x 1.650 x 2.280 / 1.150

2.680 x 1.320 x 2.150 / 1.060

GC 220 / 240 Europe Subtropic Tropic

220 – 370

12.500

6.000 / 8.000⁸⁾

63

82

105

28

30

35

96

100

92

100

400

35 - 40

$\frac{3}{4}$

3.300 x 1.550 x 2.450 / 1.650

2.950 x 1.550 x 2.250 / 1.500

GC 310 / 320 Europe Subtropic Tropic

310 – 520

18.000

6.000 / 8.000⁸⁾

82

106

160

34

37

53

120

125

118

125

600

600

400

45 - 65

$\frac{3}{4}$

3.710 x 1.810 x 2.550 / 2.000

3.370 x 1.810 x 2.410 / 1.900

GRANIFRIGOR™ – benefits:

- Low power consumption
- Fully automatic control Siemens S7
- State-of-the-art refrigeration technology
- Guaranteed dry, cool air
- Easy operation
- Silent
- 24/365 service
- Many additional options possible
- Suitable for high outside temperatures
- Remote monitoring by modem
- Large filters
- Robust industrial construction
- Quality inspection with trial run at factory



GC 450 Desert

GC 460 / 500 Europe Subtropic Tropic

GC 560 Tropic

340 – 560

460 – 750

560 – 900

25.000

25.000

25.000

6.000

6.000

6.000

165

125

165

225

270

75

65

69

78

92

215

203

210

186

214

250

250

250

600

600

600

600

600

100

65 - 100

120

$\frac{3}{4}$

$\frac{3}{4}$

$\frac{3}{4}$

3.950 x 2.130 x 2.900 / 3.000

3.950 x 2.130 x 2.900 / 3.000

3.950 x 2.130 x 2.900 / 3.200

3.740 x 2.130 x 2.690 / 2.750

3.740 x 2.130 x 2.690 / 2.750

3.740 x 2.130 x 2.690 / 2.950

FrigorTec GmbH is certified according to DIN EN ISO 9001 : 2008.

FrigorTec GmbH is member of:

- Society for the Support of the German Milling School Braunschweig e.V., Bonn / Germany
- Rationalisation Curatorship for Agriculture, Rendsburg / Germany
- School providing vocational education in Agribusiness Burg Warberg e.V., Warberg / Germany
- ALB, Stuttgart / Germany
- AGF, Detmold / Germany
- Federal Office of Administration, Berlin/Germany

TÜV acceptance testing in our factory.

An additional test at the installation site is usually not necessary for the GRANIFRIGOR™.



Prevent the spoiling of your harvest – the ecological and effective way!

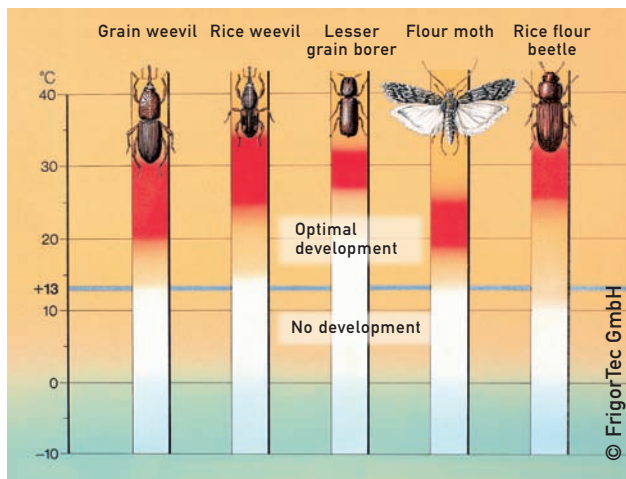
Spontaneous heating of the grain often causes great damage. Systematic hygiene regulations and the call for natural treatment of the produce grain without chemical substances are standards that must be attained. We have an answer for all these demands: GRANIFRIGOR™.

The GRANIFRIGOR™ cooling device is used to cool down grain immediately after the harvest, independent of the weather. This effective method prevents the spoiling of freshly harvested grains, which heats up spontaneously due to its cellular respiration.

Carbon dioxide, water and heat are released by this respiration – with extensive consequences: Loss of dry substance as well as the development of insects, microbes and mildew. Spontaneous heating depends on the grain's moisture and temperature. The principle is also valid for oil seeds such as rapeseed.

Since we know how grain “functions”, the GRANIFRIGOR™ operates according to two successful principles:

1. Prompt cooling to below +15 °C once the grain has been stored in: This puts insects into diapause so that they have no chance to multiply (see illustration below). Additionally the development of mildew is effectively prevented, respiration losses are minimised, and drying expenditures are also reduced by the drying effect of the cooling.

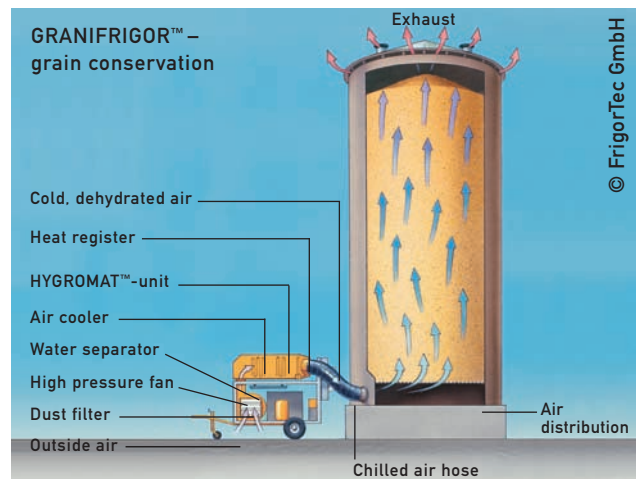


Insects that are dangerous to grain can develop at a temperature starting at +15 °C. GRANIFRIGOR™ cools the grain to below +15 °C and thereby ensures optimal freshness and quality of the harvest.

2. No ventilation with non-conditioned outside air: Grain seeds are hygroscopic. This means that depending on the temperature an equilibrium develops between the moisture content of the seeds and the relative humidity of the ambient air. Moisture develops if dry grain is exposed to humid air. The grain begins to spoil. Therefore aeration by fans is completely dependent on the weather. Furthermore, the ambient temperature during harvest time is usually much too high.

Mode of operation:

The fan of a GRANIFRIGOR™ grain cooler draws in the surrounding air (see illustration below). This air is cooled by an air conditioner (evaporator) to the desired temperature. The following HYGROMAT™ unit warms the cold air again automatically. This lowers the relative humidity and adapts to the conditions of the bulk grain. No moisturizing can occur, which would be rather damaging. This cooled and dried air is fed through the air distribution of the warehouse or the silo system and is forced through the grain. The air is then released to the outside through the exhaust vents of the storage facility. The outgoing air extracts the absorbed heat and moisture.



The GRANIFRIGOR™ process was developed by FrigorTec GmbH (formerly product division of Axima and Sulzer Escher Wyss) in co-operation with the Düsseldorf University and the Bundesforschungsanstalt für Getreide (Federal Grain Research Institute) in Detmold and since 1963 manufactured.

We pass on only what we have produced
by our own hands – Made in Germany.



In the parent plant in Amtzell, Germany all products made by FrigorTec GmbH are developed, constructed and produced. Every device passes a quality inspection with test runs before delivery. We sell the FrigorTec solutions in over 84 countries through our worldwide distribution network.

SERVICE
(24/365)



Our service keeps the units maintained and ensures the spare parts supply - worldwide.
service@frigortec.de

Grain cooling
GRANIFRIGOR™

Crane air conditioning
CRANEFRIGOR™

Standard cooling
STANDARDFRIGOR

Special solutions
SHELTERFRIGOR

Insect heat treatment
DEBUGGER

Hay dryer
AGRIFRIGOR™

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Cooling to the point

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