

LAMBDA ECHOS large

168 to 324 kW



General

Self-contained, cooling only or heat pump air conditioner with scroll compressors in "Roof-Top" version.

Configurations

HP: Roof Top type conditioner in reversible heat pump version

Strengths

- ▶ High energy performance
- ▶ Easy and quick to install
- ▶ Wide configurability

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LAMBDA ECHOS LARGE

Self-contained, cooling only or air/air heat pump air conditioner with scroll compressors in "Roof-Top" version, available in "standard" version and in "high efficiency" "HE" version (there is no high efficiency version for sizes 30.4 and 33.4).

BODY

Base, cover and framework: made of very thick, galvanized sheet-iron, which is epoxy polyester powder coated in RAL 7035 (light grey).

Panelling: made with 25mm thick sandwich panels (50mm on request) consisting of a 0.5mm thick externally pre-painted galvanized sheet-iron casing that encloses polyurethane foam matting, which guarantees the thermal and acoustic insulation of the unit. The surface of the panels in contact with the treated air is made of galvanized sheet-iron to facilitate cleaning and sanitizing operations.

The non-removable panels are fixed to the body with screws contained in nylon bushes with plug.

The removable panels are attached to the body with nylon eccentrics or inserts and have handles to make them easier to remove.

COMPRESSORS

Hermetic scroll compressors, with protection for starting at low temperatures by means of crankcase heaters and thermal overload protection of the motor by internal temperature sensor. The compressors are mounted on rubber anti-vibration mounts in a technical compartment separated from the air flow, and therefore maintenance operations can be carried out in total safety even with units running. A safety device prevents reverse rotation of the compressor spiral.

REFRIGERANT CIRCUIT

Comprises: charging valves, valve on the liquid line, dehydrator filter, liquid sight glass, safety valve, thermostatic expansion valve, high and low pressure switches.

CONDENSERS

Consist of finned coils with internally grooved copper tubes and corrugated aluminium fins for each circuit. The particular geometry and careful sizing favour heat exchange performance and give the coil high efficiency.

CONDENSING-SIDE FANS

Axial fans directly coupled to an electric motor, with internal klixon thermal overload protection.

All the fans are fixed to the body by interposition of rubber anti-vibration mounts.

The protection rating of the motors is IP 54. The fan includes a safety guard.

EVAPORATOR

Finned coil with copper tubes and corrugated aluminium fins made with interlaced circuits to make the treated air flow more homogeneous.

A stainless steel condensation collection basin is installed at the base of the coil, complete with drain fitting.

EVAPORATING-SIDE FANS

Statically and dynamically balanced dual suction centrifugal fans.

The transmission is a belt-pulley transmission with V belt (variable-diameter drive pulley for motor powers up to 11kW).

The three-phase electric motor, with IP 55 protection rating, is installed on a belt-tightener slide.

Motors with powers of 7.5 kW or higher are started with the star/delta method to limit inrush currents.

Each fan is mounted on a special support frame separated from the rest of the body by rubber anti-vibration mounts.

The air supply and return can be supplied on either of the two sides of the machine provided they are both on the same side.

The standard available pressure is 100 Pa, and can be increased up to 400 Pa on request; any need for higher pressures must be assessed by our technical department.

AIR FILTERS

All the units have a filtering section that precedes the treatment coil and therefore works on the entire flow of treated air with the same efficiency.

The standard version is supplied complete with 48mm thick corrugated filter with galvanized sheet-iron frame with filter grade G4 (according to EN 779). The filter media is made of synthetic matting, which is regeneratable and self-extinguishing.

There are other filter grades based on the type of pollutant to be removed:

F5: 48mm thick corrugated filter with galvanized sheet-iron frame with filter grade F5 (according to EN 779). The filter media is made of synthetic matting, which is regeneratable and self-extinguishing.

F7: 300mm thick rigid bag filter in polyester with pleated glass fibre paper filter media with even, calibrated spacing. F7 filters are always preceded by grade G4 filters to protect them.

There is always a door or removable panel to make the filter maintenance and/or replacement operations easier.

ELECTRICAL CONTROL PANEL

The panel comprises:

- main disconnect switch
- fuses to protect the compressors
- fuses to protect the axial fans
- thermal magnetic circuit breakers for centrifugal fans
- fuses to protect the primary and secondary circuits of the transformer
- compressor contactors
- fan contactors
- connection for connection
- remote control panel
- terminals for external OK signal
- potential free contacts for general alarm
- terminals for external OK signal

- potential free contacts for general alarm
- Microprocessor to control the following functions.
 - Air temperature control with return control
 - Freeze protection on the hot water coil
 - Compressor timing
 - Automatic rotation of compressor starting sequence
 - Alarm signalling
 - Alarm reset
 - Stepped capacity reduction of the capacity delivered by the unit
 - Cumulative alarm contact for remote signalling
 - Forcing of capacity reduction due to pressure limit on machines with four compressors
 - Alarm log recording
 - Programming of operation on settable time bands
 - Display of the following on the display.
 - Return air temperature
 - Set temperature and differential set points
 - Description of alarms
 - Hour meter operation and number of unit, compressor and pump (where present) start-ups

Power supply 400V/3~/50Hz + N for sizes 9.4/10.2; 400V/3~/50Hz for sizes 12.2/13.2/14.2/16.2

CONTROLS AND SAFETY DEVICES

- High pressure switch with manual reset
- High pressure safety valve
- Minimum temperature probe for supply air
- Maximum temperature probe on heat generator
- Thermal cut-out device for compressors and fans

TESTING

The units are factory-tested and supplied complete with oil and refrigerant.

VERSIONS

LAMBDA ECHOS /HP: reversible heat pump

LAMBDA ECHOS HE /HP: high efficiency reversible heat pump

In addition to the LAMBDA ECHOS components, this comprises: four-way reversing valve, liquid receiver, second thermostatic expansion valve, microprocessor for automatic summer/winter switching and a patented automatic coil defrost system with separate circuits.

ADDITIONAL VERSIONS

LAMBDA ECHOS /LN: low noise unit

LAMBDA ECHOS HE /LN: high efficiency low noise unit

The unit is designed to reduce the noise emissions propagating from it. The LN version has no consequence on the noise propagated inside the channels that depends directly on the combinations of required flow rates and pressures and can be reduced only through the use of channel silencers.

The LN version uses an axial fan rotation speed control system and a compartment to contain the compressors made of metal panels lined with sound absorbing matting.

AIR HANDLING MODULE SET-UP

LAMBDA ECHOS BASE

LAMBDA ECHOS HE BASE

Version suitable for working in 100% recirculation. Air exchanges are not included.

LAMBDA ECHOS FC2S

LAMBDA ECHOS HE FC2S

Version suitable for working with input of external air.

Compared to the basic version, this is equipped with a 2-damper mixing chamber, where one damper is placed on the air return and the other on the external air intake.

The unit is suitable for working in free cooling/free heating mode.

For all versions that have dampers, the "damper servo controls" accessory is available. To obtain automatic modulation of them, the "Pco" control must also be installed.

LAMBDA ECHOS FC3S

LAMBDA ECHOS HE FC3S

Version suitable for working with input of external air and with exhaustion of stale air. Compared to the FC2S version, this is equipped with a 3-damper mixing chamber and stale air exhaust fans. The unit is suitable for working in free cooling/free heating mode.

The return fan is supplied as standard with the same performance as the supply fan. Different air flow rates and pressures can be supplied on request.

The innovative configuration of the unit allows part of the energy expelled from the treated environment to be recovered. The air being exhausted is conveyed over the condensing coil, which reduces the condensing temperature and thus increases the efficiency of the unit. In the same way, the air being exhausted is conveyed over the evaporating coil also during operation in heat pump mode, thereby considerably increasing its performance. This recovery system is supplied as standard for all units equipped with extractor fans (FC3S, GC3S, RS4S, GS4S).

LAMBDA ECHOS GC2S

LAMBDA ECHOS HE GC2S

Compared to the FC2S version, the unit is equipped with a module containing one or more direct exchange condensation gas heat generators.

The main components of the generator are:

- combustion chamber and surfaces that can be in contact with condensation are made of AISI 441
- premixed gas burner that guarantees absence of carbon monoxide and nitrogen oxide emissions below 24 parts per million
- electronic board that controls the burner and modulates heat output (fuel consumption) continuously between the minimum value and the maximum value according to the control parameters set and measured by the Pco control
- combustion fume exhaust flue.

With the technology of premixing and modulation as heat demand from the room falls, the generator consumes less gas and increases its efficiency up to 109% (value calculated according to the net calorific value).

The generator certified by the GASTEC body and built in compliance with gas directive 90/396/EC and 2009/142/CE is housed in a module whose panels are insulated with rock wool according to the criteria of Italian Ministerial Decree DM 12/04/96, the air flow is separated from the gas intake point and an aeration grille puts the external environment in contact with the burner.

The following safety devices are also present on the generator.

- Safety thermostat downline of the exchanger
- Flame detection electrode
- Safety pressure switch that controls any obstruction of the fume pipe and/or the air intake pipe
- Differential pressure switch for air flow detection (supplied as standard with all the units).

All these devices, when activated, cause the burner to stop. They are indicated cumulatively by the Pco control and must be reset manually.

LAMBDA ECHOS GC3S

LAMBDA ECHOS HE GC3S

Compared to the FC3S version, the unit is equipped with a module containing a direct exchange condensation gas heat generator. For the characteristics of the generator, please see description of version GC2S.

LAMBDA ECHOS RS4S

LAMBDA ECHOS HE RS4S

A module inside which is positioned a static air/air cross-flow plate heat recovery unit is added to the unit in FC3S set-up.

Consisting of an aluminium plate pack, it allows recovery of sensible heat from the exhausted air with an efficiency, during winter operation, ranging from 50 to 55% depending on the model. The two air flows (exhaustion and return) are completely separate and therefore every type of contamination between them is avoided.

The Pco control, which manages recovery according to a set-table logic depending on whether or not the air quality probe is present, will be installed as standard with this set-up too.

The possibility of obtaining the free cooling option with RS version unit too is guaranteed by the presence of a damper for external air as recovery unit by-pass.

LAMBDA ECHOS GS4S

LAMBDA ECHOS HE GS4S

Compared to the RS4S version, the unit is equipped with a module containing a direct exchange condensation gas heat generator. For the characteristics of the generator, please see description of version GC2S.

ACCESSORIES

MOTOCONDENSING SECTION ACCESSORIES

- Condensation control with speed governor
- High and low pressure gauges
- Suction and delivery valves
- Solenoid valve on the liquid line (double valve for the HP version)
- Liquid receiver (standard on the HP version)
- Pre-painted aluminium condensing coil
- Condensing coil treated with anti-corrosion paints

VENTILATING SECTION ACCESSORIES

- Increased pressure of the supply fans (from 100 to 400Pa)
- Increased pressure of the return fans (from 100 to 400Pa)
- Rigid bag filters of grade F7
- Hot water heating coil
- Electric heating coil
- 3-way valve with modulating servo control for hot water coil control
- Sandwich panels with increased thickness (50mm)
- Immersed electrode humidifier with steam distribution nozzle
- Servo controls for dampers
- Servo controls for dampers with spring return
- Dirty filter alarm
- Rain hoods on external dampers (exchange and exhaustion)

ELECTRICAL ACCESSORIES

- "Pco" control
- Remote control panel
- RS485 serial interface
- Power factor correction to $\cos\theta \geq 0.9,5$
- Potential free operating contacts
- Enthalpy free-cooling
- Electronic soft starter
- Power supplies different from the standard one

OTHER ACCESSORIES

- Rubber anti-vibration mounts
- Soundproof casings on the compressors

TECHNICAL SPECIFICATIONS - LAMBDA ECHOS LARGE

Unit size		17.4	19.4	20.4	24.4	27.4	30.4	33.4
Cooling								
Nominal refrigeration capacity	(1)	kW	168.4	185.3	201.9	243.3	267.5	298.3
Sensible cooling capacity	(1)	kW	131.7	143.6	154.8	194.4	209.9	233.6
Power absorbed by the compressors	(1)	kW	46.7	45.6	45.4	57.0	68.2	79.6
Heating								
Nominal heating capacity	(2)	kW	176.5	191.8	210.9	243.8	274.7	319.8
Power absorbed by the compressors	(2)	kW	35.4	38.8	41.9	48.0	56.0	65.6
Compressors								
Type		Scroll						
Quantity/Refrigerant circuits	no./no.	4 / 2	4 / 2	4 / 2	4 / 2	4 / 2	4 / 2	4 / 2
Capacity reduction steps	%	0-25-50-75-100	0-25-50-75-100	0-25-50-75-100	0-25-50-75-100	0-25-50-75-100	0-25-50-75-100	0-25-50-75-100
Total oil charge	l	13	13	14	16	19	23	27
Total refrigerant charge LAMBDA ECHOS	kg	40	42	44	48	54	56	58
Total refrigerant charge LAMBDA ECHOS/HP	kg	50	52	66	66	76	76	76
Ventilating section								
Type		Centrifugal						
Air flow	m³/h	30,250	33,000	35,970	42,900	47,080	52,030	56,100
Std available static pressure	Pa	100	100	100	100	100	100	100
Air filters								
Thickness	mm	48	48	48	48	48	48	48
Efficiency		G4						
Motocondensing section								
Type		Axial						
Air flow	m³/h	42,700	65,150	87,600	87,600	87,600	86,500	85,400
Water heating coil (accessory)								
Capacity	(3)	kW	193	202.3	211.96	267.35	281.16	318.26
Water flow rate	l/s	3.151	3.299	3.457	4.365	4.582	5.188	5.411
Head loss	kPa	38	42	45	84	91	22	24
Electric heating coil (accessory)								
Capacity	kW	45	60	60	75	75	80	80
Operating stages	no.	3	3	3	4	4	4	4
Hot air generator for GC2S GC3S GS4S RS4S								
Quantity		1	1	1	2	2	2	2
Model	(4)	XL	XXL	XXL	LL	LL	XL	XL
Maximum nominal heating capacity	kW	160	194	194	250	250	320	320
Generator efficiency related to HI	%	97,6	97,1	97,1	96,8	96,8	97,6	97,6
Maximum natural gas consumption	(5) m³/h	17,3	21,2	21,2	27,5	27,5	34,7	34,7
Amount of condensation produced	l/h	6,6	5,4	5,4	8,4	8,4	13,2	13,2

(1) Calculation conditions: ambient air 27°C DB, 19°C WB; external air 35°C. Mixture with 30% external air.

(2) Calculation conditions: ambient air 20°C; external air 7°C DB, 6°C WB. Mixture with 30% external air.

(3) Coil data related to: Incoming air temperature 20°C; in/out water temperature: 80/65

(4) Nominal heating capacity: LL= 125 kW; XL= 160 kW; XXL= 194 kW

(5) Related to 15°C, 1013 mbar and supply pressure of 20 mbar

ELECTRICAL SPECIFICATIONS - LAMBDA ECHOS LARGE

Unit size		17.4	19.4	20.4	24.4	27.4	30.4	33.4
Supply ventilating section	(3)							
nº of supply fans	no.	2	2	2	2	2	2	2
Nominal fan power	kW	4	4	4	5.5	7.5	7.5	7.5
Nominal fan current	A	9	9	9	11.9	16	16	16
Return ventilating section	(4)							
nº of return fans	no.	2	2	2	2	2	2	2
Nominal fan power	kW	4	2.2	3	5.5	5.5	5.5	7.5
Nominal fan current	A	9	5	7	12	12	12	16
Motocondensing section								
nº of axial fans	no.	2	3	4	4	4	4	4
Nominal fan power	kW	1.94	1.94	1.94	1.94	1.94	1.94	1.94
Nominal fan current	A	3.9	3.9	3.9	3.9	3.9	3.9	3.9
Immersed electrode humidifier (accessory)								
Nominal steam production	kg/h	23	23	23	45	45	45	45
Number of cylinders	no.	1	1	1	1	1	1	1
Operating interval	kg/h	15–23	15–23	15–23	25–45	25–45	25–45	25–45
Absorbed power	kW	19	19	19	34	34	34	34
Absorbed current	A	27	27	27	49	49	49	49
Total								
Max. absorbed power	(1),(5)	79	82	90	109	124	134	148
Max. inrush current	(5)	257	293	312	385	406	461	485
Max. absorbed current	(2),(5)	142	149	168	196	217	234	258
Power supply	V/ph/Hz	400/3~/50±5%	400/3~/50±5%	400/3~/50±5%	400/3~/50±5%	400/3~/50±5%	400/3~/50±5%	400/3~/50±5%
Power supply for auxiliary circuits	V/ph/Hz	230-24/1~/50	230-24/1~/50	230-24/1~/50	230-24/1~/50	230-24/1~/50	230-24/1~/50	230-24/1~/50

- (1) Electrical power that must be supplied by the electricity network for operation of the unit.
 (2) Current at which the internal unit protection devices are triggered. This is the max. current absorbed by the unit. This value is never exceeded and must be used to size the line and relevant protective devices (refer to the wiring diagram supplied with the units).
 (3) Value related to units in FC3S set-up and available supply pressure of 100Pa
 (4) Value related to units in FC3S set-up and for available return pressure of 100Pa
 (5) The indicated values refer solely to the unit in FC3S set-up with available pressure of 100Pa and cannot be used for sizing the power lines of units in other versions for which it is necessary to refer to the wiring diagram supplied with them.

TECHNICAL SPECIFICATIONS - LAMBDA ECHOS LARGE HE

Unit size		17.4	19.4	20.4	24.4	27.4
Cooling						
Nominal refrigeration capacity	(1)	kW	178.0	191.1	204.6	249.3
Sensible cooling capacity	(1)	kW	138.3	148.9	159.9	197.8
Power absorbed by the compressors	(1)	kW	38.6	42.4	44.8	55.1
Heating						
Nominal heating capacity	(2)	kW	187.4	208.2	227.3	248.3
Power absorbed by the compressors	(2)	kW	34.8	37.9	40.9	47.5
Compressors						
Type			Scroll	Scroll	Scroll	Scroll
Quantity/Refrigerant circuits	no./no.		4 / 2	4 / 2	4 / 2	4 / 2
Capacity reduction steps	%		0-25-50-75-100	0-25-50-75-100	0-25-50-75-100	0-25-50-75-100
Total oil charge	l		13	13	14	16
Total refrigerant charge LAMBDA ECHOS	kg		40	42	44	48
Total refrigerant charge LAMBDA ECHOS/HP	kq		60	60	66	66
Ventilating section						
Type			Centrifugal	Centrifugal	Centrifugal	Centrifugal
Air flow	m³/h		30,250	33,000	35,970	42,900
Std available static pressure	Pa		100	100	100	100
Air filters						
Thickness	mm		48	48	48	48
Efficiency			G4	G4	G4	G4
Motocondensing section						
Type			Axial	Axial	Axial	Axial
Air flow	m³/h		87,600	86,500	85,400	85,400
Water heating coil (accessory)						
Capacity	(3)	kW	193	202.3	211.96	267.35
Water flow rate		l/s	3.151	3.299	3.457	4.365
Head loss		kPa	38	42	45	84
Electric heating coil (accessory)						
Capacity		kW	45	60	60	75
Operating stages		no.	3	3	3	4
Hot air generator for GC2S GC3S GS4S RS4S						
Quantity			1	1	1	2
Model	(4)		XL	XXL	XXL	LL
Maximum nominal heating capacity		kW	160	194	194	250
Generator efficiency related to HI		%	97,6	97,1	97,1	96,8
Maximum natural gas consumption	(5)	m³/h	17,3	21,2	21,2	27,5
Amount of condensation produced		l/h	6,6	5,4	5,4	8,4

(1) Calculation conditions: ambient air 27°C DB, 19°C WB; external air 35°C. Mixture with 30% external air.

(2) Calculation conditions: ambient air 20°C; external air 7°C DB, 6°C WB. Mixture with 30% external air.

(3) Coil data related to: Incoming air temperature 20°C; in/out water temperature: 80/65

(4) Nominal heating capacity: LL= 125 kW; XL= 160 kW; XXL= 194 kW

(5) Related to 15°C, 1013 mbar and supply pressure of 20 mbar

ELECTRICAL SPECIFICATIONS - LAMBDA ECHOS LARGE HE

Unit size		17.4	19.4	20.4	24.4	27.4
Supply ventilating section	(3)					
nº of supply fans	no.	2	2	2	2	2
Nominal fan power	kW	4	4	4	5.5	7.5
Nominal fan current	A	9	9	9	11.9	16
Return ventilating section	(4)					
nº of return fans	no.	2	2	2	2	2
Nominal fan power	kW	4	2.2	3	5.5	5.5
Nominal fan current	A	9	5	7	12	12
Motocondensing section						
nº of axial fans	no.	4	4	4	4	4
Nominal fan power	kW	1.94	1.94	1.94	1.94	1.94
Nominal fan current	A	3.9	3.9	3.9	3.9	3.9
Immersed electrode humidifier (accessory)						
Nominal steam production	kg/h	23	23	23	45	45
Number of cylinders	no.	1	1	1	1	1
Operating interval	kg/h	15-23	15-23	15-23	25-45	25-45
Absorbed power	kW	19	19	19	34	34
Absorbed current	A	27	27	27	49	49
Total						
Max. absorbed power	(1),(5)	83	84	90	109	124
Max. inrush current	(5)	265	297	312	385	406
Max. absorbed current	(2),(5)	150	153	168	196	217
Power supply	V/ph/Hz	400/3~/50 ±5%	400/3~/50 ±5%	400/3~/50 ±5%	400/3~/50 ±5%	400/3~/50 ±5%
Power supply for auxiliary circuits	V/ph/Hz	230-24/1~/50	230-24/1~/50	230-24/1~/50	230-24/1~/50	230-24/1~/50

- (1) Electrical power that must be supplied by the electricity network for operation of the unit.
 (2) Current at which the internal unit protection devices are triggered. This is the max. current absorbed by the unit. This value is never exceeded and must be used to size the line and relevant protective devices (refer to the wiring diagram supplied with the units).
 (3) Value related to units in FC3S set-up and available supply pressure of 100Pa
 (4) Value related to units in FC3S set-up and for available return pressure of 100Pa
 (5) The indicated values refer solely to the unit in FC3S set-up with available pressure of 100Pa and cannot be used for sizing the power lines of units in other versions for which it is necessary to refer to the wiring diagram supplied with them.

AIR FLOW RATES - LAMBDA ECHOS LARGE

Unit size	17.4	19.4	20.4	24.4	27.4	30.4	33.4
Max. air flow rate [m³/h]	31,625	34,500	37,605	44,850	49,220	54,395	58,650
Standard air flow rate [m³/h]	30,250	33,000	35,970	42,900	47,080	52,030	56,100
Min. air flow rate [m³/h]	23,375	25,500	27,795	33,150	36,380	40,205	43,350

The table indicates the interval of flow rate values within which the units can be selected by selection software.

Outside the indicated flow rates, please contact our technical department for feasibility verification.

COOLING PERFORMANCE OF VERSIONS FC3S_GC3S (NOMINAL AIR FLOW RATE)

Model	Air flow rate [m³/h]	Internal Air		External air conditions T DB [°C] / T WB [°C]														
		T DB	T WB	25 / 18			30 / 22			35 / 24			40 / 25			42 / 25.5		
		[°C]	[°C]	kWf	kWs	kWe	kWf	kWs	kWe	kWf	kWs	kWe	kWf	kWs	kWe	kWf	kWs	kWe
17.4	30250	24	17	165.5	130.5	37.3	164.8	125.4	41.5	162.5	127.0	46.0	158.0	136.7	50.7	156.2	139.8	52.7
		26	18	170.4	130.1	37.7	169.5	125.7	41.9	166.6	127.9	46.5	162.5	137.2	51.1	160.7	140.2	53.1
		27	19	172.1	133.8	37.9	170.9	129.3	42.2	168.4	131.7	46.7	164.1	141.8	51.3	162.5	144.8	53.2
		28	20	174.4	133.7	38.1	173.2	129.6	42.4	171.2	128.0	46.9	166.2	141.6	51.6	164.5	145.0	53.4
		30	22	180.1	128.6	38.5	178.6	125.0	42.8	175.6	127.6	47.3	171.5	136.6	52.1	170.0	139.8	54.0
19.4	33000	24	17	180.2	142.6	36.6	180.0	137.2	40.7	178.1	139.1	45.1	173.9	149.0	49.9	172.2	152.2	51.8
		26	18	186.3	141.7	36.9	185.2	137.2	41.1	182.8	140.1	45.6	179.0	149.3	50.2	177.0	152.5	52.3
		27	19	188.4	145.8	37.0	187.4	141.2	41.2	185.3	143.6	45.6	181.0	153.7	50.3	178.9	157.2	52.4
		28	20	191.0	145.6	37.2	190.0	141.1	41.4	188.3	139.3	45.9	183.4	153.9	50.5	181.5	157.0	52.6
		30	22	197.2	140.1	37.5	195.7	136.5	41.9	193.5	139.2	46.2	189.3	148.6	50.9	187.6	151.7	53.0
20.4	35970	24	17	196.5	153.8	36.3	196.1	148.5	40.4	194.0	150.6	44.8	190.3	160.8	49.5	188.2	163.2	51.8
		26	18	201.9	153.8	36.6	201.8	148.6	40.7	199.3	151.1	45.3	195.9	161.0	50.0	194.2	162.2	52.0
		27	19	204.3	157.6	36.8	204.2	152.8	40.7	201.9	154.8	45.4	198.1	165.7	50.1	196.1	168.9	52.2
		28	20	207.5	157.4	36.9	207.4	152.5	41.0	205.3	150.9	45.6	200.7	165.7	50.2	198.9	168.9	52.4
		30	22	214.9	151.3	37.2	214.1	147.5	41.3	211.3	150.4	45.9	207.3	160.6	50.8	205.7	163.1	52.8
24.4	42900	24	17	238.0	188.1	45.5	237.0	182.0	50.8	234.2	186.8	56.5	228.6	204.2	62.6	226.4	209.9	65.1
		26	18	244.6	188.2	45.8	243.8	182.5	51.3	241.3	187.6	56.9	235.9	204.8	62.9	233.5	210.5	65.5
		27	19	247.4	193.9	46.0	245.9	189.0	51.4	243.3	194.4	57.0	237.7	211.9	63.1	235.5	218.0	65.7
		28	20	250.9	193.7	46.2	249.9	188.5	51.7	247.7	188.3	57.2	241.5	213.1	63.2	239.1	218.1	65.9
		30	22	259.4	186.0	46.6	258.1	181.5	52.1	255.1	187.5	57.7	249.7	203.3	63.8	247.3	209.5	66.4
27.4	47080	24	17	262.1	205.9	53.9	261.2	198.0	60.6	257.6	202.8	67.4	252.0	219.2	74.7	249.6	224.9	77.6
		26	18	269.1	205.7	54.6	267.7	198.7	61.3	264.7	203.3	68.1	259.3	219.6	75.3	256.5	225.6	78.3
		27	19	271.5	212.0	54.8	270.5	205.3	61.4	267.5	209.9	68.2	261.6	226.9	75.5	259.0	233.1	78.6
		28	20	275.9	211.2	55.1	274.7	205.7	61.6	272.0	204.5	68.6	265.1	226.9	75.8	262.9	233.1	78.8
		30	22	284.8	202.9	55.6	283.4	197.7	62.2	280.0	202.6	69.1	273.9	218.8	76.3	271.3	224.3	79.4
30.4	52030	24	17	292.2	230.5	63.9	291.2	221.6	71.2	287.1	226.0	78.7	280.5	243.0	86.6	277.6	248.2	89.9
		26	18	300.7	230.1	64.5	298.9	222.4	71.9	295.1	226.7	79.4	288.4	243.8	87.3	285.3	249.0	90.6
		27	19	303.5	236.8	64.8	302.1	229.0	72.0	298.3	233.6	79.6	291.2	251.4	87.6	288.1	257.2	90.7
		28	20	307.4	236.6	65.1	305.9	228.9	72.4	303.4	226.9	79.9	295.5	251.2	87.9	292.3	257.0	91.1
		30	22	318.1	227.0	65.7	316.3	221.6	72.9	312.0	226.0	80.6	304.4	242.0	88.6	301.8	247.7	91.9
33.4	56100	24	17	317.7	248.1	73.6	316.4	239.0	81.4	312.9	242.0	89.6	304.9	258.7	98.4	301.9	263.9	102.0
		26	18	326.7	247.9	74.2	325.0	239.4	82.2	321.5	242.4	90.5	313.6	259.2	99.1	310.8	264.3	102.7
		27	19	330.4	254.4	74.4	328.6	245.9	82.4	324.4	249.8	90.8	316.9	266.8	99.5	313.7	272.1	103.1
		28	20	334.6	254.1	74.7	332.9	246.0	82.7	329.9	242.8	91.1	321.1	266.8	99.8	317.9	272.3	103.5
		30	22	344.7	244.9	75.6	342.8	238.1	83.4	338.4	242.1	91.9	331.3	257.3	100.7	328.5	262.6	104.4

kWf: refrigeration capacity [kW]

kWs: sensible cooling capacity [kW]

kWe: electrical power absorbed by the compressors [kW]

The performance values are related to operation with 30% external air and 70% recirculation air

The 3-damper version includes energy recovery on exhausted air

HEATING PERFORMANCE OF VERSIONS FC3S_GC3S (NOMINAL AIR FLOW RATE)

Model	Air flow rate [m³/h]	Internal Air		Internal air conditions T DB [°C]											
		T DB [°C]	T WB [°C]	10		15		18		19		20		25	
		Kwt	kWe	Kwt	kWe	Kwt	kWe	Kwt	kWe	Kwt	kWe	Kwt	kWe	Kwt	kWe
17.4	30250	-10	-10.3	127.0	23.5	130.2	25.7	132.6	27.0	133.4	27.5	135.2	28.1	137.8	30.4
		-5	-6	139.3	25.3	142.9	27.5	144.9	29.0	145.5	29.5	147.1	30.1	149.9	32.6
		0	-1	152.8	27.3	155.9	29.6	158.2	31.1	159.0	31.7	159.7	32.3	163.1	35.0
		5	4	166.7	29.3	169.7	31.8	171.3	33.4	170.9	34.0	171.1	34.5	174.0	37.3
		7	6	172.7	30.2	173.4	32.7	175.3	34.3	175.5	34.8	176.5	35.4	178.7	38.3
		10	9	178.8	31.4	179.8	33.9	181.6	35.6	182.2	36.1	183.7	36.9	186.1	39.9
		15	13	192.6	33.8	195.7	36.6	196.7	38.3	197.4	39.0	198.3	39.7	200.3	42.9
19.4	33000	-10	-10.3	138.7	25.9	140.8	28.1	142.0	29.5	142.4	30.0	143.5	30.6	144.9	33.0
		-5	-6	152.3	27.9	154.1	30.2	155.2	31.6	155.5	32.1	157.0	32.7	159.0	35.4
		0	-1	167.6	30.0	169.7	32.5	170.5	34.0	171.1	34.6	172.2	35.2	173.6	38.0
		5	4	183.4	32.4	186.1	35.0	186.7	36.6	186.5	37.2	187.8	37.8	188.7	40.8
		7	6	190.2	33.4	191.1	36.0	191.0	37.6	191.6	38.2	191.8	38.8	193.5	41.8
		10	9	196.8	34.6	198.4	37.4	199.1	39.1	199.6	39.7	200.9	40.4	202.8	43.6
		15	13	215.4	37.5	215.9	40.4	216.5	42.2	217.2	42.9	217.7	43.6	218.3	46.9
20.4	35970	-10	-10.3	152.8	28.2	152.7	30.5	153.5	31.9	153.6	32.4	154.5	33.0	154.9	35.5
		-5	-6	167.2	30.3	167.8	32.7	168.4	34.2	168.8	34.7	169.3	35.3	170.6	38.0
		0	-1	184.4	32.6	185.4	35.1	185.2	36.7	185.9	37.3	186.3	37.9	188.0	40.8
		5	4	202.9	35.3	203.8	37.9	204.5	39.6	204.3	40.1	204.2	40.7	205.1	43.9
		7	6	209.5	36.2	209.4	38.9	210.0	40.6	209.4	41.2	210.9	41.9	211.7	45.0
		10	9	218.3	37.6	218.3	40.4	218.8	42.3	219.4	42.9	219.6	43.6	221.7	46.9
		15	13	239.2	40.7	238.7	43.7	238.8	45.7	238.8	46.3	239.4	47.1	239.9	50.6
24.4	42900	-10	-10.3	176.3	31.8	177.4	34.6	178.6	36.3	179.1	36.9	180.4	37.6	182.1	40.8
		-5	-6	193.4	34.2	194.8	37.1	196.1	39.0	196.7	39.6	197.7	40.3	199.3	43.7
		0	-1	212.7	36.9	214.3	40.0	215.7	42.0	215.8	42.6	216.3	43.4	219.3	47.0
		5	4	233.0	39.8	235.3	43.1	236.5	45.3	236.7	46.0	237.9	46.8	238.5	50.6
		7	6	241.2	41.0	242.6	44.4	242.8	46.5	243.1	47.2	243.8	48.0	244.9	51.9
		10	9	250.2	42.6	251.1	46.2	253.0	48.4	252.5	49.1	253.4	49.9	255.0	54.1
		15	13	272.8	46.2	274.8	50.0	275.3	52.4	274.5	53.1	276.4	54.0	276.5	58.4
27.4	47080	-10	-10.3	198.0	36.3	200.7	39.6	202.3	41.7	203.1	42.4	205.3	43.4	208.0	47.1
		-5	-6	217.3	39.2	220.4	42.7	222.0	44.9	222.3	45.7	224.4	46.6	227.8	50.7
		0	-1	239.1	42.4	242.3	46.3	244.1	48.7	244.7	49.5	245.9	50.4	249.1	54.9
		5	4	261.6	46.0	265.1	50.1	266.7	52.7	267.4	53.6	267.8	54.5	268.9	59.1
		7	6	271.8	47.6	272.9	51.6	273.7	54.2	273.0	55.0	274.7	56.0	275.3	60.6
		10	9	281.3	49.5	282.7	53.7	283.6	56.4	284.3	57.4	286.1	58.5	287.0	63.4
		15	13	305.2	53.7	307.6	58.3	307.4	61.2	307.7	62.2	308.6	63.4	310.6	68.7
30.4	52030	-10	-10.3	231.7	43.8	236.0	47.5	238.0	49.8	239.0	50.6	241.7	51.6	246.1	55.8
		-5	-6	253.9	47.0	257.8	50.9	261.3	53.5	262.3	54.3	263.8	55.3	267.8	59.8
		0	-1	279.2	50.6	282.1	54.8	285.0	57.5	285.9	58.4	286.3	59.4	292.4	64.3
		5	4	303.7	54.5	308.2	59.2	310.8	61.9	311.7	62.9	312.0	63.9	314.7	69.0
		7	6	315.1	56.2	317.5	60.7	318.7	63.5	319.3	64.5	319.8	65.6	322.4	70.8
		10	9	324.7	58.2	327.6	62.8	329.6	66.0	330.4	67.0	331.9	68.1	335.1	73.6
		15	13	353.1	62.9	356.0	68.0	356.8	71.1	359.6	72.5	359.0	73.6	361.1	79.4
33.4	56100	-10	-10.3	249.1	50.6	253.6	54.6	256.9	57.2	257.9	58.1	261.7	59.2	265.8	63.8
		-5	-6	272.8	54.2	277.5	58.5	281.5	61.3	282.3	62.2	284.4	63.3	288.9	68.3
		0	-1	299.7	58.3	304.4	62.9	307.4	65.8	308.3	66.9	310.5	68.1	314.2	73.3
		5	4	326.9	62.7	331.4	67.8	332.2	70.8	335.1	71.8	336.8	73.2	339.0	78.7
		7	6	337.0	64.6	341.3	69.6	342.0	72.6	342.8	73.7	342.8	74.8	345.9	80.4
		10	9	348.2	66.8	354.7	72.2	353.8	75.4	355.3	76.6	357.0	77.9	358.2	83.9
		15	13	380.2	72.4	380.4	77.7	382.7	81.3	383.5	82.5	388.0	84.4	385.4	90.1

kWt: heating capacity [kW]

kWe: electrical power absorbed by the compressors [kW]

The performance values are related to operation with 30% external air and 70% recirculation air

The 3-damper version includes energy recovery on exhausted air

COOLING PERFORMANCE OF VERSION WITH HEAT RECOVERY UNIT (NOMINAL AIR FLOW RATE)

Model	Air flow rate [m³/h]	External air conditions T DB [°C] / T WB [°C]														25 / 18							30 / 22							35 / 24							40 / 25							42 / 25.5																																																																																																																																																																																																																																																																																																																																																																		
		T DB		T WB		25 / 18							30 / 22							35 / 24							40 / 25							42 / 25.5																																																																																																																																																																																																																																																																																																																																																																												
		[°C]	[°C]	kWf+r	kWf	kWs+r	kWs	kWe	kWf+r	kWf	kWs+r	kWs	kWe	kWf+r	kWf	kWs+r	kWs	kWe	kWf+r	kWf	kWs+r	kWs	kWe	kWf+r	kWf	kWs+r	kWs	kWe	kWf+r	kWf	kWs+r	kWs	kWe																																																																																																																																																																																																																																																																																																																																																																													
30.4	52030	24	17	301.7297.4231.2226.9	68.5	323.6298.0232.4206.8	75.3	343.1296.2252.1205.2	82.0	358.1289.9289.9221.7	89.1	364.6287.9302.4225.7	92.0	372.4322.4271.7221.7	93.0	389.2316.5310.4237.7100.6396.1314.3323.3241.5103.8	93.2	390.0305.9252.2218.1	83.7	355.5300.1290.8235.4	90.7	361.9298.0303.6239.7	93.7	363.1294.9300.0231.8	93.2	367.327.6326.9208.6197.2	65.5	304.5274.0227.4196.9	71.8	318.9269.3262.5212.9	78.4	324.1266.9274.8217.6	81.2	330.6276.9226.4199.7	72.3	317.6271.9261.8216.1	78.9	323.4270.0274.0220.6	81.7	336.7301.1302.7243.1	94.2	340.0284.9218.2199.1	73.3	317.6279.5252.5214.4	79.9	323.0277.3265.0219.3	82.8	347.9347.9237.1237.1	89.5	368.1345.4259.2236.5	97.0	385.1339.6298.2252.7	104.6391.8337.2311.9257.3107.8	53.6																																																																																																																																																																																																																																																																																																																																																								
33.4	56100	24	17	327.6323.1249.8245.3	78.5	351.6324.3250.9223.6	85.8	372.4322.4271.7221.7	93.0	389.2316.5310.4237.7100.6396.1314.3323.3241.5103.8	93.2	390.9333.5270.3233.9	95.0	386.7327.6310.0250.9102.5393.0324.8323.4255.2105.8	95.5	395.5300.1290.8235.4	90.7	360.7301.1302.7243.1	94.2	360.6309.5293.3242.2	95.5	367.327.6326.9208.6197.2	65.5	304.5274.0227.4196.9	71.8	318.9269.3262.5212.9	78.4	324.1266.9274.8217.6	81.2	330.6276.9226.4199.7	72.3	317.6271.9261.8216.1	78.9	323.4270.0274.0220.6	81.7	336.7301.1302.7243.1	94.2	340.0284.9218.2199.1	73.3	317.6279.5252.5214.4	79.9	323.0277.3265.0219.3	82.8	347.9347.9237.1237.1	89.5	368.1345.4259.2236.5	97.0	385.1339.6298.2252.7	104.6391.8337.2311.9257.3107.8	53.6																																																																																																																																																																																																																																																																																																																																																												
27.4	47080	24	17	269.9266.1208.8205.0	57.9	290.0267.1208.2185.3	64.2	306.6264.7227.0185.1	70.3	321.0260.0261.5200.5	76.9	326.8258.2273.0204.4	79.7	330.6276.9226.4199.7	72.3	317.6271.9261.8216.1	78.9	323.4270.0274.0220.6	81.7	336.7301.1302.7243.1	94.2	340.0284.9218.2199.1	73.3	317.6279.5252.5214.4	79.9	323.0277.3265.0219.3	82.8	347.9347.9237.1237.1	89.5	368.1345.4259.2236.5	97.0	385.1339.6298.2252.7	104.6391.8337.2311.9257.3107.8	53.6																																																																																																																																																																																																																																																																																																																																																																												
20.4	35970	24	17	203.3200.5156.5153.7	38.8	218.7201.7157.5140.5	42.7	231.5200.4170.7139.6	46.8	241.7196.5194.8149.6	51.4	246.4195.5203.2152.3	53.1	250.6264.7227.0185.1	57.9	261.0179.2183.9147.1	52.4	265.1182.4160.6136.9	48.2	270.1182.4160.6136.9	48.2	275.8247.7210.9182.8	60.4	288.4242.7245.4199.7	65.8	293.8244.6256.3207.1	68.2	300.6264.7227.0185.1	57.9	311.0204.1194.7157.9	52.2	315.1202.7203.0160.6	54.1	320.6264.7227.0185.1	57.9	331.1202.7203.0160.6	54.1	336.6264.7227.0185.1	57.9	341.1202.7203.0160.6	54.1	346.6264.7227.0185.1	57.9	351.1202.7203.0160.6	54.1	356.6264.7227.0185.1	57.9	361.1202.7203.0160.6	54.1	366.6264.7227.0185.1	57.9	371.1202.7203.0160.6	54.1	376.6264.7227.0185.1	57.9	381.1202.7203.0160.6	54.1	386.6264.7227.0185.1	57.9	391.1202.7203.0160.6	54.1	396.6264.7227.0185.1	57.9	401.1202.7203.0160.6	54.1	406.6264.7227.0185.1	57.9	411.1202.7203.0160.6	54.1	416.6264.7227.0185.1	57.9	421.1202.7203.0160.6	54.1	426.6264.7227.0185.1	57.9	431.1202.7203.0160.6	54.1	436.6264.7227.0185.1	57.9	441.1202.7203.0160.6	54.1	446.6264.7227.0185.1	57.9	451.1202.7203.0160.6	54.1	456.6264.7227.0185.1	57.9	461.1202.7203.0160.6	54.1	466.6264.7227.0185.1	57.9	471.1202.7203.0160.6	54.1	476.6264.7227.0185.1	57.9	481.1202.7203.0160.6	54.1	486.6264.7227.0185.1	57.9	491.1202.7203.0160.6	54.1	496.6264.7227.0185.1	57.9	501.1202.7203.0160.6	54.1	506.6264.7227.0185.1	57.9	511.1202.7203.0160.6	54.1	516.6264.7227.0185.1	57.9	521.1202.7203.0160.6	54.1	526.6264.7227.0185.1	57.9	531.1202.7203.0160.6	54.1	536.6264.7227.0185.1	57.9	541.1202.7203.0160.6	54.1	546.6264.7227.0185.1	57.9	551.1202.7203.0160.6	54.1	556.6264.7227.0185.1	57.9	561.1202.7203.0160.6	54.1	566.6264.7227.0185.1	57.9	571.1202.7203.0160.6	54.1	576.6264.7227.0185.1	57.9	581.1202.7203.0160.6	54.1	586.6264.7227.0185.1	57.9	591.1202.7203.0160.6	54.1	596.6264.7227.0185.1	57.9	601.1202.7203.0160.6	54.1	606.6264.7227.0185.1	57.9	611.1202.7203.0160.6	54.1	616.6264.7227.0185.1	57.9	621.1202.7203.0160.6	54.1	626.6264.7227.0185.1	57.9	631.1202.7203.0160.6	54.1	636.6264.7227.0185.1	57.9	641.1202.7203.0160.6	54.1	646.6264.7227.0185.1	57.9	651.1202.7203.0160.6	54.1	656.6264.7227.0185.1	57.9	661.1202.7203.0160.6	54.1	666.6264.7227.0185.1	57.9	671.1202.7203.0160.6	54.1	676.6264.7227.0185.1	57.9	681.1202.7203.0160.6	54.1	686.6264.7227.0185.1	57.9	691.1202.7203.0160.6	54.1	696.6264.7227.0185.1	57.9	701.1202.7203.0160.6	54.1	706.6264.7227.0185.1	57.9	711.1202.7203.0160.6	54.1	716.6264.7227.0185.1	57.9	721.1202.7203.0160.6	54.1	726.6264.7227.0185.1	57.9	731.1202.7203.0160.6	54.1	736.6264.7227.0185.1	57.9	741.1202.7203.0160.6	54.1	746.6264.7227.0185.1	57.9	751.1202.7203.0160.6	54.1	756.6264.7227.0185.1	57.9	761.1202.7203.0160.6	54.1	766.6264.7227.0185.1	57.9	771.1202.7203.0160.6	54.1	776.6264.7227.0185.1	57.9	781.1202.7203.0160.6	54.1	786.6264.7227.0185.1	57.9	791.1202.7203.0160.6	54.1	796.6264.7227.0185.1	57.9	801.1202.7203.0160.6	54.1	806.6264.7227.0185.1	57.9	811.1202.7203.0160.6	54.1	816.6264.7227.0185.1	57.9	821.1202.7203.0160.6	54.1	826.6264.7227.0185.1	57.9	831.1202.7203.0160.6	54.1	836.6264.7227.0185.1	57.9	841.1202.7203.0160.6	54.1	846.6264.7227.0185.1	57.9	851.1202.7203.0160.6	54.1	856.6264.7227.0185.1	57.9	861.1202.7203.0160.6	54.1	866.6264.7227.0185.1	57.9	871.1202.7203.0160.6	54.1	876.6264.7227.0185.1	57.9	881.1202.7203.0160.6	54.1	886.6264.7227.0185.1	57.9	891.1202.7203.0160.6	54.1	896.6264.7227.0185.1	57.9	901.1202.7203.0160.6	54.1	906.6264.7227.0185.1	57.9	911.1202.7203.0160.6	54.1	916.6264.7227.0185.1	57.9	921.1202.7203.0160.6	54.1	926.6264.7227.0185.1	57.9	931.1202.7203.0160.6	54.1	936.6264.7227.0185.1	57.9	941.1202.7203.0160.6	54.1	946.6264.7227.0185.1	57.9	951.1202.7203.0160.6	54.1	956.6264.7227.0185.1	57.9	961.1202.7203.0160.6	54.1	966.6264.7227.0185.1	57.9	971.1202.7203.0160.6	54.1	976.6264.7227.0185.1	57.9	981.1202.7203.0160.6	54.1	986.6264.7227.0185.1	57.9	991.1202.7203.0160.6	54.1	996.6264.7227.0185.1	57.9	1001.1202.7203.0160.6	54.1	1006.6264.7227.0185.1	57.9	1011.1202.7203.0160.6	54.1	1016.6264.7227.0185.1	57.9	1021.1202.7203.0160.6	54.1	1026.6264.7227.0185.1	57.9	1031.1202.7203.0160.6	54.1	1036.6264.7227.0185.1	57.9	1041.1202.7203.0160.6	54.1	1046.6264.7227.0185.1	57.9	1051.1202.7203.0160.6	54.1	1056.6264.7227.0185.1	57.9	1061.1202.7203.0160.6	54.1	1066.6264.7227.0185.1	57.9	1071.1202.7203.0160.6	54.1	1076.6264.7227.0185.1	57.9	1081.1202.7203.0160.6	54.1	1086.6264.7227.0185.1	57.9	1091.1202.7203.0160.6	54.1	1096.6264.7227.0185.1	57.9	1101.1202.7203.0160.6	54.1	1106.6264.7227.0185.1	57.9	1111.1202.7203.0160.6	54.1	1116.6264.7227.0185.1	57.9	1121.1202.7203.0160.6	54.1	1126.6264.7227.0185.1	57.9	1131.1202.7203.0160.6	54.1	1136.6264.7227.0185.1	57.9	1141.1202.7203.0160.6	54.1	1146.6264.7227.0185.1	57.9	1151.1202.7203.0160.6	54.1	1156.6264.7227.0185.1	57.9	1161.1202.7203.0160.6	54.1	1166.6264.7227.0185.1	57.9	1171.1202.7203.0160.6	54.1	1176.6264.7227.0185.1	57.9	1181.1202.7203.0160.6	54.1	1186.6264.7227.0185.1	57.9	1191.1202.7203.0160.6	54.1	1196.6264.7227.0185.1	57.9	1201.1202.7203.0160.6	54.1	1206.6264.7227.0185.1	57.9	1211.1202.7203.0160.6	54.1	1216.6264.7227.0185.1	57.9	1221.1202.7203.0160.6	54.1	1226.6264.7227.0185.1	57.9	1231.1202.7203.0160.6	54.1	1236.6264.7227

HEATING PERFORMANCE OF VERSION WITH HEAT RECOVERY UNIT (NOMINAL AIR FLOW RATE)

Model	Air flow rate [m³/h]	Internal air conditions T DB [°C]																			
		Internal Air		T DB		T WB		10		15		18		19		20		25			
		[°C]	[°C]	kWt+r	kWt	kWe															
17.4	30250	-10	-10.3	176.2	124.5	26.6	195.4	128.5	29.4	208.0	130.5	31.2	212.1	131.8	31.9	222.9	134.2	33.2	236.3	136.1	36.2
17.4	30250	-5	-6	174.1	136.1	28.2	191.6	139.9	31.1	203.6	142.1	33.0	207.2	143.0	33.7	216.9	145.3	35.0	232.3	147.8	38.1
17.4	30250	0	-1	174.1	149.7	30.3	191.0	153.0	33.0	201.1	155.2	34.8	205.1	156.0	35.6	213.3	157.9	36.9	226.5	159.6	40.1
17.4	30250	5	4	175.4	163.2	32.4	190.9	166.5	35.4	199.8	168.1	37.3	201.7	167.5	37.9	207.9	169.2	38.7	221.8	170.1	42.0
17.4	30250	7	6	176.2	168.9	33.3	190.9	171.4	36.3	198.9	172.0	38.2	201.5	172.2	38.8	206.7	173.1	39.4	221.4	174.9	42.9
17.4	30250	10	9	175.4	175.4	34.5	189.3	177.1	37.5	198.0	178.5	39.5	200.9	178.9	40.2	204.9	180.5	41.0	218.9	182.3	44.7
17.4	30250	15	13	*	*	*	190.6	190.6	40.1	199.9	192.6	42.2	203.0	193.2	43.0	207.4	195.2	44.0	220.9	196.5	47.7
19.4	33000	-10	-10.3	192.0	136.4	29.3	210.6	138.6	32.2	223.2	139.7	34.1	226.9	140.4	34.8	237.4	141.9	36.0	252.0	144.1	39.3
19.4	33000	-5	-6	190.2	149.2	31.1	207.0	151.4	34.0	219.2	152.9	36.0	222.5	153.3	36.7	232.8	155.7	38.0	248.5	157.5	41.4
19.4	33000	0	-1	191.3	165.0	33.4	207.5	166.5	36.2	217.8	167.7	38.0	221.1	168.3	38.8	229.5	169.9	40.1	243.7	171.7	43.6
19.4	33000	5	4	194.3	181.2	35.8	209.0	182.7	38.9	218.0	183.8	40.9	220.4	183.6	41.6	226.2	184.5	42.3	240.9	185.3	45.8
19.4	33000	7	6	195.3	187.4	36.8	209.5	188.5	39.9	217.1	188.2	41.9	220.2	188.7	42.6	225.0	188.8	43.1	240.2	190.1	46.7
19.4	33000	10	9	193.6	193.6	38.0	208.5	195.4	41.3	216.9	195.9	43.3	220.2	196.5	44.1	224.1	197.8	45.0	238.9	199.5	48.8
19.4	33000	15	13	*	*	*	212.6	212.6	44.3	221.9	214.0	46.5	223.9	213.4	47.1	227.9	214.8	48.2	241.5	215.2	52.2
20.4	35970	-10	-10.3	207.3	147.5	31.8	226.0	148.5	34.9	238.8	149.0	36.9	242.4	149.4	37.6	252.7	150.0	38.8	269.5	151.5	42.1
20.4	35970	-5	-6	206.4	162.3	33.8	223.1	163.3	36.8	235.0	163.7	38.8	238.1	163.7	39.6	248.5	165.6	40.9	263.6	165.7	44.2
20.4	35970	0	-1	207.9	179.6	36.2	223.6	179.5	39.2	234.1	180.2	41.0	237.6	180.8	41.8	246.4	182.2	43.2	260.8	183.3	46.8
20.4	35970	5	4	211.3	197.2	38.8	226.3	198.0	42.0	235.9	199.1	44.1	238.7	199.1	44.8	244.1	199.2	45.6	259.1	199.3	49.2
20.4	35970	7	6	213.0	204.5	39.8	227.8	205.2	43.1	235.9	204.8	45.2	239.2	205.3	46.0	244.3	205.4	46.6	259.8	205.9	50.3
20.4	35970	10	9	213.4	213.4	41.3	227.0	212.9	44.6	236.2	213.6	46.8	239.1	213.6	47.6	243.4	215.1	48.5	258.2	215.8	52.5
20.4	35970	15	13	*	*	*	233.7	233.7	47.9	241.8	233.3	50.3	244.1	232.8	51.0	247.6	233.5	52.0	262.1	233.8	56.3
24.4	42900	-10	-10.3	246.9	172.5	36.2	270.3	174.0	39.9	286.9	175.3	42.2	291.7	176.1	43.1	305.4	177.7	44.7	324.5	180.2	48.9
24.4	42900	-5	-6	243.9	189.1	38.4	265.2	190.8	42.1	280.9	192.3	44.6	285.3	192.8	45.5	297.9	194.9	47.2	319.1	197.5	51.5
24.4	42900	0	-1	244.1	208.9	41.3	265.1	210.3	44.9	278.3	211.4	47.2	282.3	211.7	48.1	293.3	213.6	49.9	312.1	215.8	54.3
24.4	42900	5	4	247.4	229.8	44.3	266.0	230.8	48.3	277.2	231.5	50.9	281.8	232.6	51.7	289.3	233.5	52.8	308.3	233.9	57.2
24.4	42900	7	6	247.4	236.8	45.6	267.0	238.9	49.6	277.8	239.1	52.1	280.8	238.6	52.9	287.2	238.9	53.7	306.5	239.6	58.3
24.4	42900	10	9	246.2	246.2	47.2	265.6	248.0	51.4	276.6	248.5	54.0	280.4	248.7	54.9	285.6	250.4	56.1	303.7	250.9	61.0
24.4	42900	15	13	*	*	*	270.2	270.2	55.2	281.4	270.8	58.1	285.4	271.3	59.1	290.5	272.9	60.3	307.2	272.0	65.4
27.4	47080	-10	-10.3	274.7	194.1	41.4	301.6	197.2	45.9	320.5	199.5	48.8	325.6	200.2	49.8	340.7	202.3	51.7	363.5	207.1	56.9
27.4	47080	-5	-6	272.7	213.3	44.1	297.3	216.7	48.7	315.0	218.9	51.7	320.1	219.9	52.9	334.2	222.5	54.9	357.2	225.3	60.0
27.4	47080	0	-1	273.4	235.3	47.7	296.9	237.5	52.1	310.9	238.3	54.9	316.8	240.2	56.1	329.0	242.5	58.2	350.1	245.7	63.7
27.4	47080	5	4	276.3	257.2	51.4	299.1	261.0	56.3	311.1	261.5	59.4	316.5	263.1	60.5	324.3	263.8	61.8	343.7	263.1	67.1
27.4	47080	7	6	278.3	266.9	52.9	298.7	268.2	57.9	310.7	268.8	61.0	315.2	269.5	62.0	322.8	270.4	62.9	343.5	270.9	68.4
27.4	47080	10	9	276.4	276.4	54.9	297.4	278.3	59.9	310.4	279.9	63.2	315.2	280.9	64.5	320.4	282.3	65.8	340.4	283.2	71.7
27.4	47080	15	13	*	*	*	303.3	303.3	64.7	315.7	304.3	68.3	319.1	303.9	69.4	323.9	304.8	70.8	344.8	306.7	77.3
30.4	52030	-10	-10.3	316.1	226.0	49.4	347.4	230.7	54.4	368.8	233.6	57.5	374.8	234.8	58.7	393.7	239.1	60.9	418.0	243.3	66.5
30.4	52030	-5	-6	314.0	247.7	52.5	341.7	251.6	57.4	362.7	255.4	60.8	368.7	256.7	62.1	383.8	259.0	64.3	411.1	263.8	69.9
30.4	52030	0	-1	316.0	273.4	56.4	343.1	276.8	61.2	359.0	277.9	64.3	364.3	278.7	65.6	380.0	283.4	68.0	402.6	285.9	73.9
30.4	52030	5	4	320.5	299.2	60.5	344.0	301.4	65.8	360.4	305.0	69.2	364.8	305.2	70.4	374.5	306.9	71.8	396.8	306.7	77.6
30.4	52030	7	6	320.1	307.3	62.1	345.2	311.1	67.5	358.5	311.6	70.9	363.4	312.3	72.1	371.0	312.5	73.1	395.4	314.3	79.0
30.4	52030	10	9	320.0	320.0	64.3	343.9	322.6	69.7	358.0	323.9	73.4	362.7	324.4	74.6	369.1	326.5	76.2	392.7	328.8	82.5
30.4	52030	15	13	*	*	*	349.7	349.7	75.0	364.6	351.8	78.8	367.7	350.7	80.0	374.7	353.4	81.7	397.4	354.8	88.6
33.4	56100	-10	-10.3	341.4	245.2	56.9	375.1	250.6	62.2	398.7	254.3	65.7	404.7	255.2	67.0	424.9	259.8	69.3	451.7	265.2	75.5
33.4	56100	-5	-6	339.9	269.1	60.3	370.0	273.8	65.7	392.4	277.8	69.4	398.5	278.9	70.8	416.3	283.1	73.3	444.1	286.8	79.4
33.4	56100	0	-1	340.5	295.0	64.7	370.5	299.7	69.9	388.5	302.0	73.4	394.1	302.7	74.8	410.6	307.5	77.4	434.5	310.0	83.8
33.4	56100	5	4	346.2	323.5	69.3	371.9	326.4	75.1	387.7	328.6	78.8	391.2	327.5	80.0	403.8	331.7	81.7	428.9	332.7	88.1
33.4	56100	7	6	346.3	332.7	71.1	373.8	337.4	77.1	387.8	337.8	80.7	392.0	337.4	82.0	400.0	337.5	83.1	428.2	341.7	89.7
33.4	56100	10	9	344.4	344.4	73.4	370.7	348.0	79.7	387.6	351.2	83.7	390.7	349.8	84.8	397.5	352.0	86.6	422.1	353.9	93.7
33.4</																					

COOLING PERFORMANCE OF VERSIONS FC3S_GC3S (HE) (NOMINAL AIR FLOW RATE)

Model	Air flow rate [m³/h]	Internal Air		External air conditions T DB [°C] / T WB [°C]														
		T DB [°C]	T WB [°C]	25 / 18				30 / 22				35 / 24			40 / 25			
		kWf	kWs	kWe	kWf	kWs	kWe	kWf	kWs	kWe	kWf	kWs	kWe	kWf	kWs	kWe		
17.4	30250	24	17	172.6	136.6	30.6	172.5	132.1	34.1	170.7	134.1	38.1	166.8	143.2	42.4	165.4	146.1	44.2
		26	18	177.7	136.3	30.9	177.3	132.6	34.4	175.7	134.5	38.4	171.8	143.6	42.7	170.3	146.6	44.5
		27	19	180.3	139.7	31.0	179.7	135.7	34.6	178.0	138.3	38.6	173.6	147.9	42.8	172.1	150.7	44.5
		28	20	182.7	139.5	31.2	182.6	135.3	34.7	180.1	138.4	38.7	175.9	148.0	43.0	174.3	151.1	44.8
		30	22	189.2	134.2	31.5	188.2	131.4	35.0	186.0	133.9	39.0	181.6	143.0	43.3	179.9	146.1	45.0
19.4	33000	24	17	184.4	147.7	33.6	184.5	142.9	37.5	182.8	145.3	41.9	179.5	154.4	46.6	177.9	157.4	48.7
		26	18	190.0	147.4	33.9	190.5	142.8	37.8	188.4	145.4	42.1	184.9	154.9	46.9	183.3	157.8	49.0
		27	19	192.6	150.8	34.1	192.7	146.5	37.9	191.1	148.9	42.4	186.7	159.2	47.1	185.4	162.4	49.1
		28	20	195.6	150.4	34.2	194.9	146.8	38.1	193.2	149.2	42.5	189.3	159.2	47.3	188.0	162.4	49.2
		30	22	202.2	144.8	34.5	201.9	141.4	38.4	199.8	144.6	42.8	195.6	153.8	47.6	194.1	156.9	49.6
20.4	35970	24	17	196.6	159.0	35.6	197.0	153.9	39.8	195.4	156.2	44.4	192.3	165.8	49.5	191.1	168.9	51.6
		26	18	202.3	158.8	35.9	203.4	153.6	40.0	201.7	156.2	44.6	198.3	166.0	49.8	196.7	169.1	52.0
		27	19	205.6	162.0	36.0	206.0	157.4	40.2	204.6	159.9	44.8	200.5	170.4	50.0	198.8	173.8	52.2
		28	20	208.8	161.6	36.2	209.0	157.3	40.3	207.2	160.2	44.9	203.2	170.4	50.1	201.8	173.8	52.4
		30	22	215.5	155.6	36.5	215.8	152.0	40.6	214.1	155.0	45.2	210.0	164.8	50.4	208.5	168.0	52.7
24.4	42900	24	17	241.6	191.8	44.0	241.6	185.6	48.9	238.8	190.8	54.5	233.7	208.1	60.6	231.5	214.1	63.2
		26	18	248.9	190.7	44.4	249.3	185.7	49.3	246.3	191.0	55.0	241.3	207.3	61.1	239.1	214.7	63.5
		27	19	251.7	197.4	44.5	251.4	191.9	49.5	249.3	197.8	55.1	242.8	216.1	61.2	241.0	222.3	63.8
		28	20	255.2	197.1	44.7	254.5	192.2	49.8	252.0	197.3	55.2	246.5	215.9	61.5	244.9	222.7	64.0
		30	22	264.2	188.6	45.2	263.7	184.8	50.2	260.8	191.1	55.8	255.5	207.2	61.9	253.4	213.6	64.5
27.4	47080	24	17	267.8	213.4	50.7	267.1	206.0	56.3	264.0	210.6	62.5	258.6	228.1	69.4	256.5	234.1	72.4
		26	18	276.6	212.2	51.2	275.7	206.0	56.7	272.5	210.9	63.0	266.6	228.5	69.9	264.2	234.6	73.1
		27	19	279.4	218.9	51.4	278.4	212.5	57.0	275.0	217.5	63.5	269.3	236.2	70.3	267.5	242.1	73.3
		28	20	283.0	218.8	51.6	282.0	212.7	57.2	278.1	218.2	63.7	272.9	236.2	70.6	270.9	242.5	73.6
		30	22	292.8	209.7	52.2	291.5	204.7	57.8	287.7	210.4	64.3	282.3	227.3	71.3	280.1	233.3	74.3

kWf: refrigeration capacity [kW]

kWs: sensible cooling capacity [kW]

kWe: electrical power absorbed by the compressors [kW]

The performance values are related to operation with 30% external air and 70% recirculation air

The 3-damper version includes energy recovery on exhausted air

HEATING PERFORMANCE OF VERSIONS FC3S_GC3S (HE) (NOMINAL AIR FLOW RATE)

Model	Air flow rate [m³/h]	Internal Air		Internal air conditions T DB [°C]											
		T DB [°C]	T WB [°C]	10		15		18		19		20		25	
		Kwt	kWe	Kwt	kWe	Kwt	kWe	Kwt	kWe	Kwt	kWe	Kwt	kWe	Kwt	kWe
17.4	30250	-10	-10.3	129.9	22.0	130.3	23.9	130.8	25.1	131.1	25.5	132.3	26.0	132.8	28.1
		-5	-6	146.2	24.3	147.1	26.2	146.9	27.4	146.8	27.8	146.8	28.2	147.7	30.6
		0	-1	163.8	26.6	164.8	28.7	164.4	30.0	165.0	30.6	165.6	31.0	166.6	33.5
		5	4	181.5	29.0	181.9	31.3	182.3	32.8	182.0	33.3	182.2	33.8	182.0	36.4
		7	6	186.9	30.0	186.8	32.3	187.4	33.9	186.8	34.2	187.4	34.8	188.2	37.5
		10	9	196.0	31.4	195.7	33.9	196.2	35.4	196.7	36.0	198.1	36.6	196.2	39.2
		15	13	215.0	34.4	215.2	37.1	214.8	38.6	214.2	39.2	214.3	39.9	214.9	42.8
19.4	33000	-10	-10.3	145.6	24.5	146.6	26.4	148.0	27.8	148.1	28.2	149.1	28.7	150.4	31.0
		-5	-6	162.4	26.5	163.4	28.7	163.6	30.0	164.4	30.6	165.1	31.0	166.1	33.6
		0	-1	182.7	29.1	183.1	31.3	183.9	32.9	184.8	33.4	185.7	34.0	186.0	36.7
		5	4	202.1	31.7	202.7	34.2	203.7	35.8	203.4	36.4	203.5	36.9	203.3	39.8
		7	6	207.6	32.6	208.8	35.2	209.6	36.9	209.4	37.4	208.2	37.9	209.8	41.0
		10	9	217.7	34.2	218.6	36.9	218.0	38.6	218.5	39.1	220.2	39.8	218.9	42.8
		15	13	238.9	37.4	239.5	40.3	238.7	42.1	239.2	42.7	239.3	43.4	238.8	46.6
20.4	35970	-10	-10.3	159.2	26.6	161.2	28.8	162.9	30.2	163.5	30.8	164.4	31.3	166.1	33.8
		-5	-6	175.8	28.8	177.9	31.1	179.6	32.6	179.9	33.2	181.0	33.7	182.4	36.5
		0	-1	198.5	31.4	199.7	33.9	201.7	35.6	201.7	36.1	201.8	36.8	201.6	39.5
		5	4	219.9	34.2	220.9	36.9	221.9	38.7	221.9	39.3	222.1	39.9	221.8	43.0
		7	6	225.3	35.1	226.4	38.0	227.1	39.7	228.6	40.5	227.3	40.9	228.8	44.3
		10	9	235.7	36.8	237.2	39.7	237.8	41.6	238.4	42.3	240.1	42.9	238.5	46.3
		15	13	258.6	40.2	259.4	43.3	259.1	45.2	259.6	46.0	259.7	46.7	260.4	50.3
24.4	42900	-10	-10.3	175.1	31.7	177.2	34.1	178.5	35.7	178.9	36.2	180.4	36.8	182.1	39.7
		-5	-6	193.6	34.1	196.5	36.7	197.3	38.3	197.8	38.9	198.9	39.6	200.6	42.6
		0	-1	217.9	36.9	219.7	39.8	220.2	41.6	221.0	42.2	221.5	42.9	221.4	46.2
		5	4	240.0	40.0	241.1	42.9	242.5	45.0	242.6	45.6	242.8	46.4	242.8	49.9
		7	6	247.3	41.1	248.8	44.2	248.6	46.2	248.7	46.8	248.3	47.5	250.7	51.5
		10	9	257.7	42.8	259.5	46.1	258.8	48.1	259.8	48.9	260.2	49.8	261.1	53.7
		15	13	281.8	46.5	282.7	50.1	281.9	52.4	282.7	53.1	283.0	54.0	283.2	58.2
27.4	47080	-10	-10.3	197.4	36.7	199.0	39.3	201.1	41.0	201.7	41.6	203.3	42.3	205.4	45.5
		-5	-6	220.8	39.6	222.3	42.4	223.2	44.2	223.5	44.8	224.9	45.6	226.4	48.9
		0	-1	245.0	42.8	246.5	45.8	247.6	47.9	246.9	48.5	249.6	49.4	251.3	53.1
		5	4	267.8	46.1	270.3	49.5	271.1	51.7	271.4	52.4	272.1	53.3	272.2	57.3
		7	6	276.8	47.5	277.8	51.0	278.7	53.2	277.9	54.0	278.2	54.7	279.8	59.0
		10	9	287.7	49.4	288.0	53.0	288.7	55.4	289.2	56.2	291.3	57.4	292.6	61.8
		15	13	314.0	53.7	314.9	57.7	314.0	60.3	314.2	61.2	315.4	62.3	316.5	67.4

kW: heating capacity [kW]

kWe: electrical power absorbed by the compressors [kW]

The performance values are related to operation with 30% external air and 70% recirculation air

The 3-damper version includes energy recovery on exhausted air

COOLING PERFORMANCE OF VERSION WITH HEAT RECOVERY UNIT (HE) (NOMINAL AIR FLOW RATE)

Model	Air flow rate [m³/h]	External air conditions T DB [°C] / T WB [°C]														25 / 18							30 / 22							35 / 24							40 / 25							42 / 25.5						
		T DB		T WB		25 / 18							30 / 22							35 / 24							40 / 25							42 / 25.5																
		[°C]	[°C]	kWf+r	kWf	kWs+r	kWs	kWe	kWf+r	kWf	kWs+r	kWs	kWe	kWf+r	kWf	kWs+r	kWs	kWe	kWf+r	kWf	kWs+r	kWs	kWe	kWf+r	kWf	kWs+r	kWs	kWe	kWf+r	kWf	kWs+r	kWs	kWe																	
17.4	30250	24	17	175.2	172.8	137.5	135.1	30.6	189.0	174.3	137.6	122.9	33.9	199.7	172.8	148.9	122.0	37.4	208.1	169.0	170.0	130.9	41.2	211.5	167.5	177.0	133.0	42.8																						
17.4	30250	26	18	*	*	*	*	*	188.8	179.0	135.6	125.8	34.3	199.5	177.5	147.2	125.2	37.8	207.1	173.5	168.5	134.3	41.6	211.1	172.0	175.7	136.6	43.2																						
17.4	30250	27	19	*	*	*	*	*	188.3	181.0	137.1	129.8	34.5	198.9	179.4	148.7	129.2	38.0	207.1	175.4	170.4	138.7	41.8	210.3	173.7	177.8	141.2	43.4																						
17.4	30250	28	20	*	*	*	*	*	188.4	183.5	136.0	131.1	34.7	199.0	181.9	147.9	130.8	38.2	206.8	177.5	169.6	140.3	42.0	210.0	175.8	177.1	142.9	43.7																						
17.4	30250	30	22	*	*	*	*	*	188.9	188.9	130.8	130.8	35.1	199.2	187.0	142.6	130.4	38.7	207.0	182.6	164.3	139.9	42.6	210.3	181.0	171.9	142.6	44.1																						
19.4	33000	24	17	187.9	185.3	153.7	151.1	33.6	202.5	186.7	154.1	138.3	37.1	214.6	185.7	166.3	137.4	41.0	224.1	182.0	189.2	147.1	45.2	227.6	180.3	197.3	150.0	46.9																						
19.4	33000	26	18	*	*	*	*	*	202.2	191.7	151.5	141.0	37.6	214.3	190.6	163.9	140.2	41.5	223.6	186.8	187.6	150.8	45.7	227.7	185.6	195.4	153.3	47.4																						
19.4	33000	27	19	*	*	*	*	*	201.8	193.9	153.5	145.6	37.8	213.5	192.5	166.2	145.2	41.7	222.8	188.6	189.9	155.7	45.9	226.9	187.5	197.8	158.4	47.7																						
19.4	33000	28	20	*	*	*	*	*	201.6	196.3	152.4	147.1	38.0	213.5	195.1	165.6	147.2	41.9	222.6	191.1	188.8	157.3	46.1	226.5	189.7	196.9	160.1	47.9																						
19.4	33000	30	22	*	*	*	*	*	202.3	202.3	146.6	146.6	38.5	213.8	200.7	159.7	146.6	42.4	222.8	196.5	183.1	156.8	46.7	226.7	195.2	191.2	159.7	48.4																						
20.4	35970	24	17	205.5	202.7	17164.6	1611.8	36.6	220.9	203.9	165.9	148.9	40.4	235.6	204.5	177.9	146.8	44.7	246.4	201.2	220.4	157.2	49.2	250.6	199.7	210.5	159.6	51.2																						
20.4	35970	26	18	*	*	*	*	*	221.4	210.1	1162.9	151.6	40.9	235.0	209.5	175.9	150.4	45.2	245.8	206.2	220.0	156.0	49.8	250.2	205.0	208.8	163.6	51.7																						
20.4	35970	27	19	*	*	*	*	*	221.2	221.2	17164.2	155.7	41.2	234.7	212.1	1177.5	154.9	45.4	245.1	208.3	202.5	165.7	50.0	249.4	207.0	211.7	169.3	52.0																						
20.4	35970	28	20	*	*	*	*	*	221.3	215.6	162.6	156.9	41.4	234.4	214.6	176.5	151.6	45.6	245.1	211.2	220.1	156.7	50.3	249.2	209.6	209.9	170.3	52.3																						
20.4	35970	30	22	*	*	*	*	*	222.1	222.1	1156.2	215.6	41.9	234.9	220.8	170.3	151.6	46.1	245.2	216.9	195.2	166.9	50.8	249.7	215.8	203.7	169.8	52.8																						
24.4	42900	24	17	245.5	242.0	192.7	189.2	44.2	264.9	243.8	192.8	171.7	48.4	281.1	242.4	210.0	171.3	53.3	293.5	237.2	224.3	178.7	58.4	298.8	235.5	255.3	192.0	60.5																						
24.4	42900	26	18	*	*	*	*	*	264.6	250.5	190.5	176.4	49.1	280.4	248.7	208.2	176.5	53.9	293.2	244.0	242.3	193.1	59.1	298.0	241.7	253.9	197.6	61.4																						
24.4	42900	27	19	*	*	*	*	*	263.8	253.2	219.3	182.5	49.4	279.5	251.4	211.3	183.2	54.2	292.4	246.7	245.7	200.0	59.3	297.3	244.5	257.9	205.1	61.6																						
24.4	42900	28	20	*	*	*	*	*	263.9	256.9	191.9	184.9	49.7	278.9	254.3	210.3	185.7	54.7	291.6	249.4	245.2	203.0	59.9	297.0	247.8	257.1	207.9	62.0																						
24.4	42900	30	22	*	*	*	*	*	263.7	263.7	184.4	184.4	50.6	279.5	261.9	203.0	185.4	55.4	292.0	256.8	237.7	202.5	60.7	297.1	254.9	249.7	207.5	62.9																						
27.4	47080	24	17	272.3	268.5	214.6	210.8	50.6	293.0	270.1	214.0	191.1	55.5	310.1	268.2	223.2	219.0	60.7	324.3	263.3	237.6	220.6	66.5	330.6	262.0	279.7	211.1	68.9																						
27.4	47080	26	18	*	*	*	*	*	292.6	277.4	211.5	196.3	56.3	309.6	275.3	230.6	196.3	61.6	323.5	270.1	265.9	212.5	67.4	329.5	268.5	278.3	217.3	69.8																						
27.4	47080	27	19	*	*	*	*	*	291.8	280.4	213.8	202.4	56.6	308.8	278.3	232.9	202.4	62.1	322.5	272.9	269.6	220.0	67.8	328.5	271.3	282.3	225.1	70.3																						
27.4	47080	28	20	*	*	*	*	*	291.7	284.1	212.4	204.8	57.1	308.3	281.6	232.0	202.5	62.5	322.2	276.5	268.5	222.8	68.3	328.1	274.7	281.3	227.9	70.8																						
27.4	47080	30	22	*	*	*	*	*	292.2	292.2	220.4	0204.0	58.0	308.5	289.4	224.0	0204.9	63.5	322.8	284.7	260.2	222.1	69.4	328.4	282.7	272.9	227.7	71.9																						

*: free cooling conditions

kWf+r: refrigeration capacity + recovery [kW]

kWf: refrigeration capacity [kW]

kWs+r: sensible cooling capacity + recovery [kW]

kWs: sensible cooling capacity [kW]

kWe: electrical power absorbed by the compressors [kW]

The performance values are related to operation with 50% external air, 50% recirculation air and with static recovery

HEATING PERFORMANCE OF VERSION WITH HEAT RECOVERY UNIT (HE) (NOMINAL AIR FLOW RATE)

Model	Air flow rate [m³/h]	Internal air conditions T DB [°C]																			
		Internal Air		T DB		T WB		10		15		18		19		20					
		[°C]	[°C]	kWt+r	kWt	kWe															
17.4	30250	-10	-10.3	180.9	129.2	23.3	197.2	130.3	25.7	208.2	130.7	27.2	211.2	130.9	27.8	221.0	132.3	28.8	233.4	133.2	31.4
		-5	-6	182.3	144.3	25.2	196.6	144.9	27.6	207.1	145.6	29.2	210.1	145.9	29.7	218.3	146.7	30.8	232.2	147.7	33.5
		0	-1	185.2	160.8	27.5	199.0	161.0	29.7	207.3	161.4	31.2	210.7	161.6	31.8	218.4	163.0	33.0	229.9	163.0	35.7
		5	4	190.1	177.9	29.8	203.3	178.9	32.4	210.5	178.8	34.0	213.1	178.9	34.6	218.0	179.3	35.3	231.5	179.8	38.2
		7	6	192.3	185.0	30.8	204.9	185.4	33.4	212.7	185.8	35.2	214.5	185.2	35.6	220.3	186.7	36.2	232.2	185.7	39.1
		10	9	195.4	195.4	32.4	207.7	195.5	35.0	215.3	195.8	36.8	217.2	195.2	37.4	221.9	197.5	38.1	232.1	195.5	41.1
		15	13	*	*	*	214.7	214.7	38.1	221.2	213.9	39.9	224.0	214.2	40.6	226.2	214.0	41.2	237.6	213.2	44.5
		-10	-10.3	202.3	146.7	26.8	220.1	148.1	29.4	232.3	148.8	31.1	235.6	149.1	31.7	245.5	150.0	32.8	258.6	150.7	35.8
		-5	-6	202.4	161.4	28.6	218.6	163.0	31.3	229.7	163.4	33.1	232.8	163.6	33.7	242.1	165.0	34.9	257.4	166.4	38.0
		0	-1	205.4	179.1	31.0	220.9	179.9	33.6	230.5	180.4	35.3	234.0	181.2	36.0	242.1	182.5	37.3	254.8	182.8	40.4
		5	4	211.9	198.8	33.6	225.2	198.9	36.5	233.9	199.7	38.4	236.7	199.9	39.0	242.0	200.3	39.8	256.6	201.0	43.1
		7	6	213.5	205.6	34.6	228.0	207.0	37.7	236.5	207.6	39.6	238.5	207.0	40.2	244.1	207.9	40.8	258.5	208.4	44.2
		10	9	216.9	216.9	35.2	230.2	217.1	39.3	238.6	217.6	41.3	241.7	218.0	42.1	245.7	219.4	42.8	257.8	218.4	46.4
		15	13	*	*	*	238.7	238.7	41.4	245.5	237.6	44.8	248.5	238.0	45.5	252.2	239.1	46.4	264.4	238.1	50.1
19.4	33000	-10	-10.3	218.9	159.1	29.7	238.7	161.2	32.6	252.6	162.8	34.6	256.2	163.2	35.3	267.7	165.0	36.5	284.9	166.9	39.8
		-5	-6	219.2	175.1	31.7	237.4	177.6	34.7	249.8	178.5	36.7	253.7	179.3	37.4	264.3	181.4	38.8	280.3	182.4	42.2
		0	-1	223.5	195.2	34.2	240.4	196.3	37.2	252.0	198.1	39.1	255.7	198.9	39.9	263.8	199.6	41.3	277.9	200.4	44.8
		5	4	229.5	215.4	36.9	245.1	216.8	40.2	254.0	217.2	42.3	257.7	218.1	43.1	264.1	219.2	44.0	279.0	219.2	47.7
		7	6	231.5	223.0	38.0	246.9	224.3	41.4	256.3	225.2	43.6	259.6	225.7	44.4	265.2	226.3	45.0	281.1	227.2	48.9
		10	9	234.6	234.6	37.7	249.9	235.8	43.2	259.9	237.3	45.6	262.0	236.5	46.3	266.2	237.9	47.2	280.5	238.1	51.2
		15	13	*	*	*	257.6	257.6	44.4	266.4	257.9	49.2	269.7	258.4	50.0	273.4	259.3	51.0	288.0	259.7	55.3
		-10	-10.3	250.2	175.8	33.1	274.4	178.1	36.2	291.3	179.7	38.1	295.9	180.3	38.9	310.2	182.5	40.2	329.1	184.8	43.7
		-5	-6	247.8	193.0	35.2	268.7	194.3	38.2	284.3	195.7	40.2	289.6	197.1	41.1	302.0	199.0	42.5	322.0	200.4	46.1
		0	-1	249.5	214.3	37.9	269.6	214.8	40.8	283.3	216.4	42.8	287.4	216.8	43.6	298.1	218.4	45.0	315.8	219.5	48.8
		5	4	253.4	235.8	40.6	272.9	237.7	44.0	284.1	238.4	46.2	288.3	239.1	47.0	295.0	239.2	47.8	314.4	240.0	51.8
		7	6	254.5	243.9	41.8	273.3	245.2	45.2	285.3	246.6	47.5	289.3	247.1	48.3	295.8	247.5	49.0	315.1	248.2	53.1
		10	9	256.5	256.5	42.7	276.3	258.7	47.2	286.7	258.6	49.5	290.8	259.1	50.4	295.7	260.5	51.4	312.7	259.9	55.7
		15	13	*	*	*	281.8	281.8	50.0	292.6	282.0	53.5	295.2	281.1	54.3	300.3	282.7	55.3	317.6	282.4	60.1
24.4	42900	-10	-10.3	278.1	197.5	37.6	304.7	200.3	40.8	323.1	202.1	42.9	328.1	202.7	43.7	344.1	205.7	45.2	364.0	207.6	49.0
		-5	-6	275.7	216.3	39.9	299.5	218.9	43.1	316.7	220.6	45.4	321.3	221.1	46.2	335.7	224.0	47.8	357.8	225.9	51.7
		0	-1	278.8	240.7	42.9	301.1	241.7	46.1	315.2	242.6	48.2	319.1	242.5	49.1	331.7	245.2	50.7	350.5	246.1	54.8
		5	4	283.1	264.0	46.0	303.3	265.2	49.6	315.2	265.6	51.9	319.2	265.8	52.8	327.8	267.3	53.9	348.1	267.5	58.3
		7	6	284.0	272.6	47.3	304.4	273.9	51.0	316.6	274.7	53.5	321.2	275.5	54.4	328.1	275.7	55.2	349.0	276.4	59.6
		10	9	285.9	285.9	49.2	306.4	287.3	53.2	318.6	288.1	55.8	322.9	288.6	56.7	328.5	290.4	57.9	348.4	291.2	62.8
		15	13	*	*	*	313.7	313.7	57.6	323.9	312.5	60.4	328.6	313.4	61.4	334.1	315.0	62.7	352.3	314.2	67.9

*: free heating conditions

kW+r: heating capacity + recovery [kW]

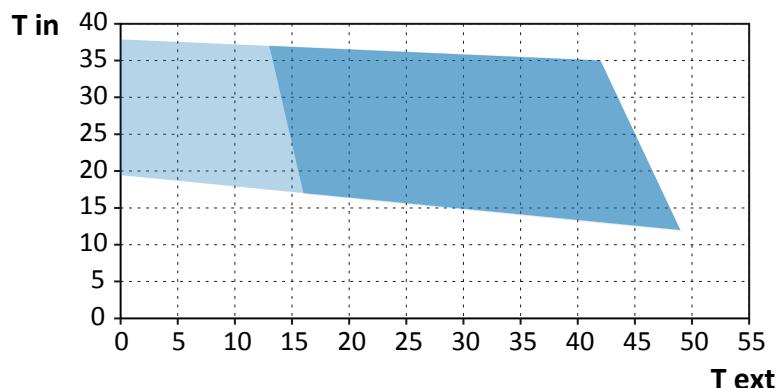
kWt: heating capacity [kW]

kWe: electrical power absorbed by the compressors [kW]

The performance values are related to operation with 50% external air, 50% recirculation air and with static recovery

OPERATING LIMITS - LAMBDA ECHOS LARGE

COOLING



T_{ext}: Temperature of the external air that strikes the condensing coil (dry bulb)

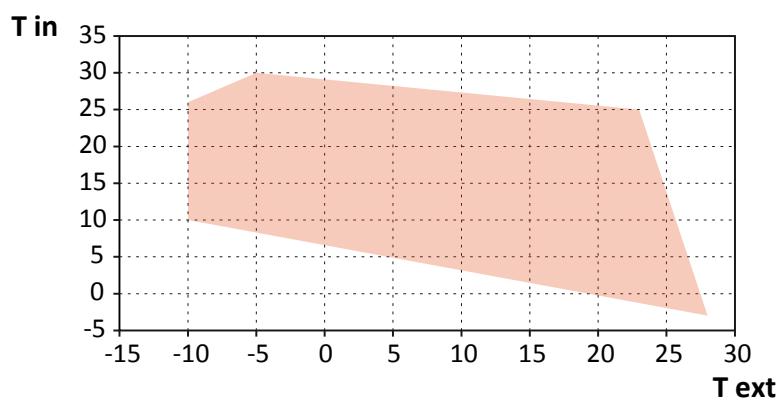
T_{in}: Temperature of the internal air that strikes the evaporating coil (dry bulb)

■ : operating range of the standard unit

■ : wide operating range of the unit with accessories with axial fan speed controller

The operating limits should be understood as average quantities for the line and therefore not generically extensible to each individual unit. They are calculated for standard air flow rates and consider that the units are positioned as per instructions.

HEATING



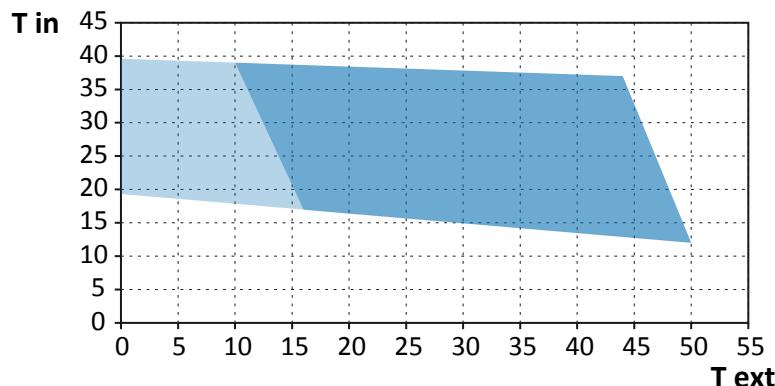
T_{ext}: Temperature of the external air that strikes the evaporating coil (dry bulb)

T_{in}: Temperature of the internal air that strikes the condensing coil (dry bulb)

The operating limits should be understood as average quantities for the line and therefore not generically extensible to each individual unit. They are calculated for standard air flow rates and consider that the units are positioned as per instructions.

OPERATING LIMITS - LAMBDA ECHOS LARGE HE

COOLING



T_{ext} : Temperature of the external air that strikes the condensing coil (dry bulb)

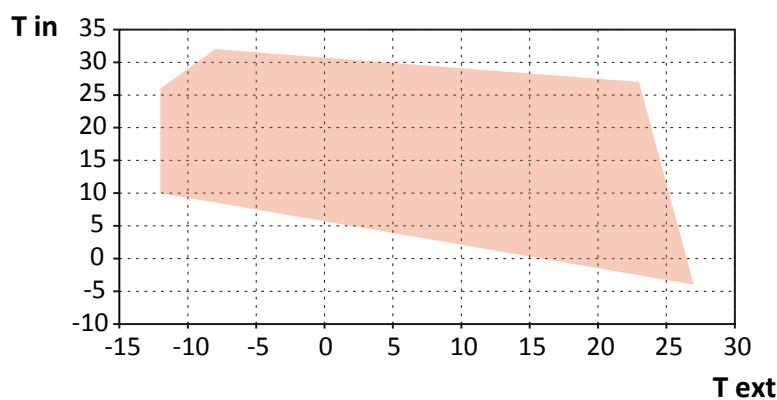
T_{in} : Temperature of the internal air that strikes the evaporating coil (dry bulb)

■ : operating range of the standard unit

■ : wide operating range of the unit with accessories with axial fan speed controller

The operating limits should be understood as average quantities for the line and therefore not generically extensible to each individual unit. They are calculated for standard air flow rates and consider that the units are positioned as per instructions.

HEATING



T_{ext} : Temperature of the external air that strikes the evaporating coil (dry bulb)

T_{in} : Temperature of the internal air that strikes the condensing coil (dry bulb)

The operating limits should be understood as average quantities for the line and therefore not generically extensible to each individual unit. They are calculated for standard air flow rates and consider that the units are positioned as per instructions.

NOISE LEVELS - LAMBDA ECHOS LARGE

MODEL	Octave bands [Hz]																Total [dB(A)]			
	63 Hz		125 Hz		250 Hz		500 Hz		1000 Hz		2000 Hz		4000 Hz		8000 Hz					
	Lw	Lp	Lw	Lp	Lw	Lp	Lw	Lp	Lw	Lp	Lw	Lp	Lw	Lp	Lw	Lp				
17.4	87	59	86	58	85	57	84	56	85	57	82	54	73	45	66	38	89	61		
19.4	91	63	90	62	89	61	88	60	88	60	85	57	77	49	70	42	92	64		
20.4	94	66	93	65	92	64	91	63	91	63	88	60	80	52	73	45	95	67		
24.4	94	66	93	65	92	64	91	63	91	63	88	60	80	52	73	45	95	67		
27.4	94	66	93	65	92	64	91	63	91	63	88	60	80	52	73	45	95	67		
30.4	94	66	93	65	92	64	91	63	91	63	88	60	80	52	73	45	95	67		
33.4	94	66	93	65	92	64	91	63	91	63	88	60	80	52	73	45	95	67		

NOISE LEVELS - LAMBDA ECHOS LARGE (LN)

MODEL	Octave bands [Hz]																Total [dB(A)]			
	63 Hz		125 Hz		250 Hz		500 Hz		1000 Hz		2000 Hz		4000 Hz		8000 Hz					
	Lw	Lp	Lw	Lp	Lw	Lp	Lw	Lp	Lw	Lp	Lw	Lp	Lw	Lp	Lw	Lp				
17.4	85	57	81	53	83	55	83	55	81	53	73	45	65	37	58	30	85	57		
19.4	87	59	84	56	85	57	85	57	82	54	75	47	68	40	61	33	86	58		
20.4	89	61	86	58	87	59	87	59	84	56	76	48	69	41	62	34	88	60		
24.4	89	61	86	58	87	59	87	59	84	56	76	48	69	41	62	34	88	60		
27.4	89	61	86	58	87	59	87	59	84	56	76	48	69	41	62	34	88	60		
30.4	89	61	86	58	87	59	87	59	84	56	76	48	69	41	62	34	88	60		
33.4	89	61	86	58	87	59	87	59	84	56	76	48	69	41	62	34	88	60		

Lw: sound power values measured in free field calculated according to standard ISO 3744.

Lp: sound pressure values calculated from the sound power through: $Lw = Lp - 10 \log Q + 20 \log r + 11$ where a directivity factor $Q=2$ has been used and it has been assumed that, at distance $r = 10m$ from the unit, the source can be considered punctiform.

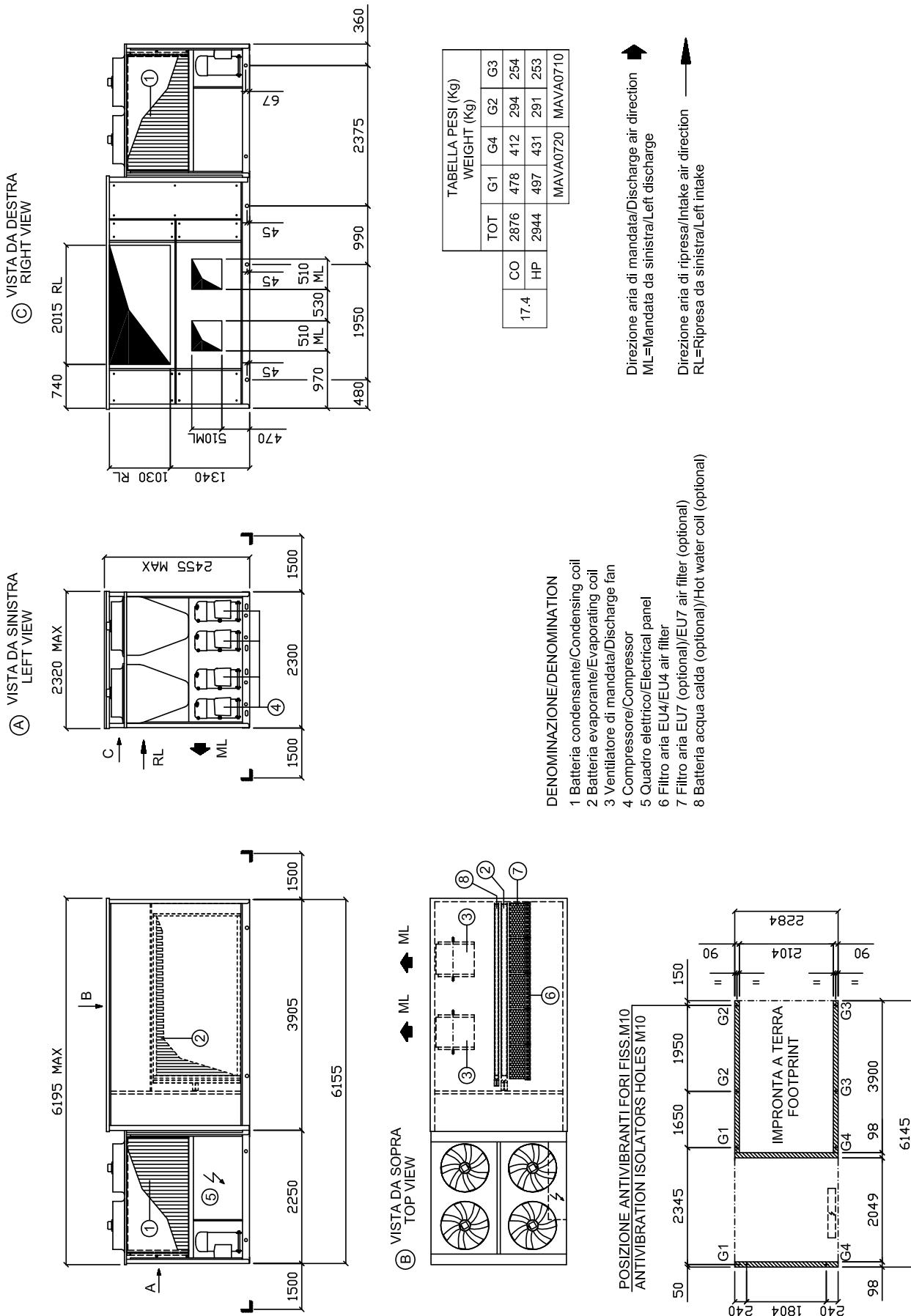
THEORETICAL NOISE ATTENUATION VALUES BASED ON DISTANCE IN FREE FIELD

Distance	(m)	1	2	3	4	5	6	7	8	9	10
Attenuation	(dB)	0	6	9.5	12	14	15.5	17	18	19	20

DIMENSIONAL DIAGRAMS

LAMBDA ECHOS LARGE 17.4

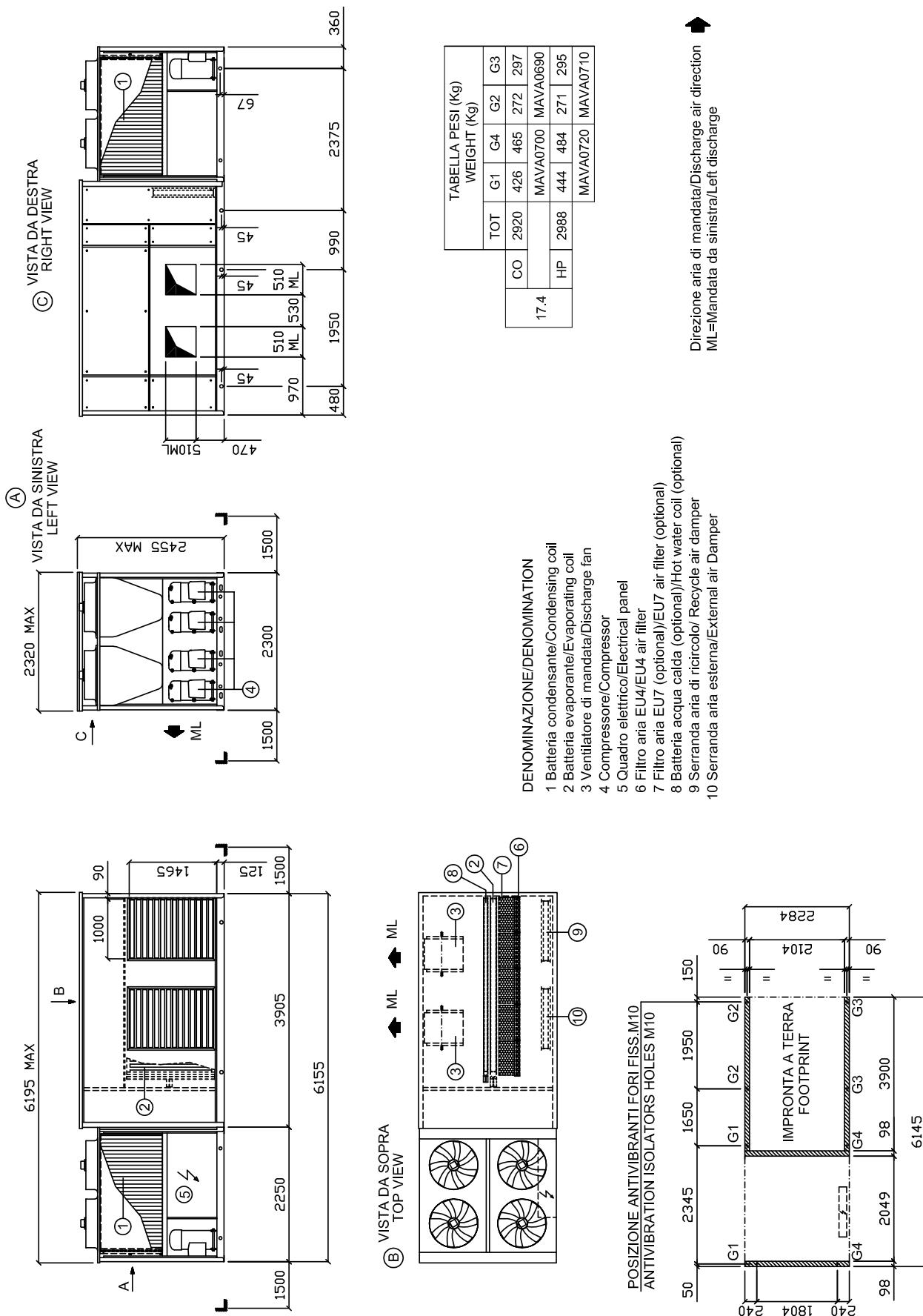
C413496-A



DIMENSIONAL DIAGRAMS

LAMBDA ECHOS LARGE 17.4 FC2S

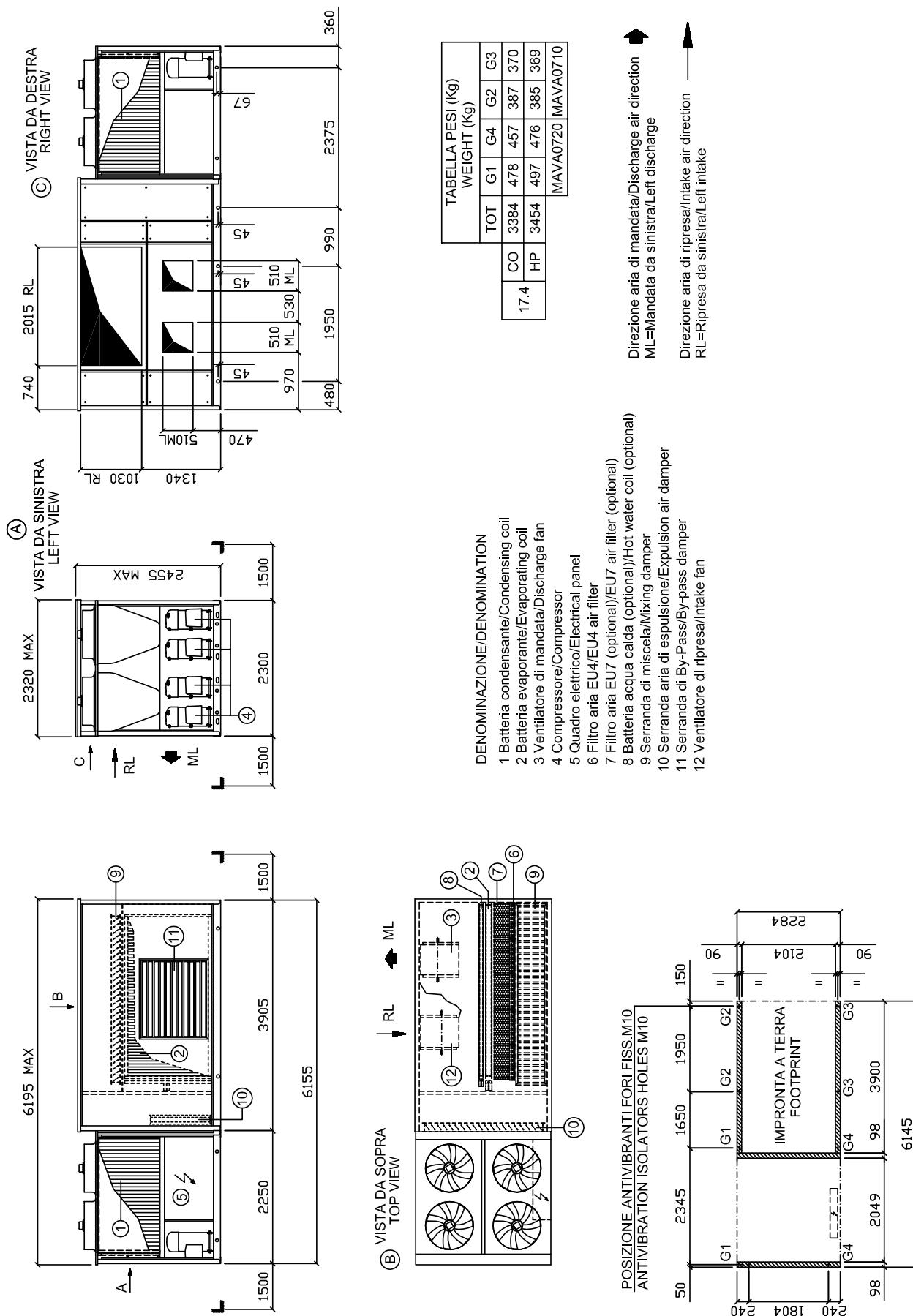
C413497-A



DIMENSIONAL DIAGRAMS

LAMBDA ECHOS LARGE 17.4 FC3S

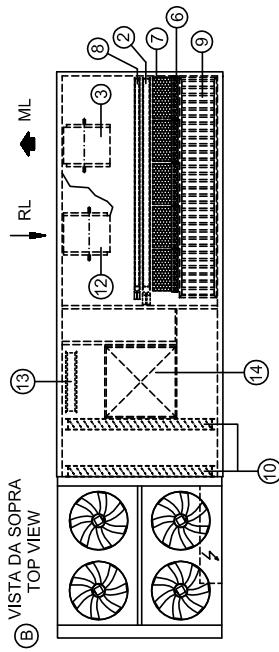
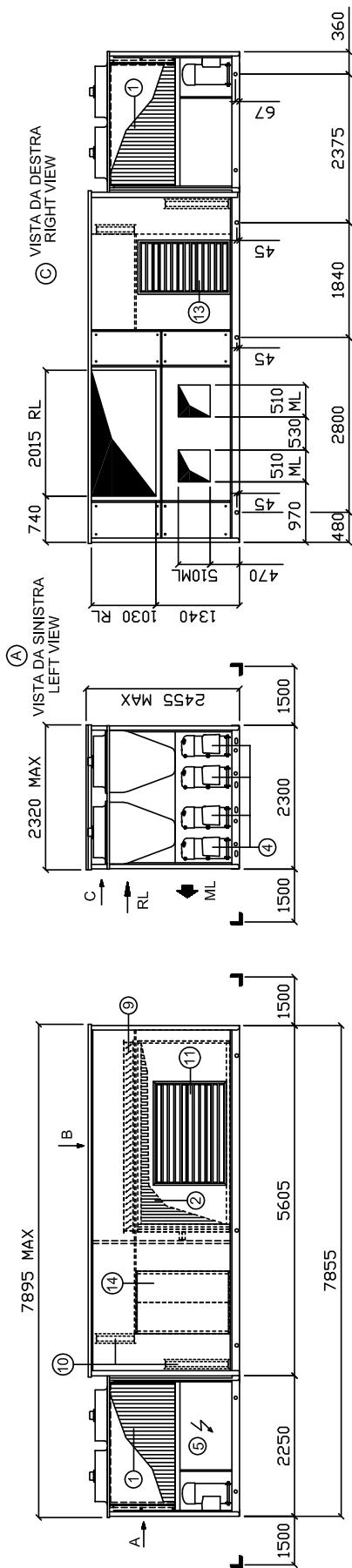
C413498-A



DIMENSIONAL DIAGRAMS

LAMBDA ECHOS LARGE 17.4 RS4S

C413499-A



DENOMINAZIONE/DENOMINATION

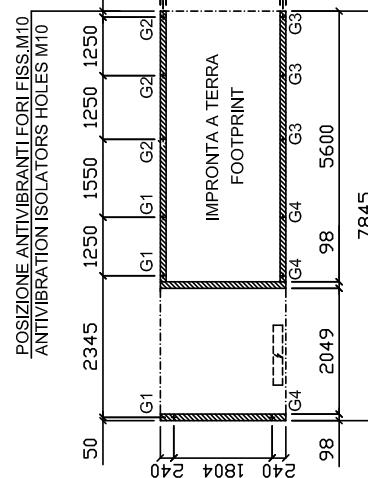
- 1 Batteria condensante/Condensing coil
- 2 Batteria evaporante/Evaporating coil
- 3 Ventilatore di mandata/Discharge fan
- 4 Compressore/Compressor
- 5 Quadro elettrico/Electrical panel
- 6 Filtro aria EU4/EU4 air filter
- 7 Filtro aria EU7 (optional)/EU7 air filter (optional)
- 8 Batteria acqua calda (optional)/Hot water coil (optional)
- 9 Serranda di miscela/Mixing damper
- 10 Serranda aria di espulsione/Expansion air damper
- 11 Serranda di By-Pass/By-pass damper
- 12 Ventilatore di ripresa/Make fan
- 13 Serranda aria esterna/External air Damper
- 14 Recuperatore/Recuperator

TABELLA PESI (Kg) WEIGHT (Kg)					
TOT	G1	G4	G2	G3	
17.4	CO	3846	389	371	267
	HP	3912	411	378	268
					247
					MAVA0700 MAVA0690

Direzione aria di mandata/Discharge air direction
ML=Mandata da sinistra/Left discharge

Direzione aria di ripresa/Intake air direction
RL=Ripresa da sinistra/Left intake

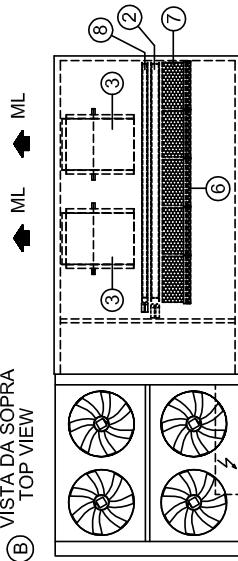
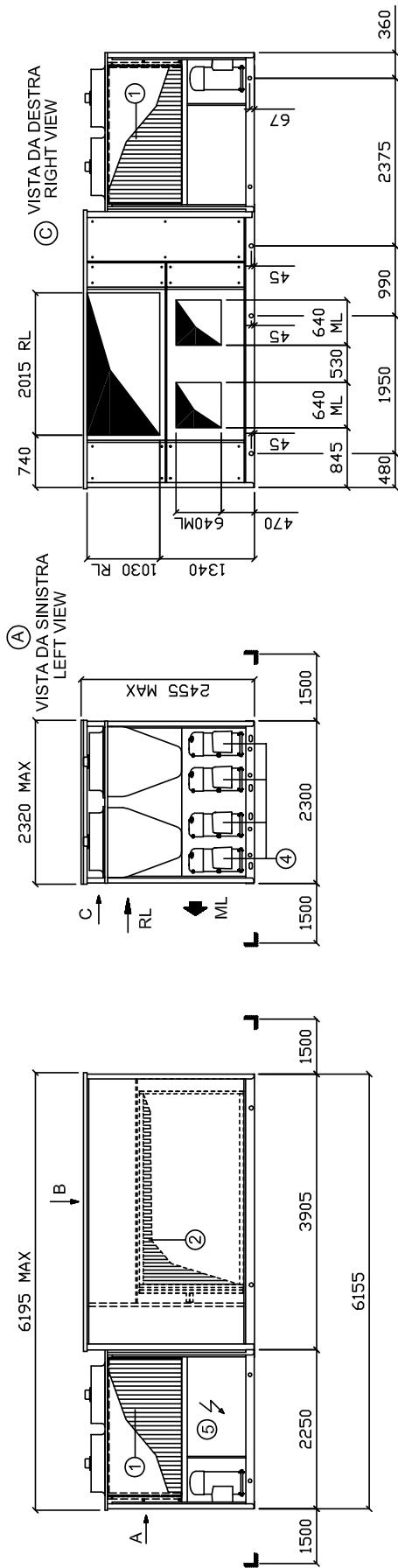
- 10 Serranda aria di espulsione/Expansion air damper
 11 Serranda di By-Pass/By-pass damper
 12 Ventilatore di ripresa/Make fan
 13 Serranda aria esterna/External air Damper
 14 Recuperatore/Recuperator



DIMENSIONAL DIAGRAMS

LAMBDA ECHOS LARGE 19.4 - 20.4

C413500-A



POSIZIONE ANTIVIBRANTI FORI FISS.M10

TABELLA PESI (Kg) WEIGHT (Kg)						
		TOT	G1	G4	G2	G3
19.4	CO	3338	490	517	322	340
	HP	3404	508	536	320	338
20.4	CO	3492	545	549	325	327
	HP	3562	564	568	323	326
					MAVA0730	MAVA0710

DENOMINAZIONE/DENOMINATION

1 Batteria condensante/Condensing c

2 Batteria evaporante/Evaporating coil

3 Ventilatore di mandata/Discharge fan
4 Compressore/Compressor

4 Compresseur/Compressi
5 Quadro elettrico/Electrical panel

6 Filtro aria EU4/EU4 air filter

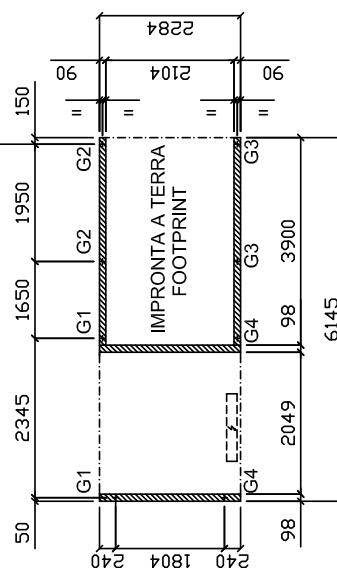
7 Filtro aria EU7 (optional)/EU7 air filter (optional)

8 Batteria acqua calda (optional) \ Hot water coil (optional)

RL=Ripresa da sinistra/Left intake

Direzione aria di manda/Discharge air
ML=Manda da sinistra/Left discharge

Direzione aria di ripresa/Intake air direct
RL=Ripresa da sinistra/Left intake



DIMENSIONAL DIAGRAMS

LAMBDA ECHOS LARGE 19.4 - 20.4 FC2S

C413501-A

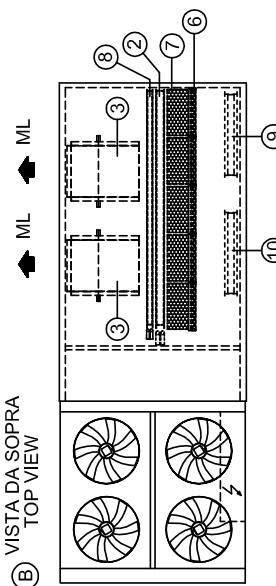
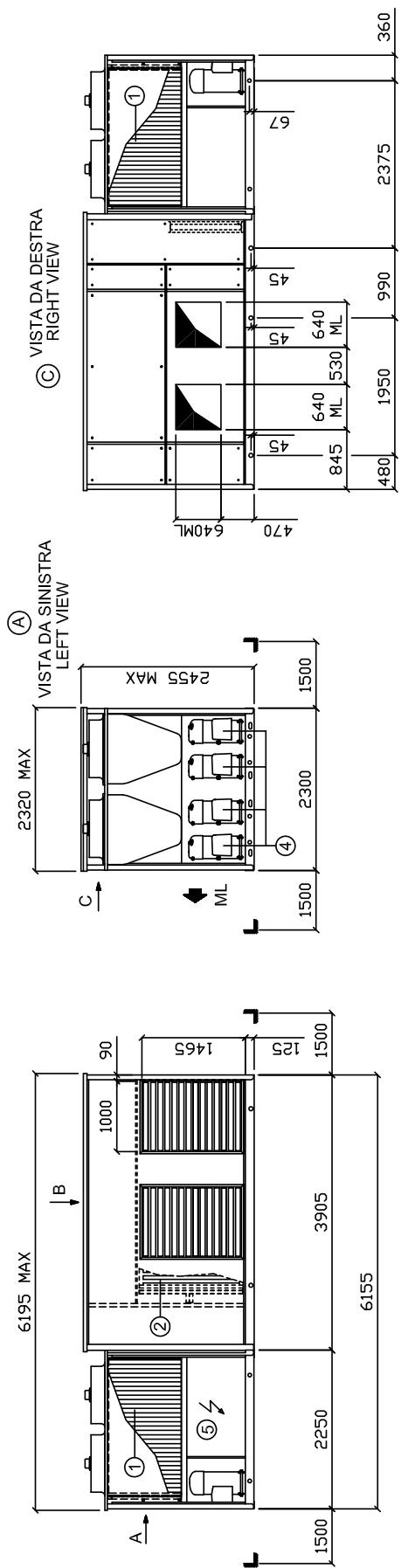
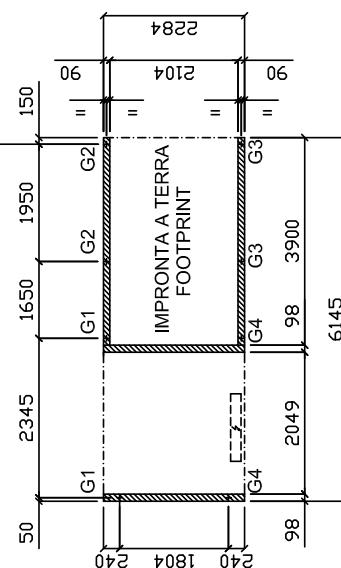


TABELLA PESI (Kg) WEIGHT (Kg)						
		TOT	G1	G4	G2	G3
19.4	CO	3372	498	518	328	342
	HP	3440	516	537	327	340
20.4	CO	3530	553	550	332	330
	HP	3594	571	568	330	328

DENOMINAZIONE/DENOMINATION

- 1 Batteria condensante/Condensing coil
 - 2 Batteria evaporante/Evaporating coil
 - 3 Ventilatore di mandata/Discharge fan
 - 4 Compressore/Compressor
 - 5 Quadro elettrico/Electrical panel
 - 6 Filtro aria EU4/EU4 air filter
 - 7 Filtro aria EU7 (optional)/EU7 air filter (optional)
 - 8 Batteria acqua calda (optional)/Hot water coil (optional)
 - 9 Serranda aria di ricircolo/Recycle air damper
 - 10 Serranda aria esterna/External air Damper

Direzione aria di mandata/Discharge air direction
ML=Mandata da sinistra/Left discharge



DIMENSIONAL DIAGRAMS

LAMBDA ECHOS LARGE 19.4 - 20.4 FC3S

C413502-A

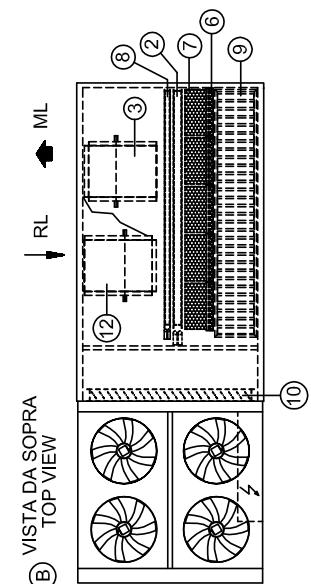
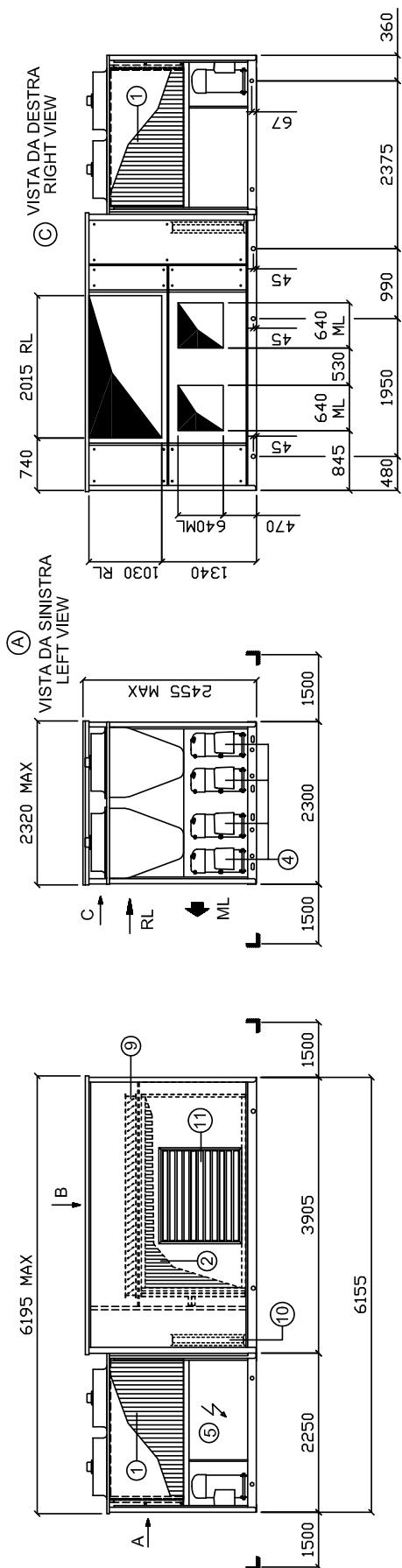


TABELLA PESI (Kg) WEIGHT (Kg)						
	TOT	G1	G4	G2	G3	
19.4	CO	3966	565	496	491	431
	HP	4034	584	515	488	430
20.4	CO	4124	621	528	494	419
	HP	4192	641	546	491	418

DENOMINAZIONE/DENOMINATION

- 1 Batteria condensante/Condensating coil
 - 2 Batteria evaporante/Evaporating coil
 - 3 Ventilatore di mandata/Discharge fan
 - 4 Compressore/Compressor
 - 5 Quadro elettrico/Electrical panel
 - 6 Filtro aria EU4/EU4 air filter
 - 7 Filtro aria EU7 (optional)/EU7 air filter
 - 8 Batteria acqua calda (optional)/Hot water tank
 - 9 Serranda di miscele/Mixing damper
 - 10 Serranda aria da espulsione/Exhaust valve
 - 11 Serranda di Bc-Pass/Bc-pass dampener
 - 12 Ventilatore di ripresa/Intake fan

Direzione aria di mandata/Discharge air direction
ML=Mandata da sinistra/Left discharge

Direzione aria di mandata/Discharge air
ML=Mandata da sinistra/Left discharge

Direzione aria di ripresa/Intake air direct
RL=Ripresa da sinistra/Left intake

/ Filtro aria EU/ (optional)/EU/ air filter (optional)

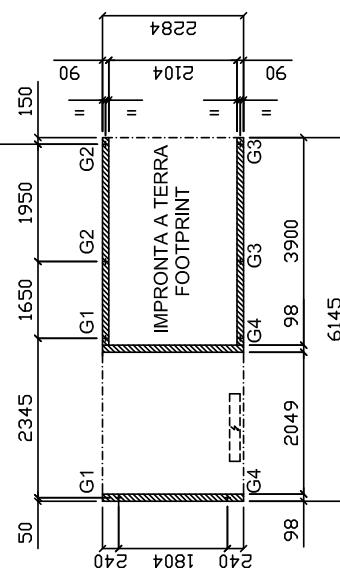
Serranda di miscela/Mixing damper

0 Serranda aria di espulsione/Expulsion air damper

- 1 Serranda di By-Pass/By-pass damper
- 2 Ventilatore di ripresa/intake fan

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POSIZIONE ANTIVIBRANTI FORI FISS.M10



DIMENSIONAL DIAGRAMS

LAMBDA ECHOS LARGE 19.4 - 20.4 RS4S

C413503-A

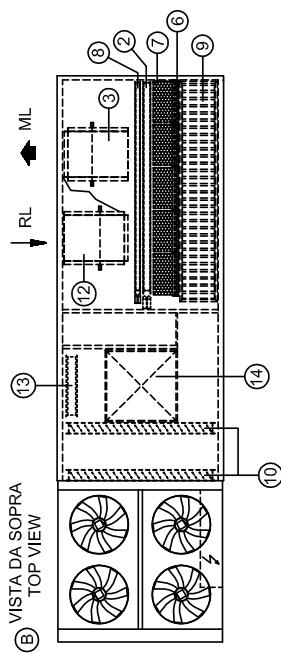
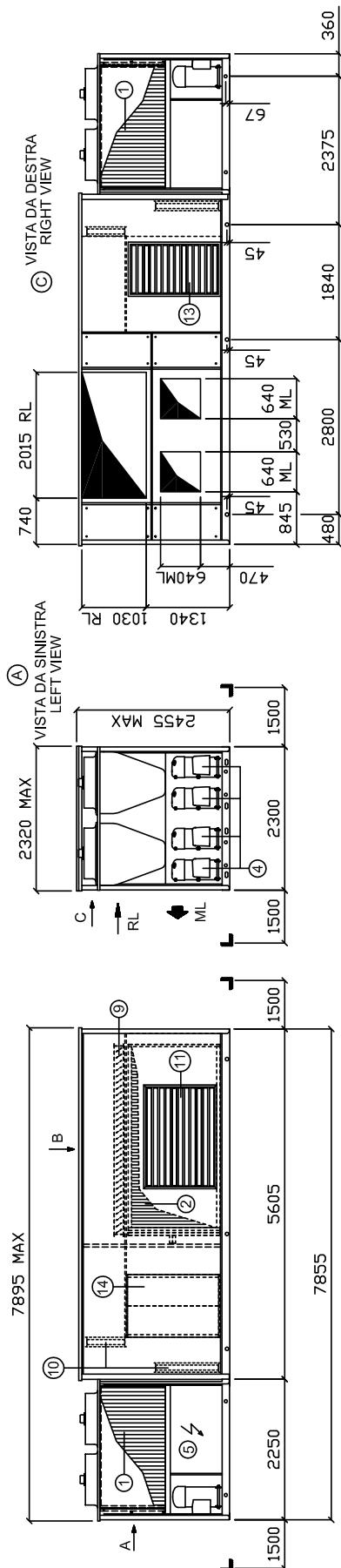


TABELLA PESI (Kg) WEIGHT (Kg)					
TOT	G1	G4	G2	G3	
19.4	CO 4560	451	391	363	315
	HP 4632	466	405	360	313
20.4	CO 4719	493	415	361	304
	HP 4785	508	429	357	301
					MAVA/0690
					MAVA/0700
					MAVA/0710
					MAVA/0720
					MAVA/0730
					MAVA/0740
					MAVA/0750
					MAVA/0760
					MAVA/0770
					MAVA/0780
					MAVA/0790
					MAVA/0800

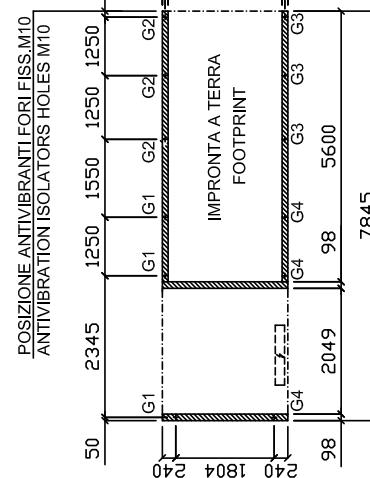
DENOMINAZIONE/DENOMINATION

- 1 Batteria condensante/Condensing coil
- 2 Batteria evaporante/Evaporating coil
- 3 Ventilatore di mandata/Discharge fan
- 4 Compressore/Compressor
- 5 Quadro elettrico/Electrical panel
- 6 Filtro aria EU4/EU4 air filter
- 7 Filtro aria EU7 (optional)/EU7 air filter (optional)
- 8 Batteria acqua calda (optional)/Hot water coil (optional)
- 9 Serranda di miscela/Mixing damper
- 10 Serranda aria di espulsione/Expulsion air damper
- 11 Serranda di By-Pass/Bypass damper
- 12 Ventilatore di ripresa/Intake fan
- 13 Serranda aria esterna/External air Damper
- 14 Recuperatore/Recuperator

Direzione aria di mandata/Discharge air direction
ML=Mandata da sinistra/Left discharge

Direzione aria di ripresa/Intake air direction
RL=Ripresa da sinistra/Left intake

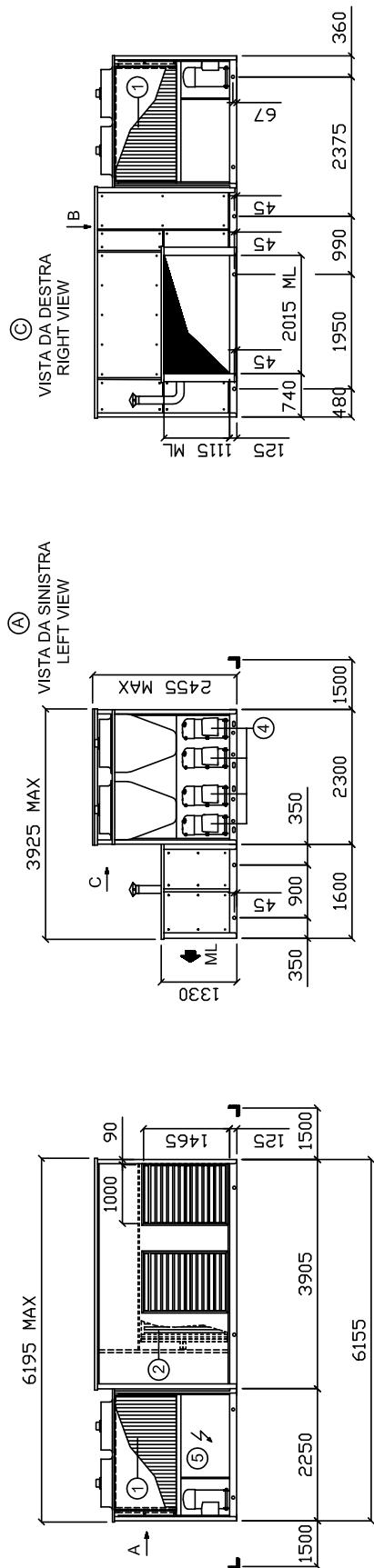
RL
ML



DIMENSIONAL DIAGRAMS

LAMBDA ECHOS LARGE 17.4 - 19.4 - 20.4 GC2S

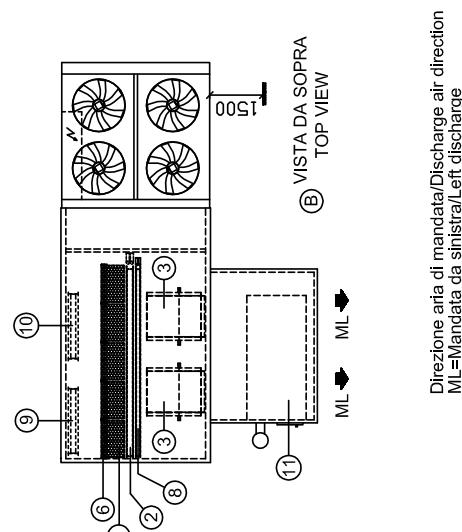
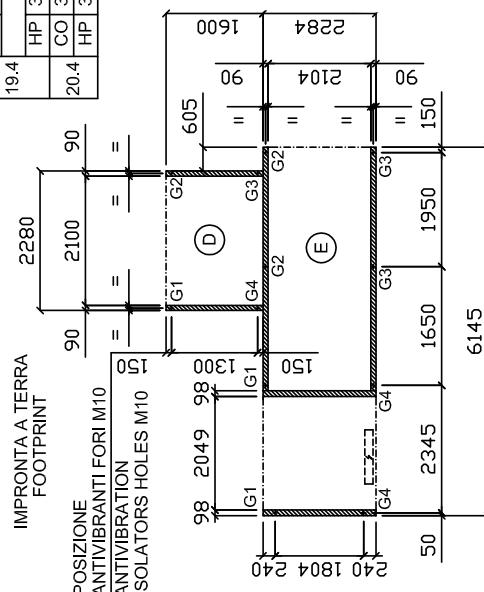
C413504-A



DENOMINAZIONE/DENOMINATION

- 1 Batteria condensante/Condensing coil
 - 2 Batteria evaporante/Evaporating coil
 - 3 Ventilatore di manda/Discharge fan
 - 4 Compressore/Compressor
 - 5 Quadro elettrico/Electric panel
 - 6 Filtro aria EU4/EU4 air filter
 - 7 Filtro aria EU7 (optional)/EU7 air filter (optional)
 - 8 Batteria acqua calda (optional)/Hot water coil (optional)
 - 9 Serranza aria di ricircolo/ Recycle air damper
 - 10 Serranza aria esterna/External air damper
 - 11 Generatore aria calda/Hot air generator

TABELLA PESI (Kg) WEIGHT (Kg)											
	E	G1	G4	G2	G3	D	G1	G2	G3	G4	TOT
17.4	CO 2920	426	465	272	297						3506
	HP 2988	444	484	271	295	MAVA0700	MAVA0690				3574
19.4	CO 3372	498	518	328	342	MAVA0720	MAVA0710	586	156	164	3958
	HP 3440	516	537	327	340	MAVA0720	MAVA0730	MAVA0710			4026
20.4	CO 3594	571	568	332	330			330	328		4116
	HP 3594	571	568	330	328	MAVA0730	MAVA0710	MAVA0690	MAVA0680		4180



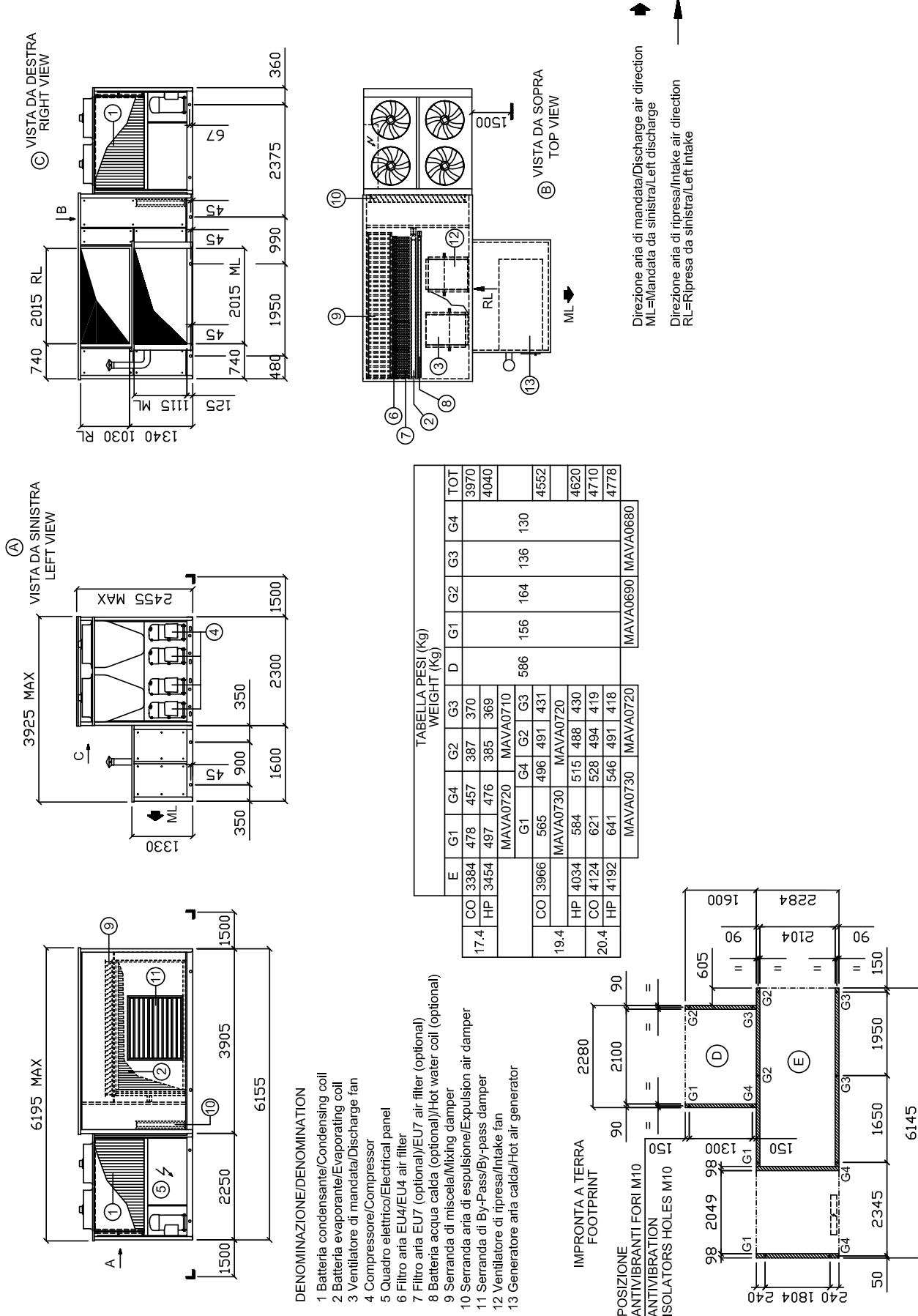
Direzione aria di mandata/Discharge air direction
ML=Mandata da sinistra/Left discharge

ML=Mandata da sinistra/Left discharge

DIMENSIONAL DIAGRAMS

LAMBDA ECHOS LARGE 17.4 - 19.4 - 20.4 GC3S

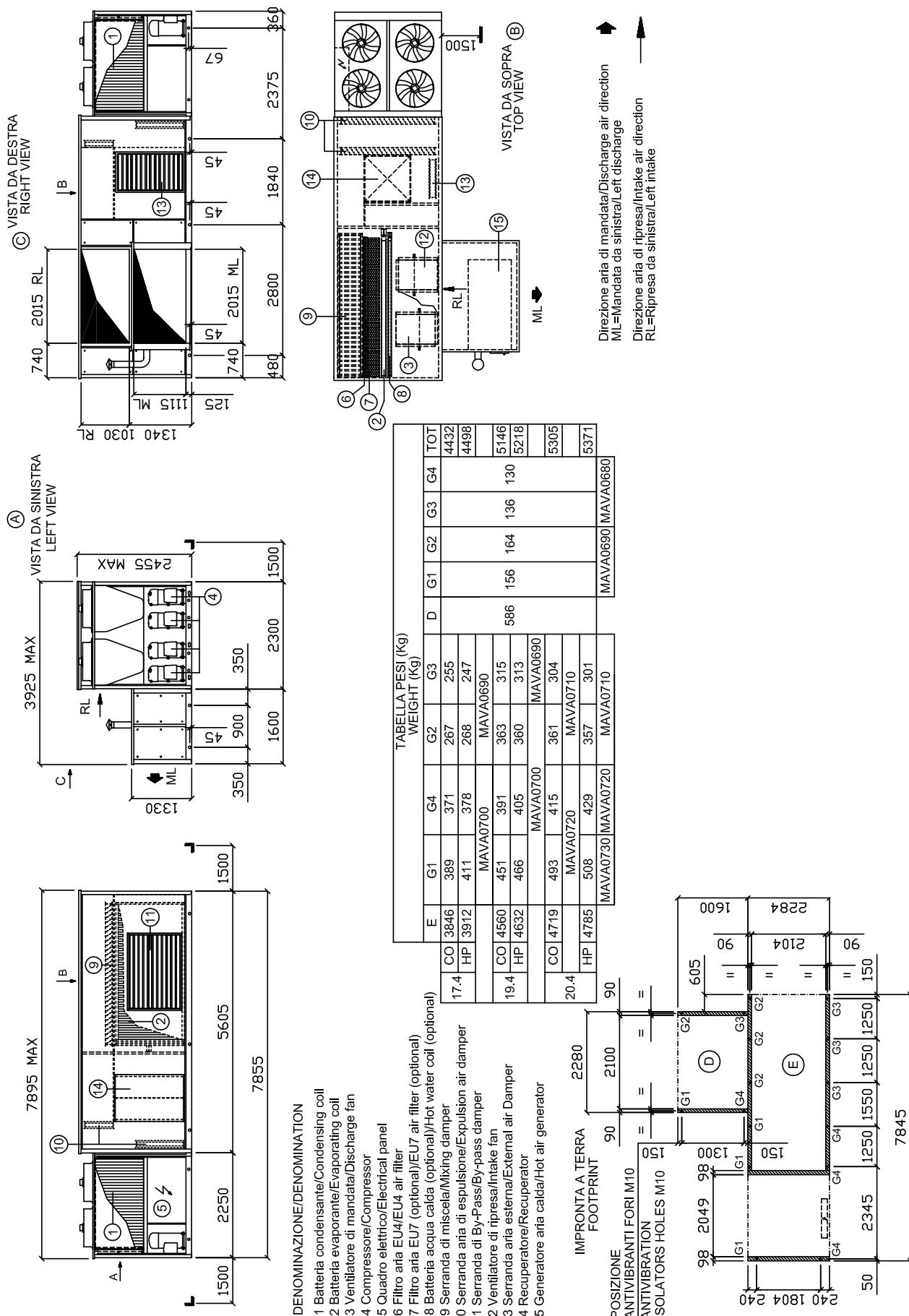
C413505-A



DIMENSIONAL DIAGRAMS

LAMBDA ECHOS LARGE 17.4 - 19.4 - 20.4 GS4S

C413506-A



DIMENSIONAL DIAGRAMS

LAMBDA ECHOS LARGE 24.4 - 27.4

C413507-A

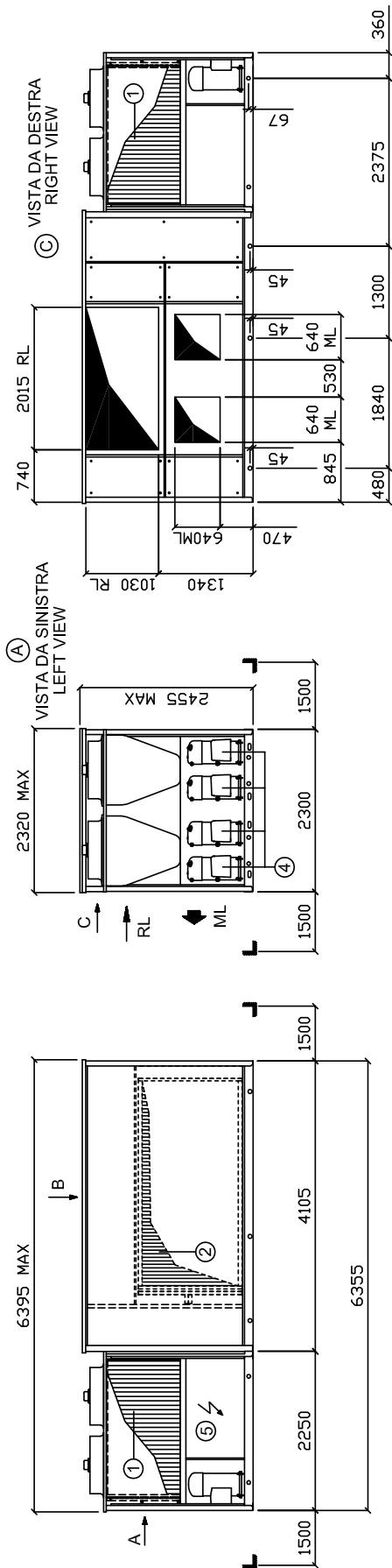
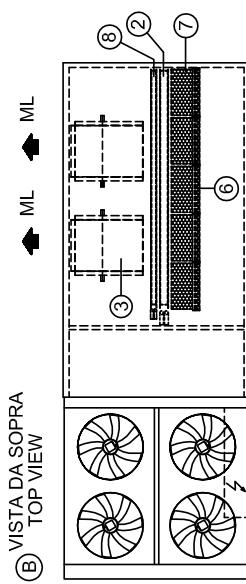


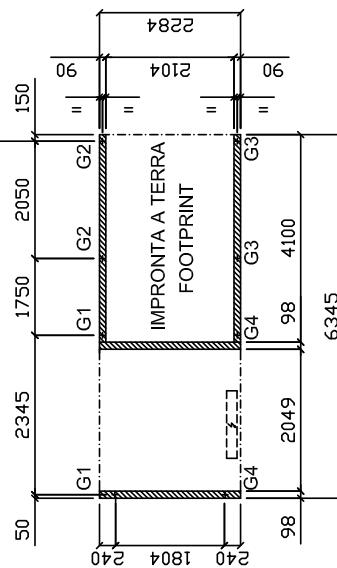
TABELLA PESI (Kg) WEIGHT (Kg)					
	TOT	G1	G4	G2	G3
24.4 CO	3512	545	545	333	333
24.4 HP	3578	563	564	331	331
27.4 CO	3526	548	550	332	333
27.4 HP	3590	566	568	330	331

Direzione aria di mandata/Discharge air direction ↑
 ML=Mandata da sinistra/Left discharge
 Direzione aria di ripresa/Intake air direction →
 RI=Ripresa da sinistra/Left intake

- DENOMINAZIONE/DENOMINATION**
- 1 Batteria condensante/Condensing coil
 - 2 Batteria evaporante/Evaporating coil
 - 3 Ventilatore di mandata/Discharge fan
 - 4 Compressore/Compressor
 - 5 Quadro elettrico/Electrical panel
 - 6 Filtro aria EU4/EU4 air filter
 - 7 Filtro aria EU7 (optional)/EU7 air filter (optional)
 - 8 Batteria acqua calda (optional)/Hot water coil (optional)



POSIZIONE ANTIVIBRANTI FORI FISSI M10
ANTIVIBRATION ISOLATORS HOLES M10



DIMENSIONAL DIAGRAMS

LAMBDA ECHOS LARGE 24.4 - 27.4 FC2S

C413508-A

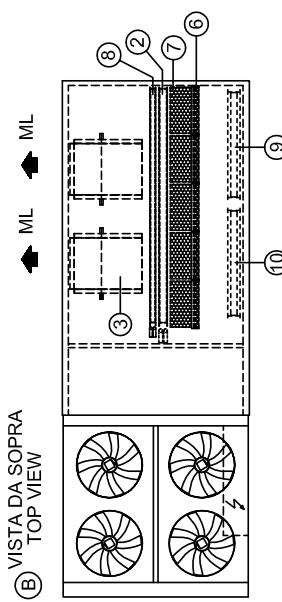
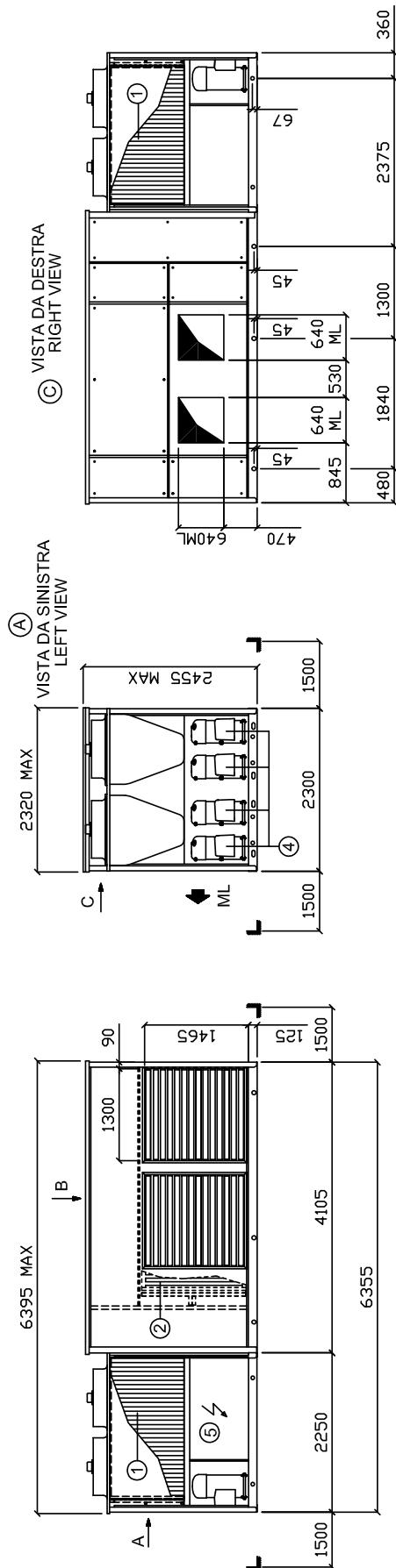


TABELLA PESI (Kg) WEIGHT (Kg)						
TOT	G1	G4	G2	G3		
24.4	CO	3640	535	559	355	371
	HP	3710	553	578	354	370
27.4	CO	3654	538	564	354	371
	HP	3722	556	583	352	370

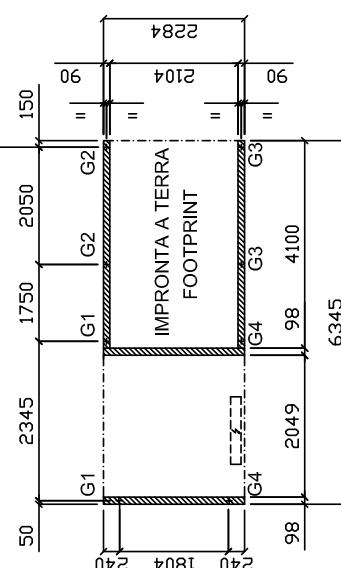
[MAVA0730] [MAVA0710]

DENOMINAZIONE/DENOMINATION

- 1 Batteria condensante/Condensing coil
- 2 Batteria evaporante/Evaporating coil
- 3 Ventilatore di mandata/Discharge fan
- 4 Compressore/Compressor
- 5 Quadro elettrico/Electrical panel
- 6 Filtro aria EU4/EU4 air filter
- 7 Filtro aria EU7 (optional)/EU7 air filter (optional)
- 8 Batteria acqua calda (optional)/Hot water coil (optional)
- 9 Serranda aria di riciclo/ Recycle air damper
- 10 Serranda aria esterna/External air Damper

Direzione aria di manda/Discharge air direction ↑
ML = Mandata da sinistra/Left discharge

10 Serranda aria esterna/External air Damper



DIMENSIONAL DIAGRAMS

LAMBDA ECHOS LARGE 24.4 - 27.4 FC3S

C413509-A

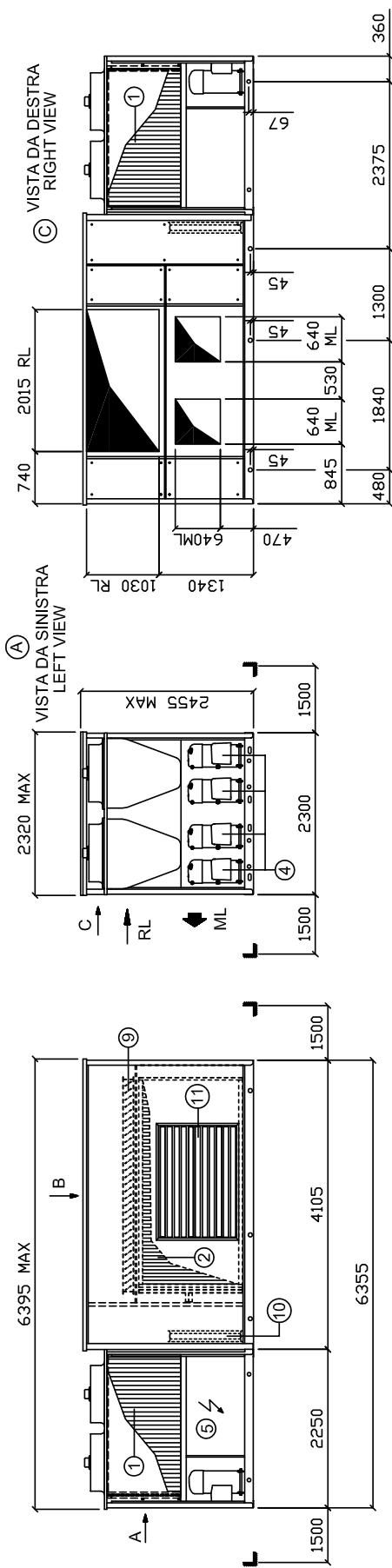
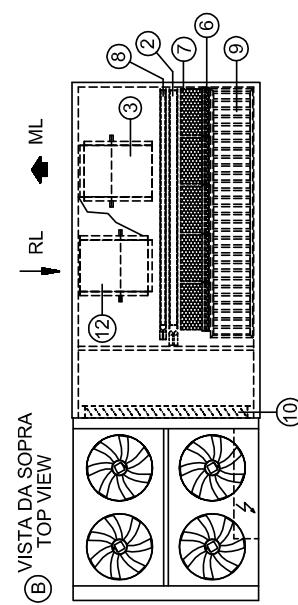
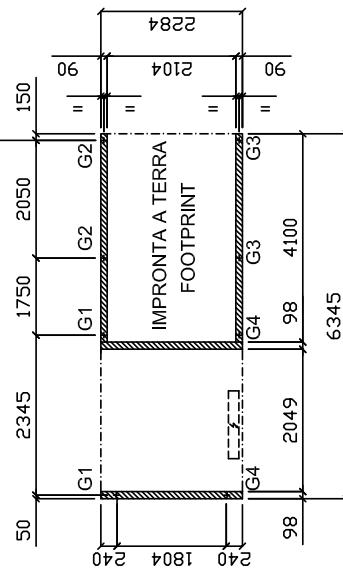


TABELLA PESI (Kg) WEIGHT (kg)					
TOT	G1	G4	G2	G3	
24.4	CO 4198	615	525	518	441
	HP 4266	634	543	515	441
27.4	CO 4210	618	529	516	442
	HP 4276	637	547	513	441
	MAVA0730				MAVA0720

DENOMINAZIONE/DENOMINATION

- 1 Batteria condensante/Condensing coil
- 2 Batteria evaporante/Evaporating coil
- 3 Ventilatore di mandata/Discharge fan
- 4 Compressore/Compressor
- 5 Quadro elettrico/Electrical panel
- 6 Filtro aria EU4/EU4 air filter
- 7 Filtro aria EU7 (optional)/EU7 air filter (optional)
- 8 Batteria acqua calda (optional)/Hot water coil (optional)
- 9 Serranda di miscela/Mixing damper
- 10 Serranda aria di espulsione/Ex-plosion air damper
- 11 Serranda di By-Pass/By-pass damper
- 12 Ventilatore di ripresa/Intake fan

POSIZIONE ANTIVIBRANTI FORI FISSI M10
ANTIVIBRATION ISOLATORS HOLES M10

Direzione aria di mandata/Discharge air direction
ML=Mandata da sinistra/Left discharge

Direzione aria di ripresa/Intake air direction
RL=Ripresa da sinistra/Left intake

DIMENSIONAL DIAGRAMS

LAMBDA ECHOS LARGE 24.4 - 27.4 RS4S

C413510-A

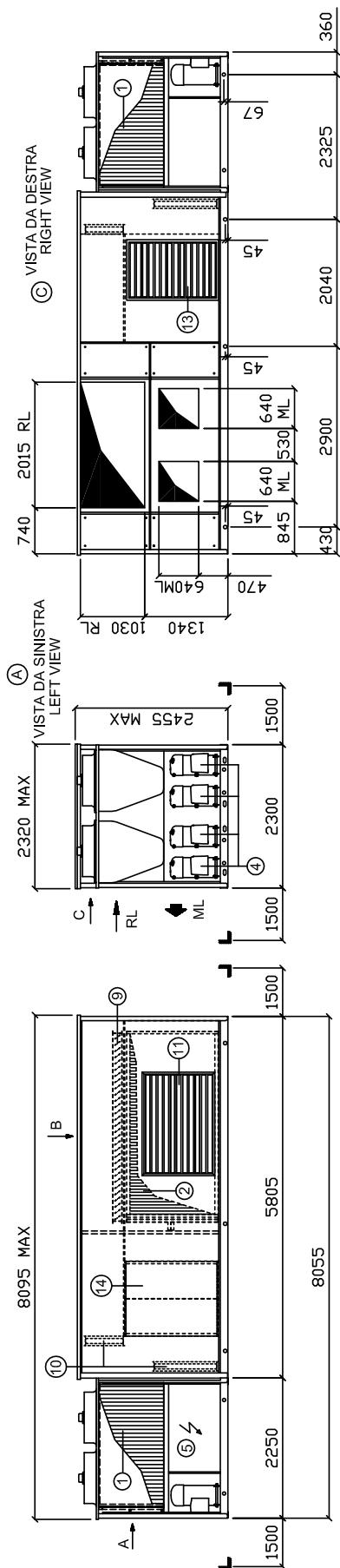
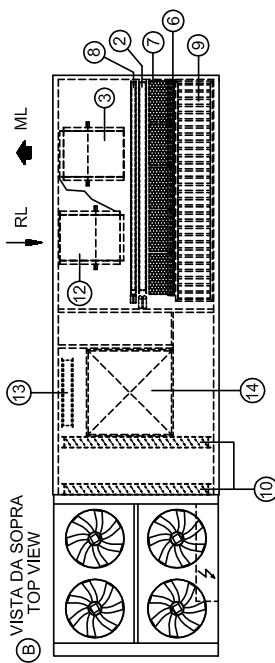


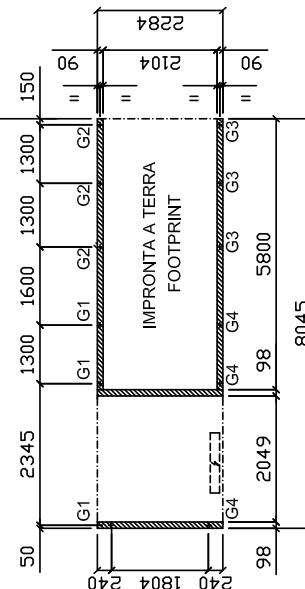
TABELLA PESI (Kg) WEIGHT (Kg)					
	TOT	G1	G2	G3	
24.4	CO 4755	493	424	359	309
		MAVA0720			MAVA0710
	HP 4824	508	438	355	307
27.4		MAVA0730	MAVA0720		MAVA0710
	CO 4767	495	427	358	309
		MAVA0720			MAVA0710
27.4	HP 4833	510	441	354	306
		MAVA0730	MAVA0720		MAVA0710

DENOMINAZIONE/DENOMINATION

- 1 Batteria condensante/Condensing coil
 - 2 Batteria evaporante/Evaporating coil
 - 3 Ventilatore di mandata/Discharge fan
 - 4 Compressore/Compressor
 - 5 Quadro elettrico/Electrical panel
 - 6 Filtro aria EU4/EU4 air filter
 - 7 Filtro aria EU7 (optional)/EU7 air filter (optional)
 - 8 Batteria acqua calda (optional)/Hot water coil (optional)
 - 9 Serranda di miscela/Mixing damper
 - 10 Serranda aria di espulsione/Exhaust air damper
 - 11 Serranda di By-Pass/By-Pass damper
 - 12 Ventilatore di ripresa/Intake fan
 - 13 Serranda aria esterna/External air Damper



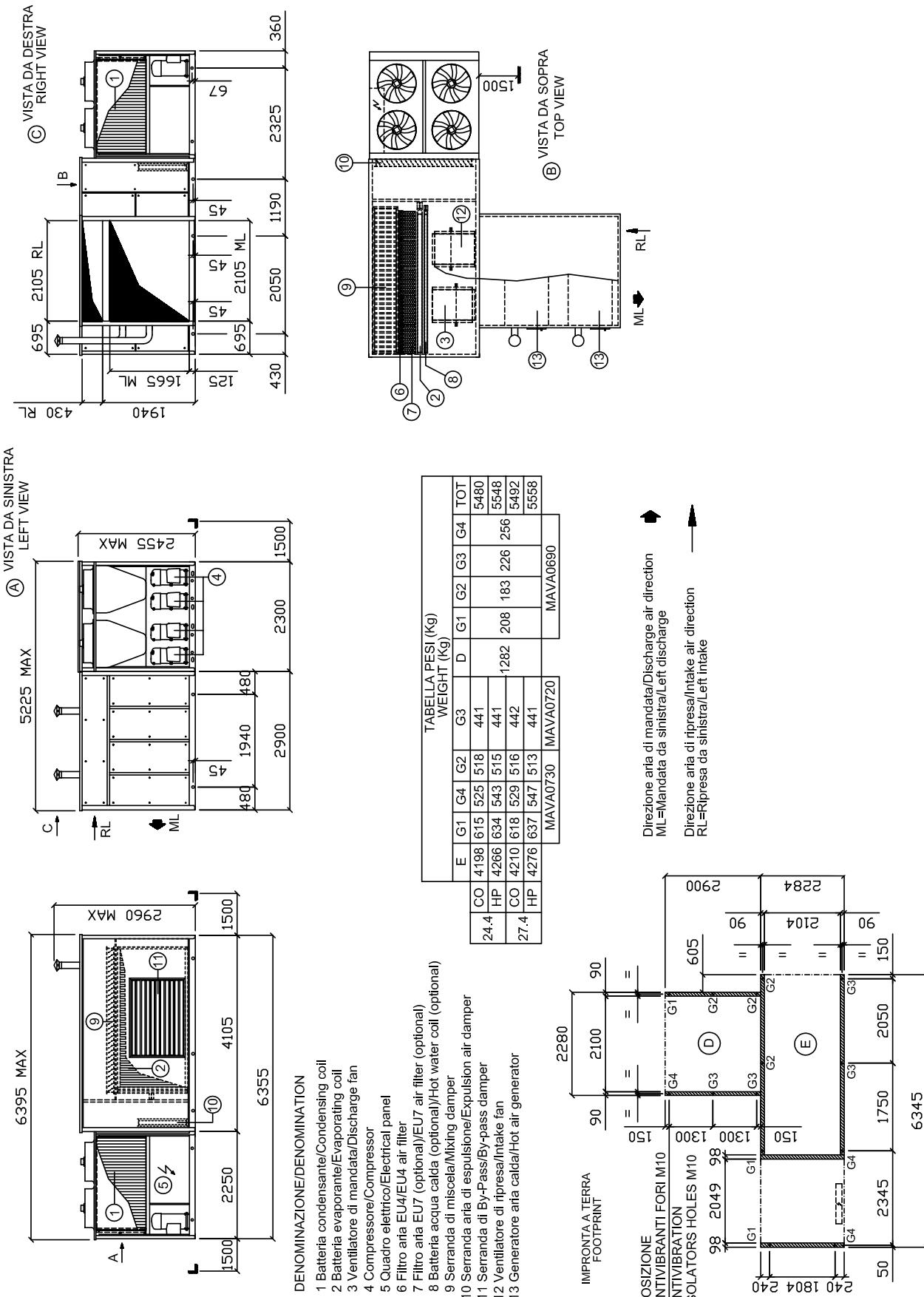
POSIZIONE ANTIVIBRANTI FORI FISS.M10
ANTIVIBRATION ISOLATORS HOLES M10



DIMENSIONAL DIAGRAMS

LAMBDA ECHOS LARGE 24.4 - 27.4 GC3S

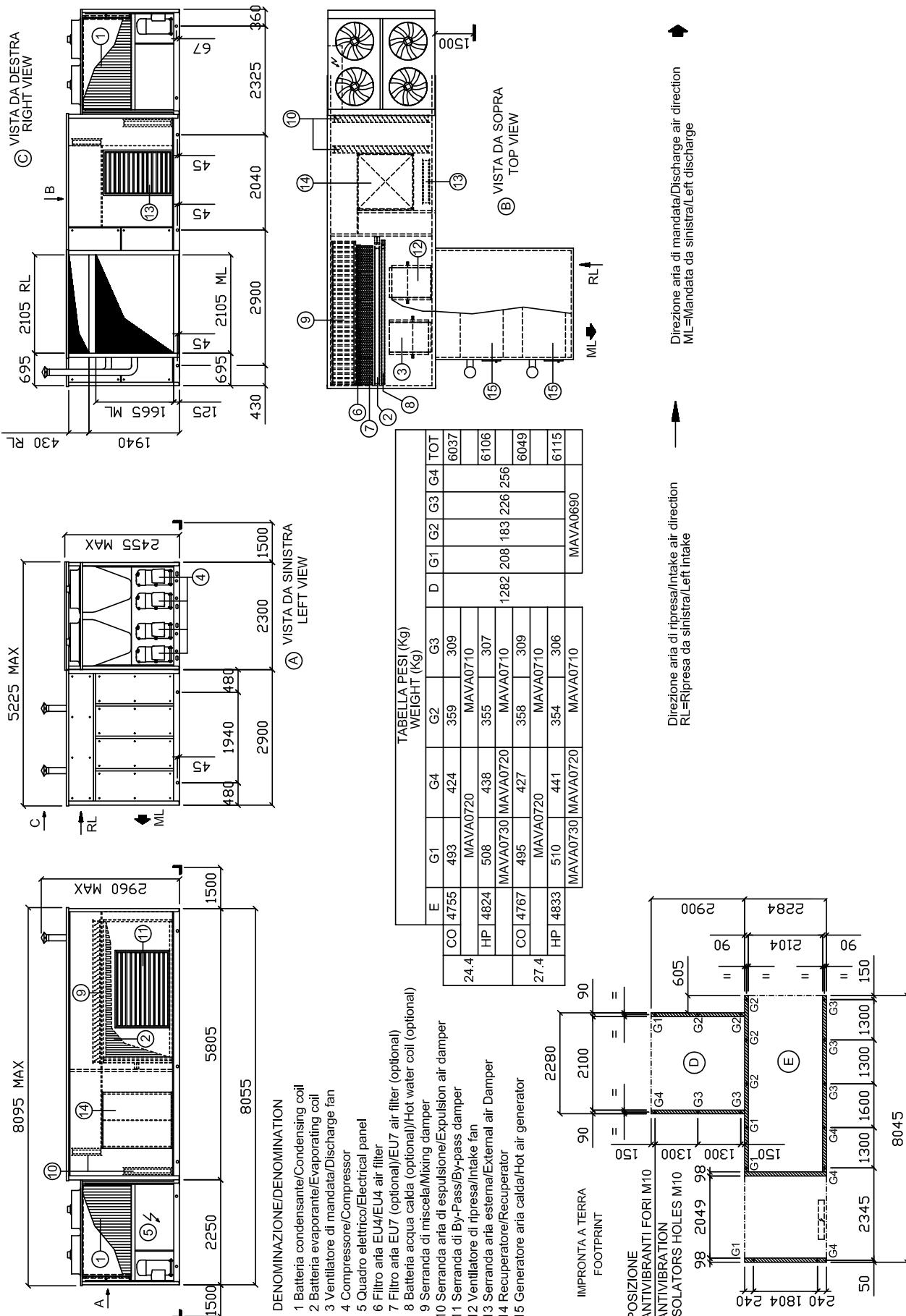
C413512-A



DIMENSIONAL DIAGRAMS

LAMBDA ECHOS LARGE 24.4 - 27.4 GS4S

C413513-A



DIMENSIONAL DIAGRAMS

LAMBDA ECHOS LARGE 30.4 - 33.4

C413514-A

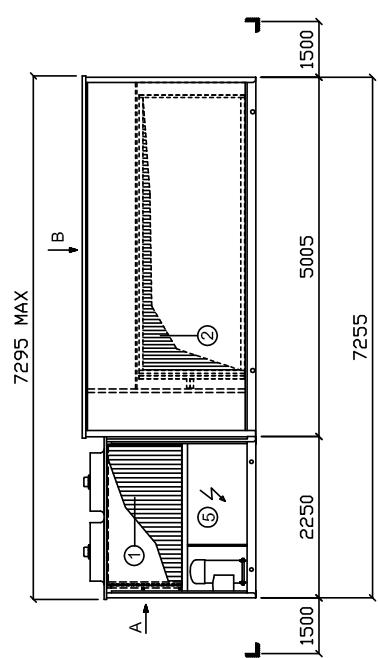
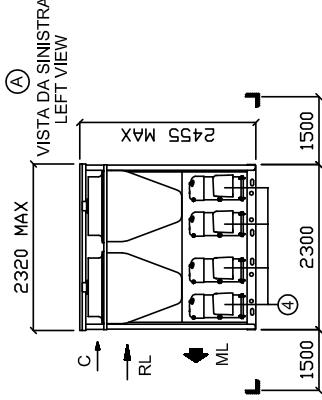
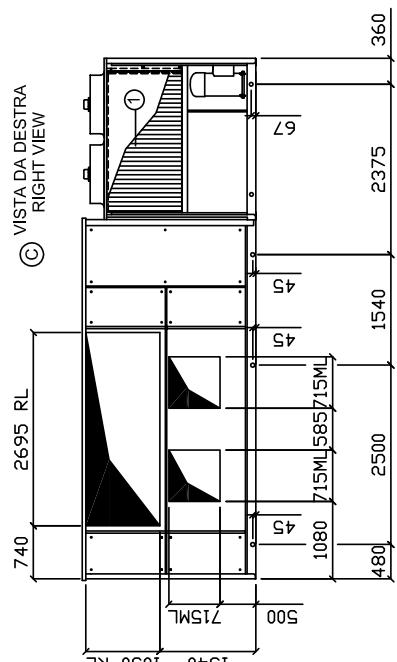
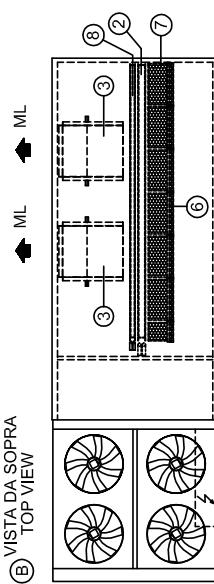
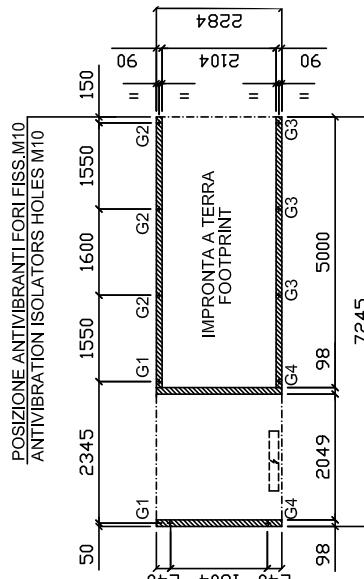


TABELLA PESI (Kg) WEIGHT (Kg)						
TOT	G1	G4	G2	G3		
30.4	CO	3968	559	573	281	287
	HP	4033	577	592	279	286
33.4	CO	4059	592	593	281	282
	HP	4129	611	612	280	281



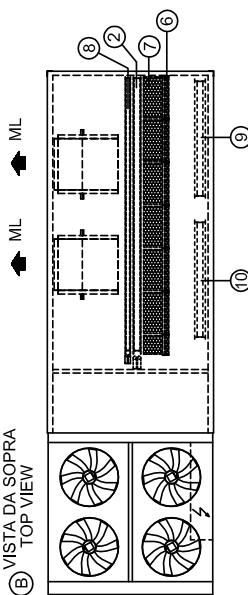
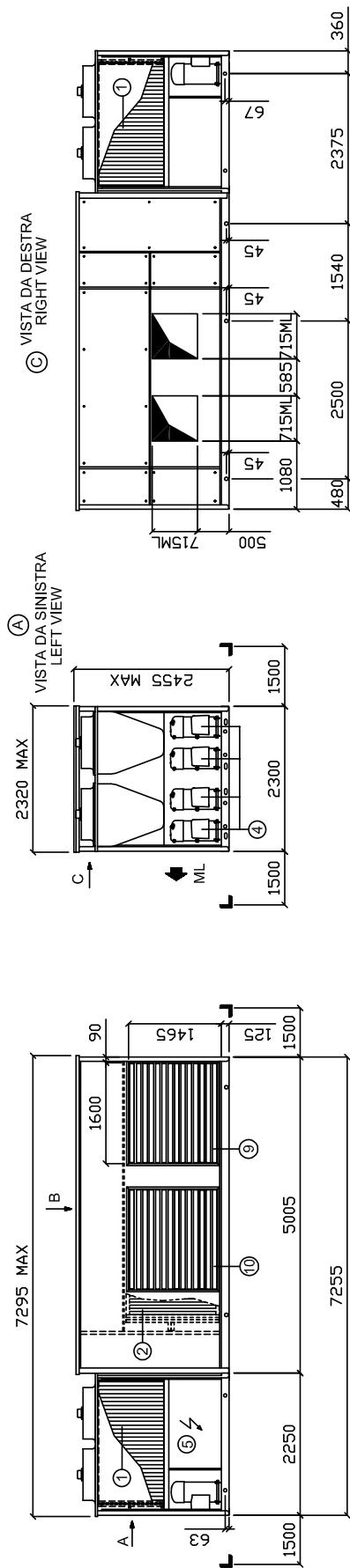
- DENOMINAZIONE/DENOMINATION
- 1 Batteria condensante/Condensing coil
 - 2 Batteria evaporante/Evaporating coil
 - 3 Ventilatore di mandata/Discharge fan
 - 4 Compressore/Compressor
 - 5 Quadro elettrico/Electrical panel
 - 6 Filtro aria EU4/EU4 air filter
 - 7 Filtro aria EU7 (optional)/EU7 air filter (optional)
 - 8 Batteria acqua calda (optional)/Hot water coil (optional)



DIMENSIONAL DIAGRAMS

LAMBDA ECHOS LARGE 30.4 - 33.4 FC2S

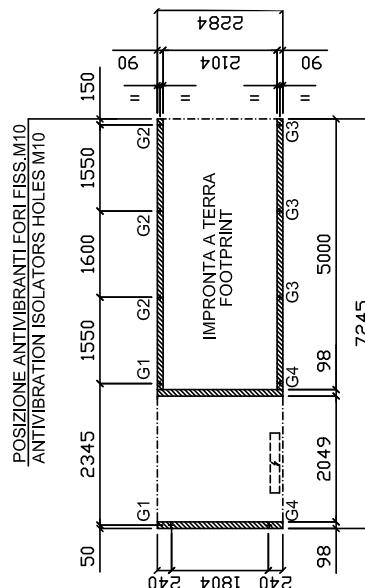
C413515-A



DENOMINAZIONE/DENOMINATION	
1 Batteria condensante/Condensing coil	
2 Batteria evaporante/Evaporating coil	

- 8 Batteria acqua calda (optional)/Hot water coil (optional)
- 9 Serranda aria di ricircolo/ Recycle air damper
- 10 Serranda aria esterna/External air Damper

Direzione aria di manda/Discharge air direction
ML=Manda da sinistra/Left discharge



DIMENSIONAL DIAGRAMS

LAMBDA ECHOS LARGE 30.4 - 33.4 FC3S

C413516-A

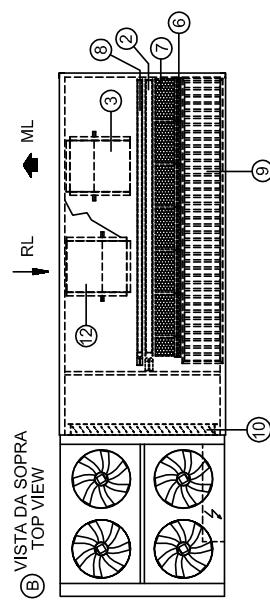
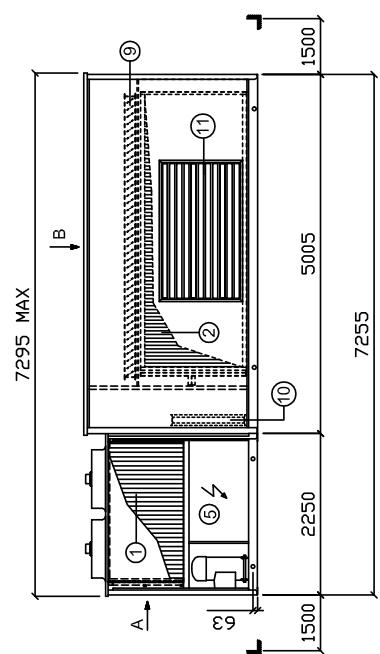
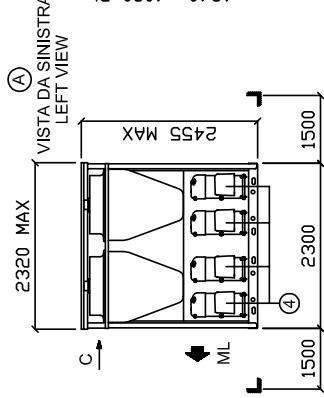
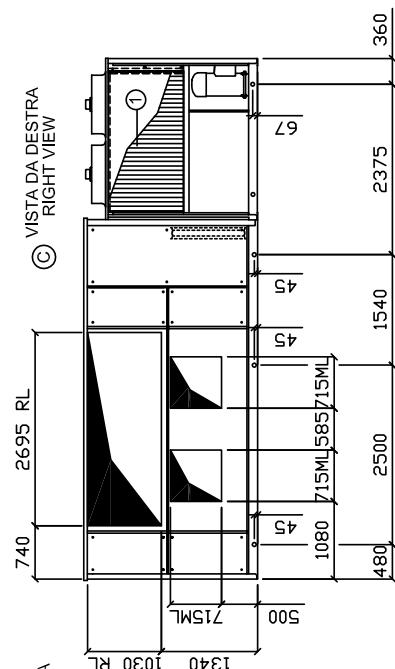


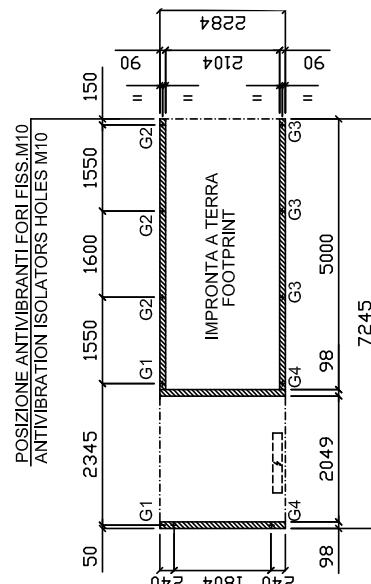
TABELLA PESI (Kg) WEIGHT (Kg)					
TOT	G1	G4	G2	G3	
30.4	CO 4727	625	546	424	371
	HP 4792	644	564	422	370
33.4	CO 4818	658	566	425	365
	HP 4883	677	584	423	364
	MAVA0730	MAVA0720	MAVA0710		

DENOMINAZIONE/DENOMINATION

- 1 Batteria condensante/Condensing coil
- 2 Batteria evaporante/Evaporating coil
- 3 Ventilatore di mandata/Discharge fan
- 4 Compressore/Compressor
- 5 Quadro elettrico/Electrical panel
- 6 Filtro aria EU4/EU4 air filter
- 7 Filtro aria EU7 (optional)/EU7 air filter (optional)
- 8 Batteria acqua calda (optional)/Hot water coil (optional)
- 9 Serranda di miscela/Mixing damper
- 10 Serranda aria di espulsione/Expulsion air damper
- 11 Serranda di By-Pass/By-pass damper
- 12 Ventilatore di ripresa/Intake fan

↑ Direzione aria di mandata/Discharge air direction
ML=Mandata da sinistra/Left discharge

→ Direzione aria di ripresa/Intake air direction
RL=Ripresa da sinistra/Left intake



DIMENSIONAL DIAGRAMS

LAMBDA ECHOS LARGE 30.4 - 33.4 RS4S

C413517-A

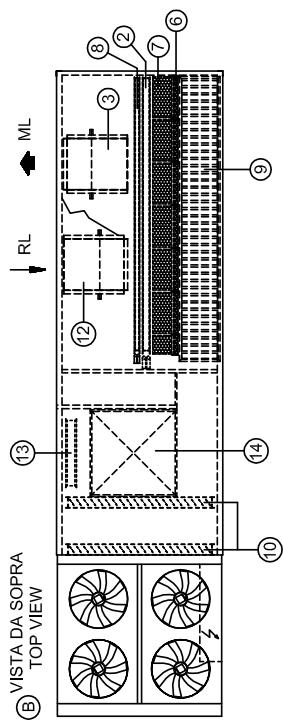
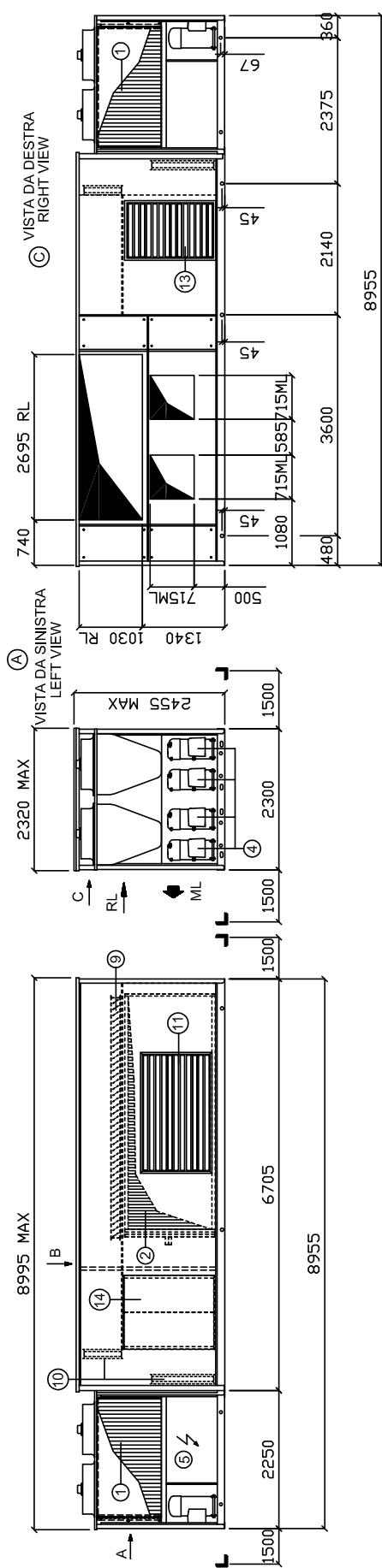


TABELLA PESI (Kg) WEIGHT (kg)					
	TOT	G1	G4	G2	G3
30.4	CO	5328	533	470	411
	HP	5400	548	484	408
33.4	CO	5421	558	485	409
	HP	5490	573	499	405
		MAVA0730	MAVA0720	MAVA0710	

DENOMINAZIONE/DENOMINATION

- 1 Batteria condensante/Condensing coil
 - 2 Batteria evaporante/Evaporating coil
 - 3 Ventilatore di mandata/Discharge fan
 - 4 Compressore/Compressor
 - 5 Quadro elettrico/Electrical panel
 - 6 Filtro aria EU/4 EU air filter
 - 7 Filtro aria EU/7 (optional)EU/7 air filter (optional)
 - 8 Batteria acqua calda (optional)/Hot water coil (optional)
 - 9 Serranda di miscela/Mixing damper
 - 10 Serranda aria di espulsione/Exhaust air damper
 - 11 Serranda di By-Pass/By-pass damper
 - 12 Ventilatore di ripresa/Inake fan
 - 13 Serranda aria esterna/External air Damper
 - 14 Documentazione/Documentation

Direzione aria di mandata/Discharge air direction
ML=Mandata da sinistra/Left discharge

Direzione aria di ripresa/intake air direction
RL=Ripresa da sinistra/left intake

Direzione aria di manda/Discharge air
ML=Manda da sinistra/Left discharge

Direzione aria di ripresa/Intake air direct
RL=Ripresa da sinistra/Left intake

- Conduzione di iniezione mixing con i pozi
- 10 Serranda aria di espulsione/Expulsion air damper
- 11 Serranda di By-Pass/By-pass damper

- 12 Ventilatore di ripresa/Intake fan
- 13 Serranda aria esterna/External air Damper
- 14 Recuperatore/Recuperator

POSIZIONE ANTIVIBRANTI FORI FISSI M10
ANTIVIBRATION ISOLATORS HOLES M10

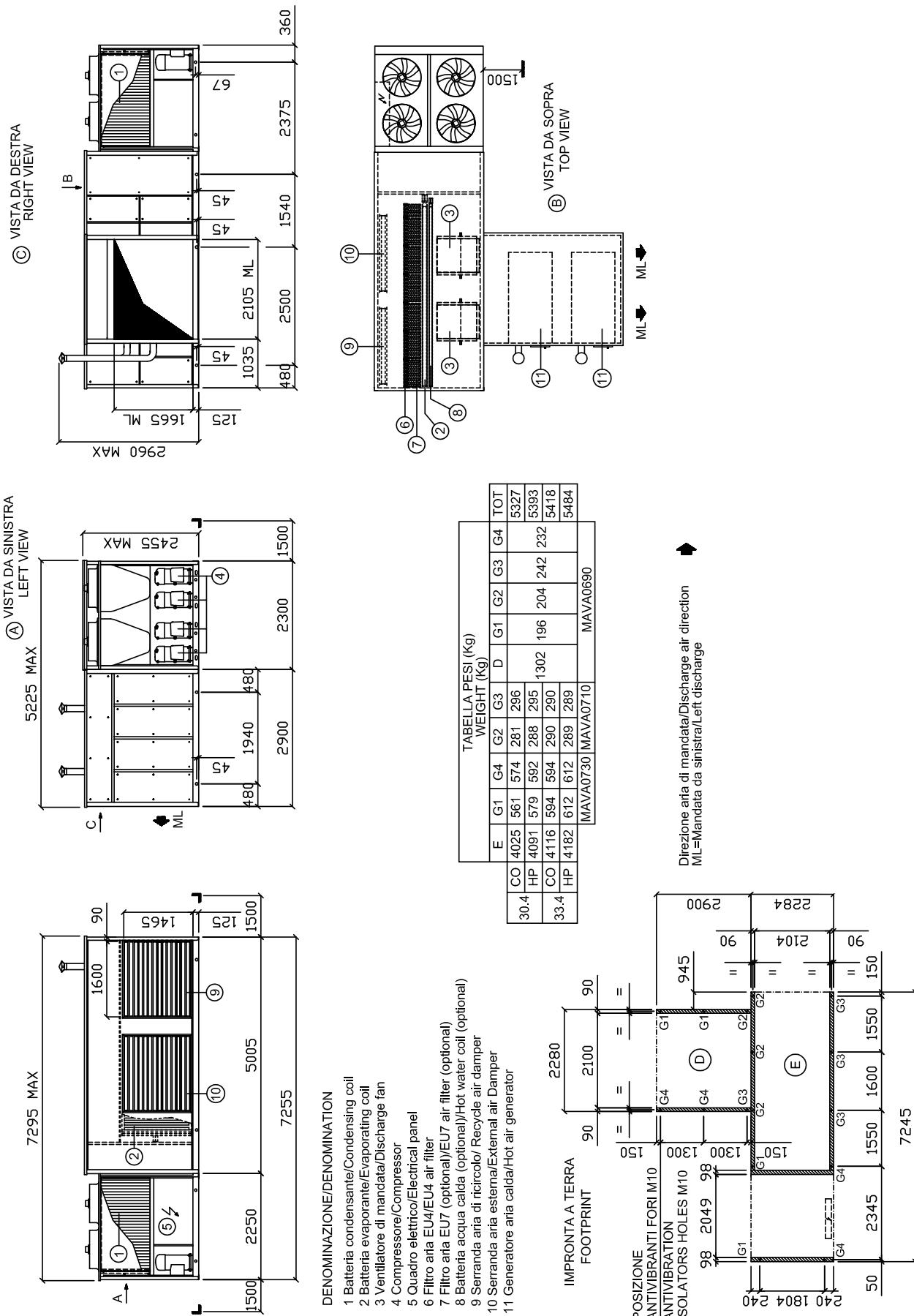
POSIZIONE ANTIVIBRANTI (mm)	PIRELLA DI BASE (mm)	PIRELLA DI TERRA (mm)
G1	90	2284
G2	98	2284
G3	104	2284
G4	104	2284

IMPRONTA A TERRA
FOOTPRINT

DIMENSIONAL DIAGRAMS

LAMBDA ECHOS LARGE 30.4 - 33.4 GC2S

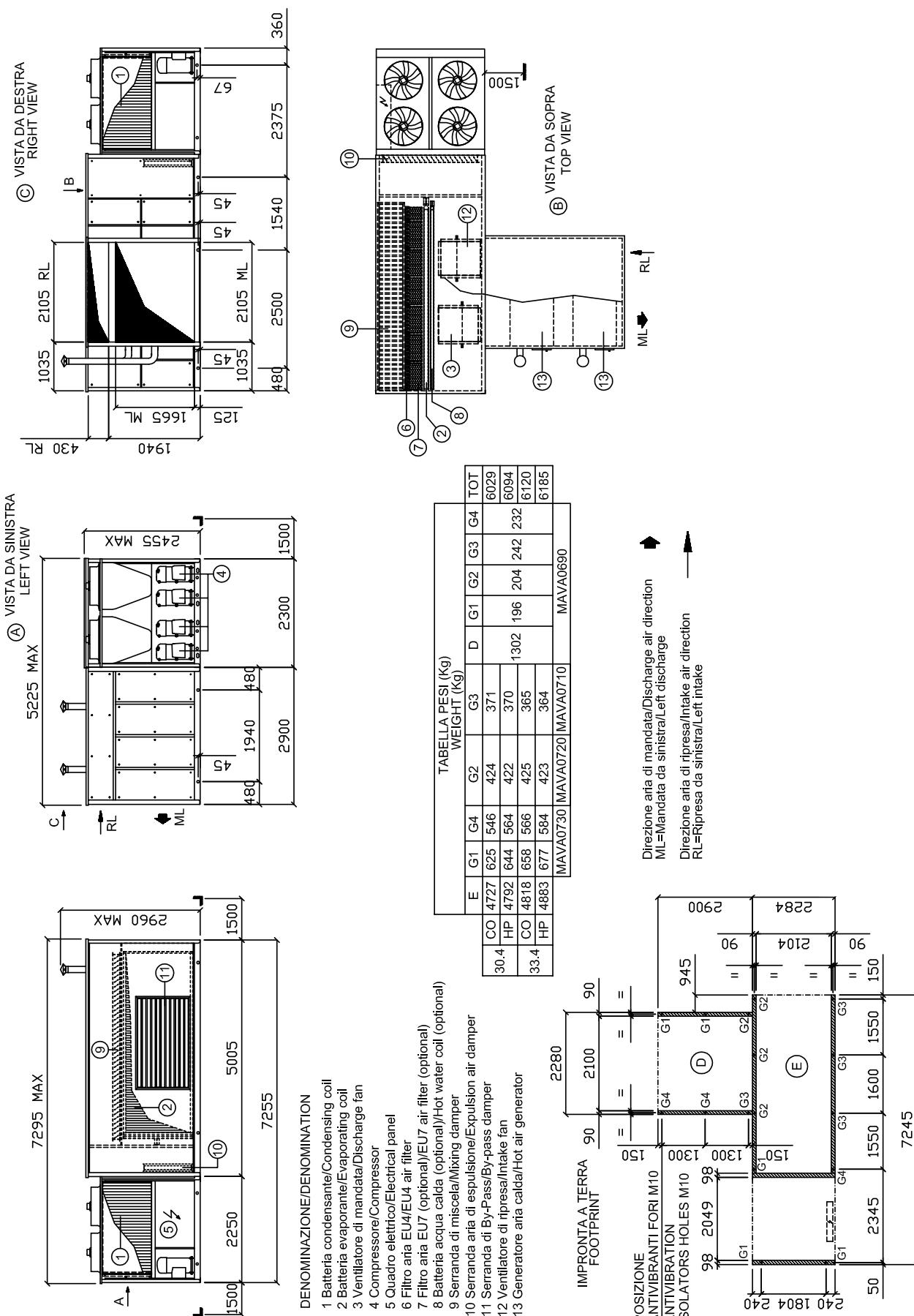
C413518-A



DIMENSIONAL DIAGRAMS

LAMBDA ECHOS LARGE 30.4 - 33.4 GC3S

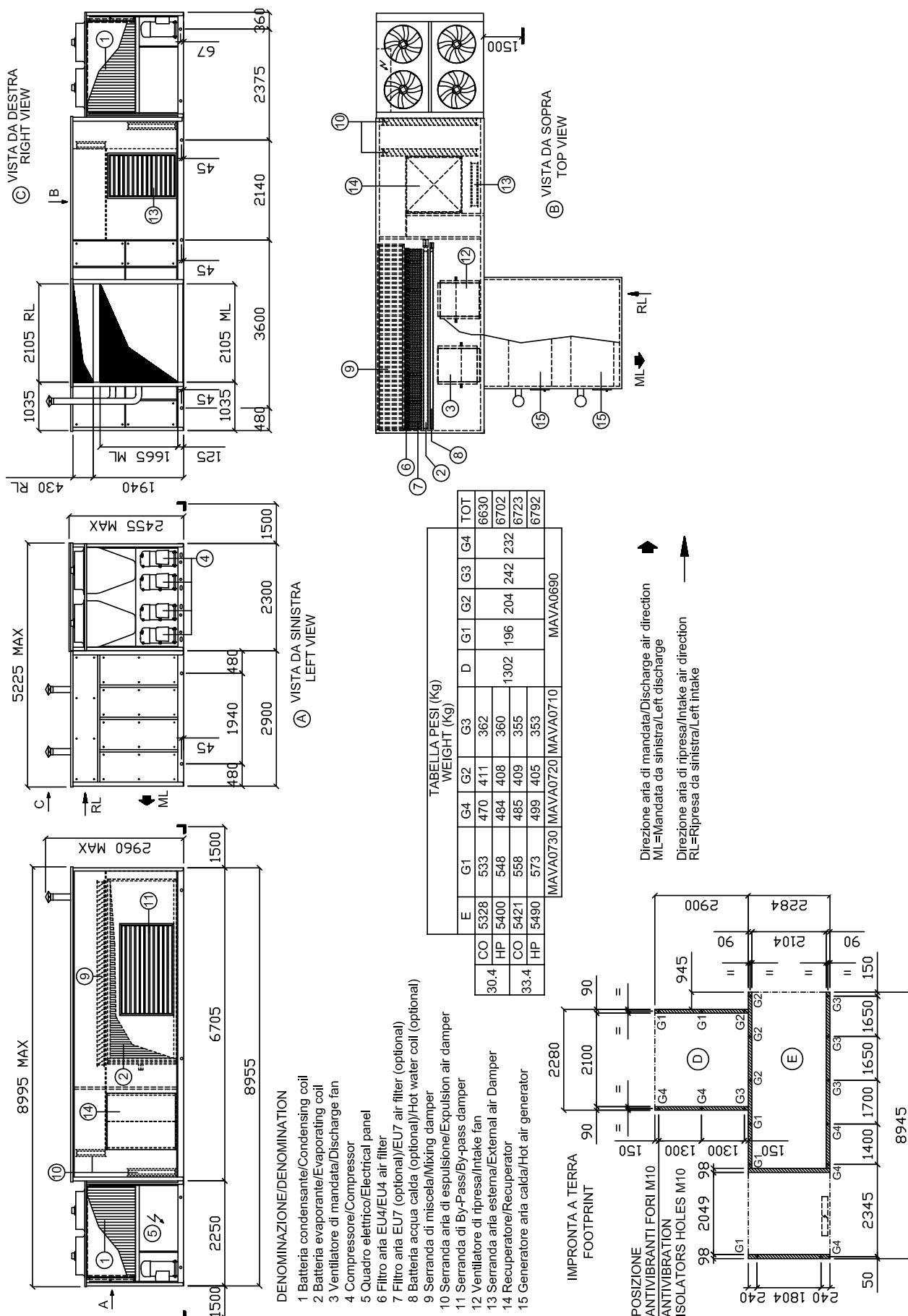
C413519-A



DIMENSIONAL DIAGRAMS

LAMBDA ECHOS LARGE 30.4 - 33.4 GS4S

C413520-A





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