

# Azanefreezer 2.0

The Natural Choice for low temperature cooling and food processing  
Low charge, air-cooled packaged units, from 100 to 650kW



Azanefreezer 2.0



Combining exceptional efficiency, ultimate flexibility and market leading quality, Azanefreezer 2.0 is the natural solution for low temperature storage and food processing applications.

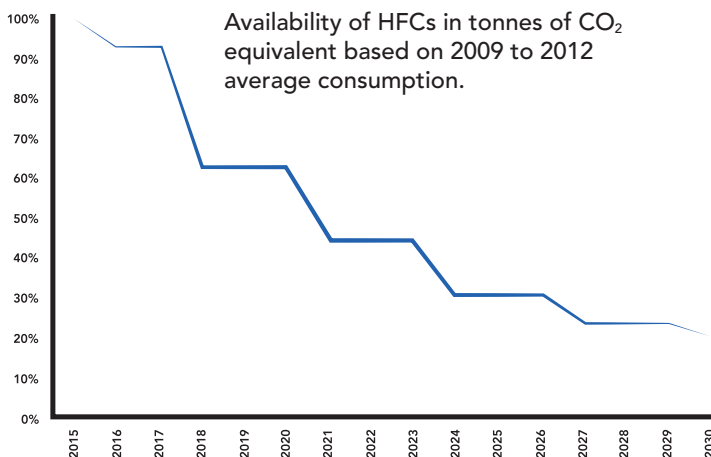
Azanefreezer 2.0 is manufactured in the United Kingdom by Star Refrigeration, the UK's leading industrial refrigeration solutions provider.



## The natural alternative to F-gases

The phase down of high Global Warming Potential (GWP) refrigerants under the F-gas Regulation has seen traditional HFC refrigerants become less viable and considerably more expensive in recent years; a trend which looks set to continue as HFC availability is further restricted under the Regulation.

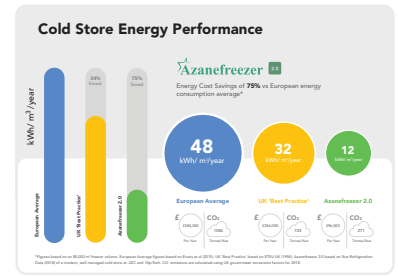
Rather than HFCs, Azanefreezer 2.0 uses natural refrigerant ammonia, which is not affected by the F-gas Regulation. Ammonia is cost effective, widely available and contributes to neither global warming nor depletion of the ozone layer (GWP=0, ODP=0), thereby representing an environmentally responsible and future proof refrigerant choice.



# Core Benefits

## Efficiency

- › Proven energy savings versus synthetic refrigerants and traditional pumped recirculation ammonia systems
- › Integrated reverse cycle defrost system melts frost directly from the inside out; ensuring fast, effective and efficient defrost \*
- › Low pressure receiver allows fully wetted evaporators; eliminating wasteful superheat and optimising heat transfer
- › EC condenser fans and automatic floating head pressure control for improved efficiency
- › In-house controls for optimised system performance
- › Additional efficiency enhancing measures include economiser, variable Vi and EC evaporator fans



Azanefreezer 2.0 installation demonstrating energy savings of up to 75%.



## Simplicity

- › Straightforward installation with no plant room required. The fully housed unit requires just two pipe connections to the evaporators, a concrete plinth and a power supply
- › The integrated air cooled condenser eliminates the considerations around water, chemicals and effluent associated with evaporative and adiabatic condensers
- › Easy maintenance access. All components which require regular maintenance are located within the package
- › No need for refrigerant pumps
- › Refrigerant charge as low as 0.52 kg/KW; up to 96% lower than equivalent pumped recirculation

## Flexibility

- › Extended operating range ensures suitability for a wide variety of low temperature applications
- › 16 standard models, with capacities from 100 to over 650kW
- › Options include heat recovery package for water or underfloor heating
- › The unit can be located at ground level or on the building roof, and can be positioned either locally or remotely to the refrigerated space
- › Packaged configuration allows the unit to be easily relocated if needed

## Reliability

Utilising proven technology and high quality components, Star products are manufactured in the UK and have an expected life span of over twenty years.

\*Units can also be supplied without reverse cycle defrost if required.

# Features & Components

Azane freezer 2.0 packaged refrigeration units are specially designed to deliver flexible and efficient cooling. Both installation and maintenance are quick and easy, whilst a robust, high quality construction ensures maximum system longevity.

## Packaged configuration

The self-contained packaged unit is designed for outdoor installation, eliminating the need for a plant room.



**Reverse cycle defrost**  
Four-way valve for fast, effective reverse cycle defrost. (Optional)



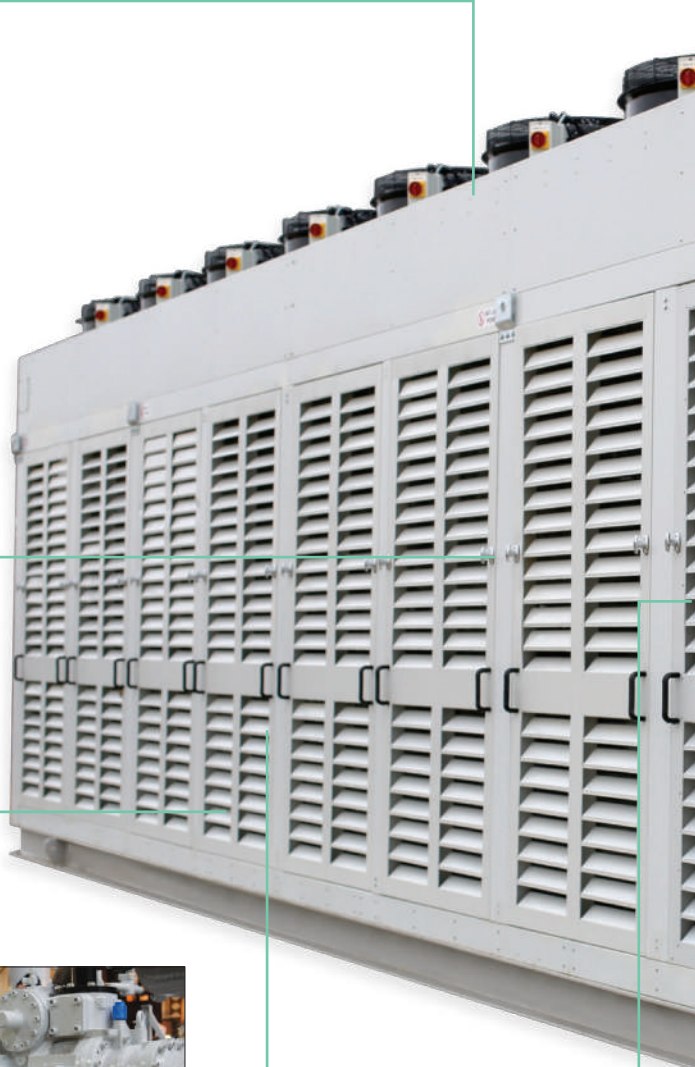
**Insulation**  
Robust PIR insulation with high quality alu-zinc cladding as standard.



**Twin compressors**  
Economised twin screw compressors with high efficiency rotors and variable Vi, providing optimised performance as well as redundancy.



**Low Pressure Receiver**  
Star's LPR system delivers efficient, overfeed operation without the need for pumps.





### EC fans

EC fans for low fan power and improved efficiency.



### Air-cooled condenser

An integrated air-cooled condenser eliminates the need for water usage and associated chemical treatments.



### Efficient controls

Star's optimised controls system includes integrated PLC and panel-mounted touchscreen HMI. A remote connectivity option allows off-site analysis and alarm monitoring.

### Electrical panel

The on-skid stainless steel electrical panel includes starters for both the package and coolers (where required), avoiding the need for multiple power supplies.

### Steel base frame

Fully welded steel base frame, for rigid construction and long life.



### Removable panels

For easy maintenance access around the unit.

## Air Coolers

AzaneFreezer 2.0 operates with aluminium evaporators. The use of aluminium offers a number of benefits:

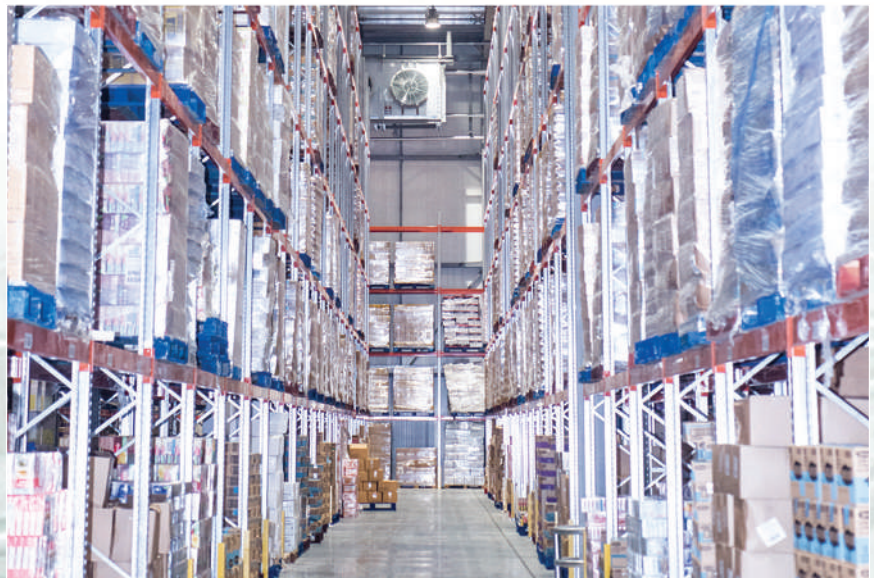
- › Lighter and more efficient at transferring heat than equivalent zinc galvanised or stainless steel
- › Corrosion resistant
- › Easy to clean



Aluminium evaporator

## Applications

The AzaneFreezer range is suitable for both cold storage and food processing applications, including spiral and in-line freezing.



# Technical schedule

The Azanefreezer 2.0 range comprises 8 standard models, each with a high efficiency 'E' version. Performance at cold store and freezer conditions is detailed below.

	MODELS															
	AF150		AF150E		AF185		AF185E		AF220		AF220E		AF290		AF290E	
Application	Cold Store	Freezer	Cold Store	Freezer	Cold Store	Freezer	Cold Store	Freezer	Cold Store	Freezer	Cold Store	Freezer	Cold Store	Freezer	Cold Store	Freezer
Capacity (kW)	158.0	97.0	158.0	98.0	189.0	115.2	189.0	117.6	224.0	134.2	224.0	138.4	289.2	176.2	289.2	180.2
Room Temperature (°C)	-22	-32	-22	-32	-22	-32	-22	-32	-22	-32	-22	-32	-22	-32	-22	-32
Design Dry Bulb Temperature (°C)	32.0		32.0		32.0		32.0		32.0		32.0		32.0		32.0	
Power Supply (V/ph/Hz)	400/3/50		400/3/50		400/3/50		400/3/50		400/3/50		400/3/50		400/3/50		400/3/50	
Full Load Current (A)*	294	294	294	294	300	300	300	300	358	358	358	358	437	437	437	437
Dimension (m) (L x W x H)	6.5 x 2.8 x 3.5	6.5 x 2.8 x 3.5	6.5 x 2.8 x 3.5	6.5 x 2.8 x 3.5	6.5 x 2.8 x 3.5	6.5 x 2.8 x 3.5	6.5 x 2.8 x 3.5	6.5 x 2.8 x 3.5	7.6 x 2.8 x 3.3	7.6 x 2.8 x 3.3	7.6 x 2.8 x 3.3	7.6 x 2.8 x 3.3	8.7 x 2.8 x 3.3	8.7 x 2.8 x 3.3	8.7 x 2.8 x 3.3	8.7 x 2.8 x 3.3
Approximate Operating Weight (kg)	10558	10558	10906	10906	10766	10766	10922	10922	12256	12256	12442	12442	13920	14475	14572	15127
Approximate Refrigerant Charge (kg)	131	131	131	131	136	136	136	136	150	150	150	150	194	220	194	220
COSP (at full load in 32°C ambient)	1.387	1.077	1.411	1.152	1.381	1.059	1.393	1.100	1.460	1.116	1.499	1.225	1.477	1.138	1.515	1.188
Compressor Quantity	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Compressor Type	Screw	Screw	Screw	Screw	Screw	Screw	Screw	Screw	Screw	Screw	Screw	Screw	Screw	Screw	Screw	Screw
Drive Type	Fixed Speed	Fixed Speed	Fixed Speed	Fixed Speed	Fixed Speed	Fixed Speed	Fixed Speed	Fixed Speed	Fixed Speed	Fixed Speed	Fixed Speed	Fixed Speed	Fixed Speed	Fixed Speed	Fixed Speed	Fixed Speed
Condenser Fan Quantity	6	6	6	6	6	6	8	8	8	8	8	8	8	8	10	10

	MODELS															
	AF330		AF330E		AF440		AF440E		AF540		AF540E		AF650		AF650E	
Application	Cold Store	Freezer	Cold Store	Freezer	Cold Store	Freezer	Cold Store	Freezer	Cold Store	Freezer	Cold Store	Freezer	Cold Store	Freezer	Cold Store	Freezer
Capacity (kW)	334.2	203.6	334.2	208.0	439.0	267.6	439.0	273.2	540.0	329.0	540.0	336.2	653.2	397.8	653.2	406.6
Room Temperature (°C)	-22	-32	-22	-32	-22	-32	-22	-32	-22	-32	-22	-32	-22	-32	-22	-32
Design Dry Bulb Temperature (°C)	32.0		32.0		32.0		32.0		32.0		32.0		32.0		32.0	
Power Supply (V/ph/Hz)	400/3/50		400/3/50		400/3/50		400/3/50		400/3/50		400/3/50		440/3/60		440/3/60	
Full Load Current (A)*	521	521	521	521	639	639	639	639	785	785	785	785	1064	1064	1064	1064
Dimension (m) (L x W x H)	8.7 x 2.8 x 3.3	8.7 x 2.8 x 3.3	8.7 x 2.8 x 3.3	8.7 x 2.8 x 3.3	8.7 x 2.8 x 3.3	8.7 x 2.8 x 3.3	10.0 x 2.8 x 3.3	10.0 x 2.8 x 3.3	10.0 x 2.8 x 3.3	10.0 x 2.8 x 3.3	11.2 x 2.8 x 3.3	11.2 x 2.8 x 3.3	11.2 x 2.8 x 3.3	11.2 x 2.8 x 3.3	11.8 x 2.8 x 3.3	11.8 x 2.8 x 3.3
Approximate Operating Weight (kg)	16516	16516	17726	17726	19013	19013	20323	20323	21199	21994	21868	23396	22980	23747	23960	24527
Approximate Refrigerant Charge (kg)	224	224	224	224	253	253	253	253	317	379	317	379	340	403	340	403
COSP (at full load in 32°C ambient)	1.516	1.077	1.547	1.244	1.537	1.165	1.554	1.255	1.527	1.159	1.538	1.241	1.504	1.145	1.551	1.242
Compressor Quantity	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Compressor Type	Screw	Screw	Screw	Screw	Screw	Screw	Screw	Screw	Screw	Screw	Screw	Screw	Screw	Screw	Screw	Screw
Drive Type	Fixed Speed	Fixed Speed	Fixed Speed	Fixed Speed	Fixed Speed	Fixed Speed	Fixed Speed	Fixed Speed	Fixed Speed	Fixed Speed	Fixed Speed	Fixed Speed	VSD	VSD	VSD	VSD
Condenser Fan Quantity	10	10	14	14	14	14	16	16	16	16	18	18	18	18	18	18

\* Information in these tables is subject to change. Please contact Star Refrigeration for current technical specification.

\*\* Dimensions relate to unit footprint, excluding rain hood and connections.

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Star Refrigeration's network of offices across the UK provide services including maintenance, service, spares, new equipment/installations, retrofits and consultancy. We specialise in industrial refrigeration including temperature controlled storage & distribution, food production, beverage, process, pharmaceutical, petrochemical, leisure & ice, data centres and HVAC. Contact your local office for more details.

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