

# CHA/ML/ST 41÷71

**A CLASS ENERGY EFFICIENCY AIRCOOLED DEDICATED HEAT PUMPS WITH DOMESTIC HOT WATER PRODUCTION, AXIAL FANS, SCROLL COMPRESSOR, PLATE EXCHANGER AND HYDRONIC KIT.**



**MIDYLINE** is the line of Heat Pumps dedicated to **hot water production up to 60 °C** and operations up to -20 °C external air temperature, with Scroll compressors, axial fans and integrated hydronic kit. The unit, featuring A CLASS energy efficiency, is designed to singly handle winter heating, summer air conditioning and the production of high temperature hot water, making use of the electrical energy and heat accumulated in the clean air source, free and infinite, which can also transfer heat to homes. Flexibility is the main feature of the MIDYLINE series, which is also combined with heating units and managed by the innovative, intelligent AQUALOGIK control system, optimizing the water setpoint and regulating power supply voltage to the pump and fans, making use of an inertial tank unnecessary. This results in performance with elevated energy efficiency, silent functioning, optimized dimensions and costs. MIDYLINE is also able to operate in extreme conditions where the external air temperature is very low, as well as intelligently managing integrated elements such as furnaces and electrical heaters. Based on the external air sensor, the microprocessor activates the single integration elements in the system.

**The units are compliant to the ErP Regulation.**

## MIDYLINE

AQUALOGIK

### VERSION

**CHA/ML/ST**

Heat Pump with AQUALOGIK technology

**CHA/ML/WP/ST**

Reversible Heat Pump with AQUALOGIK technology

### FEATURES

- Structure with supporting frame, in peraluman, galvanized sheet and with rubber shock absorbers on the frame.
- Scroll compressor with internal overheat protection and crankcase heater.
- Axial fans with low ventilation and special wing profile, directly coupled to external rotor motors.
- Condenser made of copper tube and aluminium finned coil, complete with drain pan.
- Evaporator AISI 316 stainless steel braze welded plates type, completed with water differential pressure switch and antifreeze heater.
- R407C refrigerant.
- Electrical board includes: main switch with door lock device, fuses and compressor remote control switch.
- Condensing Control is included: electronic proportional device that ensures efficient and continuous functioning of the unit with outside air temperature down to -20 °C in cooling mode. It also allows to reduce the sound level especially at night. It consists of a fans speed controller with continuous speed regulation, an high/low pressure transducer on cooling circuit and an electrical heater on electrical board.
- Functioning in heating mode with outside air temperature down to -20 °C.
- The production of hot water up to 60 °C is reachable with outside air temperature down to -15 °C. With outside air temperature of -20 °C the reachable production of hot water is up to 45 °C.
- Water circuit includes: variable speed circulating pump, safety valve, gauge and expansion vessel.
- Microprocessor control and regulation system with AQUALOGIK technology.

### ACCESSORIES

#### FACTORY FITTED ACCESSORIES

EH	Supplementary electrical heater
KC	Gas burner integration Kit
TX	Coil with pre-coated fins

#### LOOSE ACCESSORIES

HW	Storage tank for domestic hot water production
CR	Remote control panel
IS	Modbus RTU protocol, RS485 serial interface
RP	Coil protection metallic guards

MODEL			41*	51*	41**	51**	71
Heating	Heating capacity (1)	kW	11.5	16.0	11.5	16.0	22.5
	Absorbed power (1)	kW	3.2	4.6	3.2	4.6	6.5
	COP (1)		3.59	3.48	3.59	3.48	3.46
	Heating capacity (2)	kW	11.3	15.8	11.3	15.8	22.4
	Absorbed power (2)	kW	2.7	3.8	2.7	3.8	5.4
	COP (2)		4.19	4.16	4.19	4.16	4.15
Heating (EN14511)	Heating capacity (1)	kW	11.9	16.4	11.9	16.4	23.0
	Absorbed power (1)	kW	3.2	4.6	3.2	4.6	6.5
	COP (1)		3.72	3.57	3.72	3.57	3.54
	SCOP (3)		4.71	4.95	4.71	4.95	5.12
	Energy Efficiency (3)	%	185	195	185	195	202
	Energy Class (4)		A++	A++	A++	A+	
Cooling	Cooling capacity (5)	kW	7.3	10.5	7.3	10.5	16.0
	Absorbed power (5)	kW	2.5	3.6	2.5	3.6	5.2
	EER (5)		2.92	2.92	2.92	2.92	3.08
	Cooling capacity (6)	kW	10.8	15.5	10.8	15.5	21.2
	Absorbed power (6)	kW	2.7	4.0	2.7	4.0	6.1
	EER (6)		4.00	3.88	4.00	3.88	3.48
Cooling (EN14511)	Cooling capacity (5)	kW	7.0	10.2	7.0	10.2	15.6
	Absorbed power (5)	kW	2.8	3.9	2.8	3.9	5.6
	EER (5)		2.50	2.62	2.50	2.62	2.79
Compressor	Quantity	n°	1	1	1	1	1
Supplementary electrical heater	Power supply	V/Ph/Hz	230/1/50				
	Heating capacity	kW	4/6	4/6	4/6	4/6	4/6
	Absorbed current	A	18/26	18/26	18/26	18/26	18/26
	Steps	n°	2	2	2	2	2
Electrical characteristics	Power supply	V/Ph/Hz	230/1/50		400/3+N/50		
	Max. running current	A	26	35	13	15	19
	Max. starting current	A	102	165	45	69	106
Water circuit	Water flow	l/s	0.54	0.75	0.54	0.75	1.07
	Pump available static pressure	kPa	231	185	231	185	156
	Water connections	"G	1"	1"	1"	1"	1"
Sound pressure (7)		dB(A)	52	52	52	52	52
Weights	Transport weight	Kg	205	208	205	208	210
	Operating weight	Kg	209	212	209	212	214

DIMENSIONS			41*	51*	41**	51**	71
L	STD	mm	1160	1160	1160	1160	1160
W	STD	mm	500	500	500	500	500
H	STD	mm	1270	1270	1270	1270	1270

## CLEARANCE AREA

CHA/ML/ST 41\*÷71

200 | 200 | 800 | 200



## NOTES

1. Heated water from 40 to 45 °C, ambient air temperature 7 °C d.b./6 °C w.b.
  2. Heated water from 30 to 35 °C, ambient air temperature 7 °C d.b./6 °C w.b.
  3. Seasonal energy efficiency of heating at low temperature with average climatic conditions. According to EU Regulation n. 813/2013.
  4. Seasonal energy efficiency class of heating at low temperature with average climatic conditions. According to EU Regulation n. 811/2013.
  5. Chilled water from 12 to 7 °C, ambient air temperature 35 °C.
  6. Chilled water from 23 to 18 °C, ambient air temperature 35 °C.
  7. Sound pressure level measured in free field conditions at 1 m from the unit. According to ISO 3744.
- N.B. Weights of WP version are specified on technical brochure.  
 N.B. \* = Single phase  
 N.B. \*\* = Three phase

# CHA/ML/ST 91÷151

**A CLASS ENERGY EFFICIENCY AIRCOOLED DEDICATED HEAT PUMPS WITH DOMESTIC HOT WATER PRODUCTION, AXIAL FANS, SCROLL COMPRESSOR, PLATE EXCHANGER AND HYDRONIC KIT.**



**MIDYLINE**, featuring A CLASS energy efficiency, is the innovative series of Heat Pumps dedicated to **hot water production up to 60 °C** and operation up to -20 °C external air temperature, with Scroll compressors, axial fans and integrated hydronic unit. The unit, designed to originate and control – throughout the year – the best comfort conditions in rooms with a high rate of daily attendance, such as enclosed areas destined to the activities of the service sector, autonomously handles winter heating, summer air conditioning and the production of high temperature sanitary hot water. The MIDYLINE series, designed with an extremely compact structure for simple installation operations, uses only the electric energy and the heat accumulated in the air, to transfer heat to the rooms, thus allowing considerable energy savings, a high rate of reliability and the shortest start-up times. Flexibility is the main feature of the MIDYLINE series, which is indeed combined with Fan Coil units and managed by the innovative, intelligent AQUALOGIK control and optimization system, which makes the use of an inertial tank unnecessary and guarantees performances with elevated energy efficiency and silent functioning.

**The units are compliant to the ErP Regulation.**

## MIDYLINE

AQUALOGIK

### VERSION

**CHA/ML/ST**

Heat Pump with AQUALOGIK technology

**CHA/ML/WP/ST**

Reversible Heat Pump with AQUALOGIK technology

### FEATURES

- Structure with supporting frame, in peraluman and galvanized sheet.
- Scroll compressors with oil sight glass, internal overheat protection and crankcase heater.
- Axial fans with low ventilation and special wing profile, directly coupled to external rotor motors.
- Condenser made of copper tubes and aluminium finned coils.
- Evaporator AISI 316 stainless steel braze welded plates type, completed with water differential pressure switch and antifreeze heater.
- R407C refrigerant.
- Electrical board includes: main switch with door lock device, fuses and compressor remote control switch.
- Condensing Control is included: electronic proportional device that ensures efficient and continuous functioning of the unit with outside air temperature down to -20 °C in cooling mode. It also allows to reduce the sound level especially at night. It consists of a fans speed controller with continuous speed regulation, an high/low pressure transducer on cooling circuit and an electrical heater on electrical board.
- Functioning in heating mode with outside air temperature down to -20 °C.
- The production of hot water up to 60 °C is reachable with outside air temperature down to -15 °C. With outside air temperature of -20 °C the reachable production of hot water is up to 45 °C.
- Water circuit includes: variable speed circulating pump, safety valve, gauge and expansion vessel.
- Microprocessor control and regulation system with AQUALOGIK technology.

### ACCESSORIES

#### FACTORY FITTED ACCESSORIES

EH	Supplementary electrical heater
KC	Gas burner integration Kit
TX	Coil with pre-coated fins

#### LOOSE ACCESSORIES

HW	Storage tank for domestic hot water production
CR	Remote control panel
IS	Modbus RTU protocol, RS485 serial interface
RP	Coil protection metallic guards
AG	Rubber shock absorbers

MODEL			91	101	151
Heating	Heating capacity (1)	kW	30.7	40.2	52.6
	Absorbed power (1)	kW	8.0	10.9	13.6
	COP (1)		3.84	3.69	3.87
	Heating capacity (2)	kW	29.8	40.0	50.2
	Absorbed power (2)	kW	6.7	9.2	11.4
	COP (2)		4.45	4.35	4.40
Heating (EN14511)	Heating capacity (1)	kW	31.4	41.1	53.5
	Absorbed power (1)	kW	8.0	10.9	13.6
	COP (1)		3.93	3.77	3.93
	SCOP (3)		4.42	4.32	4.27
	Energy Efficiency (3)	%	174	170	168
	Energy Class (4)		A++	A++	A++
Cooling	Cooling capacity (5)	kW	20.4	28.9	37.3
	Absorbed power (5)	kW	6.6	9.3	11.7
	EER (5)		3.09	3.11	3.19
	Cooling capacity (6)	kW	27.6	39.3	47.8
	Absorbed power (6)	kW	7.7	10.7	12.8
	EER (6)		3.58	3.67	3.73
Cooling (EN14511)	Cooling capacity (5)	kW	19.8	28.2	36.5
	Absorbed power (5)	kW	7.2	10.0	12.5
	EER (5)		2.75	2.82	2.92
Compressor	Quantity	n°	1	1	1
Supplementary electrical heater	Power supply	V/Ph/Hz	400/3/50		
	Heating capacity	kW	6/10	6/10	6/10
	Absorbed current	A	26/43	26/43	26/43
	Steps	n°	2	2	2
Electrical characteristics	Power supply	V/Ph/Hz	400/3+N/50		
	Max. running current	A	28	36	42
	Max. starting current	A	109	139	179
	Water flow	l/s	1.47	1.92	2.51
Water circuit	Pump available static pressure	kPa	230	227	195
	Water connections	"G	2"	2"	2"
	Sound pressure (7)	dB(A)	61	62	64
Weights	Transport weight	Kg	220	235	265
	Operating weight	Kg	224	239	269

DIMENSIONS			91	101	151
L	STD	mm	1850	1850	1850
W	STD	mm	1000	1000	1000
H	STD	mm	1300	1300	1300

CLEARANCE AREA

CHA/ML/ST 91÷151



NOTES

1. Heated water from 40 to 45 °C, ambient air temperature 7 °C d.b./6 °C w.b.
  2. Heated water from 30 to 35 °C, ambient air temperature 7 °C d.b./6 °C w.b.
  3. Seasonal energy efficiency of heating at low temperature with average climatic conditions. According to EU Regulation n. 813/2013.
  4. Seasonal energy efficiency class of heating at low temperature with average climatic conditions. According to EU Regulation n. 811/2013.
  5. Chilled water from 12 to 7 °C, ambient air temperature 35 °C.
  6. Chilled water from 23 to 18 °C, ambient air temperature 35 °C.
  7. Sound pressure level measured in free field conditions at 1 m from the unit. According to ISO 3744.
- N.B. Weights of WP version are specified on technical brochure.

# CHA/ML/ST 182-P÷302-P

**A CLASS ENERGY EFFICIENCY AIRCOOLED DEDICATED HEAT PUMPS WITH DOMESTIC HOT WATER PRODUCTION, AXIAL FANS, SCROLL COMPRESSORS, PLATE EXCHANGER AND HYDRONIC KIT.**



**MIDYLINE**

**AQUALOGIK**

**MIDYLINE**, featuring A CLASS energy efficiency, is the innovative series of Heat Pumps dedicated to **hot water production up to 60 °C** and operation up to -20 °C external air temperature, with Scroll compressors, axial fans and integrated hydronic unit. The unit, designed to originate and control – throughout the year – the best comfort conditions in rooms with a high rate of daily attendance, such as enclosed areas destined to the activities of the service sector, autonomously handles winter heating, summer air conditioning and the production of high temperature sanitary hot water. The MIDYLINE series, designed with an extremely compact structure for simple installation operations, uses only the electric energy and the heat accumulated in the air, to transfer heat to the rooms, thus allowing considerable energy savings, a high rate of reliability and the shortest start-up times. Flexibility is the main feature of the MIDYLINE series, which is indeed combined with Fan Coil units and managed by the innovative, intelligent AQUALOGIK control and optimization system, which makes the use of an inertial tank unnecessary and guarantees performances with elevated energy efficiency and silent functioning.

Are available as option the new **EC Inverter fans with high available static pressure and efficiency for indoor ducted installation.**

**The units are compliant to the ErP Regulation.**

## VERSION

**CHA/ML/ST**

Heat Pump with AQUALOGIK technology

**CHA/ML/WP/ST**

Reversible Heat Pump with AQUALOGIK technology

**CHA/ML/SSL/ST**

Super silenced Heat Pump with AQUALOGIK technology

**CHA/ML/WP/SSL/ST**

Super silenced reversible Heat Pump with AQUALOGIK technology

## FEATURES

- Self-supporting galvanized steel frame protected with additional protection achieved via polyester powder painting.
- Scroll compressors with oil sight glass, internal overheat protection and crankcase heater.
- Axial fans directly coupled to an electric motor with external rotor.
- Condenser made of copper tubes and aluminium finned coil.
- Evaporator AISI 316 stainless steel braze welded plates type with two independent circuits on the refrigerant side and one on the water side, complete with flow switch and antifreeze heater.
- R407C refrigerant.
- Electrical board includes: main switch with door safety interlock, fuses, thermal protection relays for compressors and pump and thermocontacts for fans.
- Condensing Control is included: electronic proportional device that ensures efficient and continuous functioning of the unit with outside air temperature down to -20 °C in cooling mode. It also allows to reduce the sound level especially at night. It consists of a fans speed controller with continuous speed regulation, an high/low pressure transducer on cooling circuit and an electrical heater on electrical board.
- Functioning in heating mode with outside air temperature down to -20 °C.
- The production of hot water up to 60 °C is reachable with outside air temperature down to -15 °C. With outside air temperature of -20 °C the reachable production of hot water is up to 45 °C.
- Water circuit includes: INVERTER circulating pump, safety valve and expansion vessel.
- Microprocessor control and regulation system with AQUALOGIK technology.

## ACCESSORIES

### FACTORY FITTED ACCESSORIES

- IM Automatic circuit breakers
- SL Unit silencement
- RFM Cooling circuit shut-off valve on discharge line
- RFL Cooling circuit shut-off valve on liquid line

- EC EC Inverter fans
- ECH EC Inverter fans with high available static pressure
- DS Desuperheater
- KC Gas burner integration Kit
- SS Soft start
- TX Coil with pre-coated fins
- IS Modbus RTU protocol, RS485 serial interface

### LOOSE ACCESSORIES

- HW Storage tank for domestic hot water production
- MN High and low pressure gauges
- CR Remote control panel
- RP Coil protection metallic guards
- AG Rubber shock absorbers
- AM Spring shock absorbers

MODEL			182-P	202-P	262-P	302-P
Heating	Heating capacity (1)	kW	57.2	78.3	92.7	114
	Absorbed power (1)	kW	16.3	20.8	25.7	33.7
	COP (1)		3.51	3.76	3.61	3.38
	Heating capacity (2)	kW	55.7	74.4	91.1	112
	Absorbed power (2)	kW	13.7	17.4	21.5	27.1
	COP (2)		4.07	4.28	4.24	4.13
Heating (EN14511)	Heating capacity (1)	kW	58.0	79.2	93.6	116
	Absorbed power (1)	kW	16.3	20.8	25.7	33.7
	COP (1)		3.56	3.81	3.64	3.43
	SCOP (3)		4.92	5.52	5.11	4.80
	Energy Efficiency (3)	%	194	218	201	189
	Energy Class (4)		A++	A++	A++	A++
Cooling	Cooling capacity (5)	kW	44.3	60.4	78.6	101
	Absorbed power (5)	kW	16.4	23.6	34.8	39.1
	EER (5)		2.70	2.56	2.26	2.58
	Cooling capacity (6)	kW	60.3	81.8	101	130
	Absorbed power (6)	kW	18.7	27.5	37.6	42.2
	EER (6)		3.22	2.97	2.69	3.08
Cooling (EN14511)	Cooling capacity (5)	kW	43.6	59.6	77.7	99.7
	Absorbed power (5)	kW	17.1	24.4	35.7	40.4
	EER (5)		2.55	2.44	2.18	2.47
Compressor	Quantity	n°	2	2	2	2
	Refrigerant circuits	n°	2	2	2	2
	Capacity steps	n°			2	
Electrical characteristics	Power supply	V/Ph/Hz	400/3/50			
	Max. running current	A	44	56	68	84
	Max. starting current	A	125	159	205	246
Water circuit	Water flow	l/s	2.73	3.74	4.43	5.46
	Pump available static pressure	kPa	165	145	130	110
	Water connections	"G	2 ½"	2 ½"	2 ½"	2 ½"
ECH fan available static pressure	STD versions	Pa	90	80	100	100
	SSL/ST versions	Pa	90	90	80	85
	STD version (7)	dB(A)	60	61	62	64
Sound pressure	With SL accessory (7)	dB(A)	58	59	60	62
	SSL version (7)	dB(A)	56	57	58	60
	Transport weight	Kg	746	837	856	913
Weights	Operating weight	Kg	755	855	875	935

DIMENSIONS			182-P	202-P	262-P	302-P
L	STD	mm	2350	2350	2350	2350
	SSL	mm	2350	2350	2350	3550
W	STD/SSL	mm	1100	1100	1100	1100
H	STD	mm	1920	2220	2220	2220
	SSL	mm	2220	2220	2220	2220

CLEARANCE AREA

CHA/ML/ST 182-P÷302-P



NOTES

1. Heated water from 40 to 45 °C, ambient air temperature 7 °C d.b./6 °C w.b.
  2. Heated water from 30 to 35 °C, ambient air temperature 7 °C d.b./6 °C w.b.
  3. Seasonal energy efficiency of heating at low temperature with average climatic conditions. According to EU Regulation n. 813/2013.
  4. Seasonal energy efficiency class of heating at low temperature with average climatic conditions. According to EU Regulation n. 811/2013.
  5. Chilled water from 12 to 7 °C, ambient air temperature 35 °C.
  6. Chilled water from 23 to 18 °C, ambient air temperature 35 °C.
  7. Sound pressure level measured in free field conditions at 1 m from the unit. According to ISO 3744.
- N.B. Weights of SSL and WP versions are specified on technical brochure.