

TECHNICAL SUBMISSION

Aerotop L79 – Air to Water Heat Pump

General Description:

The Aerotop L79 Air to Water heat pump is one of a range of five units that provide heat outputs @ A-7 W35, ranging from 39kW to 66kW. The COP (EN14511:2018) at this condition ranges between 3.17 and 3.33 for all units. Multiple units can be installed with integral cascade control. The maximum number of units that can be controlled in a single cascade installation is sixteen. Elco Heating Solutions can provide common primary flow and return manifolds for up-to four heat pumps in series. Installations of from four to sixteen can be installed in banks of four to accommodate this feature.

The Aerotop L 79 is supplied with modulating compressors and evaporator fans. This feature allows the units to accurately match the design loads and limit start/stop cycles. All models are reversible to provide the option of cooling during the summer months and incorporate integral defrost control.

The units are designed for external installation

The heat pump is supplied in one piece with a fitted robust and stylish outer casing fabricated from steel, with zinc-magnesium coating. The final finish is polyester powder coat in RAL 9001. Each heat pump is supplied with an integral primary circulation pump on the system side of the condenser, an over-pressure relief valve, flow-proving switch, air vent and electric element. The case dimensions are compact and this ensures that the appliance takes minimal floor space. All units are supplied with anti-vibration mounts to limit transfer to the structure and a filter for installation in the primary return connection.

The heat pump is supplied with an integral control panel, that not only manages the operation of the unit but in addition, if required, can provide time and temperature control for a heating circuit, a domestic hot water circuit and a cooling circuit. The units can optionally be controlled via volt-free switching contacts and can accommodate Modbus communication for remote inputs and outputs to a building management system. The unit includes integral fault and alarm indications. Information is provided by specific fault codes and means less time is required fault finding.

The refrigerant circuit is hermetically sealed at manufacture and the refrigerant utilised is R32

The Aerotop L79 heat pump is a Keymark listed appliance.



INNOVATIVE AND SUSTAINABLE

Ambient air is used as the energy source
Reversible heat pump using R32 refrigerant
Can provide both heating and cooling

INTEGRATED COMPONENTS

High efficiency pump with anti-vibration as standard
Condenser unit incorporates anti corrosion treatment for added protection in aggressive environments

INVERTER – TECHNOLOGY

Compressor and evaporator fans modulate to match the power demand automatically
Minimises start stop cycles and improves load matching
Accurately matches primary temperature requirements

SILENT AND ECONOMIC OPERATION

Integral anti-vibration to limit noise transmission
Modulating evaporator fan speeds
Inverter driven compressor reduces power consumption by up-to 30%
Three operation levels to limit noise, normal, silent & super silent.

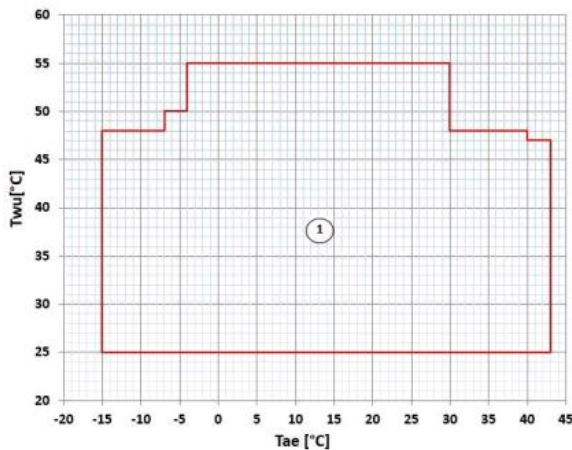
Warranty

The heat pump carries a 2 year warranty against faulty manufacture and material defects.

Service and warranty can be extended through the application of an Elco Peace of Mind service and warranty plan.

Technical Data:

Aerotop Heat Pump	L79	
Compressor		
Compressor type	Scroll Inverter	-
Number of compressors	2	-
Oil charge	6	litres
Refrigerant type	R32	-
Refrigerant charge	21.0	kg
No of circuits	1	-
Primary Water Exchanger		
Type	Brazed plate heat exchanger	-
Water content	7.8	litres
Evaporator Fans		
Fan type	Variable speed Brushless DC motor	-
Number of fans	3	-
Standard air flow	37199	m ³ /h
Installed unit power	0.9	kW
Primary Water Circuit		
Maximum pressure	10	Bar
Minimum system water volume Heating	620	litres
Minimum system water volume Cooling	200	litres
Heat pump water content	8.0	litres
Minimum flow rate	2.9	litres/sec
Nominal flow rate 5°C ΔT @ output A7 W50	4.1	litres/sec
Maximum flow rate	6.4	litres/sec
Electrical Data		
Power Supply	400/3/50+N	V/P/Hz
Maximum full load current	59.7	Amps
Maximum full load power	40.1	kW
Maximum start current	60.2	Amps
Performance (EN14511:2018)		
Heating		
Operating condition A-7 W35 – COP – SCOP (W35)	60.4 – 2.80 – 4.07	kW – COP – SCOP
Operating condition A2 W35 – COP – SCOP (W35)	76.8 – 3.54 – 4.07	kW – COP – SCOP
Power consumption (EN14511:2018)	25.7	kW
Operating condition A-4 W50 – COP (UK Specific)	66.6 – 2.36	kW – COP
Cooling		
Operating condition A35 W18 – EER - SEER	108.0 – 4.02 – 4.62	kW – EER - SEER
Power consumption (EN14511:2018)	25.1	kW
General		
Operating weight	780	kg
Sound power – standard-Silent – Super Silent	84 – 76 - 71	dB(A)

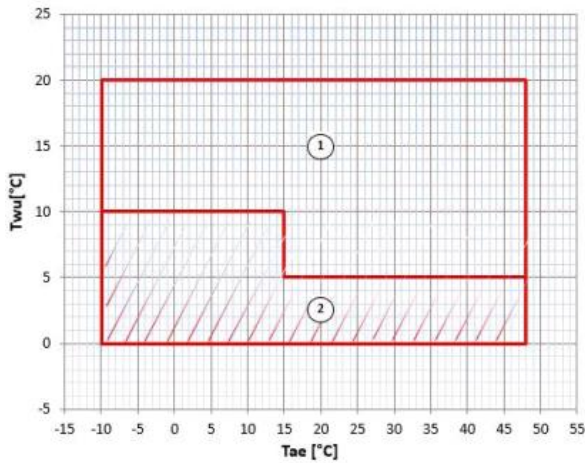


Operating Range – Heating

1. – Normal operating range

Twu – Primary flow temperature

Tae – Ambient air temperature



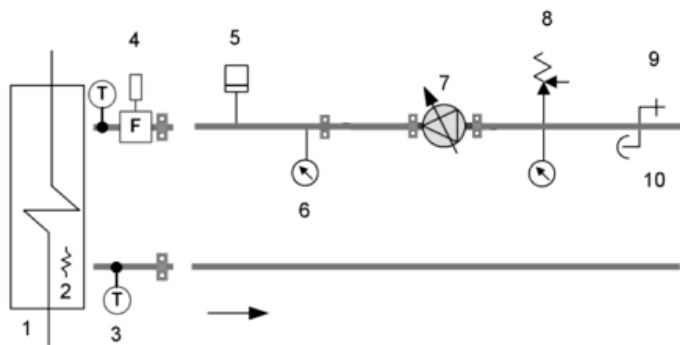
Operating Range – Cooling

1. – Normal operating range
2. – Operating range where the use of ethylene glycol is mandatory.

Twu – Primary flow temperature

Tae – Ambient air temperature

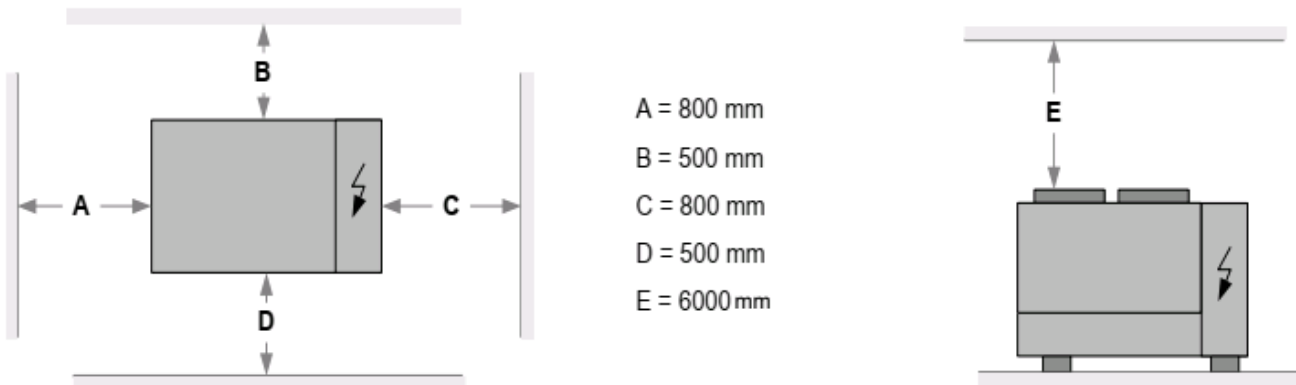
Heat Pump – Integral Components



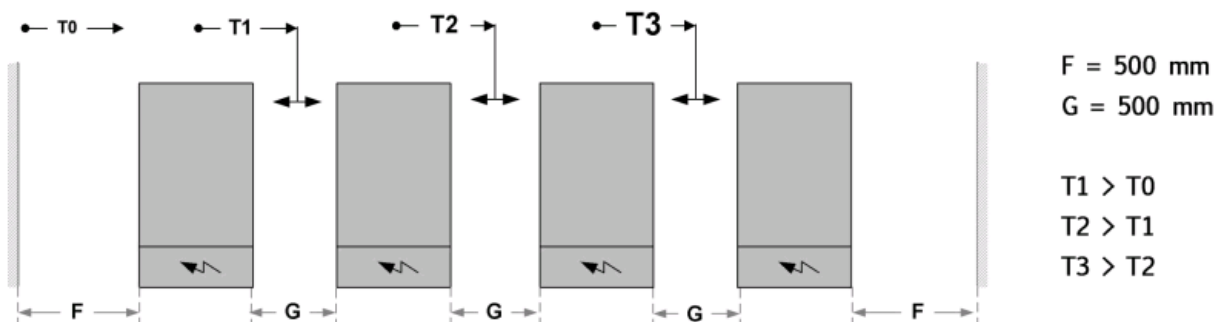
1. Condenser/evaporator – Plate heat Exchanger
2. Element for antifreeze protection
3. Temperature sensor
4. Flow proving switch
5. Over-pressure safety switch
6. Pressure gauge
7. Primary pump – adjustable frequency drive
8. Pressure relief valve
9. Discharge
10. Vent

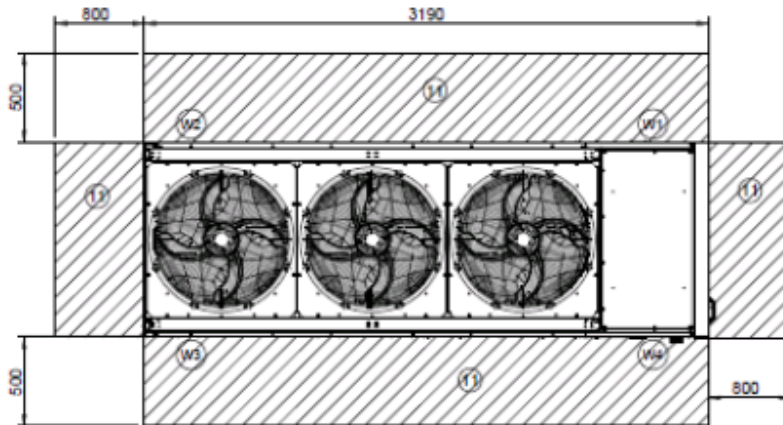
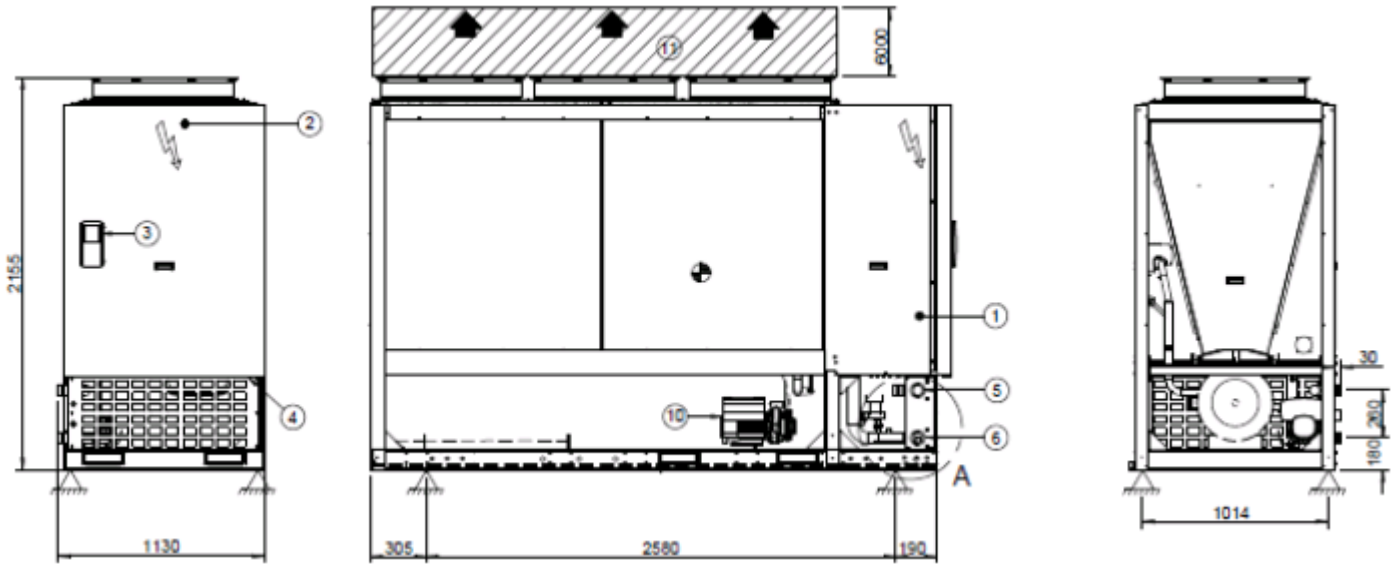
Note: A primary system water filter is supplied as a separate component and this should be installed in the primary return connection outside the appliance casing. The primary pipe-work should be connected to the heat pump using flexible connections (not supplied). This will isolate potential transmission of noise and eliminate stress transmission.

Dimension and Clearances

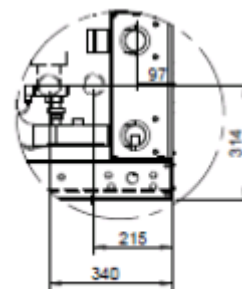


Do not smoke or use open flames within this area





1. Compressor compartment
2. Electric panel
3. Control keypad
4. Power input
5. Primary Inlet (return) – 2" Victaulic to 2" BSP
6. Primary outlet (flow) – 2" Victaulic to 2" BSP
10. Primary pump
11. Clearance required



DETAIL A

The connections at the heat pump are listed as Victaulic but threaded couplings are supplied with each heat pump