

Air-to-water heat pumps
Output: 24 - 88 kW



AEROTOP®

Heat pumps for commercial solutions



Sustainable and efficient system solutions for commercial applications

Tested systems

As a provider of heating systems, ELCO not only focuses on efficient and sustainable products, but also ensuring seamless interaction between the various components of a heating system. In ELCO's 350m² System Laboratory, extensive testing is carried out to ensure the products and systems developed meet the highest standards and requirements.

THISION® L PLUS and TRIGON® L PLUS

Flexible floor standing gas-condensing boiler

- Up to 200 kW per boiler, up to 1.6 MW in cascade
- Unique design with two heat exchangers
- Pump and check valve already integrated
- Robust and durable stainless steel heat exchanger
- High modulation range of up to 1:10
- Modular solutions with integrated plate heat exchanger and hydraulic separator
- Wall mounted solution available with THISION® L PLUS



TRIGON® XL

Ideal for challenging environments

- Comprehensive control functions with integrated master-slave cascading
- Compact dimensions
- Lightweight construction
- Wide range of applications thanks to maximum water pressure of 8 bar



TRIGON® XXL

High performance at low emissions

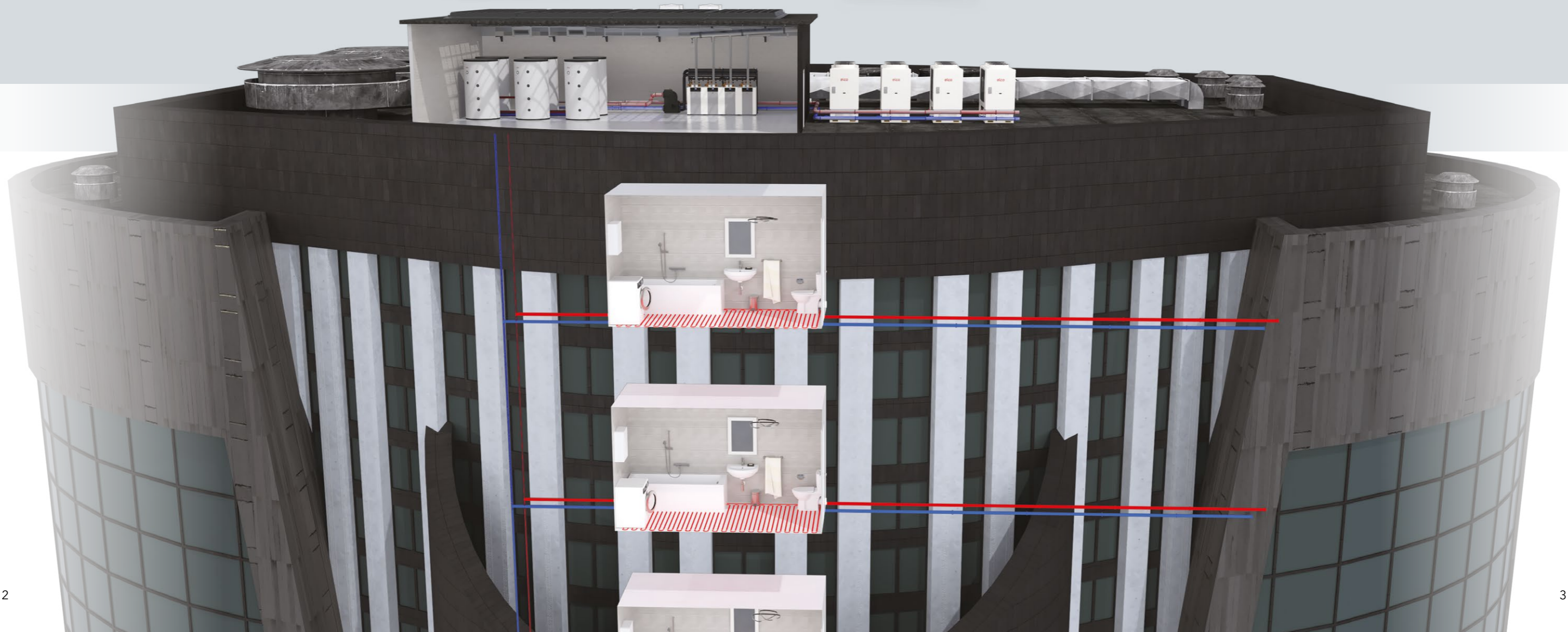
- Up to 2 MW output per boiler
- Can be dismantled into individual parts thanks to modular design
- Low water content enables roof installations
- Lowest NOx and CO emissions thanks to unique heat exchanger geometry and water-cooled burner with cold flame



AEROTOP® M & L

System and sustainability

The commercial AEROTOP® heat pumps can be combined with the highly efficient GAS condensing boilers for hybrid systems. This creates the best possible hybrid solution for highly efficient heating, cooling and domestic hot water production.



Innovation meets sustainability

The new AEROTOP® M and AEROTOP® L range of heat pumps use the ambient air as an energy source, providing a sustainable solution within a heating system, highlighted by their A++ energy class. These models are reversible and also operate with R32 refrigerant, which very few models on the market are able to offer. In addition, the AEROTOP® M and AEROTOP® L heat pumps have many other advantages in commercial applications.



Cascades

Up to 4 heat pumps can be hydraulically interconnected and up to 16 units within one network. Models of different performance levels can also be connected to each other, which not only combines the strengths of the individual modules, but also the advantages of the entire system, including:

- Increased system efficiency
- Increased reliability
- Simplified handling and installation
- Quick and easy maintenance
- Scalability

Refrigerant circuit

The R32 refrigerant circuit is completed by:

- Electronic expansion valve
- Preheater for increased efficiency
- Control panel cooling by supercooled liquid
- Reduces global warming potential (GWP) by 70% and maximises efficiencies (compared with R410A refrigerant).



Integrated components

The commercial AEROTOP® heat pumps are equipped with a wide range of extras, including an inverter pump, anti-vibration mounts and a water filter. Plus, the heat exchanger on the AEROTOP® L features an anti-corrosion coating, making it suitable for coastal installations.

Innovative capacity control:

The AEROTOP® commercial heat pumps represent a new level in energy efficiency for cooling systems and heat pumps in their category. Depending on the energy demand, the reversible system precisely adjusts the rotation frequency of the compressor.

This ensures:

- Longer running times and lower number of start/stop operations
- Heating temperatures are reached in less time than in systems without inverter
- Lower temperature fluctuations during operation



DC compressor

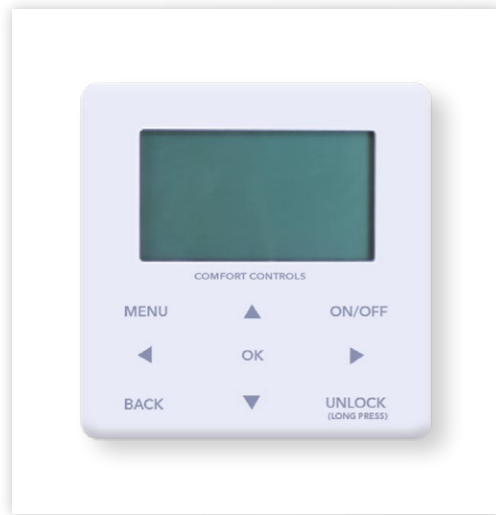
The DC compressor ensures high performance and reliability. Built-in vibration dampers and a special sound-absorbing cover ensure particularly quiet operation. The complete DC conversion significantly reduces power consumption by more than 30%.



DC inverter fan

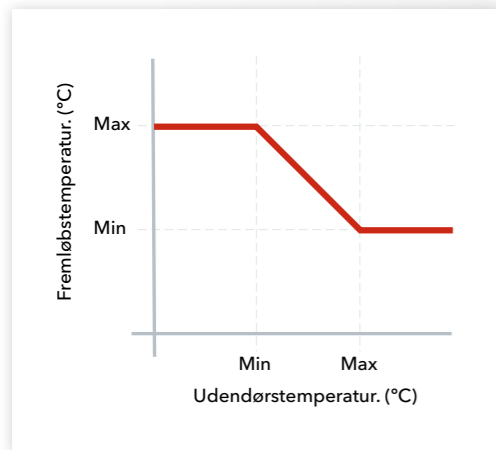
DC brushless fan motors help to meet heating and cooling demands with low noise emission and low power consumption. Both fans and fan guards are designed with CFD technology, ensuring silent and highly efficient operation.

High functionality, low noise



User interface

With the function keys, graphic display and multilevel menu, the new user interface offers comprehensive control features.



Flexible operating points

In both heating and cooling modes, the user interface allows a fix setpoint or a climate correlation curve to be simply managed. With this function available as standard, the system will set the outlet water temperature according to the outdoor ambient temperature automatically. If the outdoor temperature increases in cooling operation, the outlet water setpoint will decrease automatically to allow a higher cooling capacity to the system. Conversely, if the outdoor temperature decreases in heating operation, outlet water setpoint will increase automatically to allow a higher heating capacity to the system.



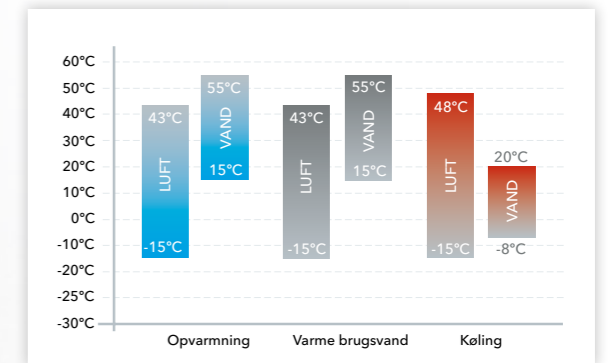
ECO mode

The ECO mode was developed to achieve maximum energy savings while maintaining acceptable comfort conditions. With this function it is possible to define, during daily operation, a period in which it is necessary to maintain maximum comfort conditions (for example working hours in the office) and one in which energy saving is preferred (for example the night hours).



Quiet operation

The construction of the AEROTOP® heat pumps, beyond increasing the efficiency of the unit, minimise the sound level making it particularly quiet. In addition, all models feature 'Silent' and 'Super Silent' modes, while anti-vibration kits are supplied as standard.



Extended operation range

The AEROTOP® L heat pumps offer a complete solution for various heating and cooling needs. In all operating modes, wide operation ranges are guaranteed both in terms of outdoor air temperature and supply water temperature. Compressor and heat exchangers are sized only to guarantee the best performances.

For example, they can supply a heat capacity of 80% at -7°C for the heat pump version.



Primary water production

In heating mode, the AEROTOP® L heat pumps can generate primary water temperatures up to a maximum of 55°C, at an outside temperature anywhere between -4°C and +30°C. Similarly, the AEROTOP® M heat pumps can generate primary water temperatures up to a maximum of 54°C, at the same outside temperature range. Reduced temperature primary water will be generated, if operating beyond the aforementioned outside temperature parameters (see Planner Manuals for full Heating Envelope).

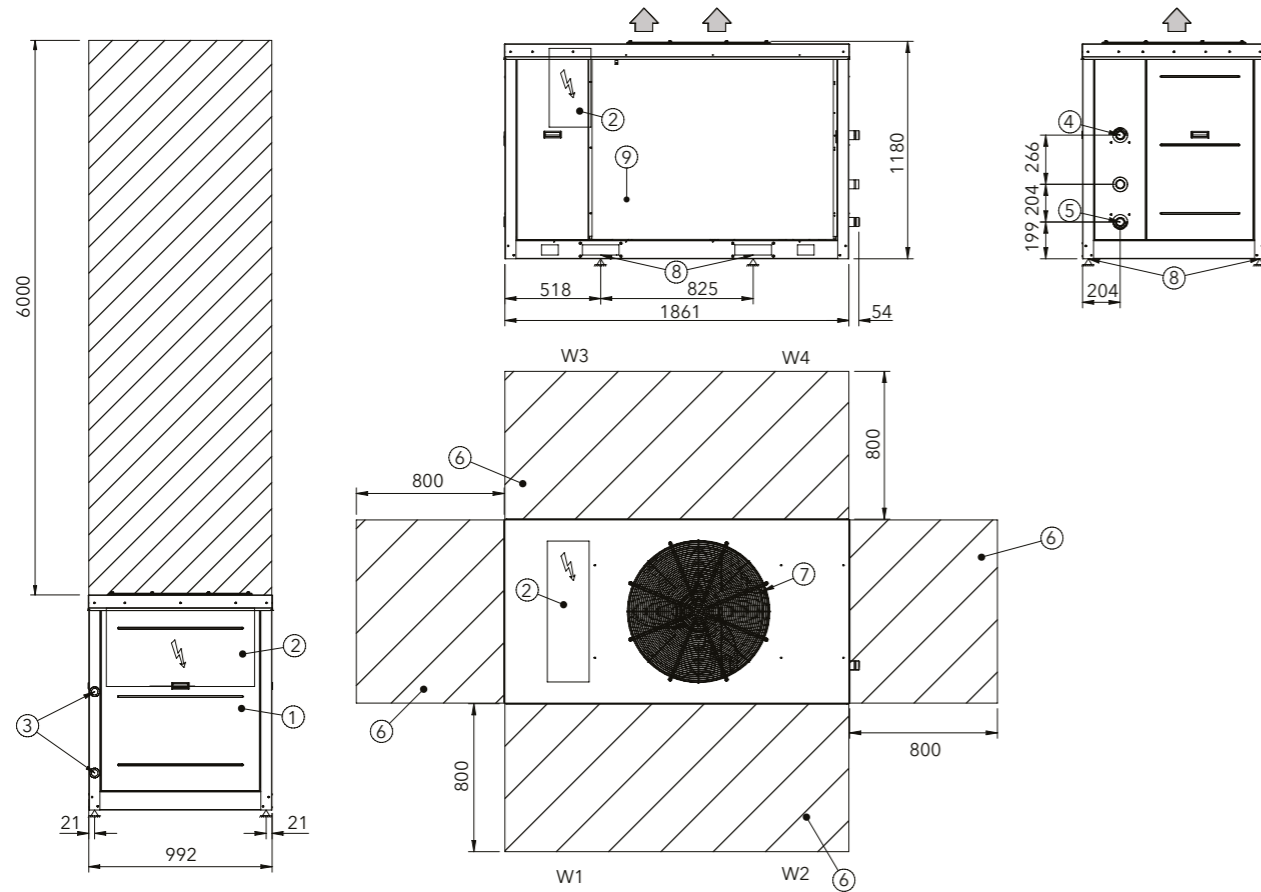
Domestic hot water production

In combination with other products, both the AEROTOP® L & M are capable of generating primary water for production of domestic hot water.

Primary Cooling

In cooling mode, both the AEROTOP® L & M heat pumps can generate chilled water to a minimum temperature of 5°C, at an outside temperature anywhere between +15°C and +48°C. ELCO Heating Solutions recommends the addition of glycol when the primary water temperature is below 5°C (see Planner Manuals for full Cooling Envelope).

Dimensions - AEROTOP® M 24 - 27 - 32

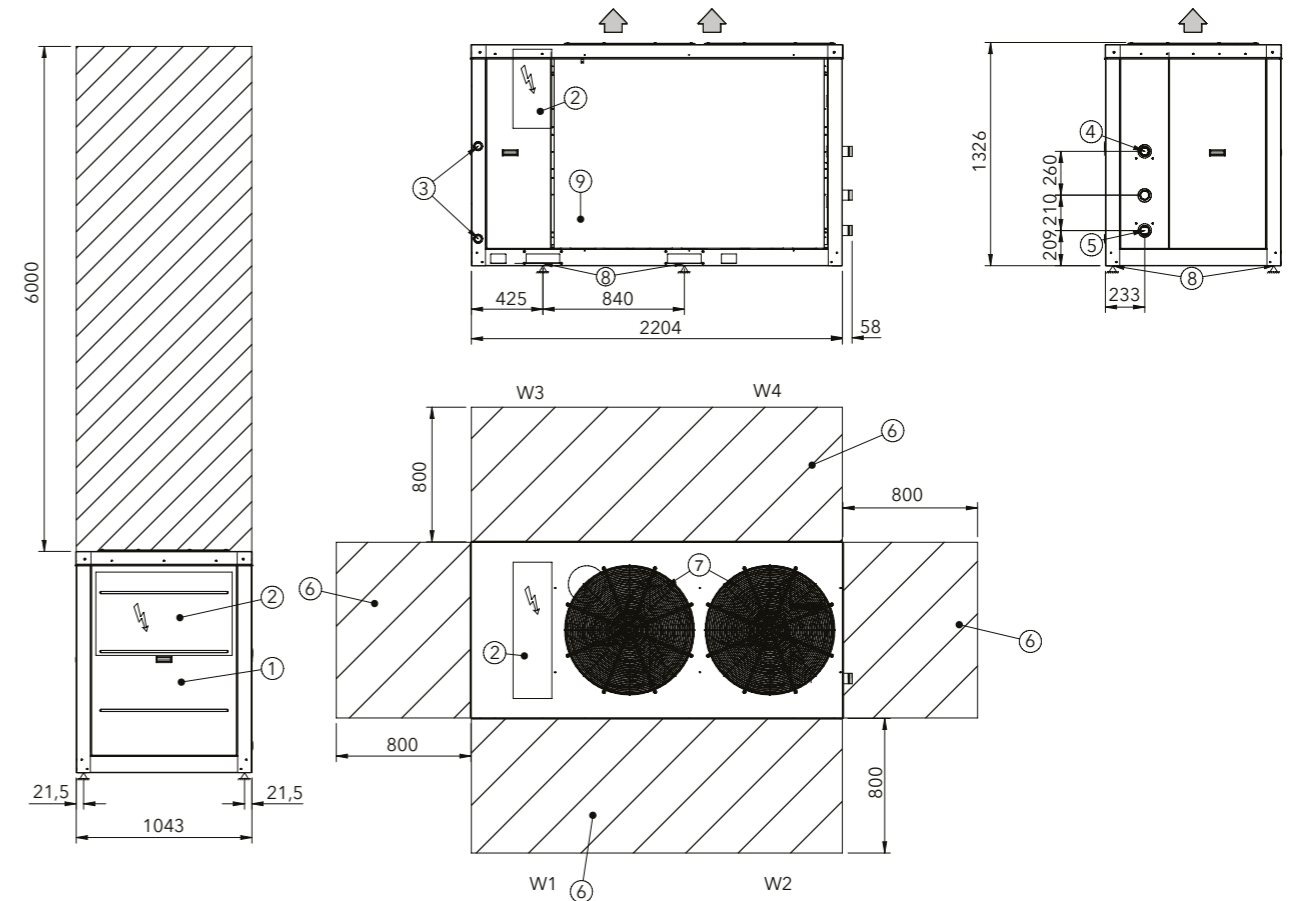


1. Compressor compartment
2. Electrical panel
3. Power input
4. Inlet water connection 1½"
5. Outlet water connection 1½"
6. Clearances
7. Electric fan
8. Unit fixing holes
9. External exchanger

AEROTOP® M		24	27	32
Size				
Length	mm	1861	1861	1861
Depth	mm	991	991	991
Height	mm	1180	1180	1180
Operational weight	kg	298	298	298
Transport weight	kg	356	356	356

The numbers in the table may vary depending on certain accessories.

Dimensions - AEROTOP® M 48

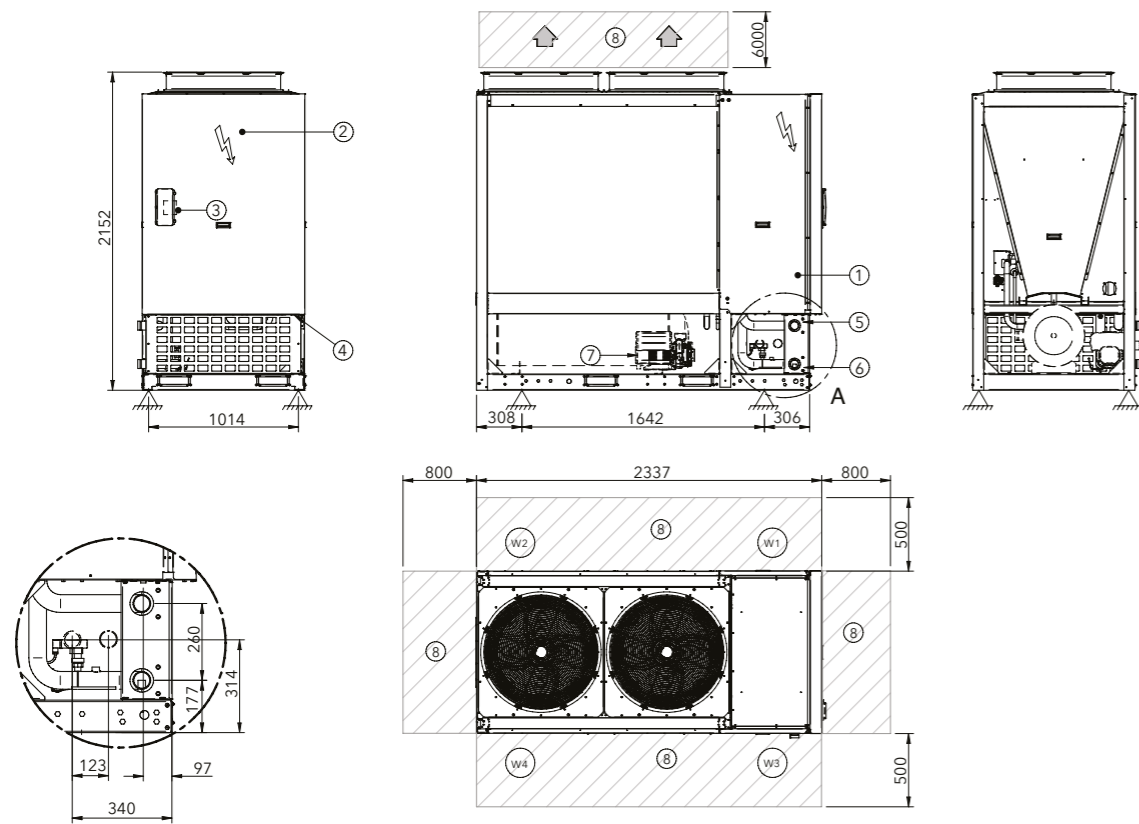


1. Compressor compartment
2. Electrical panel
3. Power input
4. Inlet water connection 2"
5. Outlet water connection 2"
6. Clearances
7. Electric fan
8. Unit fixing holes
9. External exchanger

AEROTOP® M		48
Size		
Length	mm	2204
Depth	mm	1042
Height	mm	1326
Operational weight	kg	530
Transport weight	kg	565

The numbers in the table may vary depending on certain accessories.

Dimensions – AEROTOP® L 54 – 61



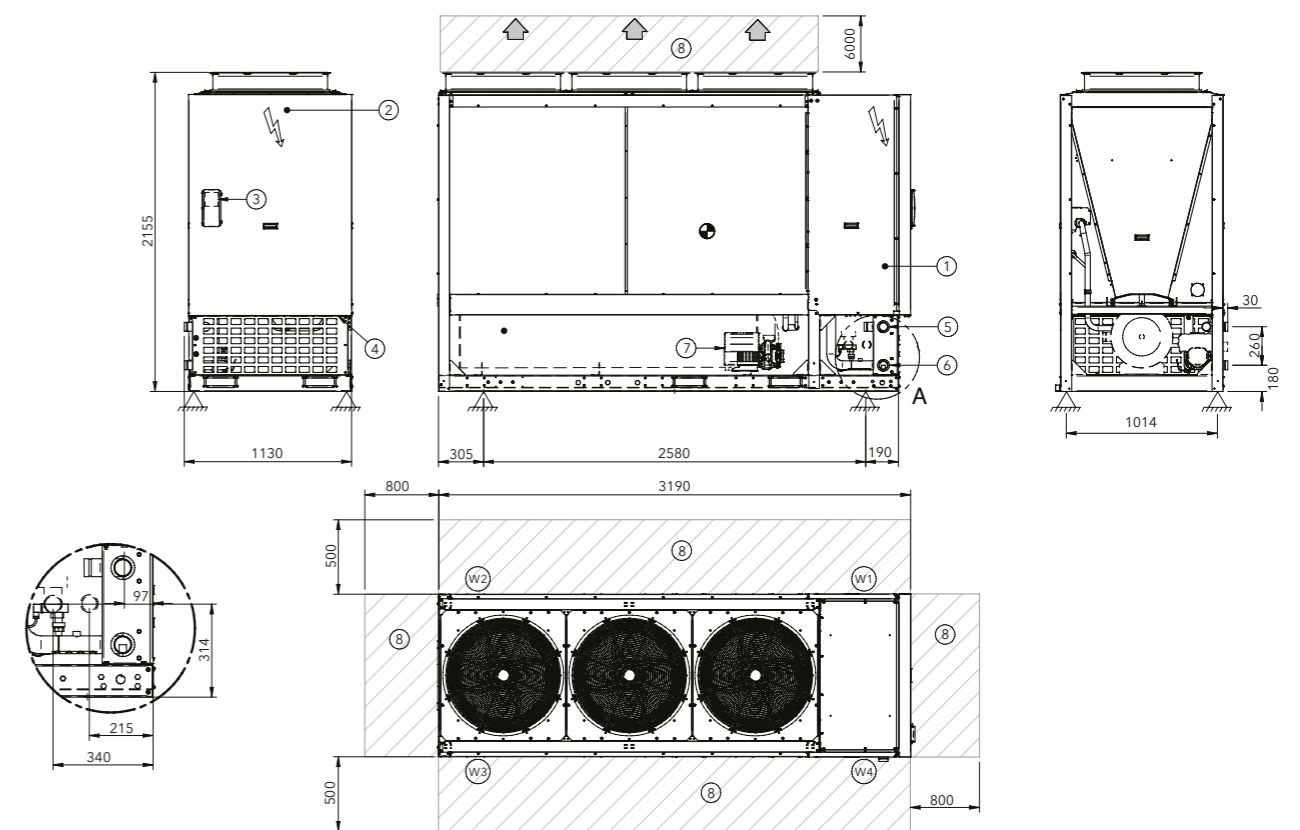
1. Compressor compartment
2. Electrical panel
3. Control keypad
4. Power input
5. Inlet water connection 2"
6. Outlet water connection 2"
7. Pump
8. Clearances

The AEROTOP® L cascade systems have 4" connections for the flow and return manifolds.

AEROTOP® L		54	61
Size			
Length	mm	2337	2337
Depth	mm	1130	1130
Height	mm	2152	2152
Operational weight	kg	580	580
Transport weight	kg	655	655

The numbers in the table may vary depending on certain accessories.

Dimensions – AEROTOP® L 65 – 79 – 88



1. Compressor compartment
2. Electrical panel
3. Control keypad
4. Power input
5. Inlet water connection 2"
6. Outlet water connection 2"
7. Pump
8. Clearances

The AEROTOP® L cascade systems have 4" connections for the flow and return manifolds.

AEROTOP® L		65	79	88
Size				
Length	mm	3190	3190	3190
Depth	mm	1130	1130	1130
Height	mm	2155	2155	2155
Operational weight	kg	780	780	780
Transport weight	kg	860	860	860

The numbers in the table may vary depending on certain accessories.

Technical data – AEROTOP®

		AEROTOP® M							
		24		27		32		48	
Technical data									
Heating & DHW production	Description	Heating Output (kW)	COP	Heating Output (kW)	COP	Heating Output (kW)	COP	Heating Output (kW)	COP
	A 7/W35	25.30	4.17	28.20	4.25	32.00	4.16	48.60	4.01
	A 7/W50	23.80	2.91	26.50	2.92	30.90	2.86	47.80	2.98
	A 2/W35	21.90	3.65	24.40	3.97	27.80	3.58	41.80	3.62
	A 2/W50	20.70	2.64	23.2	2.66	26.90	2.58	41.30	2.66
	A-4/W35	18.00	3.15	20.30	3.48	23.30	3.18	34.40	3.10
	A-4/W50	17.20	2.33	19.30	2.38	22.50	2.33	34.00	2.32
	A-7/W35	16.30	2.88	18.30	3.2	21.2	2.9	31.1	2.8
	A-7/W50	15.60	2.17	17.50	2.2	20.5	2.2	30.7	2.1
	A18/W50	30.50	3.57	34.30	3.6	40.1	3.6	62.4	3.7
	SCOP - W35	4.30		4.25		4.24		3.91	
	Power input (kW)*	6.07		6.64		8.94		12.12	

Cooling	Description	Cooling Output (kW)	EER	Cooling Output (kW)	EER	Cooling Output (kW)	EER	Cooling Output (kW)	EER
	A35/W18	31.3	4.12	34.6	3.94	41	3.6	57.7	3.83
	A35/W7	22.3	3.02	25.8	2.84	29	2.8	42	2.69
	SEER	4.63		4.64		4.63		4	
	Power Input (kW)**	7.06		8.78		11.39		15.07	

Start Current (A)	20	20	20	40.5
Run Current Maximum (A)	20	20	20	40.5
Type of compressor	Rotary inverter	Rotary inverter	Rotary inverter	Rotary inverter
Sound pressure level dB (A) standard mode (1)	59	60	60	68
Sound pressure level dB (A) silence mode (1)	57	58	59	67
Sound pressure level dB (A) super silence mode (1)	56	57	58	66
Sound Power level dB(A) (1)	75	76	76	84
Recommended Primary Buffer Capacity (l)	600	600	600	600
Minimum flow rate (l/s)	0.9	0.9	0.9	1.8
Nominal flow rate (l/s)	1.2	1.4	1.5	2.3
Maximum flow rate (l/s)	2.6	2.6	2.6	5.0
Maximum head at nominal flow rate (kPa)	185	166	155	120
Standard Air flow rate (m³/h)	12500	12500	12500	24000
ErP Energy efficiency - W35	A++	A++	A++	A++
Standard power supply (V/Ph/Hz)	400/3/50+N			

* Power input at A7/ W35°C (1) The sound pressure level refers to a distance of 1 meter from the outer surface of the unit operating in open field.
 ** Power input at A35/ W18°C Noise levels are determined using the tensiometric method (UNI EN ISO 9614-2)

		AEROTOP® L									
		54		61		65		79		88	
Technical data											
Heating & DHW production	Description	Heating Output (kW)	COP	Heating Output (kW)	COP	Heating Output (kW)	COP	Heating Output (kW)	COP	Heating Output (kW)	COP
	A 7/W35	54.40	4.07	66.70	3.90	79.30	3.96	85.90	3.98	93.70	3.98
	A 7/W50	54.80	3.01	64.20	2.89	78.80	2.90	84.70	2.84	92.60	2.77
	A 2/W35	50.40	3.65	59.40	3.57	70.70	3.55	76.80	3.54	83.70	3.46
	A 2/W50	48.30	2.74	57.00	2.67	70.80	2.64	76.40	2.58	83.50	2.52
	A-4/W35	43.00	3.23	51.60	3.26	60.30	3.07	65.80	3.07	71.70	3.01
	A-4/W50	41.00	2.46	49.00	2.45	61.40	2.31	66.40	2.27	72.70	2.22
	A-7/W35	39.4	3.0	47.9	3.1	55.2	2.8	60.4	2.8	65.9	2.8
	A-7/W50	37.4	2.3	45.1	2.3	56.8	2.1	61.6	2.1	67.5	2.1
	A18/W50	69.7	3.6	80.9	3.4	96.7	3.4	105.0	3.4	114.0	3.3
	SCOP - W35	4.04		4.03		4.08		4.07		4.06	
	Power input (kW)*	13.37		17.10		20.03		21.58		23.54	

Cooling	Description	Cooling Output (kW)	EER	Cooling Output (kW)	EER	Cooling Output (kW)	EER	Cooling Output (kW)	EER	Cooling Output (kW)	EER
	A35/W18	73.8	4	81.5	3.7	98.2	4.15	108	4.02	117	3.83
	A35/W7	53.1	2.95	58.8	2.9	72.4	3.15	78.4	3.1	85.3	2.91
	SEER	4.57		4.51		4.64		4.62		4.5	
	Power Input (kW)**	18.45		22.03		23.66		26.87		30.55	

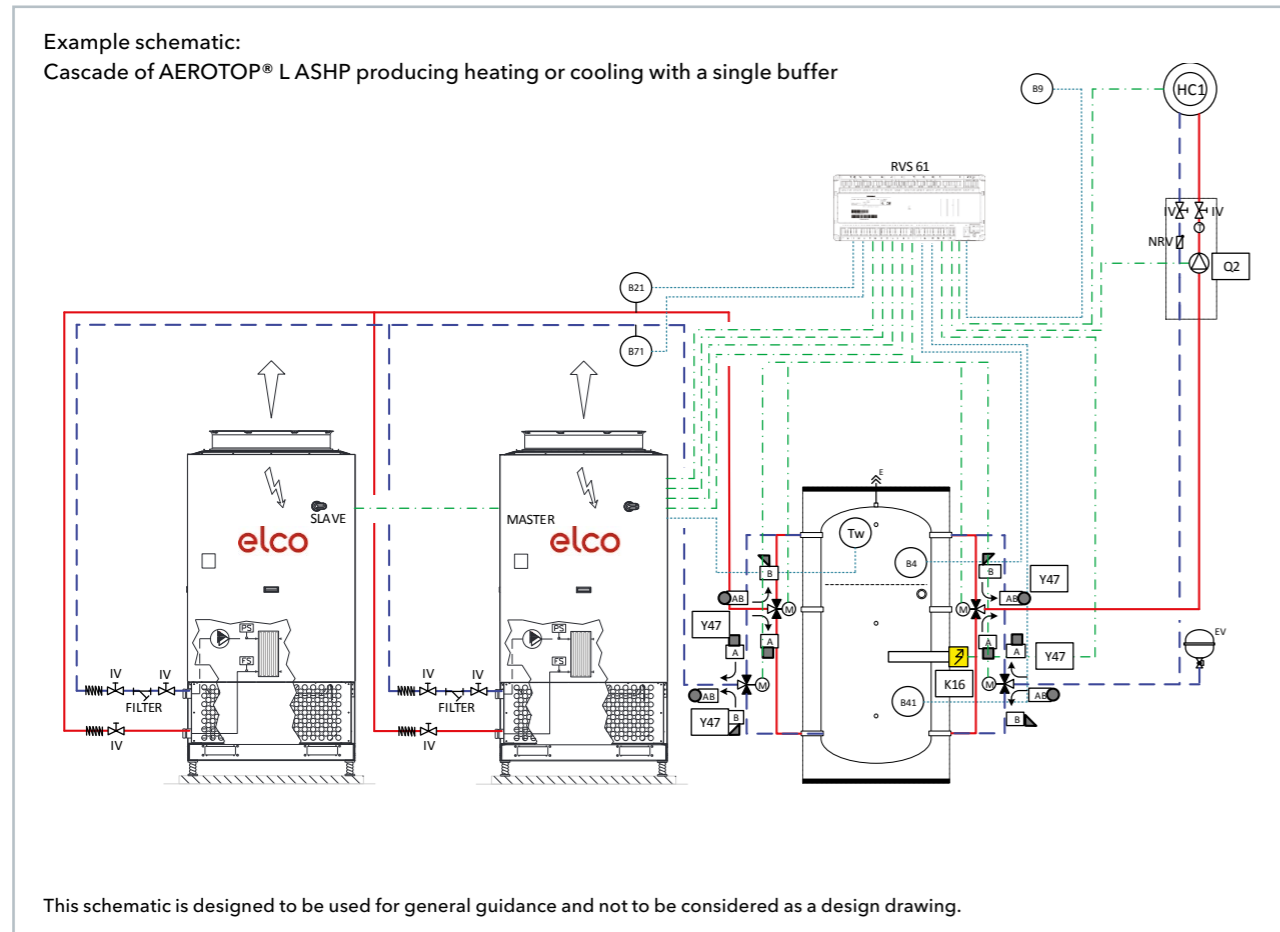
Start Current (A)	46	46	60.2	60.2	60.2
Run Current Maximum (A)	38.5	38.5	59.7	59.7	59.7
Type of compressor	Rotary inverter	Rotary inverter	Scroll inverter	Scroll inverter	Scroll inverter
Sound pressure level dB (A) standard mode (1)	64	65	62	65	67
Sound pressure level dB (A) silence mode (1)	56	56	58	58	58
Sound pressure level dB (A) super silence mode (1)	52	53	53	53	53
Sound Power level dB(A) (1)	82	82	81	84	85
Recommended Primary Buffer Capacity (l)	1000	1000	1500	1500	1500
Minimum flow rate (l/s)	1.9	1.9	2.9	2.9	2.9
Nominal flow rate (l/s)	2.6	2.9	3.1	3.8	4.2
Maximum flow rate (l/s)	6.4	6.4	6.4	6.4	6.4
Maximum head at nominal flow rate (kPa)	113	96	145	109	103
Standard Air flow rate (m³/h)	24800	24800	37200	37200	37200
ErP Energy efficiency - W35	A++	A++	A++	-	-
Standard power supply (V/Ph/Hz)	400/3/50+N				

* Power input at A7/ W35°C (1) The sound pressure level refers to a distance of 1 meter from the outer surface of the unit operating in open field.
 ** Power input at A35/ W18°C Noise levels are determined using the tensiometric method (UNI EN ISO 9614-2)

System examples - AEROTOP® M & AEROTOP® L

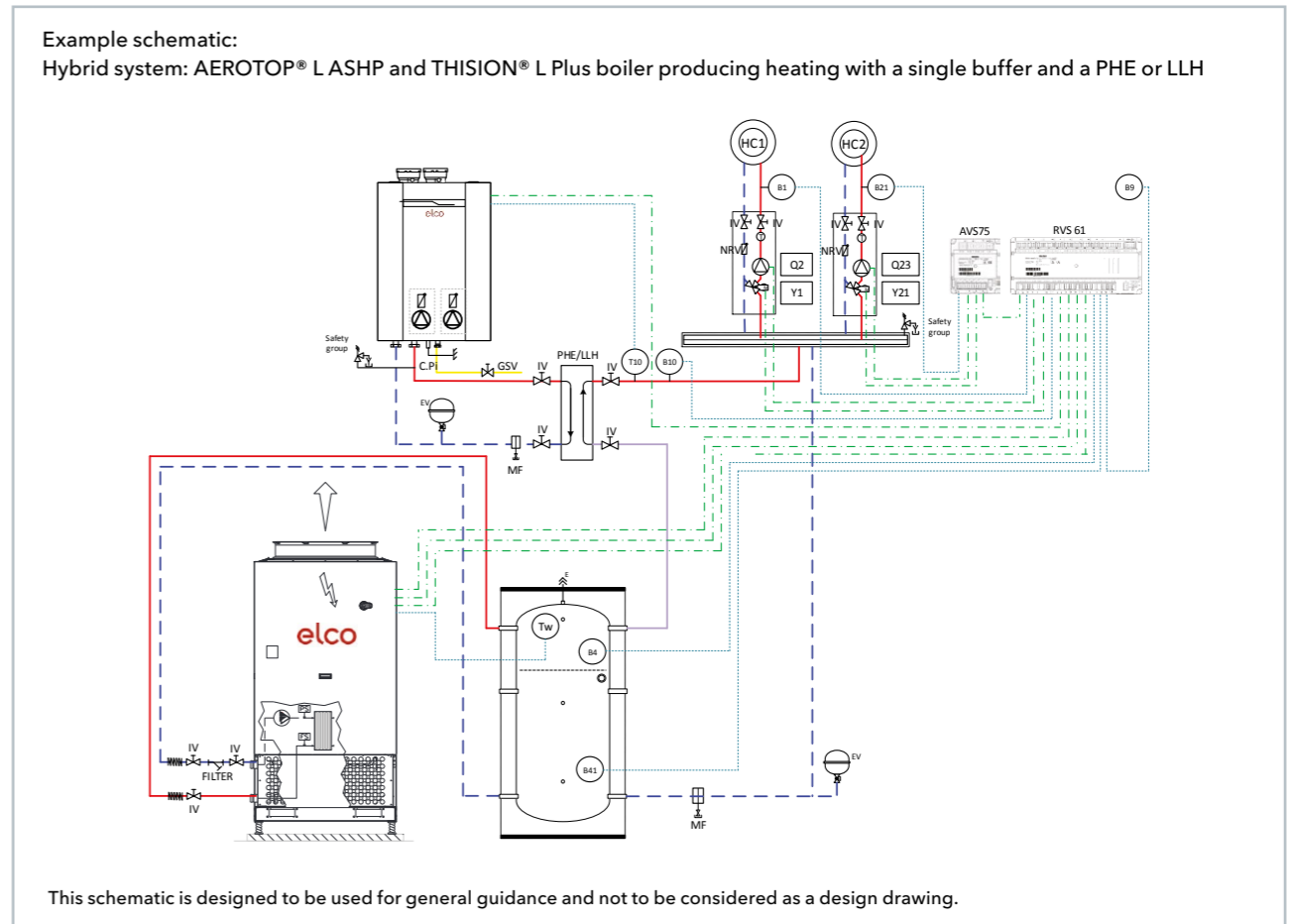
Application examples

The following systems outline typical examples for commercial applications. Depending on the requirements, the commercial AEROTOP® heat pumps can be combined with additional components from ELCO Heating Solutions, such as buffer, gas condensing boilers or hot water heaters. This provides efficient and sustainable heating, cooling and domestic hot water production throughout the whole year.



- ▶ 2 x AEROTOP® L heat pumps
- ▶ 1 x buffer for both heating and cooling
- ▶ 4 x three way diverting valves to switch between heating or cooling
- ▶ 1 x heating or cooling circuit

System examples - AEROTOP® M & AEROTOP® L



- ▶ 1 x AEROTOP® L heat pump
- ▶ 1 x THISION® L Plus boiler
- ▶ 1 x buffer
- ▶ 1 x plate heat exchanger or low loss header
- ▶ Optional outdoor sensor
- ▶ Optional clip-in for up to 3 mixing circuits

Case study - Derbyshire Academy

Hybrid heaven for Academy building

When a Derbyshire Academy received funding to replace its ageing heating plant, ELCO Heating Solutions was on-hand to supply a new, highly sustainable hybrid system. It is now contributing to a combined carbon saving of 134 tonnes per year.

The challenge

The new equipment has replaced two coal-fired 'Robin Hood' boilers, which provided heating and hot water to the premises for many years. With poor efficiencies and the need to be stoked every morning, the academy required a new system that was going to be fit for the future and provide long-term sustainable heating and hot water production.

Testimonials

Commenting on the project James Robinson, Senior Contracts Manager at BSN Group, said: "This was a fantastic job to work on and it's been a pleasure to install a system that will make a dramatic impact to the day-to-day running costs of the academy. The new heat pumps and boilers provide the best of both worlds, delivering optimum efficiency and sustainability throughout the year, while the installation was incredibly simple. All the equipment integrated perfectly thanks to standardised connections, so we've been really pleased with the ELCO products and the outcome of the project."

Consultants for the project were Birmingham-based Jonathan Richard Associates. Commenting on the project objectives, Andrada Borcovi, Low Carbon Consultant for Surveyors to Education, said: "Following a successful Phase 1 Public Sector Decarbonisation Scheme application, funding was received by the academy to undertake the fabric first roof insulation restoration works, and install a highly efficient and low carbon Air Source Heat Pump heating system."

This forms part of the academy's successful Low Carbon Skills Fund application and its long-term decarbonisation plan to make a contribution to reduce emissions as part of the Net Zero by 2050 challenge. The total fossil fuel carbon saving of the combined projects equates to 134 tonnes per year. "We've specified ELCO on many projects in the past and knew their high-quality air source heat pumps would be ideal for this design."



The ELCO solution

Two 48kW AEROTOP® M commercial heat pumps were combined with two THISION® L ECO 120kW wall-mounted condensing gas boilers to deliver a hybrid system. Staff and students are now benefitting from the latest sustainable heating and hot water technology.

Featured products:



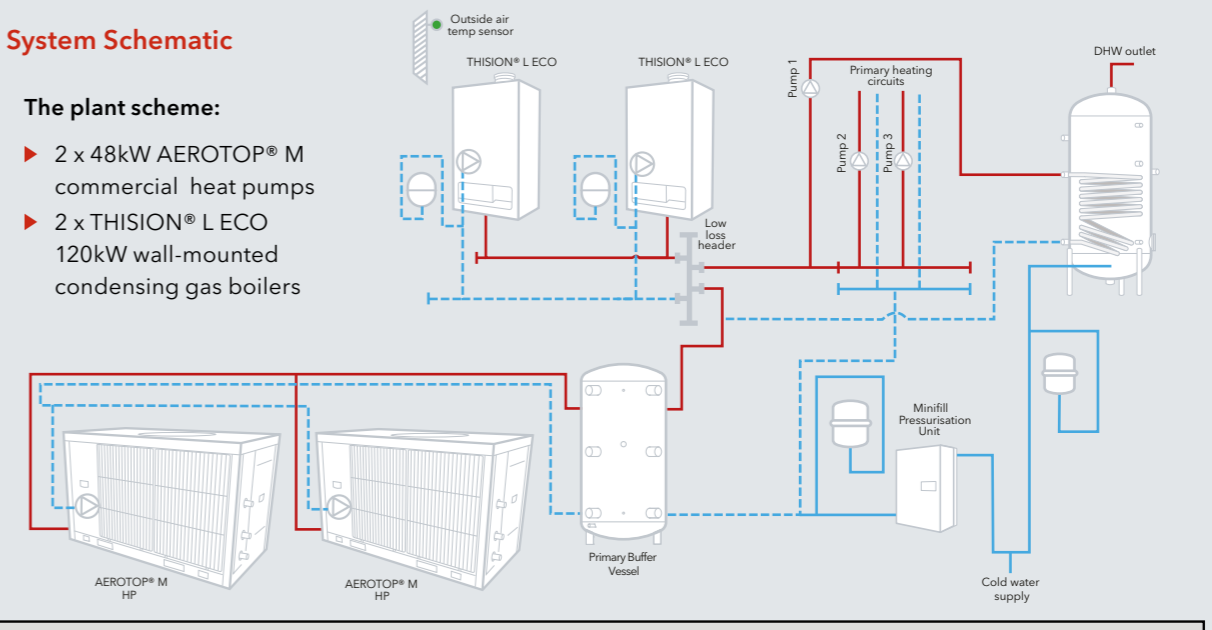
AEROTOP® M reversible heat pumps are available in outputs from 24kW to 48kW per unit. They can be cascaded up to 16 units and managed through the built in controller. The AEROTOP® range also extends to 'L' models which can deliver outputs from 54kW to 88kW per unit.

- ▶ R32 refrigerant
- ▶ Cascades
- ▶ ECO mode
- ▶ Quiet operation
- ▶ Reversible
- ▶ SCOP up to 4.3% (W35) and COP up to 3.3%
- ▶ Extended operation range
- ▶ Integrated components

"The new heat pumps and boilers provide the best of both worlds..."

System Schematic

- The plant scheme:
- ▶ 2 x 48kW AEROTOP® M commercial heat pumps
 - ▶ 2 x THISION® L ECO 120kW wall-mounted condensing gas boilers



This schematic is designed to be used for general guidance and not to be considered as a design drawing.

Case study - Lloyds Bank, Kent

A Future Saver: ELCO Heat Pump Installed at High Street Bank

Staff at the Lloyds Bank in Chatham, Kent, are benefitting from highly sustainable heating, thanks to the installation of a new 48kW AEROTOP® M heat pump from ELCO Heating Solutions. The new heat pump has replaced ageing and inefficient gas boilers, with the new unit providing a zero NOx system and highly efficient heating throughout the office building.

The challenge

Located on the roof of the three-storey building, the new ELCO heat pump is providing space heating to the main office areas on the second and third floors, as well as stairwells and washrooms. To accommodate the lower flow temperatures of the AEROTOP® unit, the refurbishment also included the upgrade of heat emitters to Type 33 radiators. The system is now delivering highly efficient heating, and is part of the Lloyds Banking Group's desire to remove inefficient systems from its property portfolio and be carbon neutral by 2030.

Testimonials

The M&E consultants for the project were Mitie, with the ELCO AEROTOP® heat pump specified by Project Manager Steve Bell. Commenting on ELCO, Steve said: "We have previously fitted ELCO boilers on many jobs in the past, but this was the first time we had used their heat pumps - and we've been really impressed. We were recommended the AEROTOP® unit by Alan Hough, the local sales manager, and after comparing the specification and performance against our usual supplier, it made complete sense to use it on this project. It's now up and running and operating perfectly."



Hybrid System Selector Tool

Reduce Emissions and Costs with ELCO



ELCO has developed an exclusive Hybrid System Selector Tool, which uses an extensive range of parameters to calculate the most suitable - and sustainable - product for any commercial project.

For consultants and D&B contractors working on heat pump only projects or hybrid systems, ELCO can help find the right solution. We will use the tool to calculate annual CO₂ emissions and running costs, then compare different options to ensure you and your clients can make informed choices.

What is it?

A powerful and advanced tool providing a detailed comparison between a hybrid system and a boiler-only setup, helping to achieve net zero targets.

Why use it?

Ideal for planning stages 1 & 2, the game-changing selector tool can calculate:

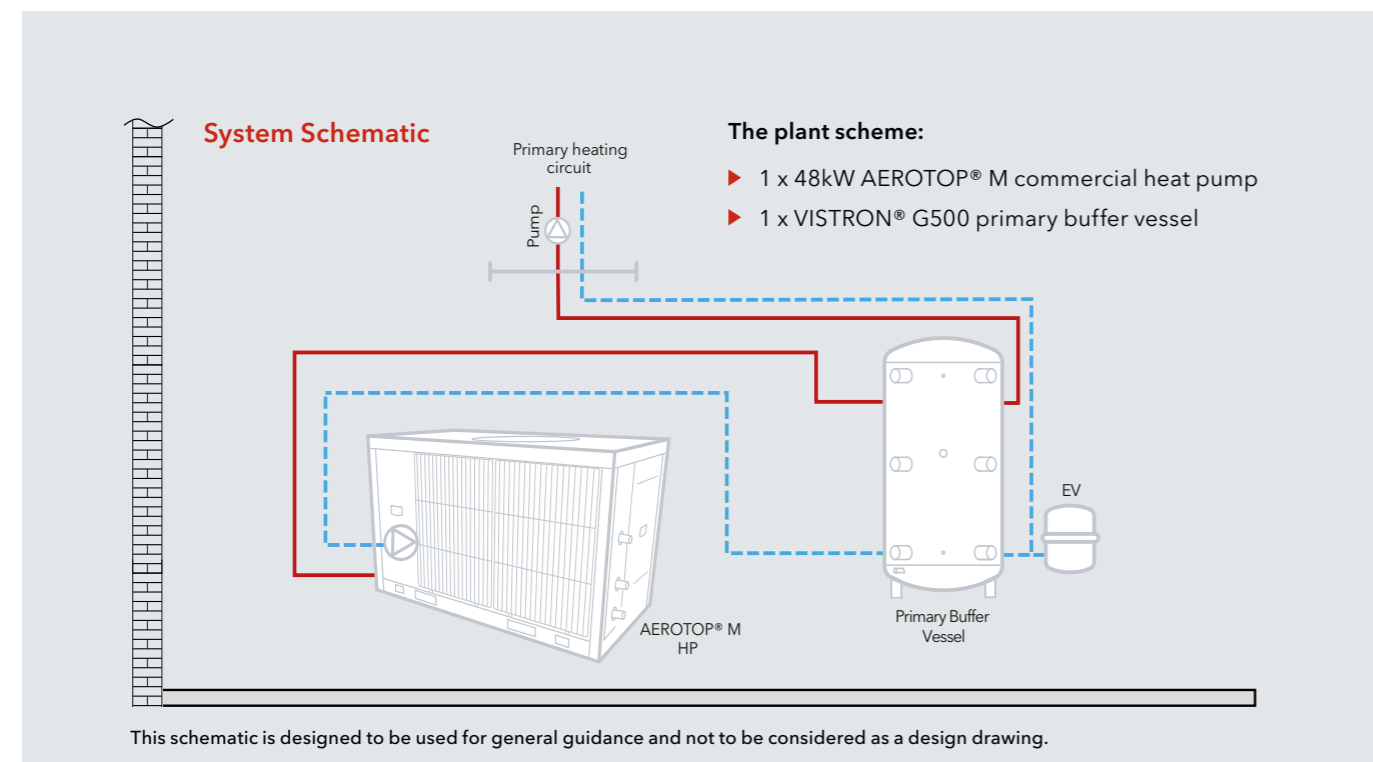
- ▶ Annual carbon emission savings
- ▶ Running costs (for both boiler and heat pump)
- ▶ Required system parameters at any external temperature
- ▶ Seasonal performance factor (SPF) as per AM17



Why ELCO?

With over ten years of experience working with heat pump technology, ELCO has a wealth of knowledge and expertise in sustainable heating solutions.

The Hybrid System Selector Tool from ELCO can provide an accurate comparison between existing system versus heat pump and existing system versus hybrid solution.





ELCO – A partner you can rely on

As a specialist partner, you can rely on ELCO's extensive hybrid systems expertise, from planning right through to servicing and maintenance. Our specially trained technicians are available around the clock to help with the installation and commissioning of commercial hybrid systems – offering their experience and assistance when you need it the most.



Commissioning

Our specialists always work together with you in commissioning an ELCO product properly to provide a high quality service.



First class service

Whether it is repairs, maintenance or troubleshooting, our service technicians are there for you seven days a week.



Trained and certified service technicians

Our ELCO service technicians are specially trained, qualified and fully equipped with the tools required to ensure all our products are maintained to the highest standards.

More information

Service Department	01268 546770	service@elco.co.uk
Spares Department	01268 546771	spares@elco.co.uk
Sales Department	01268 207244	enquiries@elco.co.uk
After Sales Technical	01268 546772	technical@elco.co.uk
Training	01268 207244	marketing@elco.co.uk



www.elco.co.uk

Your local contact is:



ELCO Heating Solutions Limited
3 Juniper West, Fenton Way, Southfields Business Park,
Basildon, Essex SS15 6SJ
Tel: 0345 646 0442 Fax: 01268 888250
www.elco.co.uk



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