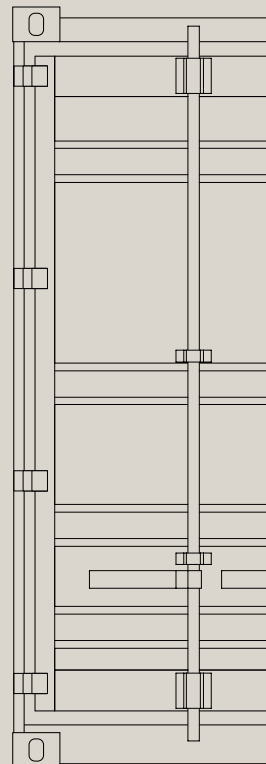
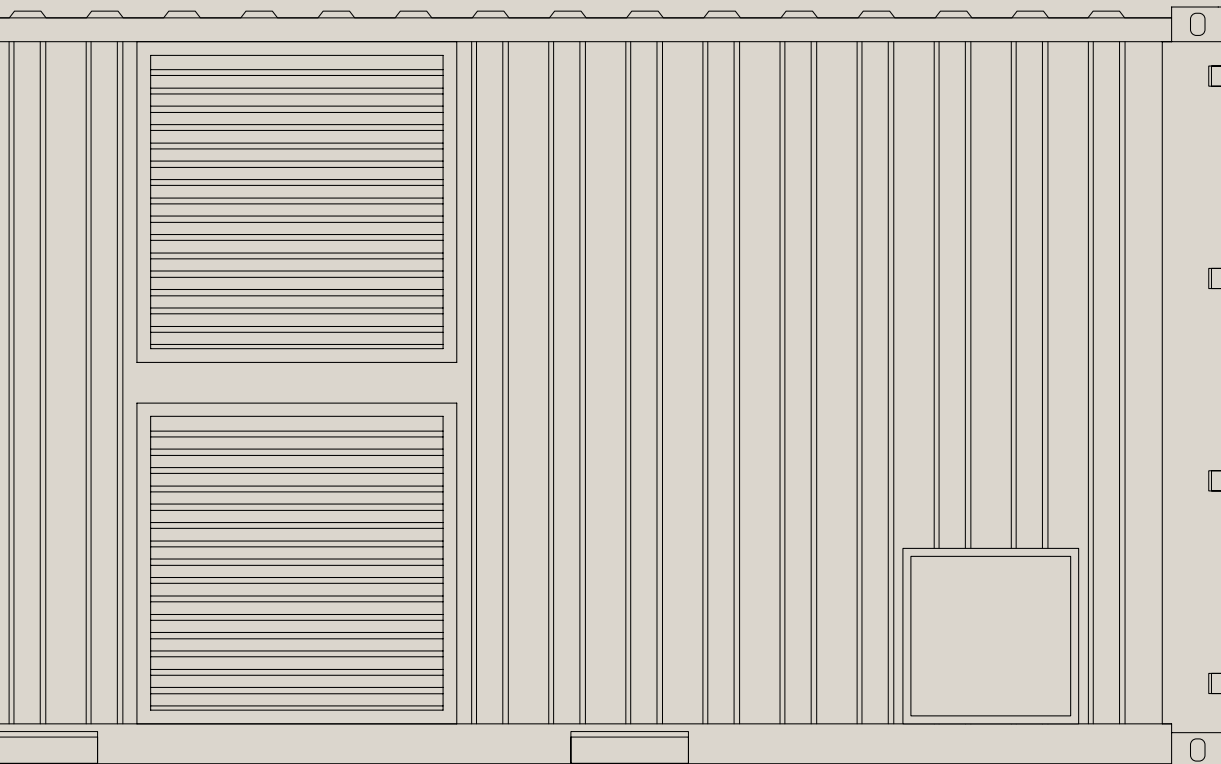


Annex 3-H/DHW

Sustainable air sourced heatpump with **PSHI™**

Here is the world's most energy-efficient air sourced heat pump, delivered in a sustainable "plug & play" container solution.

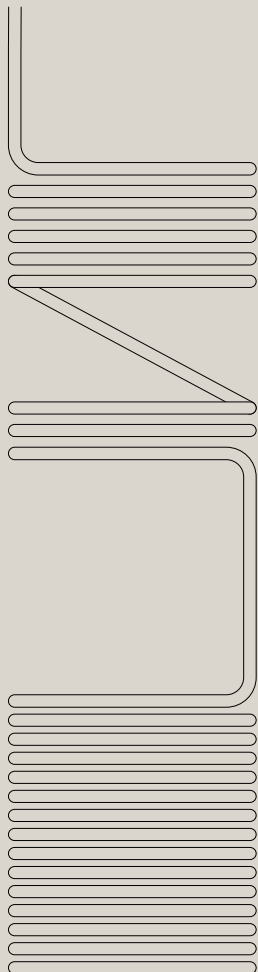
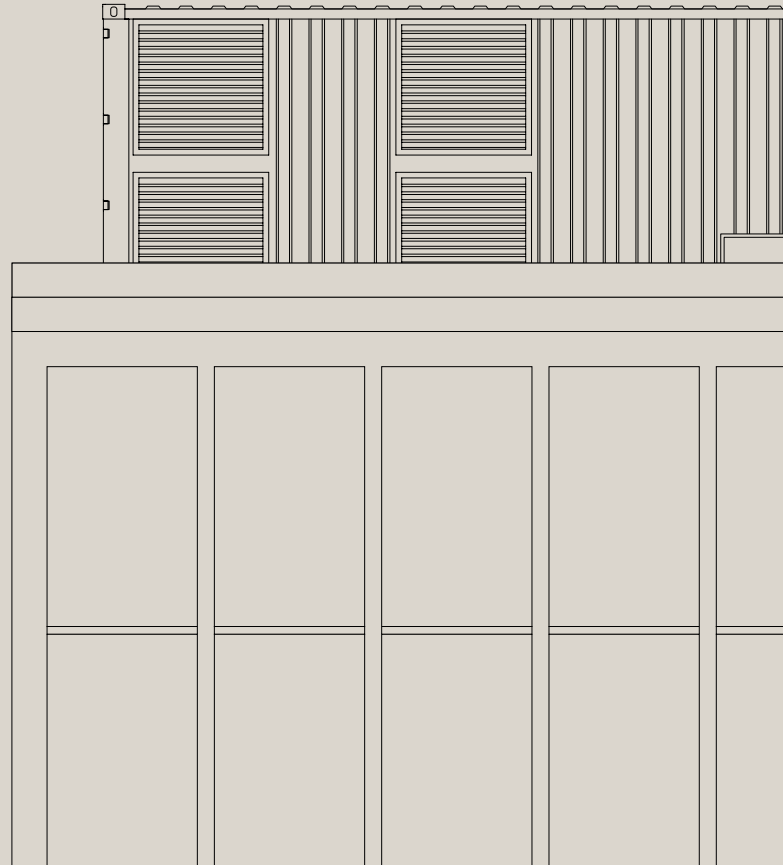


Neotemp°

Traditional technical room moved **outdoors**

By moving the technical room outdoors, preferably on the roof where possible, it offers several advantages:

- + Increased flexibility in choosing more efficient and environmentally friendly refrigerant as an energy carrier.
- + Possibility to easily connect future one's external energy sources, such as solar and wind energy.
- + Containers can be easily soundproofed in accordance with Norwegian Standard NS8175, to less than 35 dB (A)



PSHI™ - performance and efficiency

With PSHI™, Annex 03 provides at least 35% better energy efficiency than other air to water heat pump solutions. As the plate heat exchanger and the flow switch are completely eliminated, our solution provides better reliability and simplified service and maintenance. Correct dimensioned, the system provides an annual heating factor (SCOP) of approx. 5.0, and operating costs can be reduced by up to 80%.

Systemtank and PSHI™ heat exchanger coil in 316L stainless steel, internal and external pickling. 3 mm material thickness secure high operation reliability and durability with an expected life cycle of +35 years. DHW heat exchanger in anti-limescale design.

In short - PSHI™ is a better solution to performance and the environment compared to other fossil mobile solutions on the market.

Turnkey and "plug & play"

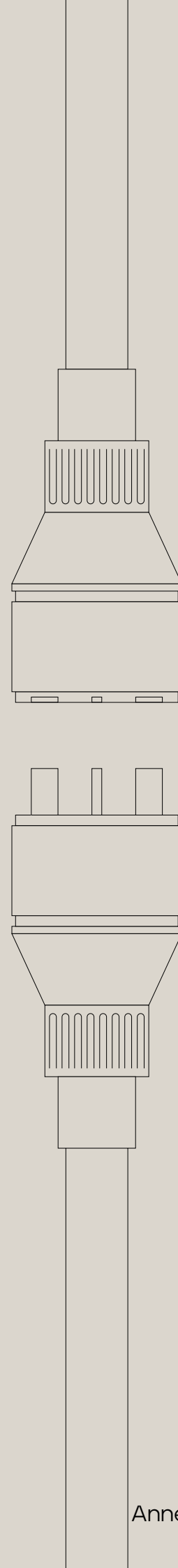
This turnkey standard 20-foot container is transported by truck, boat or train. The system is modular and can be easily adapted to any level of energy demand, with absolutely no upper limits. The container is pre-assembled, pre-tested and pre-configured with MOM documentation, ready for commissioning and regulation. Simply plug & play.

New construction or rehabilitation

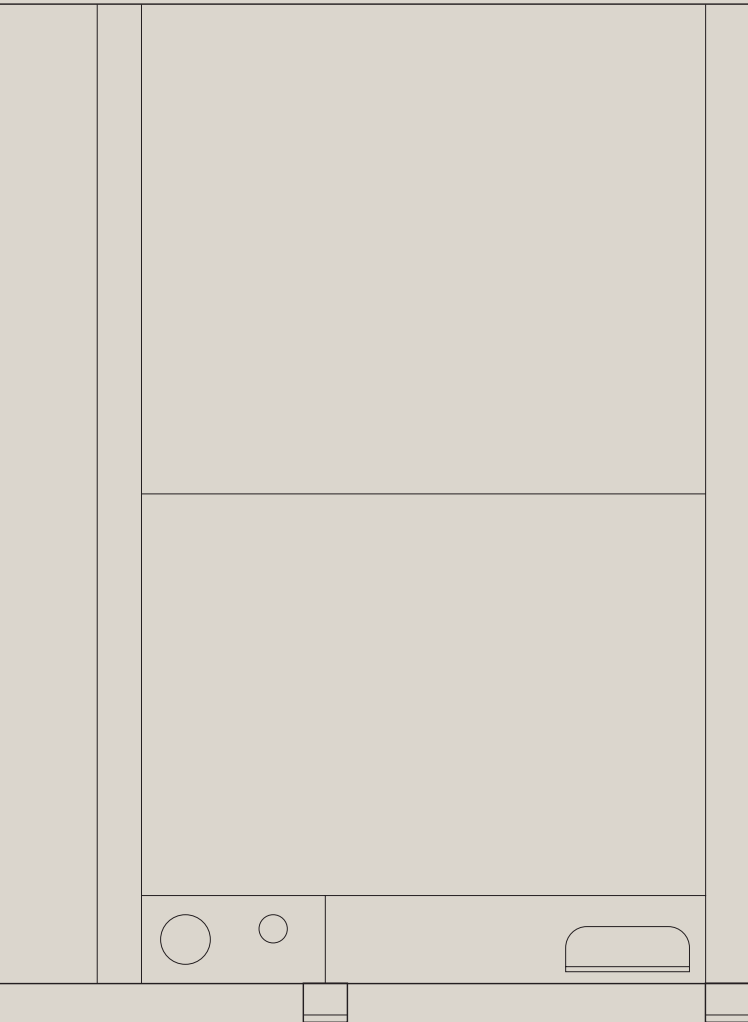
Containers can be placed on the roof or at ground level, and with less than 15m², they are in most cases not subject to a building application. It can also have the same cladding as other building materials for a nice overall look. By placing the technical room outside the building, valuable space is freed up indoors, and it is a very profitable and quick implementation of energy saving measures. It is also a perfect temporary energy saving measure in cases where the building is planned to be demolished or re-regulated. In the case of new construction or rehabilitation, containers can advantageously be installed early in the project, as a great heating source during the building process.

Energy demand

The modular container solution delivered in the size 20 feet with up to 111 kW heating capacity combined with 2,800 liter of domestic hot water (40°C). In a 40 feet container up to 222 kW heating capacity combined with 5600 liter domestic hot water (40°C). The modules can be combined to cover any energy demand, completely without upper limitations. Various applications such as waterborne heating, cooling, domestic hot water and 3-pipe VRF systems, tailored to any individual project.



Panasonic ECOi Extreme

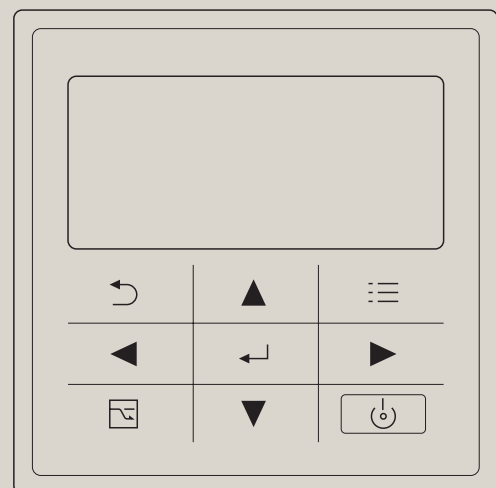


The ECOi Ex heat pump from Panasonic is developed for a very low energy consumption in combination with high energy efficiency and performance.

- + Each unit has two parallel-connected rotating inverter-controlled compressors, which give more precise and effective temperature control and high operational reliability.
- + With starting current of only 2 amps the dimensioning on the electrical system is easier, and hence it provides lower electricity peaks generating lower tariffs from the electricity provider/supplier.
- + Defrosting with minimum heat production loss (hot gas bypass) gives an unparalleled energy-efficient defrosting process.
- + Bluefin™ vaporizer that improves efficiency, and silicon-coated circuit board that protects the device against moisture and dust.
- + High performance under extreme conditions. Heating operation from -35°C to 38°C and cooling operation from -10°C to $+50^{\circ}\text{C}$.
- + Simple installation, service-friendly control and maintenance, and longer life cycle.

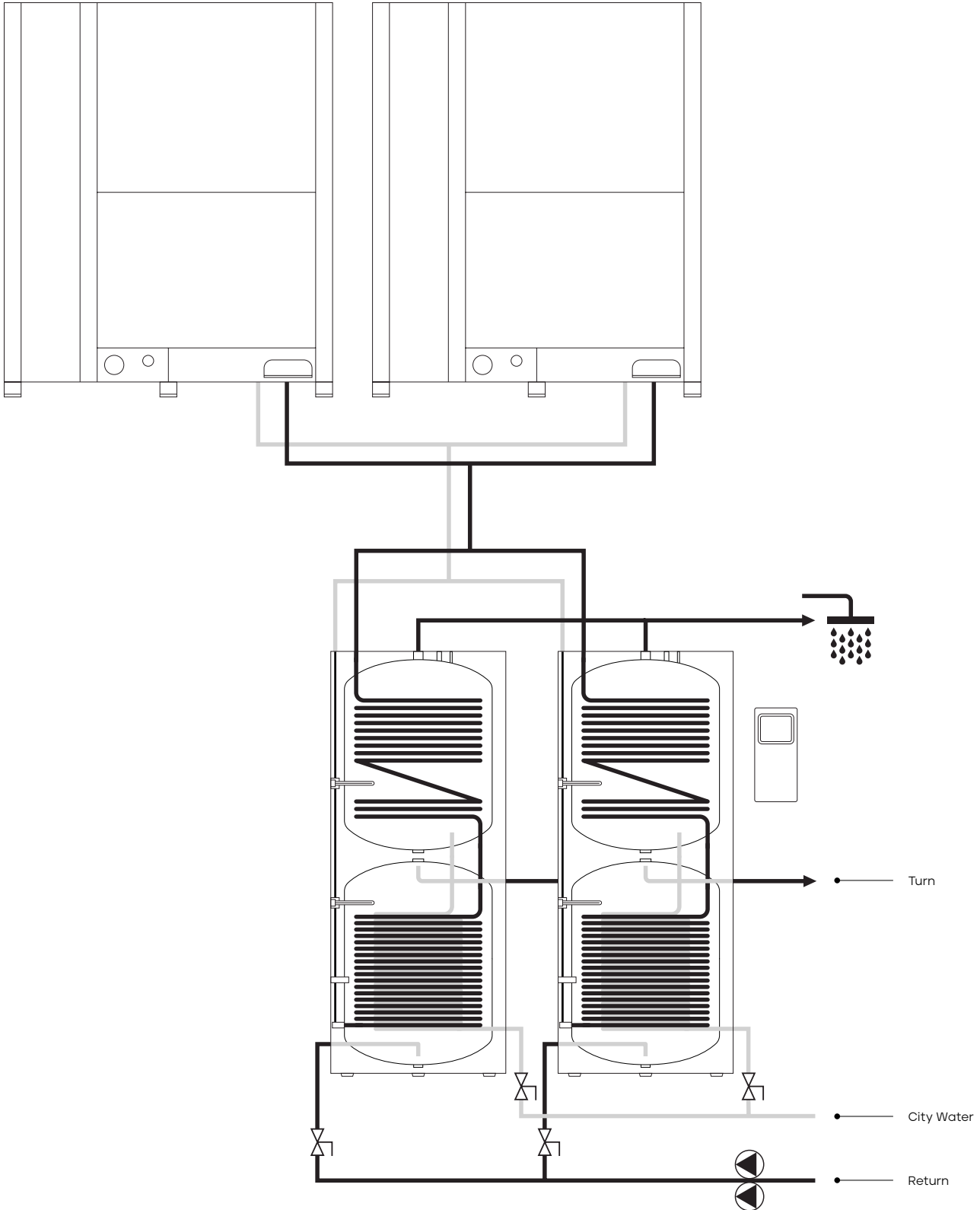
Full control

We offer many management options, from limited user management to a fully remote-controlled system via wireless applications. Touch panel, web server, monitoring of energy consumption, and tablets are some of many possibilities that exist.



System solution

- simple overview



Measurements and dimensional data

Dimensions:

6.06m x 2.44m x 2.59m (L x W x H)

Weight:

3600 kg

Power input:

400V 3N 54 amp

Starting current:

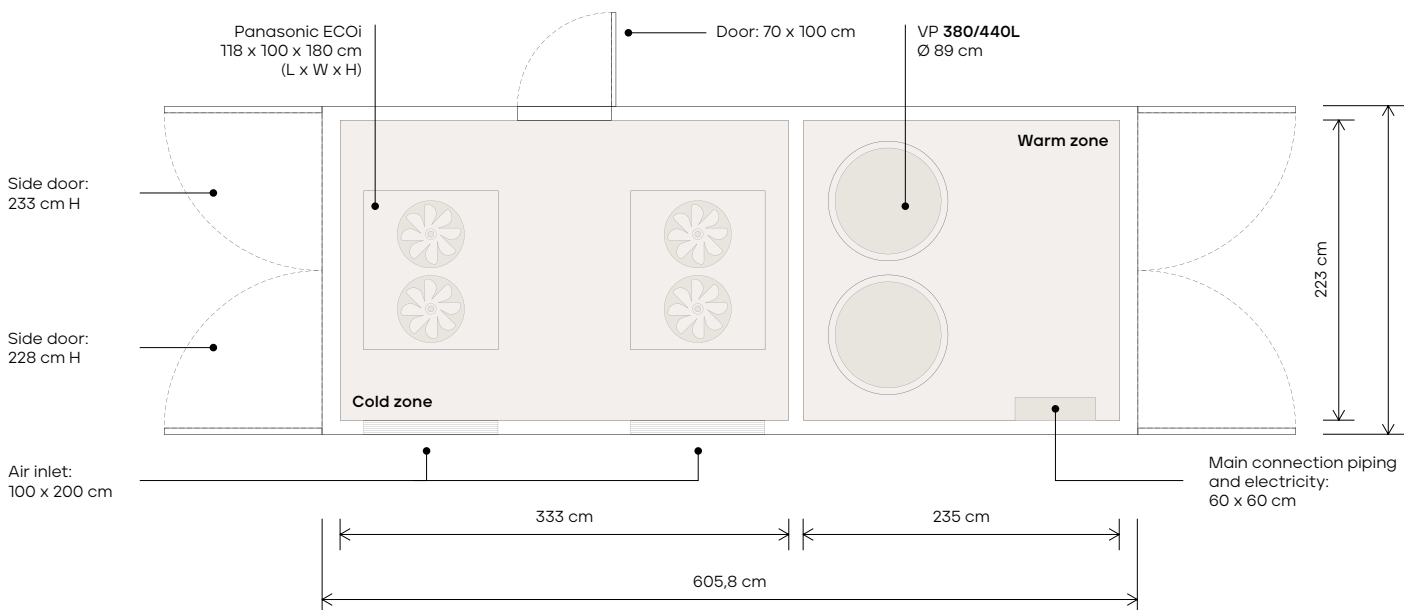
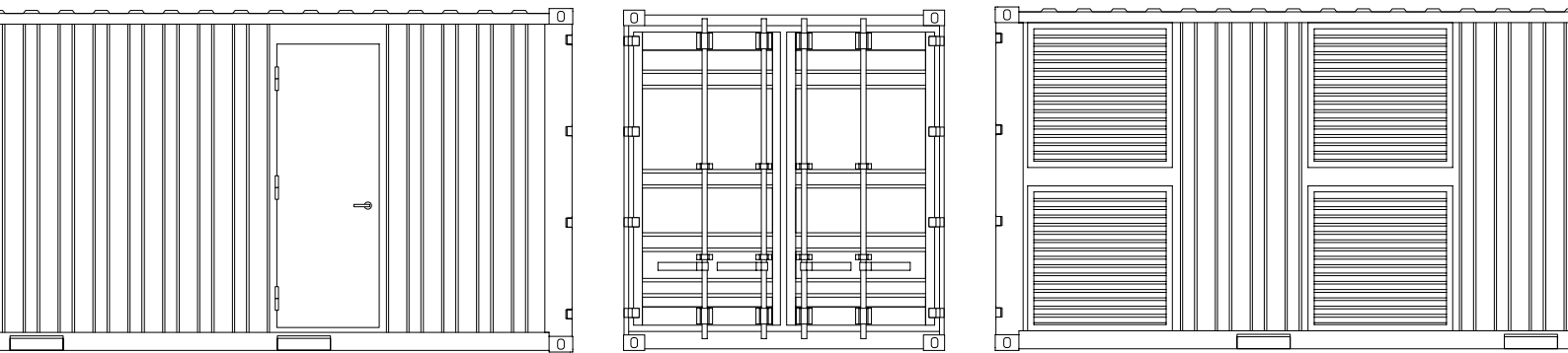
2 amp

Connection waterborne heating:

DN50 / Stainless Steel 316L

Connection Domestic Hot Water:

DN40 / Stainless Steel 316L



Specifications and performance data

Heating capacity:

111 kW

Domestic Hot Water capacity:

Using the PSHI™ technology the Annex 03-H/DHW increases the Domestic Hot Water temperature from 55°C up to 80°C, completely without the use of electric heating elements. Annex 03-H/DHW provides a total capacity of 2,800 liter of domestic hot water @ 40°C.

System/Energy tank model	2 x Neotemp VP 380/440L
Heating capacity at 7°C, water temperature at 25/35°C	111 kW
COP at 7°C, water temperature at 25/35°C	4,05
Heating capacity at 7°C, water temperature at 45/55°C	87,5 kW
COP at 7°C, water temperature at 45/55°C	3,56
Energy efficiency class at 47/55°C	A+++
η_{sh} (LOT21)	156%
COP Combined, +7°C, water at 30/35°C and DHW 75°C	5,12
Dimension	2095 x 890 mm
Net Weight	2 x 227 kg
Water pipe connector, turn/return	DN50
Water pipe connector DHW	DN40
Heating water flow (AT=10K 45/55°C)	7,5 m ³ /h
Capacity electric heater (DHW cylinder only)	2 x 6 kW
Flow switch	Not installed
Water filter	Yes
Energy efficiency class for energy label (EU) No 812/2013 Annex III (A+F)	A+
Energy efficiency class for product fiche (EU) No 812/2013 Annex II, Table 1	A+++
Outdoor unit	2 x Panasonic U-16ME2E8
Sound pressure	53 dB(A)
Dimension (HxWxD)	1842 x 1180 x 1000 mm
Net weight	2 x 315 kg
Connection liquid pipe	3/4" (18,88mm)
Connection gas pipe	1-3/8" (35,58mm)
Refridgerant	2 x 8,3 kg
Water outlet temperature range in heating mode	10°C to 55°C
Operation range outdoor temperature	-35°C to +38°C
Starting current	Max 4 amp (2 x 2 amp)
Maximum current	52 amp

Heating Capacity Table

Energy/system tank: 2 x VP 380/440L

Outdoor unit: 2 x U-16ME2E8

Ambient temperature	At 10K Water outlet	kW Heating capacity	kW Power input	COP kW/kW
+18°C	35°C	111,1	13,6	8,14
	45°C	95,1	11,8	8,03
	55°C	87,4	10,9	8,01
+15°C	35°C	111,1	15,6	7,12
	45°C	95,1	13,5	7,05
	55°C	87,4	12,3	7,08
+10°C	35°C	111,1	20,5	5,41
	45°C	95,1	19,5	4,88
	55°C	87,4	20,6	4,24
+7°C	35°C	111,1	25,1	4,43
	45°C	95,1	22,9	4,16
	55°C	87,4	22,2	3,94
+5°C	35°C	111,1	26,2	4,24
	45°C	95,1	23,8	3,99
	55°C	87,4	23,1	3,79
+2°C	35°C	106,1	27,5	3,85
	45°C	94,2	27,0	3,49
	55°C	87,4	25,8	3,39
0°C	35°C	100,0	27,0	3,70
	45°C	88,6	25,9	3,42
	55°C	82,6	25,6	3,23
-5°C	35°C	86,3	25,1	3,44
	45°C	76,5	24,4	3,14
	55°C	71,4	24,2	2,95
-10°C	35°C	74,2	23,2	3,19
	45°C	65,7	22,8	2,89
	55°C	61,2	22,7	2,69
-15°C	35°C	63,7	21,8	2,93
	45°C	56,2	21,5	2,62
	55°C	N/A	N/A	N/A
-20°C	35°C	55,0	20,8	2,65
	45°C	N/A	N/A	N/A
	55°C	N/A	N/A	N/A
-25°C	35°C	47,0	20,1	2,34
	45°C	N/A	N/A	N/A
	55°C	N/A	N/A	N/A

Neotemp°

Postboks 117,
Bygdaveien 172
9450 Hamnvik

info@neotemp.net
+47 77 02 92 22

neotemp.net