PRODUCT GUIDE

Air conditioning

pure energy

**Conditioning your ambient,
maximising your comfort.**

MTA®

Cooling, conditioning, purifying.

Cooling, conditioning, purifying.

ENERGY FOR

An Air Conditioning system is a challenge and an opportunity. Increasing energy efficiency and decreasing environmental impact; providing comfort to human beings and improving their well-being, every day without interruption; providing a solution which is flexible to the needs of each individual application. At MTA we are dedicated to offering our Customers all this, and more ...

A company built on solid foundations

Founded over 30 years ago with the aim of providing innovative energy solutions, today MTA covers a role of Global leader within the fields of the conditioning of commercial, public or residential ambients, industrial process cooling and compressed air & gas purification. MTA's energy solutions offer unique answers to individual Customer needs. MTA's mission is to maximize Customer satisfaction by means of expert support, implementing optimized solutions with a minimal environmental impact.

Expert consultancy and service

MTA's energy lies within its people, with a dedicated team of experts focused to a single aim, that of satisfying and exceeding the needs and requests of its Customers. Continuous Business Process updates, coupled with advanced operating procedures, ensure MTA remains at the forefront of corporate development. MTA's worldwide network of expert personnel receive continuous and extensive training, to ensure that everybody representing MTA assumes the role of expert consultant towards its Customers.

The power of a global team

MTA boasts 3 production facilities, Sales Companies covering 4 continents and a network of Partners in over 80 countries worldwide. The expert international service network, is backed up by a comprehensive worldwide spare parts coverage. MTA products, designed for operation worldwide, comply to local legislations. Advanced supervision technology, including web browser and GSM/GPRS connectivity, ensures peace of mind wherever you may be.

THE MTA GLOBAL TEAM

MTA Australasia PTY.Ltd

MTA Deutschland GmbH

NOVAIR-MTA, S.A. - E

MTA France S.A.

M.T.A. S.P.A. - ITA

MTA UK Limited

MTA ROMANIA Srl

MTA USA, LLC

MTA is represented in over 80 countries worldwide, offering knowledgeable consultancy and service support

8 MTA Group Sales Companies cover 4 continents. Wherever you may be, MTA is always close at hand.

THE FUTURE

pure energy

A partner you can trust

MTA's success has been built upon its reputation within the marketplace, with endless renowned companies worldwide placing their trust in MTA to supply them with the optimum solution to their needs. MTA's flexibility towards special Customer solutions ensures each and every need can be satisfied. Continuous communication and cooperation with its Partners and Customers ensures MTA creates a team spirit with an aim towards excellence and long-term collaboration.

Pioneering innovation

MTA's future is founded upon the principals of innovation and excellence. Unique Customer solutions are born from a notable and continuous investment in R&D. Numerous patented products and state-of-the-art testing facilities ensure MTA products are not only highly advanced, but also extremely reliable. MTA's production facilities offer flexible manufacturing processes with extensive individual testing of each and every product leaving the factory. MTA is ISO9001:2000 certified.

Environmental commitment

MTA's very first product, a patented refrigeration dryer offering a new dimension in energy savings, set the path which has been followed ever since. Today MTA boasts novel products ensuring a minimal environmental impact and offers expert consultancy concerning energy savings within Customer applications. MTA's facilities and processes meet the requirements of ISO 14000 environmental legislations. MTA strives to ensure its success also benefits the ambient in which it operates.

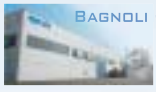
Application driven Customer solutions

MTA's success is based upon understanding Customer applications. At MTA the aim is not to merely supply products, rather to fully maximize Customer potential. Whether it be office buildings, hotels, hospitals, shopping centres, cultural institutions, leisure facilities, telecommunications, public buildings or residential applications, MTA has the answers to each specific air conditioning need. Add to that MTA's extensive knowledge of industrial air conditioning and process cooling, within a vast array of individual applications.

MANUFACTURING

Tribano - Italy

Conselve - Italy



Bagnoli - Italy

MTA's facilities offer advanced manufacturing technology and attentive quality control for each individual unit.

Certifications

ISO 9001 BUREAU VERITAS Certification
Nº 220817

MTA is ISO9001 certified, a sign of its commitment to complete customer satisfaction.

CE

MTA products comply with European safety directives, as recognised by the CE symbol.

EUROVENT CERTIFIED PERFORMANCE
www.eurovent-certification.com

MTA partecipates in the E.C.C. programme for LCP-HP. Certified products are listed on: www.eurovent-certification.com

MTA's quality is reflected in numerous certifications, of which the above are merely a small sample.

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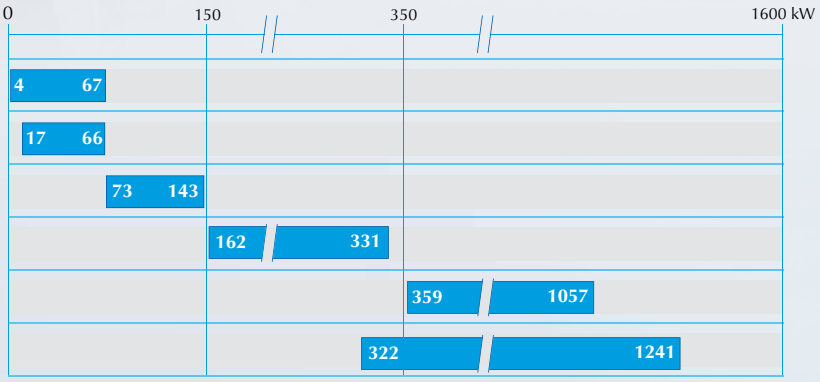
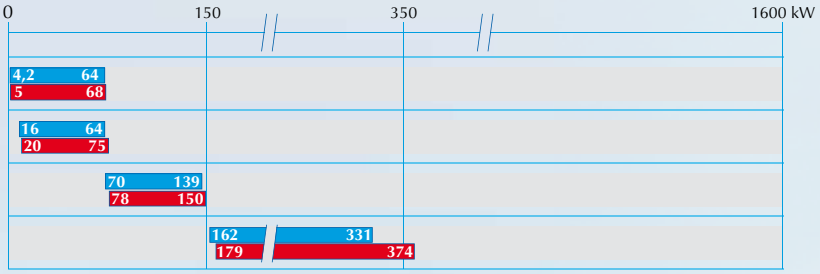
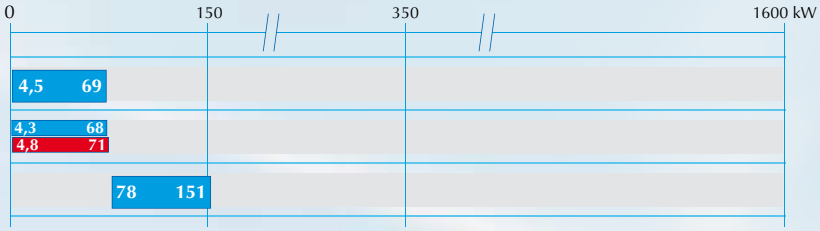


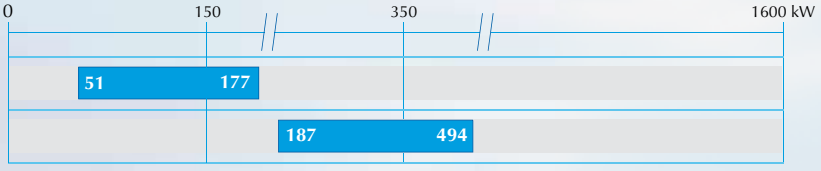
Air/water heat pumps



Condensing units



Air-cooled water chillers with integrated Freecooling



Add-on Freecooling modules

Legend

Mode
- ❄ cooling
- ❄/🔥 cooling/heating

Fans
- axial
- centrifugal

Compressors
- rotary
- screw
- scroll
- centrifugal

Heat exchanger
- plate
- immersed finned coil
- shell and tube
- finned coil

Cooling, conditioning, purifying.

Multifunction units

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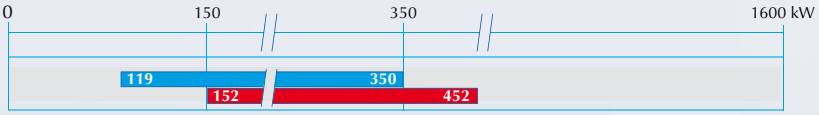

Water-cooled water chillers

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NEPTUNE *tech*	pag. 24 - 25	❄	◎	R410A	-	▥
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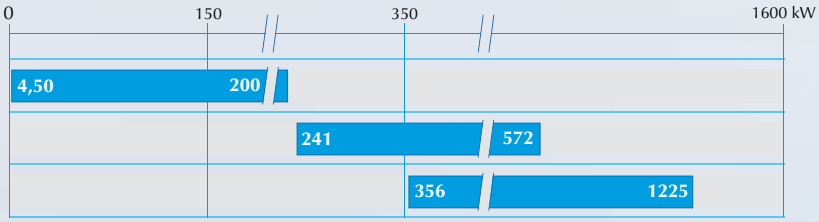

Water/water heat pumps

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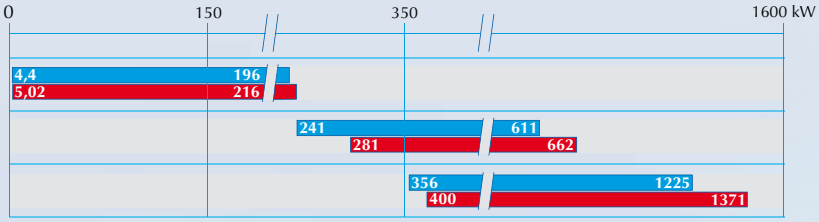

Condenserless units

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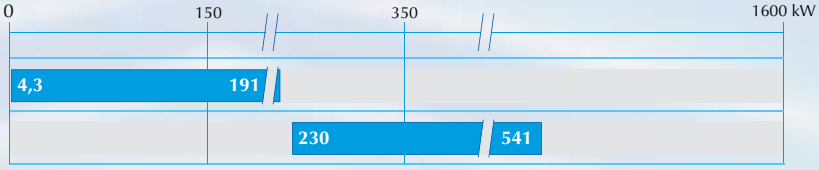

Hydraulic air treatment terminal units

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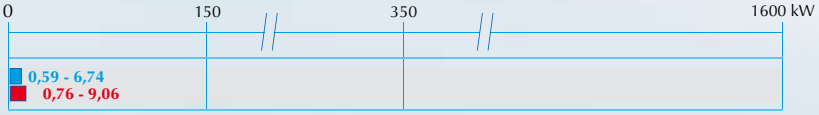

Quick guide

CYGNUS TECH R410A

AIR-COOLED WATER CHILLERS, HEAT PUMPS, CONDENSING UNITS AND REVERSIBLE CONDENSING UNITS FEATURING ROTARY OR HERMETIC SCROLL COMPRESSORS. COOLING CAPACITY 4 - 67 kW, HEATING CAPACITY 5 - 68 kW.

pure energy

BENEFITS

- Extremely low noise levels;
- High EER/COP values and seasonal performance indices;
- Ideally suited to commercial and domestic chilled water air-conditioning applications;
- Extended operating limits;
- Optimisation of heat pump defrosting cycles thanks to the exclusive Frost Detecting System (FDS) (Minimum ambient temperature in heat pump mode = -10 °C);
- Self-adaptive temperature control (SAC) for efficient operation with installations having low water contents;
- Designed for installation in confined spaces;
- Easy to use thanks to a controller with icon-based dual display;
- Easy installation and simple access to all chiller components.

MAIN OPTIONS

- Configuration without storage tank;
- High/low head pressure pump;
- Double pump with one in stand-by (depending on model);
- Condensate collection tray with hose connection (models 013-071);
- Anti-freeze heaters on evaporator, pump and tank;
- Remote user interface;
- RS485 ModBus interface for connection to supervisor systems;
- xWEB300D for local or remote (GSM/GPRS) monitoring plus data filing based on WEB server technology;
- Antivibration mountings;
- Condenser filters;
- Soft starter;
- Thermostat (condensing and reversible condensing unit).

STANDARD FEATURES

- Hermetic Rotary compressors (013-020) Scroll compressors (031- 171) tandem Scroll compressors (211-301);
- Integral hydronic kit complete with pump, tank, expansion vessel, filling/drain valve, pressure gauge, and automatic bleed valve;
- Hydraulic threaded connections directly accessible from the exterior of the unit;
- Brazed stainless steel plate evaporator;
- Axial fans with sickle shaped blades and electronic speed control;
- Heat pumps with 2nd thermostatic valve for performance optimisation in all operating conditions (models 131 to 301);
- Factory charged with refrigerant and non-freezing oil (MC versions excluded);
- Protection grade IPX4;
- Inspections and tests performed in factory as per all MTA products and components;
- Environmentally friendly refrigerant R410A with zero ozone depletion potential;
- Phase monitor against phase reversal;
- Compressor crankcase heater.

VERSIONS

- Chiller (CY);
- Heat pump (HCY);
- Condensing unit (MCCY);
- Reversible condensing unit (MCHCY).

	Model CY - HCY - MCCY - MCHCY		013	015	020	031	051	071	081	101	131	171	211	251	301
CY	Cooling capacity	kW	4,29	5,29	7,14	10,1	14,5	18,7	22,5	29,7	38,7	44,2	52,0	59,9	66,6
	Absorbed power	kW	1,27	1,67	2,26	2,99	4,53	6,13	6,62	8,89	11,4	12,6	15,7	17,4	20,7
	ESEER	-	2,98	2,86	2,94	3,31	3,34	3,22	3,55	3,58	3,55	3,72	4,25	4,43	4,42
	Max external air temperature	°C	49	47	46	47	46	46	47	46	46	47	46	46	45
HCY	Cooling capacity	kW	4,19	5,15	6,99	9,71	14,0	17,7	21,9	28,9	37,0	42,9	50,4	58,0	64,2
	Heating capacity	kW	4,56	5,57	7,25	10,5	15,3	18,9	22,8	29,7	39,0	43,9	52,9	59,7	68,0
	Absorbed power (in heating)	kW	1,24	1,54	2,05	2,88	4,30	5,53	6,14	8,08	10,4	11,7	14,2	16,3	18,8
	Min. external air temperature	°C	-8	-8	-7	-8	-8	-7	-9	-7	-8	-8	-8	-8	-7
MCCY	Cooling capacity	kW	4,47	5,46	7,37	10,5	15,1	19,4	23,2	30,5	39,8	45,5	53,5	61,9	68,8
	Absorbed power	kW	1,28	1,68	2,28	3,02	4,57	6,19	6,68	8,97	11,5	12,7	15,8	17,6	21,0
	Max external air temperature	°C	47	46	45	47	46	45	46	45	45	46	45	45	44
MCHCY	Cooling capacity	kW	4,34	5,29	7,20	10,0	14,5	18,4	22,8	29,9	38,4	44,7	52,6	60,8	67,6
	Heating capacity	kW	4,76	5,86	7,47	10,8	16,1	19,4	23,7	31,0	40,7	46,1	54,8	62,1	70,6
	Absorbed power (in heating)	kW	1,05	1,33	1,78	2,37	3,49	4,50	4,95	6,51	8,33	9,36	11,4	13,1	14,8
	Min. external air temperature	°C	-7	-6	-6	-7	-6	-6	-7	-6	-6	-7	-6	-6	-5

Power supply	V/Ph/Hz	230±10%/1/50			400±10%/3/50									
Circuits / Compressors	N°	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/2	1/2	1/2
Sound pressure level	dB(A)	35,6	37,7	38,9	40,7	41,9	42,9	41,5	44,5	46,8	48,2	48,6	49,4	49,0
Depth	mm	380	380	380	550	550	550	810	810	1112	1112	1112	1112	1112
Width	mm	978	978	978	1420	1420	1420	1960	1960	2060	2060	2470	2470	2470
Height	mm	985	985	985	1288	1288	1288	1203	1203	1417	1417	1595	1595	1595
Installed weight	Kg	98	101	111	151	182	184	344	361	470	505	613	638	654

All data refers to standard units at the following nominal conditions:

Chiller: evaporator water inlet-outlet 12-7 °C, external air temperature 35 °C;
Heat pump: condenser water inlet-outlet 40-45 °C, external air temperature 7 °C dry bulb, 6 °C wet bulb;
Condensing unit: Evaporating temperature 5 °C, external air temperature 35 °C;
Reversible condensing unit: condensing temperature 40 °C, ambient air temperature 7 °C 6 °C wet bulb.

Sound pressure level in hemispherical field at 10 m from condenser side and 1.6 m from ground. Values with tollerance ± 2 dB.
The sound levels refer to operation of the unit under full load in nominal conditions and with circulation pump.

The listed noise levels, weights and dimensions refer to base chillers with no options fitted.

EUROVENT CERTIFIED PERFORMANCE www.eurovent-certification.com

MTA partecipates in the E.C.C. programme for LCP-HP. Certified products are listed on www.eurovent-certification.com. Eurovent Certification applied to the units:
- Air/Water with cooling capacity up to 600 kW
- Water/Water up to 1500 kW (N.A. on MC)

Microprocessor controller with dual icon-based display.

Higher energy efficiency and quieter operation thanks to the use of scroll compressors.

Built-in pumping module with or without storage tank.

ORION R407C

AIR-COOLED WATER CHILLERS AND HEAT PUMPS WITH CENTRIFUGAL FANS, FEATURING HERMETIC SCROLL COMPRESSORS.
COOLING CAPACITY 17 – 66 kW, HEATING CAPACITY 20 – 75 kW.

pure energy

BENEFITS

- High installation flexibility: direction of condensing air expulsion easily changed, even in site;
- Ideal for small hydronic air conditioning systems;
- Complete with storage tank and pump to facilitate installation and start-up operations;
- Designed for installation in confined spaces;
- High EER and COP values;
- Extended operating limits;
- Optimisation of heat pump defrosting cycles (HON) thanks to the exclusive Frost Detecting System;
- Self-adaptive temperature control logic SAC;
- Extremely quiet even without the use of sound-insulating devices;
- Easy to use thanks to an intuitive controller with dual icon-based display;
- Practical routine maintenance with easily accessible internal parts.

MAIN OPTIONS

- Layout without storage tank;
- High/low head pressure pump;
- Modified fan orientation;
- Inverter driven electronic fan speed regulation;
- Remote user interface;
- RS485 ModBus interface for connection to supervisor systems;
- xWEB300D for local or remote (GSM/GPRS) monitoring plus data filing based on WEB server technology;
- Antivibration dampers;
- Filters to protect the condenser coils;
- Condenser coils designed for aggressive atmospheres;
- Compressor housings;
- Antifreeze heaters on evaporator, pump and tank;
- Differing fan pulleys.

STANDARD FEATURES

- Hermetic scroll compressors (tandem dual compressor from model 211);
- Integral hydronic kit complete with centrifugal pump, tank, expansion vessel, relief valve, filling/drain valve, pressure gauge, and manual bleed valve;
- Hydraulic threaded connections directly accessible from the exterior of the unit;
- Brazed stainless steel plate evaporator;
- Centrifugal fans with fanwheel having forward-curved blades, double suction and belt-drive transmission with variable pitch pulley;
- Microprocessor controller with dual icon-based display;
- Panelling with internal condensate proof insulation;
- Condensate tray with threaded drain connection;
- Refrigerant charge, non-freezing oil, and factory testing;
- IP54 electric protection rating;
- Inspections and tests performed in factory as per all MTA products and components;
- Environmentally friendly refrigerant R407C with zero ozone depletion potential;
- Phase monitor against phase reversal;
- Compressor crankcase heater.

VERSIONS

- Chiller (ON);
- Heat pump (HON).

	Model ON - HON		071	081	101	131	171	211	251	301
ON	Cooling capacity	kW	17,1	21,1	28,8	37,3	43,6	50,1	57,1	66,6
	Absorbed power	kW	5,91	6,61	9,15	11,9	13,4	15,9	17,7	21,0
	Available static pressure	Pa	110	117	131	130	153	181	202	205
	ESEER	-	2,69	2,97	2,94	2,90	2,99	3,13	2,95	2,78
	Max external air temperature	°C	46	47	47	46	48	47	46	47
HON	Cooling capacity	kW	16,1	20,7	28,1	36,3	41,6	48,4	54,8	63,2
	Absorbed power	kW	5,76	6,54	9,02	11,8	13,3	15,8	17,7	21,0
	Available static pressure	Pa	128	144	151	161	153	181	225	232
	ESEER	-	2,58	2,93	2,89	2,84	2,88	3,00	2,82	2,63
	Max external air temperature	°C	47	45	47	46	46	46	47	46
	Heating capacity	kW	19,8	23,5	31,2	42,1	49,2	57,1	63,7	74,7
	Absorbed power	kW	6,12	6,81	9,46	12,0	14,3	16,5	19,0	21,9
	Min. external air temperature	°C	-8	-6	-7	-8	-8	-8	-7	-6
	Power supply	V/Ph/Hz	400±10%/3/50							
	Circuits / Compressors	N°	1/1	1/1	1/1	1/1	1/1	1/2	1/2	1/2
	Sound pressure level	dB(A)	52,9	54,0	54,2	55,8	56,2	55,9	57,3	58,8
	Depth	mm	930	930	930	930	1081	1081	1081	1081
	Width	mm	1265	1265	1915	1915	2110	2110	2507	2507
	Height	mm	1444	1444	1444	1444	1900	1900	1900	1900
	Installed weight	Kg	225	258	350	377	672	731	877	907

All data refers to standard units at the following nominal conditions:

Chiller: evaporator water inlet-outlet 12-7 °C, external air temperature 35 °C;
Heat pump: condenser water inlet-outlet 40-45 °C, external air temperature 7 °C dry bulb, 6 °C wet bulb.

Sound pressure level in hemispherical field at 10 m from condenser side and 1.6 m from ground with ducted air outlet. Values with tollerance ± 2 dB. The sound levels refer to operation of the unit under full load in nominal conditions and with circulation pump.

The listed noise levels, weights and dimensions refer to base chillers with no options fitted.

EUROVENT CERTIFIED PERFORMANCE www.eurovent-certification.com

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- Air/Water with cooling capacity up to 600 kW
- Water/Water up to 1500 kW

Microprocessor controller with dual icon-based display.

Higher energy efficiency and quieter operation thanks to the use of scroll compressors.

Built-in pumping module with or without tank.

TAURUS TECH R410A

AIR-COOLED WATER CHILLERS, HEAT PUMPS AND CONDENSING UNITS FEATURING HERMETIC SCROLL COMPRESSORS.
COOLING CAPACITY 73 - 143 kW, HEATING CAPACITY 78 - 150 kW.

pure energy

BENEFITS

- Reduced noise levels, thanks also to the availability of three differing acoustic versions;
- High EER/COP levels, especially at partial loads;
- Optimisation of performance also in heat pump mode thanks to hot gas injection and the innovative FDS defrosting system (min. ambient temperature -10 °C in heat pump mode);
- SAC self-adapting temperature control for efficient operation in installations with low water contents (dual-compressor models);
- Start-up and operation in even the most adverse conditions;
- Easy installation and simple access to all chiller components;
- Easy to use, thanks to an intuitive controller with dual icon-based display.

MAIN OPTIONS

- 1 or 2 pumps and water pressure gauge;
- Storage tank;
- Compressor shut-off valves on suction and discharge lines;
- Electronic fan speed control;
- Condenser coils designed for aggressive atmospheres;
- Antivibration dampers;
- Anti-freeze heaters on evaporator, pump and tank;
- Metal mesh protective filters or grilles for condensing coils;
- Remote user interface;
- RS485 ModBus interface for connection to supervisor systems;
- xWEB300D for local or remote (GSM/GPRS) monitoring plus data filing based on WEB server technology;
- Electric power supplies differing from standard;
- Soft starter.

STANDARD FEATURES

- 2 or 4 scroll compressors positioned in parallel in one or two circuits;
- Single welded-brazed stainless steel plate evaporator "dual-circuit";
- Heat pumps equipped with 2nd thermostatic valve, for performance optimisation in all operating conditions;
- Condensate tray with hose connection;
- Axial fans with progressive activation for optimised condensing pressure control;
- Solenoid valve on the liquid line of each refrigeration circuit;
- Factory charged with refrigerant and non-freezing oil (MC versions excluded);
- IP54 electric protection rating;
- Inspections and tests performed in factory as per all MTA products and components;
- Environmentally friendly refrigerant R410A with zero ozone depletion potential;
- Phase monitor against phase reversal;
- Compressor crankcase heater.

VERSIONS

- Chiller (TAT);
- Heat pump (HTAT);
- Condensing unit (MCTAT);
- Acoustic configurations:
  - N (standard);
  - SN (low noise);
  - SSN (super-silent).
- Low ambient air temperature in cooling mode (down to -20 °C);
- Version with recovery desuperheaters;
- Version with total recovery condenser.

	Model TAT - HTAT - MCTAT		030	035	040	050	055	060
TAT	Cooling capacity	kW	73,0	82,7	100	115	129	143
	Absorbed power	kW	22,5	23,5	30,4	34,7	38,7	42,6
	ESEER	-	3,72	3,89	4,14	3,6	3,73	3,93
	Max external air temperature	°C	47	47	46	46	47	46
HTAT	Cooling capacity	kW	70,0	78,5	95,9	111	125	139
	Heating capacity	kW	77,6	85,0	109	120	136	150
	Absorbed power (in heating)	kW	22,5	24,2	30,5	35,4	41,1	44,7
	Min. external air temperature	°C	-8	-9	-8	-8	-8	-8
MCTAT	Cooling capacity	kW	78,3	86,0	104	121	137	151
	Absorbed power	kW	23,0	23,8	30,7	35,3	39,3	43,2
	Max external air temperature	°C	46	47	45	46	47	46

Power supply	V/Ph/Hz	400±10%/3/50					
Circuits / Compressors	N°	1/2	1/2	1/2	2/4	2/4	2/4
Sound pressure level (N)	dB(A)	59,9	63,0	59,3	61,0	60,5	60,5
Sound pressure level (SN)	dB(A)	54,3	57,2	53,5	55,2	54,5	54,5
Sound pressure level (SSN)	dB(A)	51,1	53,0	50,0	52,3	51,5	51,5
Depth	mm	2507	2507	2507	3407	3407	3407
Width	mm	1110	1110	1110	1110	1110	1110
Height	mm	2120	2120	2120	2120	2120	2120
Installed weight	Kg	995	1028	1177	1524	1573	1598

All data refers to standard units at the following nominal conditions:

Chiller: evaporator water inlet-outlet 12-7 °C, external air temperature 35 °C.
Heat pump: condenser water inlet-outlet 40-45 °C, external air temperature 7 °C dry bulb, 6 °C wet bulb.
Condensing unit: Evaporating temperature 5 °C, external air temperature 35 °C.

Sound pressure level in hemispherical field at 10 m from condenser side and 1.6 m from ground. Values with tollerance ± 2 dB.
The sound levels refer to operation of the unit under full load in nominal conditions and with circulation pump.

The listed noise levels, weights and dimensions refer to base chillers with no options fitted.

EUROVENT CERTIFIED PERFORMANCE www.eurovent-certification.com

MTA partecipates in the E.C.C. programme for LCP-HP. Certified products are listed on www.eurovent-certification.com. Eurovent Certification applied to the units:
- Air/Water with cooling capacity up to 600 kW
- Water/Water up to 1500 kW (N.A. on MC)

Microprocessor with double display and icon control.

Pump section with or without storage tank.

Simplified installation and easy access to all internal components.

ARIES TECH R410A

AIR-COOLED WATER CHILLERS, HEAT PUMPS AND MULTIFUNCTION UNITS FEATURING HERMETIC SCROLL COMPRESSORS.
COOLING CAPACITY 162 - 331 kW, HEATING CAPACITY 179 - 374 kW.

pure energy

BENEFITS

- Reduced noise levels, thanks also to the availability of three differing acoustic versions;
- High EER/COP levels, especially at partial loads;
- Optimisation of performance also in heat pump mode thanks to hot gas injection and the innovative EcoDefrost defrosting system (min. ambient temperature -10 °C in heat pump mode);
- Allows start-up and operation in even the most severe conditions thanks to the unloading function;
- Simplified installation and easy access to all components;
- User friendly controller with multifunctional buttons and dynamic display icons.

MAIN OPTIONS

- Shell and tube evaporator (AST only);
- 1 or 2 high/low head pressure pumps and water pressure gauge;
- Storage tank;
- Electronic thermostatic valve (AST only);
- Compressor shut-off valves on suction and discharge lines;
- Electronic fan speed control;
- Condenser coils designed for aggressive atmospheres;
- Antivibration dampers;
- Anti-freeze heaters on evaporator, pump and tank;
- Metal mesh filters for condenser coil protection;
- Replicated remote user terminal;
- Serial connection to supervisor systems;
- MTA xWEB supervision based on internal web pages;
- Electric power supplies differing from standard;
- Power factor correction capacitors;
- Modularity/web interconnection hub;
- Soft starter;
- Victaulic connections;
- Anti Legionella device (HAST/MF);
- Simple remote control.

STANDARD FEATURES

- 4 scroll compressors in parallel within two independent circuits;
- Single brazed "dual-circuit" stainless steel plate evaporator;
- Heat pumps equipped with 2nd thermostatic valve for optimised performance in all operating conditions);
- Axial fans with progressive activation for optimised condensing pressure control, installed in two independent aeraulic sections;
- RS485 ModBus interface for connection to supervisor systems;
- Ethernet connection featuring pre-programmed HTML supervision pages, allowing local or internet based visualization and modification of the operating parameters;
- Factory tested and supplied with refrigerant charge and antifreeze oil;
- IP54 electric protection rating;
- Environmentally friendly refrigerant R410A with zero ozone depletion potential;
- Phase monitor against phase reversal;
- Compressor crankcase heater.

VERSIONS

- Chiller (AST);
- Heat pump (HAST);
- Multifunction unit (simultaneous heating and cooling) (HAST/MF);
- Low ambient air temperature version (down to -20 °C in cooling mode) (AST only);
- High external air temperature / high efficiency (H version);
- Version with desuperheaters (AST and HAST only);
- Versions with total heat recovery (standard on HAST/MF);
- Configuration with integrated Free-cooling, featuring unique aeraulic separation between chiller and Free-cooling sections;
- Acoustic configurations:
  - N (standard);
  - SN (low noise);
  - SSN (very low noise).

	Model AST - HAST - HAST/MF		050	060	070	080	090	100	110	120	130	140
AST	Cooling capacity	kW	-	-	162	196	213	225	250	272	312	331
	Absorbed power	kW	-	-	58,1	66	70	76,9	90,4	105	107	118
	ESEER (N)	-	-	-	3,84	4,15	4,29	4,32	4,12	4,15	4,07	4,10
	ESEER (H)	-	-	-	4,07	4,27	4,28	4,44	4,01	4,05	4,19	4,22
	Max external air temperature vers. N	°C	-	-	45	46	46	46	45	44	46	45
	Max external air temperature vers. H	°C	-	-	49	49	48	48	49	48	48	48
HAST	Cooling capacity	kW	-	-	165	195	206	218	249	284	306	332
	Heating capacity	kW	-	-	179	214	230	243	276	317	339	374
	Absorbed power (in heating)	kW	-	-	51,9	61,4	65,9	70,4	80,2	88,5	95,5	103
	Min external air temperature	°C	-	-	-7	-7	-6	-6	-6	-8	-7	-8
HAST/MF (1)	Cooling capacity	kW	119	144	169	201	219	232	264	297	323	350
	Heating capacity	kW	152	191	220	260	281	300	342	385	418	452
	Absorbed power	kW	33	41	50	59	62	68	78	88	95	102
	EER (2)	-	3,56	3,50	3,38	3,41	3,53	3,41	3,38	3,38	3,40	3,43
	COP (2)	-	4,56	4,64	4,40	4,41	4,53	4,41	4,38	4,38	4,40	4,43
	Max external air temperature vers. N	°C	48	48	48	48	46	46	46	47	47	46
	Min external air temperature vers. N	°C	-7	-7	-7	-7	-6	-6	-6	-8	-7	-8

Power supply	V/Ph/Hz	400±10%/3/50									
Circuits / Compressors	N°	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/4
Sound pressure level (N)	dB(A)	65,6	65,6	65,6	64,6	64,6	64,6	64,6	64,6	65,3	65,3
Sound pressure level (SN)	dB(A)	59,2	59,2	59,2	58,0	58,0	58,0	58,0	58,0	58,2	58,2
Sound pressure level (SSN)	dB(A)	50,9	50,9	50,9	50,9	49,7	49,7	50,7	50,7	51,1	51,1
Sound pressure level (H)	dB(A)	-	-	64,6	64,6	63,7	63,7	65,3	65,3	64,3	64,3
Depth	mm	3418	3418	3418	3418	3418	3418	4518	4518	4518	4518
Width	mm	2188	2188	2188	2188	2188	2188	2188	2188	2188	2188
Height	mm	1989	1989	1989	1989	1989	1989	1989	1989	1989	1989
Installed weight	Kg	1850	1875	1761	1934	1998	2062	2288	2310	2498	2591

All data refers to standard units at the following nominal conditions:

Chiller / Multifunction unit in cooling: evaporator water inlet-outlet 12-7 °C, external air temperature 35 °C;
Heat pump / Multifunction unit in heating: condenser water inlet-outlet 40-45 °C, external air temperature 7 °C dry bulb, 6 °C wet bulb.

(1) Simultaneous function 100% cooling, 100% heating.
(2) Compressors only.
Sound pressure level in hemispherical field at 10 m from condenser side and 1.6 m from ground. Values with tollerance ± 2 dB.
The sound levels refer to operation of the unit under full load in nominal conditions and with circulation pump.

The listed noise levels, weights and dimensions refer to base chillers with no options fitted.

MTA partecipates in the E.C.C. programme for LCP-HP. Certified products are listed on www.eurovent-certification.com. Eurovent Certification applied to the units:
- Air/Water with cooling capacity up to 600 kW
- Water/Water up to 1500 kW

Semigraphic user interface with multifunctional buttons and dynamic display icons.

Also available with shell and tube evaporator.

Pump section with or without storage tank.

GALAXY TECH R410A

AIR-COOLED WATER CHILLERS FEATURING TANDEM/TRIPLE SCROLL COMPRESSORS.
COOLING CAPACITY 359 - 1057 kW.

pure energy

BENEFITS

- Reduced noise levels, thanks also to the availability of three differing acoustic versions;
- High EER/COP levels, especially at partial loads;
- Ideal for large hydronic air conditioning installations in public and private surroundings;
- Allows start-up and operation in even the most severe conditions;
- Easy installation with direct access to the water connections and the applications of victaulic connections;
- Simple to install and maintain, easily accessible components;
- User friendly controller with multifunctional buttons and dynamic display icons.

MAIN OPTIONS

- 1 or 2 pumps and water pressure gauge;
- Storage tank;
- Condenser coils designed for aggressive atmospheres;
- Metal mesh filters for condenser coil protection;
- Electronic fan speed control;
- Compressor suction and discharge valves;
- Electronic thermostatic expansion valve;
- Antifreeze heater on evaporator, pumps and tank;
- Antivibration dampers;
- Serial connection to supervisor systems;
- MTA xCONNECT supervision based on internal web pages;
- Modularity / web interconnection hub;
- Replicated remote user terminal;
- Soft starter;
- Compressor housings;
- Victaulic connections;
- Simple remote control;
- Special applications with partial or total heat recovery exchangers;
- Special applications for water temperatures down to -10 °C;
- Shell and tube evaporator.

STANDARD FEATURES

- Multiple scroll compressors (4, 6, 9 or 12 depending on the model) connected in parallel (tandem or trio) on 2, 3 or 4 independent refrigeration circuits;
- Stainless steel brazed plate dual-circuit evaporators "dual-circuit";
- Shut-off valve and solenoid valve on the liquid line in each refrigeration circuit;
- xDRIVE features the ModBUS-RTU communication protocol as standard, allowing connection with the most widely utilised Building Management Systems (BMS). It also features an Ethernet port as standard, with HTML supervision pages preloaded for connection to a company intranet or the Internet. The xDRIVE can manage in master/slave mode up to 10 units;
- Phase monitor against phase loss and phase reversal and checks the operating voltage limits;
- Axial fans with progressive starting for condensing pressure control;
- High and low pressure transducer;
- Water differential pressure switch, air bleed valve and water drain valve;
- Water collectors for twin evaporator models;
- Factory tested and supplied with refrigerant charge and antifreeze oil;
- Environmentally friendly refrigerant R410A with zero ozone depletion potential;
- All the compressors are equipped with crankcase heaters as standard.

VERSIONS

- Chiller;
- Low ambient temperature in cooling mode (down to -20 °C);
- Acoustic & high efficiency configurations:
  - N (standard);
  - SN (low noise);
  - SSN (very low noise);
  - HE (high efficiency);
  - SHE (low noise high efficiency).

Model GLT		120	135	150	165	180	195	210	225	240	255	270	285	300	315	330	345	360
Cooling capacity	kW	359	402	447	488	529	584	629	676	717	758	799	850	894	935	976	1017	1057
Absorbed power	kW	109	125	141	153	164	180	196	212	224	235	247	266	283	294	305	317	328
ESEER (N)	-	4,33	4,23	4,26	4,40	4,47	4,29	4,32	4,34	4,44	4,49	4,55	4,32	4,33	4,40	4,47	4,51	4,54
ESEER (HE)	-	4,72	4,51	4,51	4,51	4,52	4,58	4,57	4,57	4,67	4,56	4,57	4,57	4,56	4,55	4,55	4,64	4,51
ESEER (SHE)	-	4,99	4,77	4,74	4,85	4,88	4,88	4,84	4,81	4,96	4,90	4,94	4,88	4,84	4,89	4,92	5,03	4,83
Max ext. air temperature N	°C	46	46	46	46	46	46	46	45	45	46	46	46	46	46	46	46	46
Max ext. air temperature HE	°C	51	48	48	48	51	48	48	48	48	48	51	48	48	48	48	48	46
Power supply	V/Ph/Hz	400±10%/3/50																
Circuits / Compressors	N°	2/4	2/6	2/6	2/6	2/6	3/9	3/9	3/9	3/9	3/9	3/9	4/12	4/12	4/12	4/12	4/12	4/12
Sound pressure level (N)	dB(A)	66,6	66,5	66,3	66,4	66,6	67,6	67,5	67,4	67,5	67,7	67,9	68,7	68,6	68,7	68,8	68,9	69,0
Sound pressure level (SN)	dB(A)	59,2	59,1	58,9	59,0	59,1	60,1	60,0	60,1	60,0	60,1	60,3	61,2	61,1	61,2	61,3	61,3	61,4
Sound pressure level (SSN)	dB(A)	52,9	53,0	53,1	53,9	54,1	54,7	54,6	54,8	55,4	55,9	56,4	56,0	56,1	56,5	56,9	57,2	57,5
Sound pressure level (HE)	dB(A)	65,6	65,8	65,8	66,6	67,3	67,5	67,6	67,6	68,1	68,6	69,1	68,8	68,8	69,3	69,6	70,0	70,2
Sound pressure level (SHE)	dB(A)	58,2	58,5	58,6	60,0	60,2	60,3	60,3	60,8	61,3	61,7	61,5	61,6	62,0	62,3	62,7	62,7	62,8
Depth	mm	4530	4530	4530	4530	4530	6510	6510	6510	6510	6510	6510	8490	8490	8490	8490	8490	8490
Width	mm	2190	2190	2190	2190	2190	2190	2190	2190	2190	2190	2190	2190	2190	2190	2190	2190	2190
Height	mm	2360	2360	2360	2360	2360	2360	2360	2360	2360	2360	2360	2360	2360	2360	2360	2360	2360
Installed weight	Kg	3106	3407	3505	3711	3908	5040	5138	5240	5449	5651	5840	6787	6884	7091	7287	7495	7691

All data refers to standard units at the following nominal conditions:

Chiller: evaporator water inlet-outlet 12-7 °C, external air temperature 35 °C.

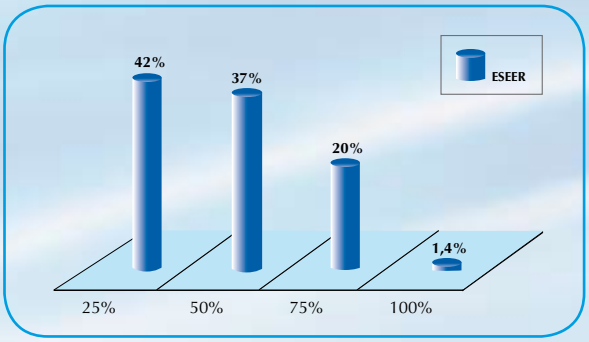
Sound pressure level in hemispherical field at 10 m from condenser side and 1.6 m from ground. Values with tollerance ± 2 dB. The sound levels refer to operation of the unit under full load in nominal conditions and with circulation pump.

The listed weights and dimensions refer to base chillers with no options fitted (NB: dimensions for lower noise and/or higher efficiency versions may differ).

MTA partecipates in the E.C.C. programme for LCP-HP. Certified products are listed on www.eurovent-certification.com. Eurovent Certification applied to the units:
- Air/Water with cooling capacity up to 600 kW
- Water/Water up to 1500 kW

PARTIAL LOADS

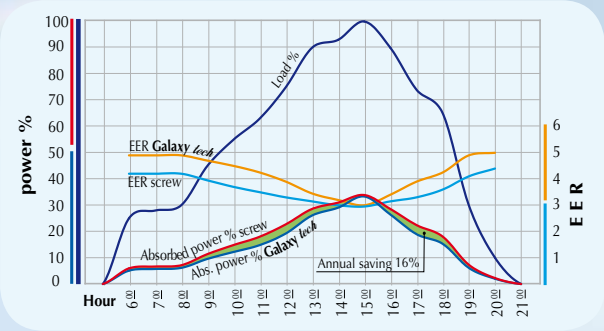
ESEER operating time percentages



The standardised ESEER indice establish the average weighted efficiency of a chiller and provide insight – in a more accurate manner than the EER value – into the relationship between the useful effect (energy removed from the rooms) and the energy expended (electrical power consumption) of an air conditioning unit throughout an entire season of operation.

The graphs show the importance of operation at partial load from the energy standpoint.

MULTISCROLL SOLUTION



City: Milan **- Application:** offices air conditioning

Comparison of absorbed power during a hot summer day; the chart refers to the worst situation among the possible ones during the whole year, as the multiscroll chiller maximizes the EER at partial loads.

Semigraphic user interface with multifunctional buttons and dynamic display icons.

Optimisation of performance in the most frequent duty conditions thanks to the multiscroll logic.

Pump section with or without storage tank.

PHOENIX PLUS R134a

AIR-COOLED CHILLERS WITH R134A EQUIPPED WITH SEMI-HERMETIC TWIN SCREW COMPRESSORS.
COOLING CAPACITY 322 – 1241 kW.

pure energy

BENEFITS

- ESEER seasonal performance index up to beyond 4,4;
- Precise water temperature control and adaptation to user needs thanks to continuous compressor capacity control from 25% (2 compressors) or 12,5% (4 compressors) of maximum load;
- 20 different basic models to match the specific requirements of the installation;
- SN, SSN and SHE versions feature compressors housed in acoustically insulated metal compartments clad with sound absorbing material, combined with reduced fan speeds, anti-vibration dampers and mufflers;
- Maximum ease of access to all components and coils for routine cleaning operations;
- User friendly controller with multifunctional buttons and dynamic display icons.

MAIN OPTIONS

- Electronic thermostatic expansion valves;
- Electronic fan speed control;
- Filters to protect the condenser coils;
- Refrigerant-water exchangers with antifreeze heaters;
- Condenser coils with anticorrosion treatment;
- Replicated remote user terminal;
- Antivibration dampers;
- Serial connection to supervision systems;
- MTA xCONNECT Supervision based on internal web pages;
- Modularity / web interconnection hub;
- Special applications with partial or total heat recovery;
- Special applications for water temperatures down to -10 °C;
- Special very high efficiency applications;
- Compressor automatic circuit breakers;
- Antifreeze heater;
- Metal mesh filters for condenser coil protection;
- Compressor housings;
- Simple remote control;
- Compressor crankcase heater.

STANDARD FEATURES

- Environmentally friendly refrigerant R134a with zero ozone depletion potential;
- Microprocessor controller;
- Semi-hermetic dual screw compressors expressly developed for use with R134a;
- Tube core evaporator expressly designed for use with R134a;
- "Victaulic" hydraulic connections;
- Condensers with transverse "V" formation and subcooling section;
- Check valve on compressor discharge and shut-off valves on discharge and suction lines;
- Shut-off valve and solenoid valve on the liquid line;
- Limitation of peak current by means of part-winding device;
- Muffler and flexible hoses on compressor suction and discharge (SSN version);
- Refrigerant charge, non-freezing oil, and factory testing;
- IP54 electric protection rating;
- Inspections and tests performed in factory as per all MTA products and components;
- Compressor crankcase heater;
- All the units are equipped with a phase monitor which provides protection against phase loss and phase reversal and checks the operating voltage limits.

VERSIONS

- Chiller;
- Version for -20 °C external air temperature;
- Acoustic & high efficiency configurations:
  - N (standard);
  - SN (low noise);
  - SSN (very low noise).
  - HE (high efficiency);
  - SHE (low noise high efficiency).

Model PNP		160	170	180	190	200	220	250	265	280	310	330	360	390	405	420	440	470	500	530	560
Cooling capacity	kW	322	342	362	394	423	480	526	568	611	673	721	771	831	873	934	987	1014	1048	1155	1241
Absorbed power	kW	114	123	131	134	145	159	180	191	202	221	239	260	280	291	306	322	340	358	385	407
ESEER (N)	-	3,58	3,72	3,78	3,80	3,85	3,92	3,62	3,95	4,06	3,95	3,95	3,84	3,93	4,01	4,17	4,06	3,87	3,66	4,01	4,17
ESEER (HE)	-	3,89	3,99	4,01	4,03	4,15	4,01	3,94	4,26	4,36	4,18	4,19	4,11	4,22	4,30	4,40	4,35	4,13	3,94	4,32	4,41
ESEER (SHE)	-	3,78	3,88	3,90	3,93	4,05	3,92	3,83	4,14	4,24	4,08	4,09	4,01	4,11	4,19	4,35	4,18	4,02	3,82	4,19	4,26
Max external air temp. vers. N	°C	44	44	44	44	44	46	44	44	44	46	46	44	44	44	44	45	44	44	44	44
Max external air temp. vers. HE	°C	49	49	49	49	49	49	49	50	50	49	49	49	49	50	50	48	48	47	46	44

Power supply	V/Ph/Hz	400±10%/3/50																			
Circuits / Compressors	N°	2/2	2/2	2/2	2/2	2/2	2/2	2/2	2/2	2/2	3/3	3/3	3/3	3/3	3/3	3/3	4/4	4/4	4/4	4/4	4/4
Sound pressure level (N)	dB(A)	68,9	68,9	68,9	70,1	70,1	71,0	71,1	71,0	70,9	72,4	72,7	72,8	72,8	72,7	72,6	74,0	74,1	74,1	74,0	73,9
Sound pressure level (SN)	dB(A)	61,4	61,4	61,4	62,3	62,3	63,0	62,9	62,9	63,0	64,7	64,8	64,7	64,6	64,6	64,6	66,0	66,0	65,9	65,9	65,9
Sound pressure level (SSN)	dB(A)	55,1	55,0	55,0	56,2	56,1	57,0	56,8	56,9	56,9	58,2	58,8	58,7	58,6	58,6	58,6	61,2	61,1	61,1	61,1	61,1
Sound pressure level (HE)	dB(A)	70,2	70,0	69,9	71,6	71,5	72,7	72,6	72,4	72,2	73,7	74,4	74,4	74,2	74,1	73,9	75,3	75,2	75,2	75,0	74,9
Sound pressure level (SHE)	dB(A)	63,1	63,0	62,8	64,3	64,2	65,2	64,9	64,7	64,5	66,3	67,0	66,8	66,5	66,4	66,3	67,8	67,6	67,5	67,3	67,2
Depth	mm	4530	4530	4530	4530	4530	4530	4530	4530	4530	6510	6510	6510	6510	6510	6510	8490	8490	8490	8490	8490
Width	mm	2190	2190	2190	2190	2190	2190	2190	2190	2190	2190	2190	2190	2190	2190	2190	2190	2190	2190	2190	2190
Height	mm	2360	2360	2360	2360	2360	2360	2360	2360	2360	2360	2360	2360	2360	2360	2360	2360	2360	2360	2360	2360
Installed weight	Kg	3467	3509	3554	4137	4288	4702	4866	4949	5033	6511	6907	7286	7391	7472	7627	9085	9306	9349	9833	10000

All data refers to standard units at the following nominal conditions:

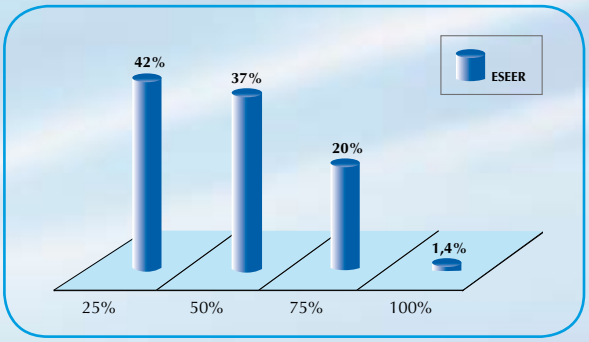
Chiller: evaporator water inlet-outlet 12-7 °C, external air temperature 35 °C.
Sound pressure level in hemispherical field at 10 m from condenser side and 1.6 m from ground. Values with tollerance ± 2 dB.
The sound levels refer to operation of the unit under full load in nominal conditions.

The listed weights and dimensions refer to base chillers with no options fitted (NB: dimensions for lower noise and/or higher efficiency versions may differ).

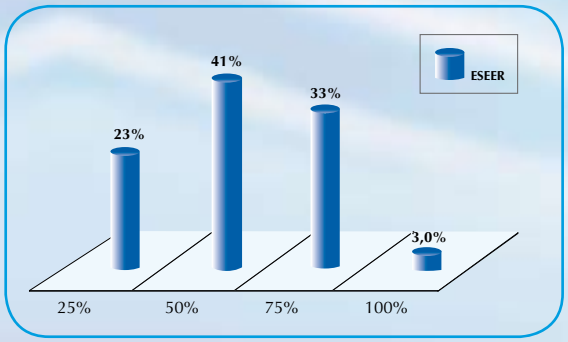
MTA partecipates in the E.C.C. programme for LCP-HP. Certified products are listed on www.eurovent-certification.com. Eurovent Certification applied to the units:
- Air/Water with cooling capacity up to 600 kW
- Water/Water up to 1500 kW

IMPORTANCE OF OPERATION AT PARTIAL LOAD

ESEER operating time percentages



ESEER energy weights



The standardised ESEER indice establish the average weighted efficiency of a chiller and provide insight – in a more accurate manner than the EER value – into the relationship between the useful effect (energy removed from the rooms) and the energy expended (electrical power consumption) of an air conditioning unit throughout an entire season of operation.

The graphs show the importance of operation at partial load from the energy standpoint; specifically, in the interval of 50-75% of rated capacity the unit develops significantly 70-80% of the useful effect, i.e. the cooling energy produced.

Semigraphic user interface with multifunctional buttons and dynamic display icons.

Electronic thermostatic expansion valves.

Maximum accessibility to compressors.

ARIES FREECOOLING R407C

AIR-COOLED WATER CHILLERS WITH INTEGRATED FREECOOLING FEATURING HERMETIC SCROLL COMPRESSORS.
COOLING CAPACITY 51 - 177 kW.

pure energy

BENEFITS

- Maximum exploitation of free cooling and maximum energy efficiency of the system with respect to conventional solutions, thanks to the independence of the coils in terms of air handling;
- Accurate control of water outlet temperature (including at low temperatures down to -15 °C), thanks to the use of a modulating three-way water valve;
- Generous sizing of coils for free-cooling;
- Operates at high ambient temperatures thanks to the compressor unloading;
- Version SSN featuring extremely quiet operation;
- Individually tested in a test chamber like all MTA components and products;
- User friendly control section with simple readout and graphic display;
- Simple to install and maintain, easily accessible components.

MAIN OPTIONS

- Compressor suction and discharge valves;
- Electronic fan speed control;
- Electronic thermostatic expansion valve (except 201-301);
- Hydronic group without pump;
- Hydronic group with storage tank and single or twin pumps (351-751 only);
- High, medium and low head pressure pumps;
- Air filter on condenser coils (standard on 201-301);
- Power factor correction capacitors (351-751);
- Antivibration dampers;
- Simple remote control;
- Replicated remote user terminal;
- Supervisor systems;
- Victaulic connections.

STANDARD FEATURES

- Parallel scroll compressor coupling within single refrigerant circuit;
- Finned coil evaporator inside the storage tank (201 - 301) and shell and tube evaporator (351 - 751);
- Condensers and fans installed in a separate compartment with aeraulic isolation, for maximum Free-Cooling effect and maximum overall energy efficiency;
- Axial fans with crescent shaped blades featuring step regulation;
- 3-way modulating valve for Free-Cooling (controlled by microprocessor), water connections within chiller;
- Total Free-Cooling from approximately 10 °C below the water outlet temperature;
- Water differential pressure switch on evaporator (301-751);
- High and low pressure transducers;
- Single or twin high pressure switches for max condensing pressure control;
- Electronic expansion valve with external equalisation, refrigerant filter, sight glass, solenoid valve on liquid line (except 201-301);
- Safety valve (except 201 - 301);
- Microprocessor control with advanced software ensuring optimum control in all conditions;
- All the units are delivered with a phase monitor which provides protection against phase loss and phase reversal;
- The scroll compressors are equipped with cranckcase heaters as standard;
- Main switch;
- IP54 electric protection rating;
- Environmentally friendly refrigerant R407C with zero ozone depletion potential.

VERSIONS

- N (standard);
- SN (low noise);
- SSN (very low noise);
- Low ambient temperature version (min. -15 °C).

	Model AS FC		201	251	301	351	401	501	551	601	701	751
Free Cooling OFF	Cooling capacity (1)	kW	50,9	54,6	69,3	80,1	97,6	115	133	146	161	177
	Total absorbed power (1)	kW	16,2	19,3	20,0	30,1	34,3	40,1	44,4	50,7	52,7	60,1
	Max external air temperature (1)	°C	45	47	47	42	44	43	43	41	45	43
TOTAL Free Cooling	Cooling capacity (1)	kW	50,9	54,6	69,3	80,1	97,6	115	133	146	161	177
	Absorbed power (1) *	kW	1,6	2,3	2,3	4,0	4,0	4,0	4,0	4,0	6,0	6,0
	Total freecooling (1)	°C	1,0	1,4	-0,3	1,6	0,5	-0,7	0,4	-0,7	1,4	0,4
Free Cooling OFF	Cooling capacity (2)	kW	46,5	49,5	63,1	72,8	88,6	105	121	133	147	162
	Total absorbed power (2)	kW	15,7	18,8	19,5	29,0	33,1	38,5	42,7	48,6	50,8	57,8
	Max external air temperature (2)	°C	46	48	48	44	45	44	44	43	46	45
TOTAL Free Cooling	Cooling capacity (2)	kW	46,5	49,5	63,1	72,8	88,6	105	121	133	147	162
	Absorbed power (2) *	kW	1,6	2,3	2,3	4,0	4,0	4,0	4,0	4,0	6,0	6,0
	Total freecooling (2)	°C	-1,1	-0,7	-2,3	-0,6	-1,5	-2,5	-1,5	-2,5	-0,6	-1,6
	ESEER	-	4,19	3,82	4,07	3,56	3,73	3,79	3,97	3,94	3,91	3,75
	Power supply	V/Ph/Hz	400±10%/3/50									
	Circuits / Compressors	N°	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2
	Sound pressure level Freecooling OFF (N)	dB(A)	60,2	60,2	61,5	62,6	61,6	61,6	61,6	61,6	62,3	62,3
	Sound pressure level Freecooling OFF (SN)	dB(A)	-	-	-	56,2	55,0	55,0	55,0	55,0	55,2	55,2
	Sound pressure level Freecooling OFF (SSN)	dB(A)	-	-	-	48,9	48,9	47,7	48,7	48,7	49,1	49,1
	Depth	mm	2550	2550	2550	3495	3495	3495	4595	4595	4595	4595
	Width	mm	1400	1400	1400	2188	2188	2188	2188	2188	2188	2188
	Height	mm	2136	2136	2136	1989	1989	1989	1989	1989	1989	1989
	Installed weight	Kg	1494	1494	1509	1858	1980	2276	2536	2541	2752	2803

All data refers to standard units at the following nominal conditions:

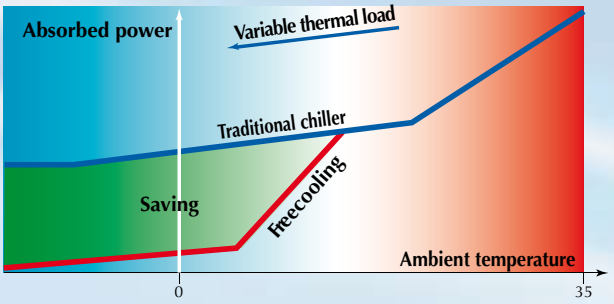
(1) Evaporator water inlet/outlet temperature 15-10 °C, external air temperature 35 °C, glycol water at 30%.
(2) Evaporator water inlet/outlet temperature 12-7 °C, external air temperature 35 °C, glycol water at 30%.
* In total Freecooling mode the absorbed power is only the fans absorbed power.
Sound pressure level in hemispherical field at 10 m from condenser side and 1.6 m from ground. Values with tollerance ± 2 dB.
The sound levels refer to operation of the unit under full load in nominal conditions.

The listed weights and dimensions refer to base chillers with no options fitted.

AVAILABILITY OF FREE-COOLING

	Annual FC % usability on daily time from 6 AM till 8 PM	
	% of freeccooling with water inlet = 12 °C	% of freeccooling with water inlet = 15 °C
Berlin	**54%**	**68%**
Brussels	**51%**	**69%**
Copenhagen	**61%**	**74%**
Milan	**47%**	**54%**
Oslo	**75%**	**84%**
Stockholm	**63%**	**73%**
Vienna	**50%**	**60%**

ENERGY SAVING



Semi-graphic backlit PGD terminal.

Sections featuring complete aeraulic segregation to maximise the use of free-cooling.

Servo-controlled three-way hydraulic valve.

PHOENIX FREECOOLING R407C

AIR-COOLED WATER CHILLERS WITH FREECOOLING SYSTEM FEATURING DOUBLE SCREW SEMIHERMETIC COMPRESSORS.
COOLING CAPACITY 187 - 494 kW.

pure energy

BENEFITS

- Maximum exploitation of free cooling and maximum energy efficiency of the system with respect to conventional solutions, thanks to the independence of the coils in terms of air handling;
- Accurate control of water outlet temperature (including at low temperatures - down to -15 °C), thanks to the use of a modulating three-way water valve;
- Generous sizing of coils for free-cooling;
- Version SSF featuring extremely quiet operation;
- Individually tested in a test chamber like all MTA components and products;
- User friendly control section with simple readout and graphic display;
- Simple to install and maintain, asily accessible components.

MAIN OPTIONS

- Compressors cover (for C only, standard on other versions);
- Condensing section electronic fan speed regulation;
- Electronic thermostatic valve (special);
- Electrical protection by means of automatic cut-outs;
- Metal mesh protection filters for coils;
- Anti-vibration dampers kit;
- Replicated remote user terminal kit;
- Supervisor kits.

STANDARD FEATURES

- Twin screw compressors with crankcase heater and oil level control;
- Part winding start for reduced current spikes;
- Compressor suction and discharge valves;
- Shell and tube evaporator;
- Independent refrigeration circuits;
- Axial fans with sickle-shaped blades;
- 3-way modulating water valve for Free-Cooling (managed by microprocessor control) and internal hydraulic connections to the machine;
- Total Free-Cooling from approximately 10 °C below the water outlet temperature;
- Water differential pressure switch on evaporator;
- High and low pressure transducers;
- Electronic expansion valve with external equalisation, refrigerant filter, sight glass, solenoid valve on liquid line;
- Safety valve;
- Microprocessor control with advanced software ensuring optimum control in all conditions;
- Main switch;
- Protection grade IP54;
- SSF fitted silencers, flexible tubing and compressor vibration damping;
- Environmentally friendly refrigerants with R407C zero ozone depletion potential;
- All the units are delivered with a phase monitor which provides protection against phase loss and phase reversal;
- The scroll compressors are equipped with cranckcase heaters as standard.

VERSIONS

- C - standard;
- SC - low noise;
- SF - low noise (for high ambient temperatures);
- SSN - super-silent;
- Low ambient temperature version (min. -15 °C).

	Model PH FC		0801	0901	1101	1251	1401	1602	1702	1802	2002	2202
Free Cooling OFF	Cooling capacity (1)	kW	187	218	264	306	362	373	395	412	468	494
	Total absorbed power (1)	kW	68	79	93	105	119	136	151	165	176	195
	Max external air temperature vers. C (1)	°C	43	43	42	44	44	43	42	40	41	39
	Max external air temperature vers. SF (1)	°C	45	46	46	46	44	43	-	-	-	-
TOTAL Free Cooling	Cooling capacity (1)	kW	187	218	264	306	362	373	395	412	468	494
	Absorbed power (1) *	kW	6	8	8	10	12	12	12	12	14	14
	Total freecooling (1)	°C	-0,2	-1,6	-2,0	-0,6	0,1	-0,2	-0,8	-1,3	-0,6	-1,3
Free Cooling OFF	Cooling capacity (2)	kW	170	198	239	278	329	339	360	376	425	449
	Total absorbed power (2)	kW	65	75	88	101	114	130	144	158	167	185
	Max external air temperature vers. C (2)	°C	45	44	44	45	45	45	43	42	43	41
	Max external air temperature vers. SF (2)	°C	46	47	47	48	45	45	-	-	-	-
TOTAL Free Cooling	Cooling capacity (2)	kW	170	198	239	278	329	339	360	376	425	449
	Absorbed power (2) *	kW	6	8	8	10	12	12	12	12	14	14
	Total freecooling (2)	°C	-2,1	-3,4	-3,7	-2,4	-1,8	-2,1	-2,7	-3,1	-2,4	-3,0
	ESEER	-	3,44	3,72	3,63	3,6	3,98	3,48	3,62	3,65	3,55	3,42
	Power supply	V/Ph/Hz	400±10%/3/50									
	Circuit / Compressors	N°	1/1	1/1	1/1	1/1	1/1	2/2	2/2	2/2	2/2	2/2
	Freecooling noise level OFF vers. C	dB(A)	62,0	63,2	62,6	63,6	65,0	65,5	65,6	65,7	66,9	66,9
	Freecooling noise level OFF vers. SC	dB(A)	55,4	56,3	56,0	57,0	59,0	59,1	59,3	59,4	60,5	60,6
	Freecooling noise level OFF vers. SF	dB(A)	55,7	56,1	56,3	57,2	59,1	59,2	-	-	-	-
	Freecooling noise level OFF vers. SSF	dB(A)	49,1	49,5	49,8	50,6	51,0	51,5	-	-	-	-
	Depth	mm	3675	4590	4590	5490	6425	6425	6425	6425	7360	7360
	Width	mm	2190	2190	2190	2190	2190	2190	2190	2190	2190	2190
	Height	mm	2350	2350	2350	2350	2350	2350	2350	2350	2350	2350
	Installed weight	Kg	2623	3306	3814	4648	5003	5273	5385	6089	6133	6154

All data refers to standard units at the following nominal conditions:
(1) Evaporator water inlet/outlet temperature 15-10 °C, external air temperature 35 °C, glycol water at 30%.
(2) Evaporator water inlet/outlet temperature 12-7 °C, external air temperature 35 °C, glycol water at al 30%.
* In total Freecooling mode the absorbed power is only the fans absorbed power.
Sound pressure level in hemispherical field at 10 m from condenser side and 1.6 m from ground. Values with tollerance ± 2 dB.
The sound levels refer to operation of the unit under full load in nominal conditions.

AVAILABILITY OF FREE-COOLING

	Annual FC % usability on daily time from 6 AM till 8 PM	
	% of freeccoling with water inlet = 12 °C	% of freeccoling with water inlet = 15 °C
Berlin	**54%**	**68%**
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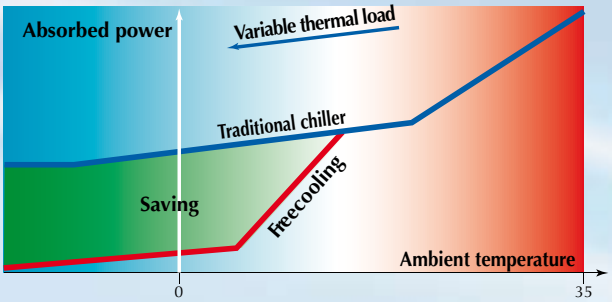
ENERGY SAVING



Semi-graphic backlit PGD terminal.

Sections featuring complete aeraulic segregation to maximise the use of free-cooling.

Servo-controlled three-way hydraulic valve.

AquaFree

Add-on Freecooling modules for Aries tech, Galaxy tech and Phoenix plus, transforming the Chiller into an all-in-one modular and expandable Freecooling Chiller.
Cooling capacity 242 – 466 kW per single module.

pure energy

PLUG & PLAY

Connect AquaFree to the chiller (AST, GLT and PNP) and set the software parameters comunications between the units. The chiller's xDRIVE microprocessor will control the chiller / free-cooler combination as a single unit. In case of AQUAfree connection to a chiller previously installed check before the software compability. The AQUAfree / chiller piping kit is available on request.

ENERGY EFFICIENT

AquaFree can easily obtain savings of 30% or more, offering efficiency levels well beyond the industry norm. The modular design permits additional AquaFree modules to be added, allowing efficiencies to be further increased and tailored to individual applications.

SUPER SILENT

Choose between 2 noise levels, both extremely quiet, with an electronic fan speed control option to further reduce part load noise levels. Especially during night time, when temperatures drop and freecooling becomes more active, AquaFree's low noise becomes a notable asset.

INDEPENDENT

Each module features its own electrical connection and 3-way valve, as well as its own electrical panel and microprocessor with independent alarms and water in/out and ambient temperature visualization: consequently each module can operate completely autonomously.

GLYCOL FREE KIT

The glycol free kit is available on request and is ideal in applications requiring an absence of glycol, such as food industries. The glycol free kit, which features its own intermediate exchanger and hydraulic circuit, is simply installed between the chiller and the AquaFree modules.

PEACE OF MIND

Each AquaFree module features its own microprocessor, allowing it to operate independently. If one module suffers a fault the others can still operate, if the chiller suffers a fault the modules can continue to operate. AquaFree can operate at ambient temperatures of -15 °C to +46 °C. Each AquaFree module features independent aeraulic sections featuring axial fans with progressive activation (continuos control on request).

VERSATILE

As AquaFree modules are independent, so system transportation is simplified. AquaFree can be positioned separately if space needs dictate it. It is also possible to install AquaFree, or add additional modules, at a later date. Each AquaFree module features its own remote on/off control.

MODELS & VERSIONS

- Acoustic versions:
  - standard (N version);
  - low noise (SN version).
- Modules:
  - AFW100 (for connection to AST 090-140);
  - AFV200 (for connection to GLT/PNP);
  - AFV300 (for connection to GLT/PNP);
- Low ambient version (down to -20 °C).

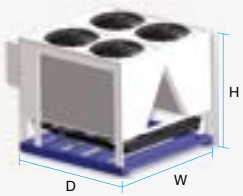
ACCESSORIES

- Freecooling coils with anticorrosion treatment;
- Lateral hydraulic connections (AFW100);
- Metal mesh filters for freecooling coils;
- Electronic fan speed control;
- Antivibration dampers;
- On request Chiller-AquaFree interconnection kit (tubing to be supplied by installer);
- On request (special) add-on Glycol-free kit;
- Replicated remote user terminal;
- Victaulic connections.

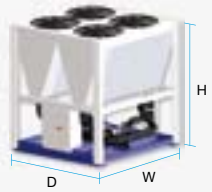
Technical data		AFW100	AFV200	AFV300
Applicable chiller		**AST 090-140**	**GLT & PNP**	**GLT & PNP**
Cooling capacity (N)	kW	310	310	466
Cooling capacity (SN)	kW	242	242	363
Absorbed power (N)	kW	8	8	12
Absorbed power (SN)	kW	7,8	7,8	11,7
Water flow (N)	m³/h	58,3	58,3	87,4
Water flow (SN)	m³/h	45,4	45,4	68,1
Pressure drop (N)	kPa	77	77	86
Pressure drop (SN)	kPa	47	47	52
No. of Coils / Fans	-	4	4	6
Power supply	V/Ph/Hz	400±10%/3/50		
Sound pressure level (SN)	dB(A)	61,0	61,0	62,8
Sound pressure level (SN)	dB(A)	54,0	54,0	55,8
Depth (D)	mm	2.100	2.100	3.100
Width (W)	mm	2.188	2.190	2.190
Height (H)	mm	1.989	2.360	2.360
Installed weight	kg	1.071	1.260	1.835

All data refers to standard units at the following nominal conditions:
Water inlet-outlet 15-10 °C, external air temperature 0 °C, 30% ethylene glycol.
Sound pressure level in hemispherical field at 10m from coil side, 1.6 m from ground, full load operation at nominal conditions, tollerance ± 2 dB.

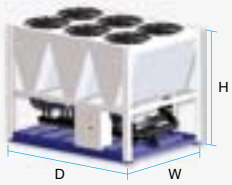
AFW100



AFV200



AFV300



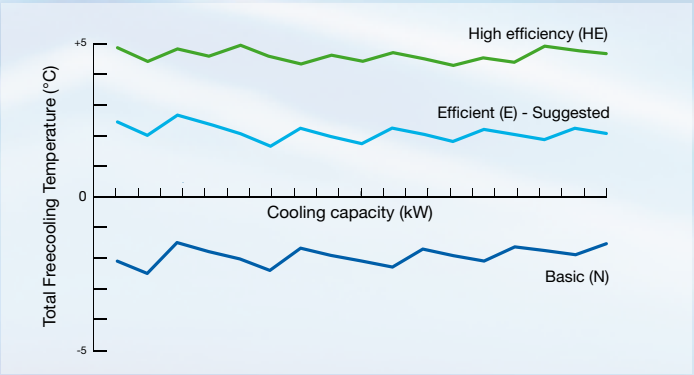
AFV200 & AFV300 can be mounted directly to the back of the chiller, AFW100 requires a small service area between itself and the chiller.

TAILOR MADE FREECOOLING

AquaFree allows the user to define the desired efficiency, simply combining multiple modules to achieve the optimum freecooling level. Any combination of AFV200 and AFV300 modules allows the freecooling section to be increased one “V” coil at a time from a minimum of two coils upwards.
As an example, a GLT150N chiller, operating at water 15/10 °C with 30% glycol and a single AFV300 module (Basic "N" configuration), achieves a TFT (total freecooling temperature, the temperature at which the unit achieves 100% freecooling) of -0,2 °C. Alternatively, the application of two AFV200 modules (Efficient "E" configuration) achieves a TFT of +3,1 °C. By applying an AFV300 module and an AFV200 module (High efficiency "HE" configuration), a TFT of +5,0 °C can be achieved.

SELECT YOUR EFFICIENCY

The size and number of AquaFree modules applied allows the efficiency level to be progressively increased from Basic (N) to Efficient (E) and even High efficiency (HE) levels.



The integral microprocessor allows AquaFree to operate independently.

Each AquaFree module features its own independent electrical panel.

The 3-way valve, installed on-board as standard, optimises the freecooling level.

OCEAN TECH R410A

WATER-COOLED WATER CHILLERS, HEAT PUMPS AND CONDENSERLESS UNITS FEATURING ROTARY OR HERMETIC SCROLL COMPRESSORS.
COOLING CAPACITY 4 - 200 kW, HEATING CAPACITY 5 - 216 kW.

pure energy

BENEFITS

- Lowest noise levels (down to 30 dB(A)) for installation in residential surroundings;
- High EER/COP levels, especially at partial loads;
- Extremely compact, allows installation just about anywhere;
- Operates with water outlet temperatures from 0 °C to 20 °C;
- Unloading function (model 200-600) allowing unit operation even in extreme conditions;
- Self Adapting Control (SAC) with dynamic set point, for incrased precision with low thermal inertias;
- Robust design with high quality components from renowned international suppliers, fruit of MTA's industrial background;
- Eurovent certified performance;
- Flexibility of use, sized for operation with water either from a tower or from a geothermal source;
- Easy installation and complete access to all components;
- Easy to use intuitive controller with dual icon display.

MAIN OPTIONS

- Storage and pump module with a geometrical configuration allowing the two units to be mounted together;
- High and low head pressure pumps;
- Noise reducing compressor housing;
- Condensing pressure control valve;
- Antivibration dampers;
- Soft starter;
- Remote user interface;
- RS485 MODBUS interface for connection to supervisor systems;
- xWEB300D remote supervision, allowing local or remote monitoring via a web server or a GSM/GPRS;
- Matching cooling towers or dry coolers available on request.

STANDARD FEATURES

- Hermetic rotary (018-030), scroll (040-150) and twin scroll (200-600) compressors;
- Single evaporator and brazed stainless steel plate condenser;
- Factory charged with non-freezing oil and refrigerant (OCT/HOCT);
- IP22 electric protection rating;
- Extensive inspections and tests performed on all units (as per all MTA products);
- Environmentally friendly refrigerant R410A with zero ozone depletion potential;
- Compressor crankcase heater;
- Phase monitor against phase reversal.

VERSIONS

- Chiller (OCT);
- Heat pump with inversion on the refrigerant side (HOCT);
- Condenserless unit (MEOCT) with in/out shut-off valves designed for use with a remote condenser.

	Model OCT - HOCT - MEOCT		018	022	030	040	050	070	100	130	150	200	230	280	350	400	500	600
	Tower water																	
OCT	Cooling capacity	kW	4,50	5,81	7,68	11,1	15,7	24,4	32,5	42,1	48,6	66,5	75,1	89,4	113	130	169	200
OCT	Absorbed power	kW	1,14	1,45	1,95	2,55	3,61	5,47	7,16	9,04	10,6	14,1	16,1	19,7	24,0	27,8	36,5	42,7
OCT	ESEER	-	4,34	4,28	4,16	4,91	4,79	4,83	4,91	5,02	4,96	5,98	6,03	5,90	6,20	6,08	5,91	5,98
	Well water																	
OCT	Cooling capacity	kW	4,81	6,19	8,22	11,9	16,8	26,0	34,6	44,7	52,1	70,8	79,9	95,5	121	138	180	212
OCT	Absorbed power	kW	0,99	1,29	1,76	2,16	3,14	4,82	6,29	7,94	9,35	12,4	14,1	17,4	20,9	24,1	32,2	37,6
HOCT	Cooling capacity	kW	4,72	6,09	8,07	11,6	16,5	25,7	34,1	44,1	50,7	69,6	78,5	93,2	118	136	177	209
HOCT	Heating capacity	kW	5,02	6,44	8,58	12,3	17,4	26,7	35,4	45,9	51,8	72,0	81,5	96,3	123	142	184	216
HOCT	Absorbed power (in heating)	kW	1,37	1,70	2,29	3,33	4,46	6,62	8,65	11,0	12,4	17,2	19,8	23,6	30,1	35,1	45,2	52,3
	Condenserless unit																	
MEOCT	Cooling capacity	kW	4,30	5,55	7,38	10,6	15,0	23,4	31,1	40,1	46,4	63,1	71,6	85,6	108	124	162	191
MEOCT	Absorbed power	kW	1,24	1,55	2,06	2,85	3,96	5,89	7,75	9,88	11,3	15,5	17,6	21,2	26,5	30,4	39,6	46,3

Power supply	V/Ph/Hz	230±10%/1/50				400±10%/3/50											
Circuits / Compressors	N°	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/2	1/2	1/2	1/2	1/2	1/2	1/2
Sound pressure level	dB(A)	30,0	30,7	31,1	34,7	35,9	37,6	40,0	43,7	46,1	47,4	48,6	49,1	50,9	51,8	52,0	53,7
Depth	mm	310	310	310	310	500	500	500	500	500	660	660	660	660	785	785	785
Width	mm	520	520	520	520	780	780	780	780	780	1735	1735	1735	1735	1950	1950	1950
Height	mm	830	830	830	830	1000	1000	1000	1000	1000	1200	1200	1200	1200	1200	1200	1200
Installed weight	Kg	49	53	59	67	120	158	180	204	216	399	430	486	548	617	691	725

All data refers to standard units at the following nominal conditions:

Tower water: evaporator water inlet/outlet temperature 12-7 °C, condenser water inlet/outlet temperature 30-35 °C.
Well water: evaporator water inlet/outlet temperature 12-7 °C, condenser water inlet/outlet temperature 15-30 °C.
Heat pump: condenser water inlet/outlet temperature 40-45 °C; evaporator water inlet/outlet temperature 12-7 °C.
Condenserless unit: evaporator water inlet/outlet temperature 12-7 °C; condensing temperature 45 °C.

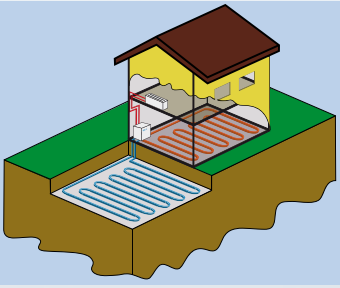
Sound pressure level in hemispherical field at 10 m from condenser side and 1.6 m from ground.
Values with tollerance ± 2 dB.
The sound levels refer to operation of the unit under full load in nominal conditions.

The listed noise levels, weights and dimensions refer to base chillers with no options fitted.

EUROVENT CERTIFIED PERFORMANCE www.eurovent-certification.com

MTA partecipates in the E.C.C. programme for LCP-HP. Certified products are listed on www.eurovent-certification.com. Eurovent Certification applied to the units:
- Air/Water with cooling capacity up to 600 kW
- Water/Water up to 1500 kW (N.A. on ME)

Suitable for operation within geothermal applications.



Separate storage and pump module with two pump versions

Allows installation in even the most limited spaces.

NEPTUNE TECH R410A

WATER-COOLED WATER CHILLERS, HEAT PUMPS AND CONDENSERLESS UNITS FEATURING HERMETIC SCROLL COMPRESSORS.
COOLING CAPACITY 241 - 572 kW, HEATING CAPACITY 281 - 662 kW.

pure energy

BENEFITS

- Up to 6 compressors offer high efficiency and reliability;
- High energy efficiency levels, especially at partial loads;
- Extremely compact, even passes through a domestic door;
- Operates with water outlet temperatures from 0 °C to 25 °C;
- Unloading function allowing operation even in extreme conditions;
- Self Adapting Control (SAC) with dynamic set point, for increased precision with low thermal inertias;
- Robust design with high quality components from renowned suppliers, fruit of MTA's industrial background;
- Eurovent certified performance;
- Reduced noise levels, thanks also to the availability of two differing acoustic versions;
- Flexibility of use, sized for operation with either tower or well water;
- Energy efficient total heat recovery and desuperheater options;
- Easy installation and access to all components;
- Allows both inlet and outlet water control, with a PID control logic;
- Generous ambient limits (-10 °C to +45 °C);
- Easy to use intuitive controller with dual icon display.

MAIN OPTIONS

- Noise reducing compressor housing;
- Modulating condensing pressure control valves;
- Antivibration dampers;
- Soft starter;
- Desuperheater (20% heat recovery);
- Total heat recovery (100% heat recovery only chiller);
- Shell & tube evaporator (on request);
- Antifreeze heater for exchangers;
- Remote user interface;
- RS485 MODBUS interface for connection to supervisor systems;
- xWEB300D remote supervision, allowing local or remote monitoring via web server or GSM/GPRS;
- Matching cooling towers or dry coolers available on request;
- Remote condensers for integration with unit available on request (ME).

STANDARD FEATURES

- 3 to 6 hermetic scroll compressors, positioned in parallel in one or two circuits;
- Brazed stainless steel plate evaporators and condensers;
- Shut-off valve and solenoid valve on the liquid line;
- Extensive inspections and tests performed on all units;
- Factory charged with non-freezing oil and refrigerant (except ME);
- IP54 electrical protection rating;
- Environmentally friendly refrigerant R410A with zero ozone depletion potential;
- All the scroll compressors are equipped with cranckcase heaters as standard;
- All the units are delivered with a phase monitor which provides protection against phase loss and phase reversal.

VERSIONS

- Standard;
- Low noise;
- ME - Condenserless unit combinable with remote condenser;
- Heat pump with inversion on the water side.

	Model NET - NET/ME		075	090	100	110	120	135	150	165	180
	Tower water										
NET	Cooling capacity	kW	241	286	319	345	381	428	478	527	572
NET	Absorbed power	kW	54,2	63,2	72,6	80,3	84,0	96,9	109	117	125
NET	ESEER	-	5,85	5,95	5,75	5,71	5,91	5,90	5,99	6,16	6,21
	Well water										
NET	Cooling capacity	kW	256	304	339	367	404	455	509	562	611
NET	Absorbed power	kW	47,7	55,6	63,8	70,8	73,9	85,2	95,7	101	109
Heat pump	Heating capacity	kW	281	331	373	404	441	499	560	612	662
Heat pump	Absorbed power	kW	66,2	77,0	88,8	98,0	102	118	133	142	153
	Condenserless unit										
/ME	Cooling capacity	kW	230	271	304	333	361	408	457	499	541
/ME	Absorbed power	kW	59,4	69,3	79,2	85,8	92,4	106	119	129	139

Power supply	V/Ph/Hz	400±10%/3/50								
Circuits / Compressors	N°	1/3	1/3	2/4	2/4	2/4	2/5	2/6	2/6	2/6
Sound pres. level (Standard)	dB(A)	58,1	59,8	59,3	60,3	61,0	61,1	61,1	62,0	62,8
Sound pres. level (comp. housing)	dB(A)	51,1	52,8	52,4	53,3	54,0	54,1	54,1	55,0	55,8
Depth	mm	2010	2010	2610	2610	2610	3705	3705	3705	3705
Width	mm	800	800	800	800	800	800	800	800	800
Height	mm	1830	1830	1830	1830	1830	1830	1830	1830	1830
Installed weight	Kg	993	1161	1332	1440	1549	1729	1867	2061	2211

All data refers to standard units at the following nominal conditions:

Tower water: evaporator water inlet/outlet temperature 12-7 °C, condenser water inlet/outlet temperature 30-35 °C.
Well water: evaporator water inlet/outlet temperature 12-7 °C, condenser water inlet/outlet temperature 15-30 °C.
Heat pump: condenser water inlet/outlet temperature 40-45 °C; evaporator water inlet/outlet temperature 12-7 °C.
Condenserless unit: evaporator water inlet/outlet temperature 12-7 °C; condensing temperature 45 °C.
Sound pressure level in hemispherical field at 10 m from operating side and 1,6 m from ground. Values with tollerance ± 2 dB.
The sound levels refer to unit operation under full load in nominal conditions.

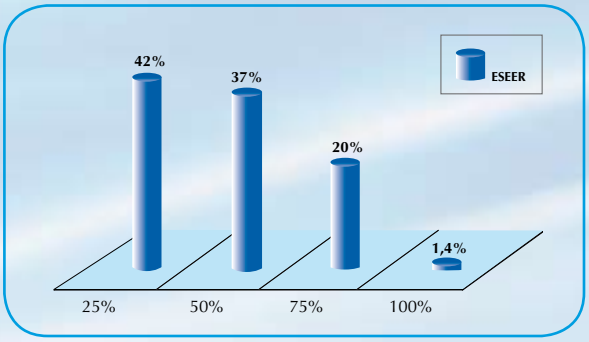
The listed noise levels, weights and dimensions refer to base chillers with no options fitted.

EUROVENT CERTIFIED PERFORMANCE www.eurovent-certification.com

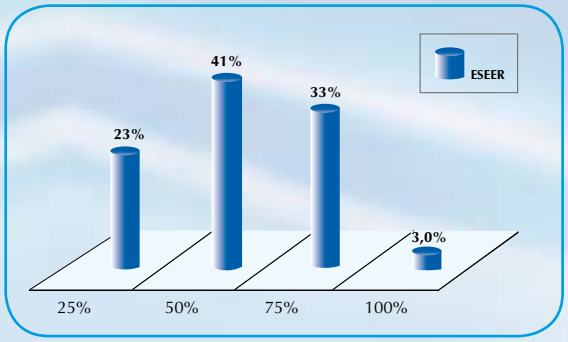
MTA partecipates in the E.C.C. programme for LCP-HP. Certified products are listed on www.eurovent-certification.com. Eurovent Certification applied to the units:
- Air/Water with cooling capacity up to 600 kW
- Water/Water up to 1500 kW (N.A. on ME)

IMPORTANCE OF OPERATION AT PARTIAL LOAD

ESEER operating time percentages



ESEER energy weights



The standardised ESEER indice establish the average weighted efficiency of a chiller and provide insight – in a more accurate manner than the EER value – into the relationship between the useful effect (energy removed from the rooms) and the energy expended (electrical power consumption) of an air conditioning unit throughout an entire season of operation.

The graphs show the importance of operation at partial load from the energy standpoint; specifically, in the interval of 50-75% of rated capacity the unit develops significantly 70-80% of the useful effect, i.e. the cooling energy produced.

Microprocessor controller with dual icon-based display.

Optimised performance thanks to multiscroll logic.

Ideal for air conditioning of civil, public and private buildings.

AQUARIUS PLUS R134a

WATER-COOLED WATER CHILLERS AND HEAT PUMPS FEATURING DOUBLE SCREW COMPRESSORS.
COOLING CAPACITY 356 - 1225 kW, HEATING CAPACITY 400 - 1371 kW.

pure energy

BENEFITS

- 19 base models with single or twin compressors to perfectly match each specific system requirement;
- Class leading nominal and seasonal energy efficiency ratings;
- Reduced noise levels, thanks also to the availability of two differing acoustic versions;
- Easy access to all components;
- Continuous control of the cooling capacity;
- User friendly controller with multifunctional buttons and dynamic display icons.

MAIN OPTIONS

- Compressor protection by means of automatic cut-outs;
- Condensing pressure control kit;
- Anti-vibration dampers kit;
- Replicated remote user terminal kit;
- Supervisor kits;
- Combinable cooling tower or dry cooler available on request;
- Antifreeze heater;
- Total or partial recovery exchangers (50% or 100% of rejection heat (available on request);
- Pressure control valves kit;
- MTA xCONNECT supervision based on internal web pages;
- Modularity / web interconnection hub.

STANDARD FEATURES

- Electronic thermostatic expansion valves as standard on models (1401-2401) and (2202-4802), optional for the remaining models;
- Semi-hermetic dual screw compressors expressly developed for use with R134a;
- Evaporator and shell and tube condensers optimised for operation with R134a;
- Easily adapted to heat pump operation;
- Check valve on compressor discharge, shut-off valves on suction and discharge lines;
- Shut-off valve and solenoid valve on the liquid line;
- RS485 ModBus interface for connection to Supervisors;
- Ethernet connection featuring pre-programmed HTML supervision pages, allowing local or internet based visualization and modification of the operating parameters;
- Start-up with low peak current;
- Suitable for outdoor installation (IP44 protection rating);
- Environmentally friendly refrigerant R134a with zero ozone depletion potential;
- All the units are equipped with a phase monitor which provides protection against phase loss and phase reversal and checks the operating voltage limits;
- Compressor crankcase heaters;
- The new programmable 32-byte “xDRIVE” microprocessor is equipped with a LINUX operating system and a backlit semi-graphic user terminal.

VERSIONS

- N (standard);
- SSN (very low noise);
- Heat pump with inversion on water side.

Model AQP		1401	1601	1801	2101	2401	1402	1502	1602	1802	2002	2202	2502	2652	2802	3202	3402	3602	4202	4802
Tower water																				
Cooling capacity	kW	356	427	486	553	607	364	384	410	475	530	570	648	686	728	847	913	974	1113	1225
Absorbed power	kW	70	84	96	109	119	71	76	81	93	103	112	127	134	140	166	178	191	219	238
ESEER	-	6,11	5,86	6,26	5,65	6,18	6,43	6,14	5,90	6,41	6,55	6,46	5,93	6,36	6,48	6,06	6,42	6,49	5,87	6,42
Well water																				
Cooling capacity	kW	373	446	506	578	634	380	401	428	497	553	594	677	718	762	886	952	1014	1161	1281
Absorbed power	kW	66	78	88	102	111	67	70	75	87	95	104	119	125	131	154	165	176	206	222
Power supply	V/Ph/Hz	400±10%/3/50																		
Circuits / Compressors	N°	1/1	1/1	1/1	1/1	1/1	2/2	2/2	2/2	2/2	2/2	2/2	2/2	2/2	2/2	2/2	2/2	2/2	2/2	2/2
Sound pressure level (N)	dB(A)	69,0	68,0	68,0	69,0	70,0	66,0	66,0	66,0	68,0	68,5	69,0	70,0	71,0	72,0	71,0	71,0	71,0	72,0	73,0
Sound pressure level (SSN)	dB(A)	63,0	62,0	62,0	63,0	64,0	60,0	60,0	60,0	62,0	62,5	63,0	64,0	65,0	66,0	65,0	65,0	65,0	66,0	67,0
Depth	mm	1020	1020	1020	1020	1020	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200
Width	mm	3345	3345	3345	3345	3345	3745	3745	3745	3745	3745	3745	3745	4295	3755	4745	4845	4860	4760	4760
Height	mm	2020	2020	2110	2110	2110	1850	1850	1850	1850	1940	1940	1940	1940	2000	2130	2200	2200	2250	2250
Installed weight	Kg	2455	2909	3420	3477	3586	2691	2966	2966	3024	3683	3983	4040	4409	4509	5826	6539	6539	6539	7141

All data refers to standard units at the following nominal conditions:

Tower water: evaporator water inlet/outlet temperature 12-7 °C, condenser water inlet/outlet temperature 30-35 °C.
Well water: evaporator water inlet/outlet temperature 12-7 °C, condenser water inlet/outlet temperature 15-30 °C.
Heating capacity = Cooling capacity + Absorbed power.

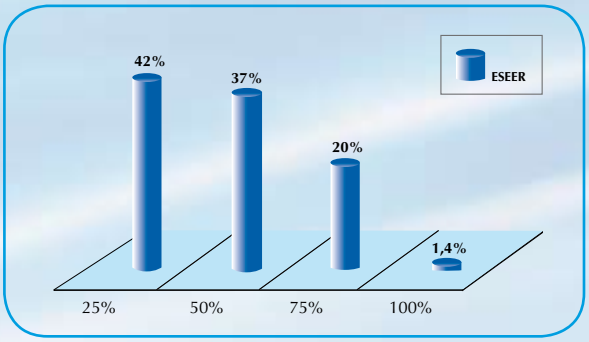
Sound pressure level in hemispherical field at 10 m from condenser side and 1.6 m from ground. Values with tollerance ± 2 dB.
The sound levels refer to operation of the unit under full load in nominal conditions.
The listed weights and dimensions refer to base chillers with no options fitted.

EUROVENT CERTIFIED PERFORMANCE www.eurovent-certification.com

MTA partecipates in the E.C.C. programme for LCP-HP. Certified products are listed on www.eurovent-certification.com. Eurovent Certification applied to the units:
- Air/Water with cooling capacity up to 600 kW
- Water/Water up to 1500 kW

PARTIAL LOADS

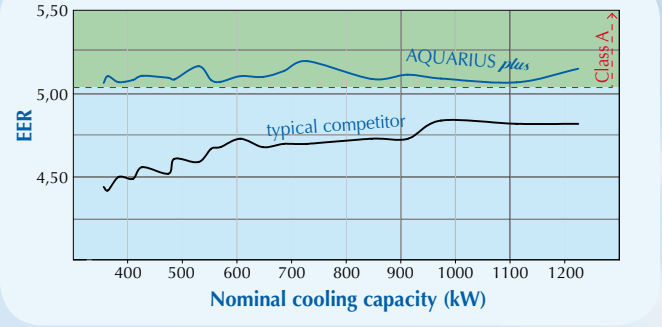
ESEER operating time percentages



The standardised ESEER indice establish the average weighted efficiency of a chiller and provide insight – in a more accurate manner than the EER value – into the relationship between the useful effect (energy removed from the rooms) and the energy expended (electrical power consumption) of an air conditioning unit throughout an entire season of operation.

The graphs show the importance of operation at partial load from the energy standpoint.

A SAVING WHICH YOU CAN'T IGNORE



AQUARIUS*plus* units are designed to guarantee energy efficiency levels at the top of the category. This has been achieved thanks to precise design and selection of component such as the screw compressors developed and optimised for R134a and the high efficiency exchangers.

All AQUARIUS*plus* models are rated "Class A" according to Eurovent.

Semigraphic user interface with multifunctional buttons and dynamic display icons.

Electronic thermostatic valves.

Continuous control of the cooling capacity.

EURUS FANCOILS EXPOSED OR CONCEALED VERSION

CENTRIFUGAL FAN COILS FOR SURFACE MOUNTING OR RECESSED INSTALLATION. COOLING CAPACITIES FROM 0,6 – 7,6 kW AND HEATING CAPACITY FROM 0,8 TO 9 kW. AIR FLOW FROM 100 TO 1500 m^3/h.

pure energy

BENEFITS

- Very quiet operation;
- Reduced dimensions;
- Eurovent certified performances;
- Different configurations for all types of installations;
- Wide range of accessories;
- Simplest installation, maintenance and with easily accessible internal parts;
- Reduced maintenance requirements;
- Also available in 4-pipe configurations for operation with hot and cold water;
- Extremely low power consumptions.

STANDARD FEATURES

- Rugged steel cabinet; galvanized and pre-painted to ensure durable resistance over time, white color RAL 9003;
- Air filter on all models;
- Centrifugal fan with double air inlet, offering low noise operation with limited power consumptions;
- Single phase eletric motor with six speeds (three speeds MIN, MED and MAX connected in the factory);
- Plastic air grid made by ABS with light gray color;
- Exchanger coil with copper tubes and aluminium fins.

MAIN OPTIONS

- Additional coils (with 1 or 2 rows) for 4-pipes installations;
- On/off control valves with 2 or 3 ways;
- Condensate collection tray;
- Feet floor mounting for version M;
- Rear covering panel (for installation against glazed walls);
- Base covering panel;
- Front intake grille for version M;
- Condensate drain hose with quick coupling for version C-E;
- Fancoil version (line EURUS-I) equipped with brushless and sensorless synchronous electronic motor managed by an inverter board.

CONTROL

- Wide selection of controllers, all featuring speed and temperature control, available with or without digital display, for installation on the unit or for separate wall-mounting, and with numerous control facilities depending on the requirements and the options installed on the unit;
- Wireless remote control for complete installation flexibility, with a wireless temperature sensor;
- Infrared microprocessor to control multiple units connected in series;
- Device for control via PC.

VERSIONS

Sizes

- Available in 9 sizes to cover all performance requirements for all needs.

Configurations

- Version with casing (model M) for ceiling, wall, or floor-mounting installation;
- Version with compact casing (model C) with front air intake grid and without feet, for ceiling, wall or floor-mounting installation;
- Recessed version (model E) for vertical or horizontal installation.

Coil modes

- With single 3-row coil;
- With single 4-row coil;
- With additional coils with 1 row (for 4 pipes and 3 or 4 coil rows) or 2 rows (for 4 pipes and 3 coil rows).

Fan coil models 2 pipes and 3 rows coil			130	230	330	430	530	630	730	830	930
Air flow	max	m³/h	220	295	385	485	650	760	925	1200	1500
	med.	m³/h	175	220	270	335	495	590	735	1020	1210
	min.	m³/h	105	145	235	265	315	415	535	655	830
Total cooling capacity	max	W	1030	1560	2390	2870	3640	4090	5110	5820	6740
	med.	W	860	1250	1780	2140	2940	3370	4290	5190	5870
	min.	W	590	910	1570	1730	2030	2540	3340	3740	4470
Sensible cooling capacity	max	W	860	1240	1800	2190	2820	3200	3950	4680	5550
	med.	W	710	970	1320	1600	2230	2590	3270	4120	4730
	min.	W	470	690	1115	1280	1510	1910	2500	2880	3490
(Cooling mode) Pressure drop	max	kPa	2,3	6,5	19,7	27,2	16,2	19,8	34,2	19	24,6
	med.	kPa	1,7	4,4	11,8	16,2	11,1	14,1	25,1	15,5	19,3
	min.	kPa	0,9	2,5	9,4	11,2	5,8	8,6	16,2	8,7	11,9
Heating capacity	max	W	1390	2020	2920	3560	4500	5090	6270	7660	9060
	med.	W	1150	1590	2150	2610	3590	4130	5190	6740	7720
	min.	W	760	1120	1870	2090	2420	3070	4010	4800	5710
(Heating mode) Pressure drop	max	kPa	2	5,5	16,7	23,1	13,8	16,8	29,1	16,2	20,9
	med.	kPa	1,4	3,7	10	13,8	9,4	12	21,3	13,2	16,4
	min.	kPa	0,8	2,1	8	9,5	4,9	7,3	13,8	7,4	10,1
Sound power level	max	dB(A)	45	47	49	47	48	52	56	60	64
	med.	dB(A)	39	40	40	39	41	46	51	56	58
	min.	dB(A)	32	30	36	33	31	37	42	45	50
Sound pressure level (*)	max	dB(A)	36	37	40	38	39	43	47	51	55
	med.	dB(A)	30	31	31	30	32	37	42	47	49
	min.	dB(A)	23	21	27	24	22	28	33	36	41
Dimensions	A	mm	675	775	990	990	1205	1205	1420	1420	1420
	B	mm	225	225	225	225	225	225	225	225	225
	D	mm	374	474	689	689	904	904	1119	1119	1119
	E	mm	330	430	645	645	860	860	1075	1075	1075
	F	mm	354	454	669	669	884	884	1099	1099	1099
Weight (**)	mod. M / C	kg	13	14	18	19	21	22	26	35	36
	mod. E	kg	9	13	18	19	21	22	25	33	33

Total cooling capacity at the following conditions: water inlet-outlet temperature 7-12 °C. Air temperature 19 °C (wb) / 27 °C (db).
Heating capacity at the following conditions: water inlet temperature 50 °C. Air temperature 20 °C.
(*): sound pressure levels are 9 dB(A) lower than sound power level for a 100 m³ room with a reverberation time of 0,5 sec.
(**): for models with 3-row coils.

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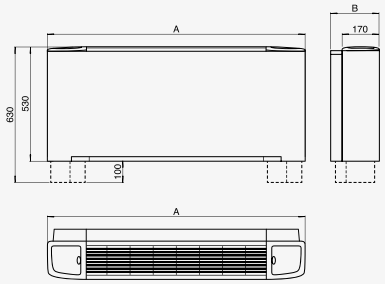
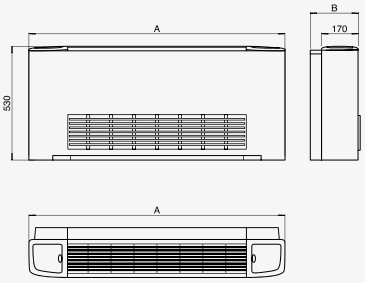
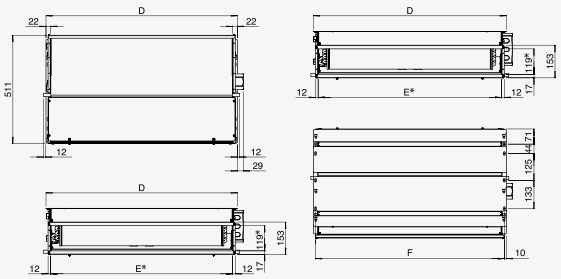
- Air/Water with cooling capacity up to 600 kW
- Water/Water up to 1500 kW



Version M



Version C



Version E

Controller installed on the unit and accessible via a flap (optional).

Digital controller allowing remote mounting on a wall (optional).

Management and controll with microprocessor and infrared controller (optional).

EURUS - CA CASSETTE FANCOILS

CASSETTE WITH RADIAL FAN.
COOLING CAPACITY FROM 1,3 TO 11 kW AND HEATING CAPACITY FROM 1,6 TO 14 kW.
AIR FLOW FROM 310 TO 1820 m^3/h.

pure energy

BENEFITS

- Possibility to mix external air with air temperature;
- Very quiet operation;
- Eurovent certified performances;
- Wide range of accessories;
- Simplest installation and maintenance;
- Extremely low power consumptions;
- Innovative and prestigious design.

STANDARD FEATURES

- Rugged steel cabinet, with insulating cells closed from 10 mm, to ensure durable resistance over time;
- Air filter on all models;
- Condensate pump;
- Radial type fan;
- Generous choice of 6 alternative fan speeds (three speeds MIN, MED and MAX connected in the factory);
- Intake grid and adjustable air distribution made by ABS white RAL 9003;
- Exchanger coil with copper tubes and aluminium fins.

VERSIONS

- 7 models with one heat exchanger (2 pipe units), 11 models with two heat exchangers (4 pipe units), either with control panel or remote infra-red control.

CONTROL

- Wide selection of remote controllers, all featuring speed and temperature control, available with or without digital display, for wall-mounting installation;
- Wireless remote control for complete installation flexibility, with a wireless temperature sensor;
- Infrared microprocessor to control multiple units connected in series;
- Device for control via PC.

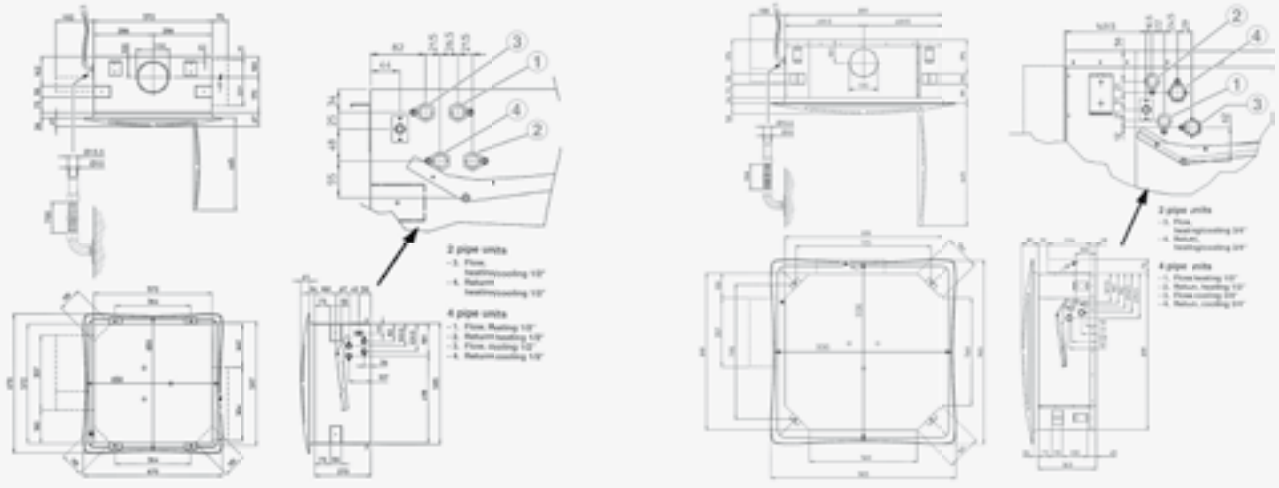
MAIN OPTIONS

- Additional coils for 4-pipes installations;
- On/off control valves with 2 or 3 ways;
- Fresh air connection;
- Unit with remote control board;
- Eletric low energy motor consumption controlled by an inverter board (line EURUS-CA-I).

2 Pipes Cassette Models			EU-CA02	EU-CA12	EU-CA22	EU-CA32	EU-CA42	EU-CA52	EU-CA62
Air flow	max	m³/h	610	520	710	880	1140	1500	1820
	med.	m³/h	420	420	500	610	820	970	1280
	min.	m³/h	310	310	320	430	630	710	710
Total cooling capacity	max	W	1980	2680	4330	5020	6160	9510	11100
	med.	W	1630	2340	3340	3880	4910	6780	8450
	min.	W	1270	1840	2250	2940	4210	5310	5310
Sensible cooling capacity	max	W	1640	2040	3180	3740	4590	6480	8250
	med.	W	1320	1750	2390	2810	3580	4480	6090
	min.	W	1010	1350	1570	2080	3030	3460	3710
(Cooling mode) Pressure drop	max	kPa	10,0	9,7	15,1	19,7	21,6	26,9	35,6
	med.	kPa	7,0	7,6	9,4	12,4	14,3	14,7	21,8
	min.	kPa	4,5	4,9	4,6	7,5	10,9	9,4	9,4
Heating capacity	max	W	2640	3350	5230	6170	7770	10710	14000
	med.	W	2120	2900	3930	4630	6030	7340	10300
	min.	W	1620	2220	2560	3430	5120	5610	6130
(Heating mode) Pressure drop	max	kPa	9,0	8,2	11,4	17,7	15,1	23	30,6
	med.	kPa	6,0	6,3	7,3	11,2	9,9	12,4	18,6
	min.	kPa	4,0	4,1	3,5	6,7	6,7	7,9	7,9
Sound power level	max	dB(A)	49	45	53	59	48	53	58
	med.	dB(A)	40	40	45	49	40	40	48
	min.	dB(A)	33	33	33	41	33	34	34
Sound pressure level (*)	max	dB(A)	40	36	44	50	39	44	49
	med.	dB(A)	31	31	36	40	31	31	39
	min.	dB(A)	24	24	24	32	24	25	25
Dimensions	A	mm	575	575	575	575	820	820	820
	B	mm	575	575	575	575	820	820	820
	H	mm	275	275	275	275	303	303	303

Total cooling capacity at the following conditions: water inlet-outlet temperature 7-12 °C. Air temperature 19 °C (wb) / 27 °C (db).
Heating capacity at the following conditions: water inlet temperature 50 °C. Air temperature 20 °C.
(*): sound pressure levels are 9 dB(A) lower than sound power level for a 100 m³ room with a reverberation time of 0,5 sec.

MTA partecipates in the E.C.C. programme for LCP-HP. Certified products are listed on www.eurovent-certification.com. Eurovent Certification applied to the units:
- Air/Water with cooling capacity up to 600 kW
- Water/Water up to 1500 kW



Electonic control (optional).

Digital controller allowing remote mounting on a wall (optional).

Management and controll with microprocessor and infrared controller (optional).

CONNECTIVITY

CLICK AND CHECK

xCONNECT, MTA's world of connectivity solutions, allows connection to User-supplied Building Management Systems (**BMS**), connection **via local LAN** or **Ethernet networks**, connection to MTA's dedicated **xWEB** supervisor, the possibility to program or download storical data via **USB** connection, and much more beyond.

Serial connection to the most advanced **BMS** systems allows MTA units to be integrated into a centralised supervisor through ModBus protocol. The integration with Lonworks, Bacnet, Profibus system is possible through apposite gateways (not included).

Local supervision via intranet or internet can also be achieved **via Ethernet**, with **pre-programmed HTML supervision pages** which, according to the unit type, are already pre-programmed within the unit itself.

Local Ethernet connection allows multiple units to be interconnected within an autonomous system, with one unit acting as Master. The User can manage all units within the system via the Master unit, or via a remote User interface.

MTA's **xWEB** function represents one of the most advanced supervision systems currently available, and integrates the latest internet applications.

All **xWEB** solutions feature a server utilising a µc-Linux operating system, allowing data transmission to a client PC. The server reads, files and manages all information arriving from the units to which it is connected. The following functions are offered in Web page format, either locally or remotely, even **via GSM/GPRS**:

- Dynamic multiparameter visualization, either graphically or numerically, of all analogue data, the outputs status and the alarm status;
- Remote modification of the operating parameters;
- Graphic scheduling for command functions;
- System personalization, including alarm messaging rules;
- Alarm reset procedures and alarm history filing by remote display;
- Alarm message transmission via fax, sms and e-mail (only for xWEB with built in GSM/GPRS modem).

Features offered depend upon unit type and xCONNECT configuration utilised.

THE COMPLETE MTA PRODUCT PROGRAMME

CHILLERS FOR INDUSTRIAL APPLICATIONS

Air and water-cooled chillers, heat pumps and laser chillers. Nominal cooling capacity from 0,5 to 181 kW.

TAE*evo*

Non-ferrous liquid chillers for laser application. Cooling capacity: from 6,6 to 97,7 kW.

T3*laser*

RWD

Air-blast water coolers. Nominal cooling power from 10 to 372 kW.

ANCILLARY EQUIPMENT

Remote condensers to be combined with MTA chillers.

Beyond RWD, MTA offers an extensive range of water cooling solutions.

Evaporative cooling towers to be combined with MTA water-cooled chillers.

Add-on hydraulic modules including tank and single or twin pumps.

External liquid storage tanks for integration within the system hydraulic circuit.

Auxiliary intermediate heat exchangers for specific application needs.

ENERDRYER: THE BIOGAS DRYER

ENERDRYER

A packaged plug & play solution, for the dessication of Biogas. EnerDryer is supplied on a compact galvanized steel frame, requiring no additional installation or programming. The stainless steel gas side features a gas/gas economizer, water/gas exchanger and separation / condensate discharge system. The cooling water circuit features a pump and storage tank. MTA offers complete design flexibility, including solutions with integrated blowers.

COMPRESSED AIR DRYERS

Refrigeration dryers:

- DE: High reliability, easy to use energy saving dryers (air flow 17-2250 m^3/h).
- MG: Scroll compressor equipped dryers featuring unique DRYMODULE evaporators (air flow 1320-11400 m^3/h).
- MGI: Energy saving dryers with twin inverter technology (air flow 4500-10800 m^3/h).
- DN: Up to 4 scroll compressors for high energy savings (air flow 13500-45600 m^3/h).
- BD: High capacity dryers for all personal needs (air flow 17400-32400 m^3/h).
- HPD: 50barg dryers (air flow 1530-7302 m^3/h).

Adsorption dryers:

- NA: Compact aluminium heatless dryers (air flow 7-118 m^3/h).
- NC: Heatless dryers featuring unique energy saving microprocessor (air flow 240-1500 m^3/h).
- NH: Heat regenerated dryers for reduced purge air energy losses (air flow 600-10000 m^3/h).

COMPRESSED AIR COMPONENTS

Filters and separators for the removal of condensate, oil and impurities from compressed air.

Air and water-cooled aftercoolers for air and gas treatment, with a complete choice of applied materials and including high pressure versions.

Electronic zero-loss, mechanical zero-loss and timed drains, including high pressure versions.

Oil-water separators for simple and economic condensate disposal.

ENERGY FOR THE FUTURE

MTA was born over 30 years ago with a clear objective: improving mankind's relationship with two distinct natural resources, air and water, and optimising their transformation into energy sources. And as each application differs, so MTA offers a personalised energy solution perfectly aligned to each individual need. At MTA energy is our business, and improving your relationship with your energy is our aim.

STRATEGIC DIVERSIFICATION

MTA covers three distinct market segments. As well as Air Conditioning solutions, MTA offers products for Industrial Process Cooling, as well as Compressed Air & Gas Treatment solutions. MTA is renowned for the innovation it brings into each of these three sectors; in fact our strategic diversification offers our Customers unique benefits unseen in their individual fields.

FAR REACHING BUT ALWAYS CLOSE BY

MTA is present in over 80 countries worldwide. 7 MTA Sales Companies cover 4 continents. Expert knowledge and an accurate attention to application consultancy and service support guarantees that our Customers can look forward to long term peace of mind and an optimized energy solution. We always remain close to our Customers, so wherever you may be, we are close by.

www.mta-it.com

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MTA worldwide

MTA is present in over 80 countries worldwide. For information concerning your nearest MTA representative please contact MTA.

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MTA Germany
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www.mta.de

MTA Romania
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www.mta-it.ro

MTA Spain
Tel. +34 938 281 790
www.novair-mta.com

MTA UK
Tel. +44 01702 217878
www.mta-uk.co.uk

MTA USA
Tel. +1 716 693 8651
www.mta-usa.com

Substitutes GPCOM001HD
ed. 05/12
GPCOM001ID

MTA®
Cooling, conditioning, purifying.

MTA is ISO9001 certified, a sign of its commitment to complete customer satisfaction.

MTA products comply with European safety directives, as recognised by the CE symbol.

MTA partecipates in the E.C.C. programme for LCP-HP. Certified products are listed on: www.eurovent-certification.com