



## NEW GENERATION INVERTER BLDC HIGH PERFORMANCE SELF-CONTAINED UNIT



### ADVANTAGE OF USE

- Very compact design and low weight
- 50% higher energy efficiency compared to ON/OFF
- Highest comfort: silent operation and stable temperature
- Lowest consumption: 150-200 W max input power in ECO mode
- Elimination of peak current at start-up (only 2 A max)

### EASY INSTALLATION

The compact overall dimensions and low weight allow the installation onboard all types of boat

### ACCESSORIES



WI-FI MODULE WITH CONTROL APP



UVA/C LED AIR STERILIZER KIT



# NEW BLDC INVERTER GENERATION SMALLER, LIGHTER AND MORE POWERFUL



SCUTOVFD KIT



## THE FIRST MARINE AIR CONDITIONING SYSTEM WITH THE BLDC INVERTER TECHNOLOGY



### ULTIMATE VARIABLE FREQUENCY DRIVE TECHNOLOGY

VFD technology "sensor less" is used to accurately control the compressor speed in order to deliver the needed capacity at all times, following the environmental conditions; by contrast traditional air conditioners use on/off type compressors that either work at maximum speed or stop.

The Frigomar self-contained unit is equipped with a BLDC motor compressor (98% energy efficient) controlled by an electrical inverter varying the speed from 20-100 Hz. Thanks to the elimination of start-stop cycles the energy efficiency is considerably increased without sharp fluctuations of air temperature and power supply, thus increasing the lifespan of the unit and the comfort on board.

### ENERGY SAVING (-50% ON AVERAGE ELECTRICAL ENERGY CONSUMPTION)

Compressor starts at low speed (20 Hz) with no peak current and then accelerates smoothly up to the max frequency (100 Hz) in order to cool or heat quickly. As room temperature approaches the set point value, the compressor slows down, keeping a constant temperature in silent operation and saving energy. In term of Seasonal Energy Efficiency Ratio, the average reduction in electrical energy consumption is 50%, compared to the equivalent traditional air conditioner.

### SMOOTH STARTING (NO PEAK CURRENT AT START)

Starting ramp is set at low frequency (20 Hz) allowing very low starting torque and starting current, far below the nominal value. The max starting current is 2 A, while for the equivalent traditional air conditioner the max peak starting current is 20-30 A, despite employing soft starting devices.

### POWERFUL

Inverter air conditioning operates at maximum capacity after start up, therefore the set temperature is reached more quickly.

### COMFORTABLE

Inverter air conditioner finely adjusts its capacity according to the thermal loads variation in order to maintain the desired ambient temperature without fluctuations, thus allowing higher comfort than with non-inverter air conditioners.

Thanks to PMSM motor, sound shield and ventilation design the operation is very silent in every working condition.

### VARIABLE CAPACITY OPERATION (ECO FUNCTION)

ECO function is activated by selecting the minimum fan speed, in order to further reduce the power consumption.

### RELIABLE

BLDC motor together with accurate control of superheating allow a much longer compressor lifespan than non-inverter models, where start / stop cycles stress considerably the motor windings. Thanks to VFD technology the unit withstands very low seawater temperature (5°C/41°F) in winter and very high seawater temperature (45°C/113°F) in summer.

### EASY INSTALLATION

Very compact dimensions with possibility to detach the electric box, if needed, for simplifying the installation.

### ACCESSORIES ON DEMAND

- Air exit adapters (from square to round shape, from round to oval)
- Stainless steel fixing brackets for wall mounting the electric box
- WI-FI module
- Air UVA/C sterilizer kit

### COMPLY WITH EMC DIRECTIVE

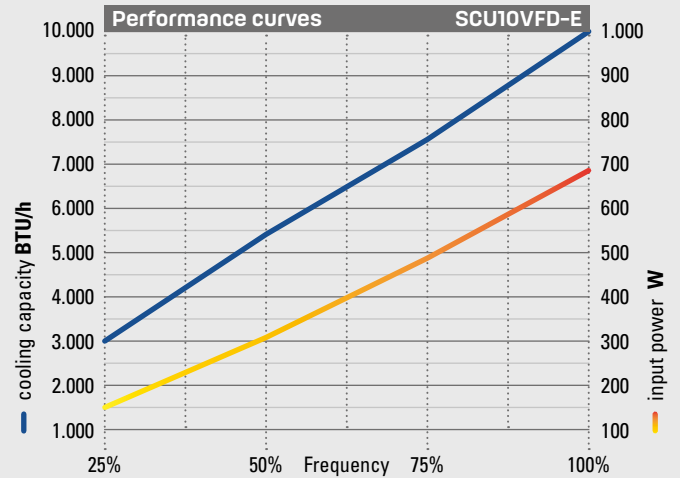
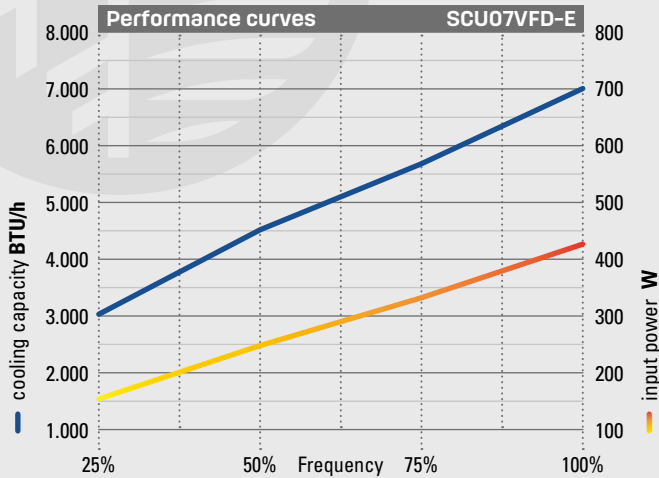
The equipment complies with the Electromagnetic Compatibility (EMC) Directive 2004/108/EC.

### DESIGNED AND MANUFACTURED IN ITALY

## SCU07VFD - SCU10VFD

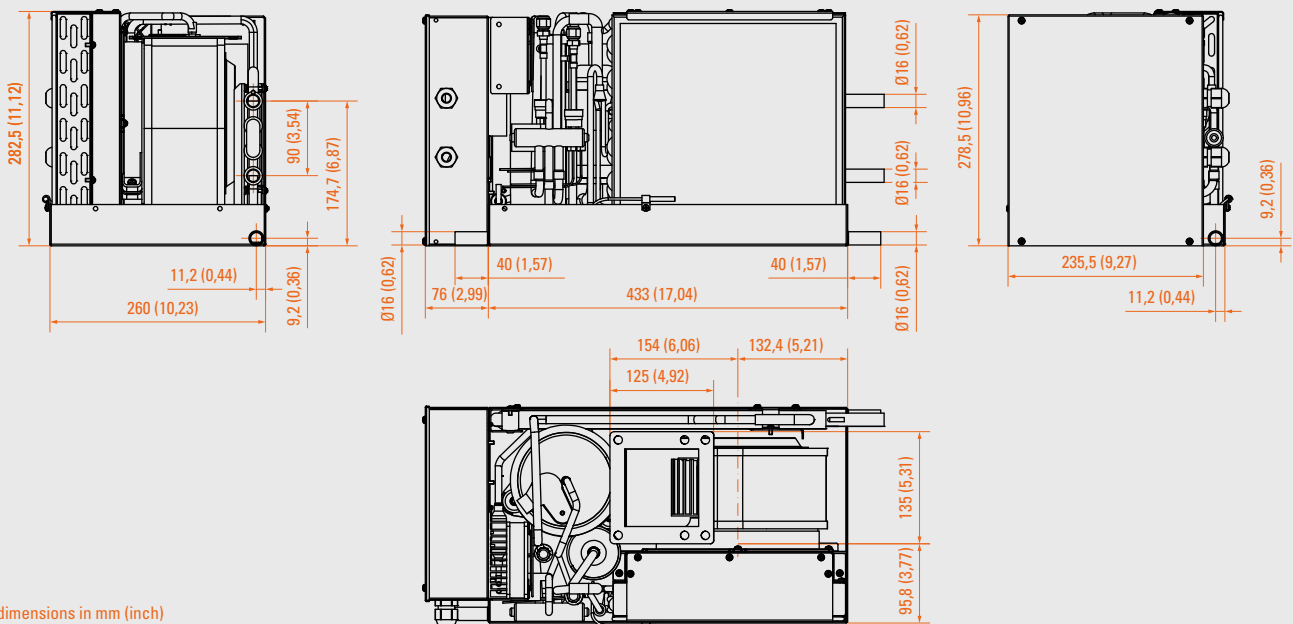
Max Cooling/Heating capacity  
**7.000 - 10.000 BTU/h**

Dimensions  
**433 x 260 x 282 mm**



MODEL	SCU07VFD-E	SCU07VFD-A	SCU10VFD-E	SCU10VFD-A
Width			433 mm - 17 in	
Height*			282 mm - 11.1 in	
Depth			260 mm - 10.2 in	
Weight (including electrical box)			22 kg - 48.6 lb	
Remote Electric box dimensions			232 x 277 x 76 mm - 9.13 x 10.90 x 2.99 in	
Voltage/phase/ cycle	230 V / 1ph / 50-60 Hz	115 V / 1ph / 50-60 Hz	230 V / 1ph / 50-60 Hz	115 V / 1ph / 50-60 Hz
Max Cooling/Heating capacity	7.000 BTU/h	7.000 BTU/h	10.000 BTU/h	10.000 BTU/h
Max input power	430 W	470 W	680 W	730 W
Max Current	1,9 A	4.2 A	3,0 A	6.5 A
Energy label (EN14825)			A	
Cooling capacity ECO**			3.000 BTU/h	
Input power ECO mode**			150 W	
Max seawater flow-pressure drop***			1,0 m <sup>3</sup> /h 2,8 m H <sub>2</sub> O - 4.4 gpm 9.2 feet H <sub>2</sub> O	
Min seawater flow-pressure drop***			0,8 m <sup>3</sup> /h 1,8 m H <sub>2</sub> O - 3.5 gpm 5.9 feet H <sub>2</sub> O	
Air exit duct diameter			120 mm - 5 in	
Refrigerant R410A			0,350 kg - 0.78 lb	

\* including electrical box \*\* minimum fan speed \*\*\* only considering the seawater condenser

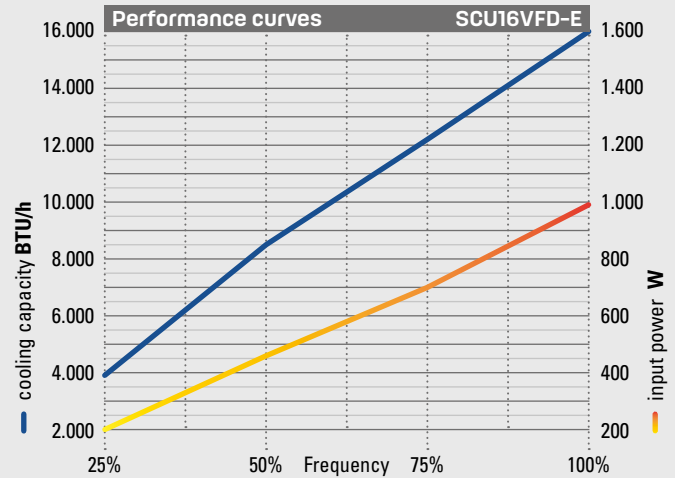
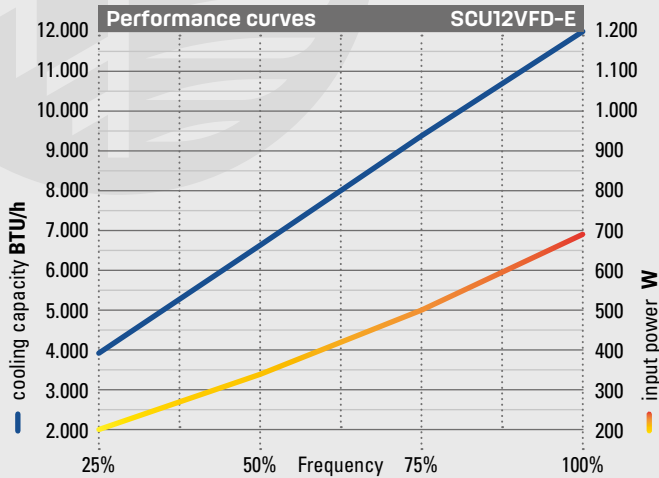


dimensions in mm (inch)

## SCU12VFD - SCU16VFD

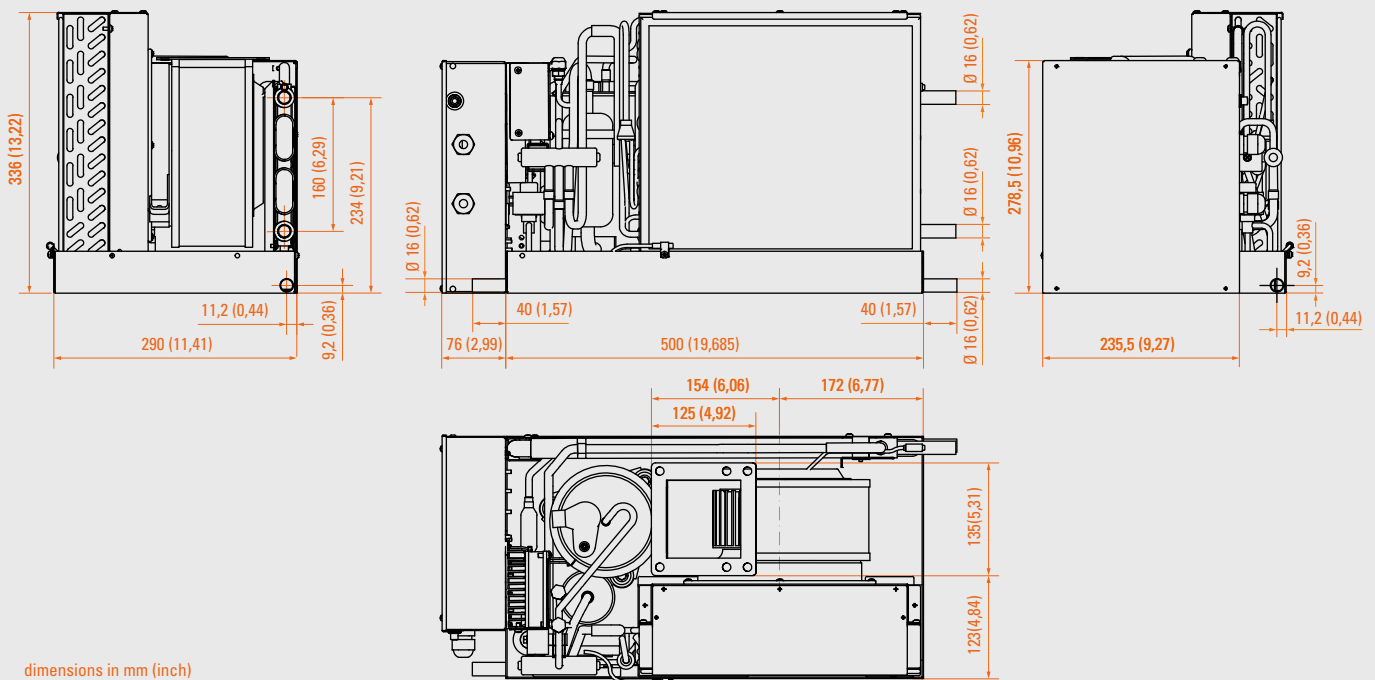
Max Cooling/Heating capacity  
**12.000 - 16.000 BTU/h**

Dimensions  
**500 x 290 x 336 mm**



MODEL	SCU12VFD-E	SCU12VFD-A	SCU16VFD-E	SCU16VFD-A
Width			500 mm - 19.7 in	
Height*			336 mm - 13.2 in	
Depth			290 mm - 11.4 in	
Weight (including electrical box)			27 kg - 59.5 lb	
Remote Electric box dimensions			232 x 277 x 76 mm - 9.13 x 10.90 x 2.99 in	
Voltage/phase/ cycle	230 V / 1ph / 50-60 Hz	115 V / 1ph / 50-60 Hz	230 V / 1ph / 50-60 Hz	115 V / 1ph / 50-60 Hz
Max Cooling/Heating capacity	12.000 BTU/h	12,000 BTU/h	16.000 BTU/h	16,000 BTU/h
Max input power	710 W	750 W	1.050 W	1.090 W
Max Current	3,2 A	6.9 A	4,8 A	10.0 A
Energy label (EN14825)			A	
Cooling capacity ECO**			3.900 BTU/h	
Input power ECO mode**			200 W	
Max seawater flow-pressure drop***	1,3 m <sup>3</sup> /h - 4,2 m H <sub>2</sub> O - 5.7 gpm - 13.8 feet H <sub>2</sub> O		1,4 m <sup>3</sup> /h - 4,9 m H <sub>2</sub> O - 6.2 gpm - 16.1 feet H <sub>2</sub> O	
Min seawater flow-pressure drop***	1,2 m <sup>3</sup> /h - 3,6 m H <sub>2</sub> O - 5.3 gpm - 11.8 feet H <sub>2</sub> O		1,3 m <sup>3</sup> /h - 4,2 m H <sub>2</sub> O - 5.7 gpm - 13.8 feet H <sub>2</sub> O	
Air exit duct diameter			150 mm - 6 in	
Refrigerant R410A			0,450 kg - 0.99 lb	

\* including electrical box \*\* minimum fan speed \*\*\* only considering the seawater condenser



dimensions in mm (inch)

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