

# NORD

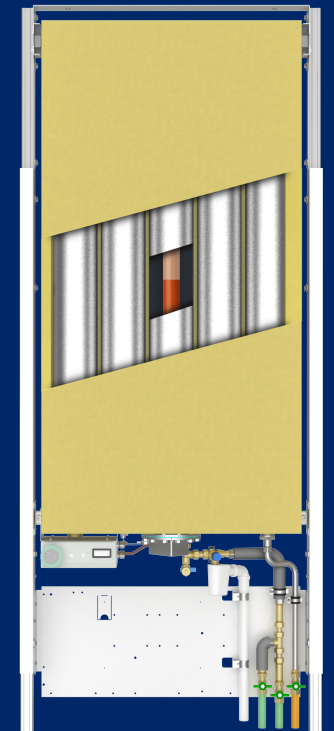
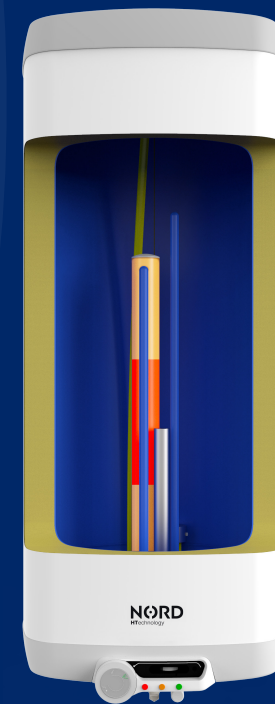
HTechnology

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## EcoBoiler brochure

**We have the solution**

Best in PV usage with HEAT GENERATION technology

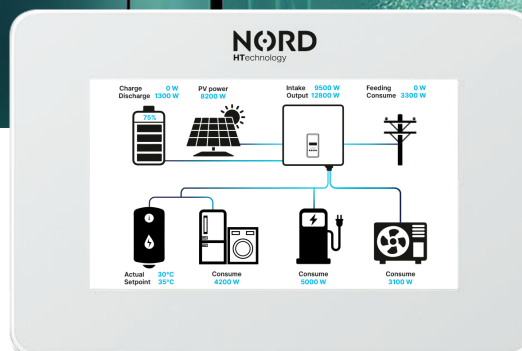
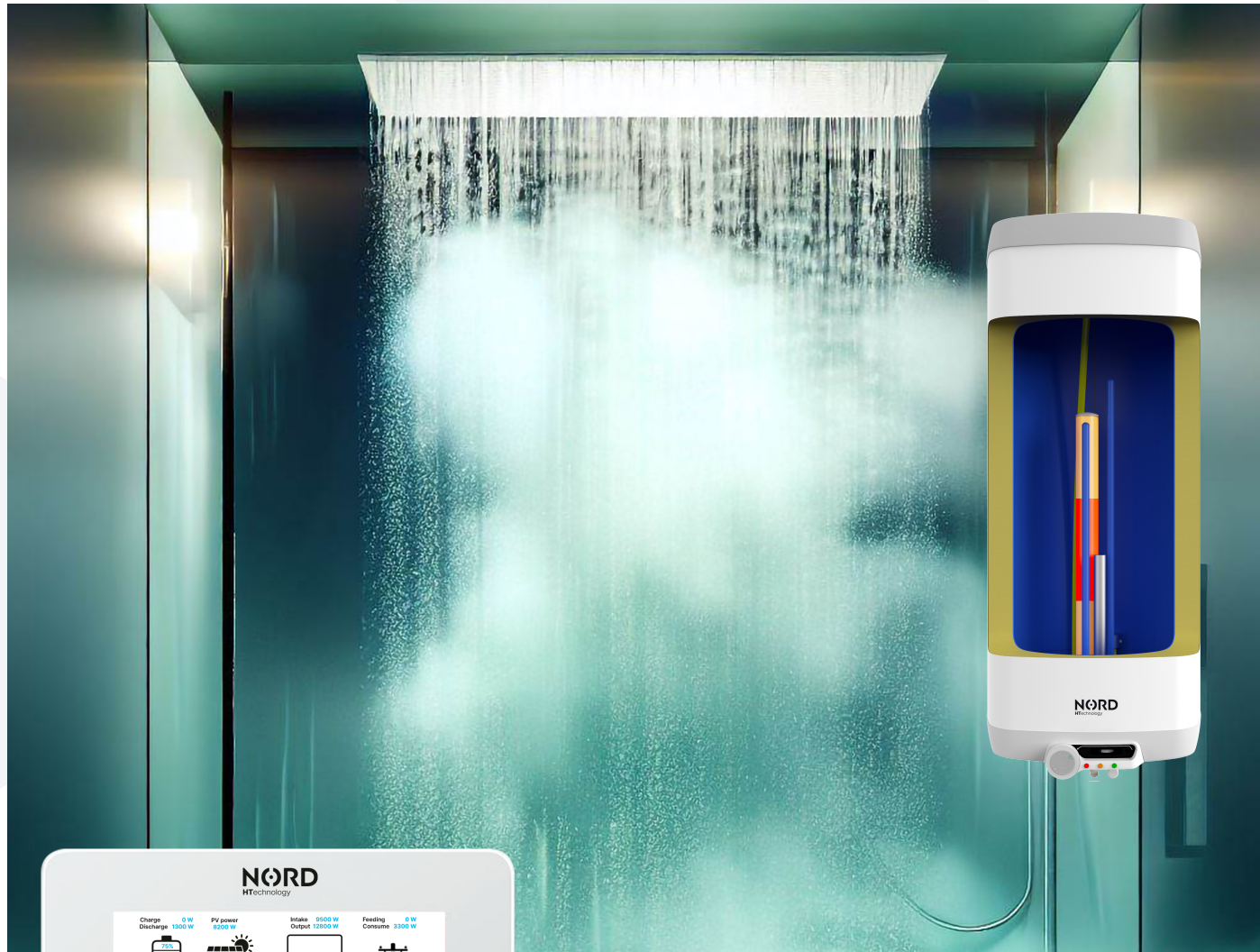


# NORD

HTechnology

**We have the solution**  
Best in PV usage with HEAT  
GENERATION technology

◀ An EcoBoiler with low power coils is most effective with usage of PV power and can be used as stand-alone system or combined with EcoControl or Power Genius 3000 devices for even greater results.



◀ In order to ensure that all components from photovoltaics to heating system cooperate together, bring maximum benefit and whole system reaches its potential, NORD HT AS introduces to you EcoControl, which is optional to control and distribute the energy in your system efficiently. Explore more on [www.nord-solution.com](http://www.nord-solution.com).

# The NORD project

NORD HT AS is an association of engineering companies and renowned prestigious universities from the EU. Company's (NORD's/ The) first projects started already in 2014 with the support of financial resources from Norwegian funds.

Main vision of NORD HT AS is to connect sectors of renewable resources, home heating, domestic hot water heating and electromobility for residential and small industrial applications.

Intelligent design enables maximum utilization of available green energy. As result of that, savings are maximized and return of the investment is shortened.



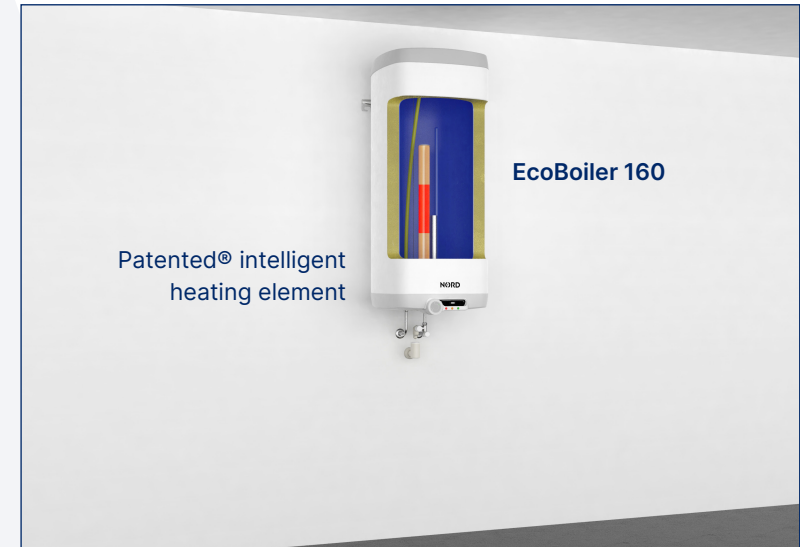


# NORD EcoBoiler solution

Patented® intelligent system for water heating with solar power.

Suitable solution for all type of livings, flats, apartments, houses, can be equipped with NORD EcoBoiler. Very interesting solution for microinstallations without battery storage - simple and creative, suitable for your daily hot water generation needs.

## AFFORDABLE AND EFFICIENT



# Smart energy storage

By segmenting the storage content, a reduction in charging power is achieved without having to compromise on availability.

Low charging powers allow you to use your photovoltaics effectively without having to draw additional energy from the grid. And that also in the transitional months.

## ECOBOILER BECOMES AN INTELLIGENT ENERGY STORAGE



The adapted heating output of the NORD EcoBoiler system in combination with a PV system maximises the use of your own electricity, without complex control!

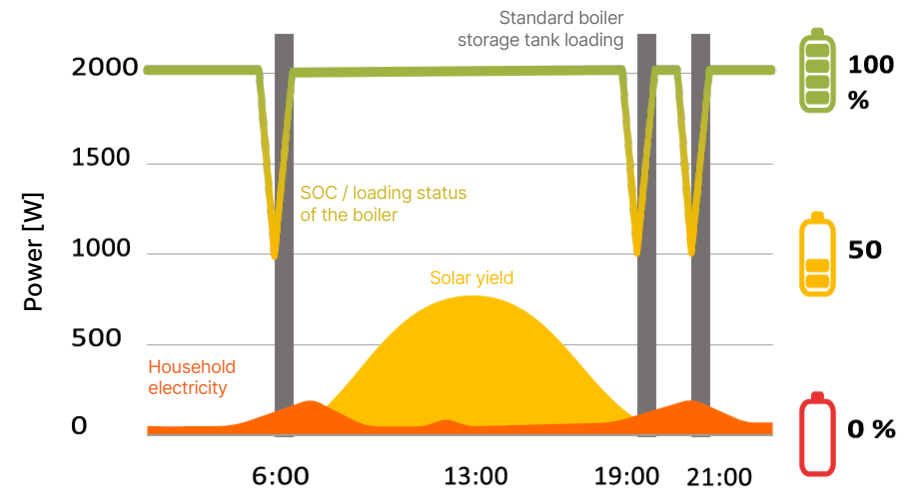
⊕ low investment costs

⊕ low calcification tendency

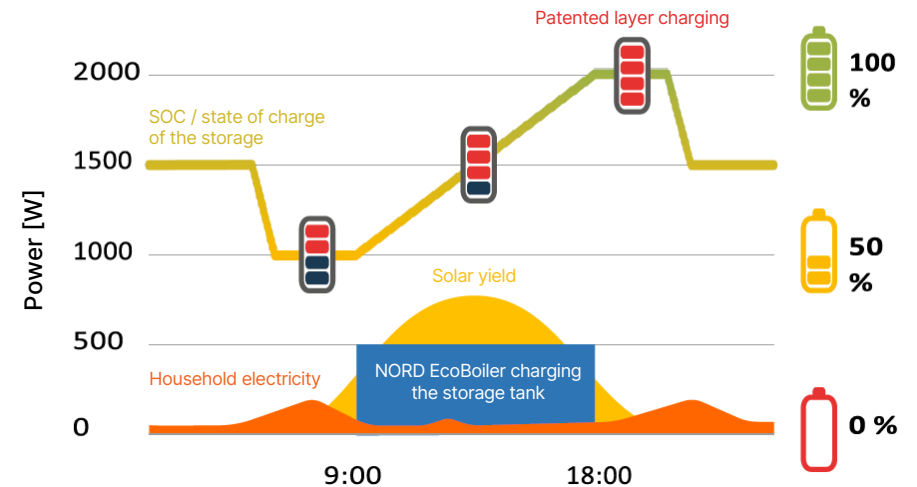
⊕ low service costs

⊕ high operational reliability

## Standard boiler storage - Daily cycle ❌

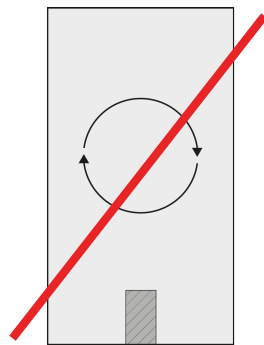


## NORD EcoBoiler - Daily cycle ✓



# The 3-zone hot water preparation

A standard water heater is always fully charged and therefore has no free capacity for PV energy. Due to the special stratification, the water in the NORD EcoBoiler is always hot at the top and the cold layers underneath store photovoltaic energy throughout the day.

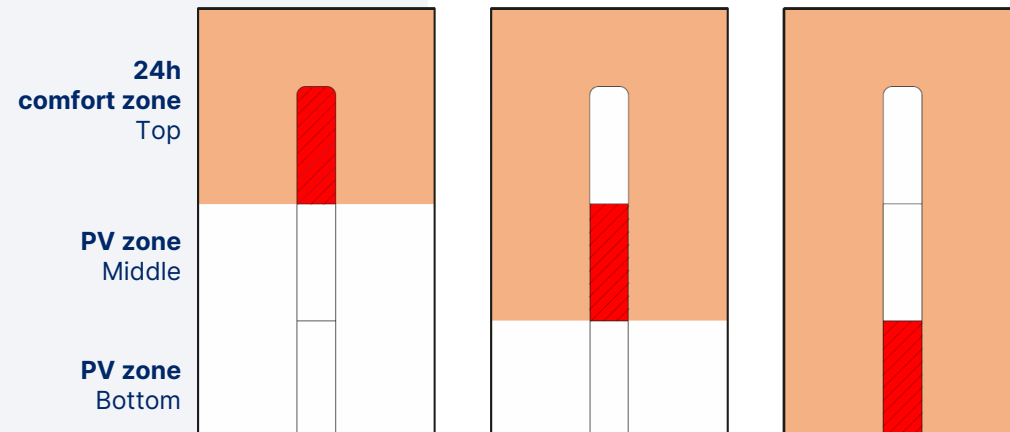


Standard boiler without heating zone layers



**NORD solution**  
patented® intelligent heating element

## NORD EcoBoiler the 3-zone hot water preparation



# Degree of self-sufficiency

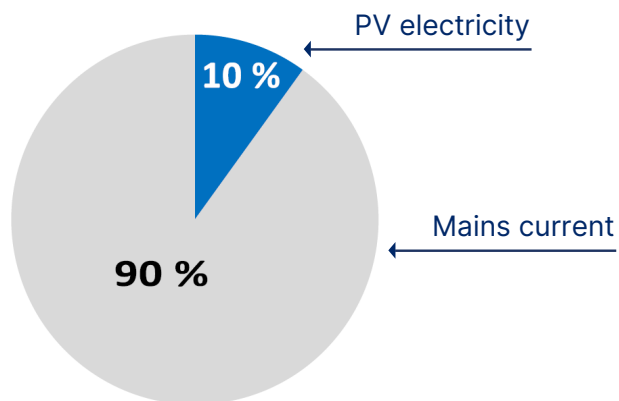
The degree of self-sufficiency indicates the proportion of electricity consumption that is supplied by the photovoltaic storage system.



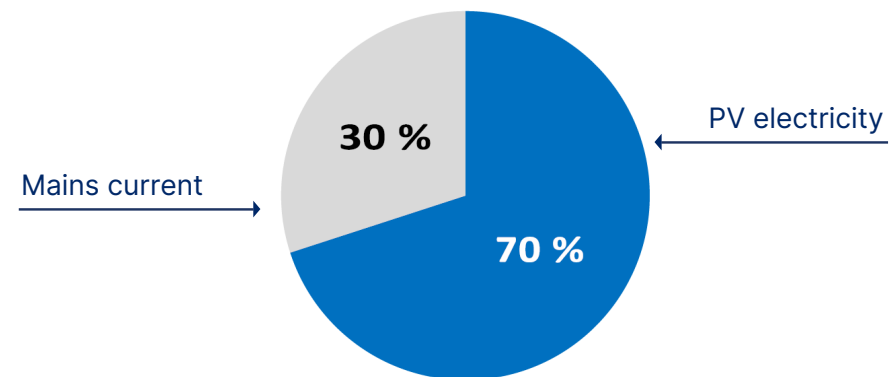
**Optimal use** of photovoltaics even on less sunny days



Standard boiler ❌



**NORD EcoBoiler** ✅



# EcoBoiler installation

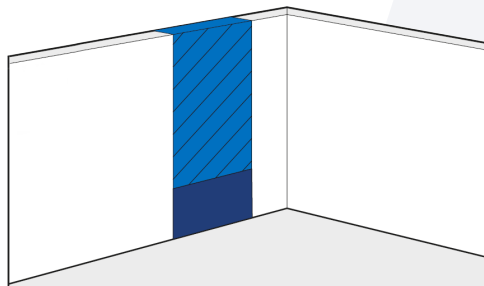
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Different container designs allow classic wall mounting or an invisible intermediate wall solution for the implementation of all architectural specifications.

- ⦿ no circulation pipes, no circulation losses
- ⦿ no high-temperature generation required for hot water preparation, therefore ideally suited for all renewable forms of energy

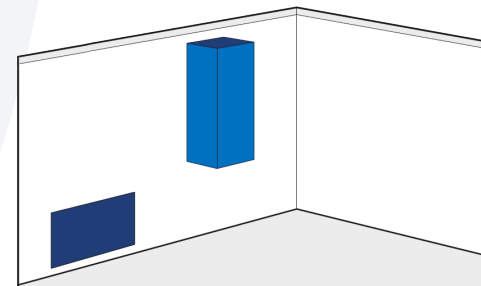
- ⦿ no complex consideration of standards and guidelines as with central water heating systems
- ⦿ no need to consider hot water generation when dimensioning and determining the flow temperature (very important for heat pump systems)

Intermediate wall storage  
with hydraulic module



NORD EcoBoiler 140 Flat | 140 Flat+

Suspended storage tank with  
hydraulic module



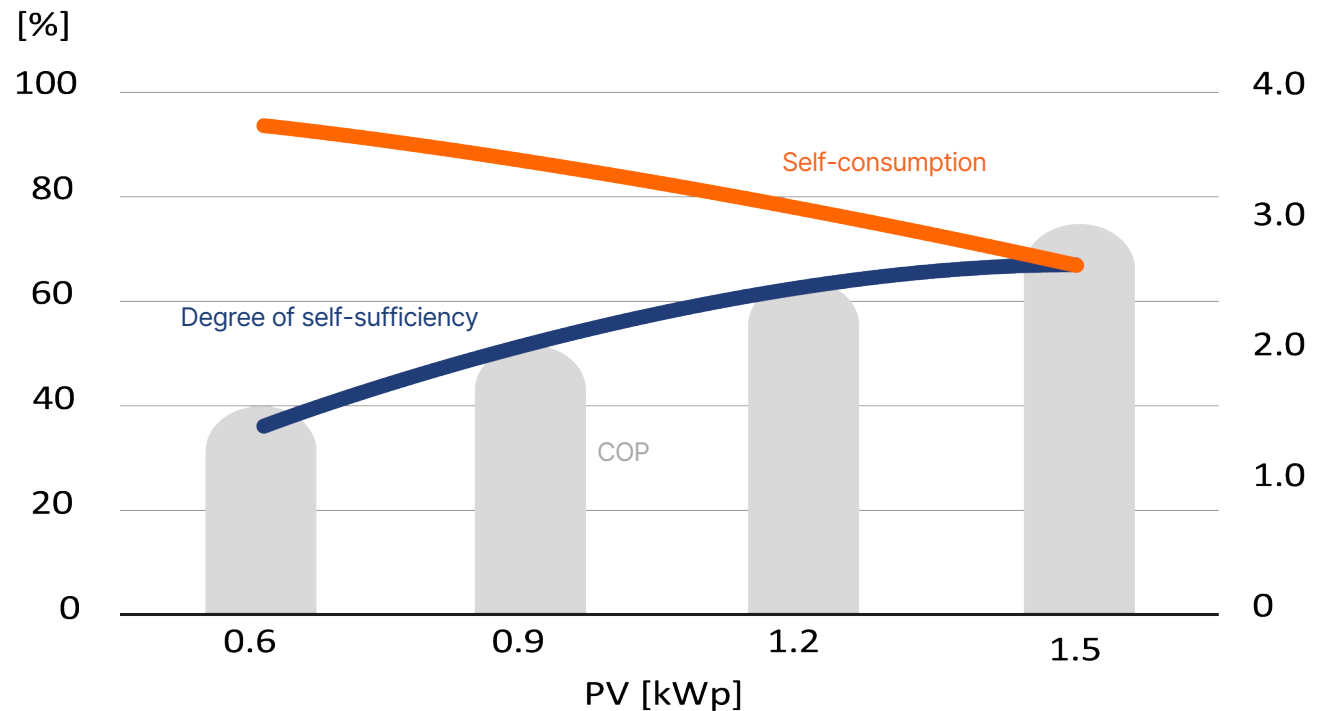
NORD EcoBoiler 160



# Maximal benefit and minimal effort

Example simulation calculation with Polysun V10, 160 litre NORD EcoBoiler water heater (surface mounted) and 100 litre average hot water withdrawal per day at 40°C (1,755 kWh/a).

## ANNUAL COP DIAGRAM



\*COP = annual performance factor as the ratio of useful energy to electricity drawn from the grid.

# Technical data

NORD EcoBoiler	160	140 FLAT	140 FLAT+
Storage material	Steel, enamelled, with protective anode	Stainless steel 1.4571 (V4A), dip-pickled	Stainless steel 1.4571 (V4A), dip-pickled
Storage capacity (litres)	152	140	140
Dimensions H x W x D (mm)	1235×520×550	1750×920×200	1750×920×250
Max. perm. operating pressure (bar)	6	6	6
Cold water pressure (bar)	9	9	9
Max. operating temperature (°C)	90	95	95
Approximate empty weight (kg)	51	80	85
Storage insulation	Pressure-foamed PU rigid foam, CFC-free	Pressure-foamed PU rigid foam, CFC-free	Pressure-foamed PU rigid foam, CFC-free
Load profile	M	M	M
Energy label incl. PV	A (1,5kWp, 1,2kWp), C (0,9kWp, 0,6kWp)	B (1,5kWp, 1,2kWp), C (0,9kWp, 0,6kWp)	B (1,5kWp, 1,2kWp), C (0,9kWp, 0,6kWp)

## INSERT

Revision flange	Diameter inside 150 mm	Stainless steel, diameter inside 150 mm
Display elements	Different coloured signal lamps for all heating zones, thermometer (analogue)	Different coloured signal lamps for all heating zones
Electric heating element	Patented electric heating element, 3-stage (EcoBoiler 160) / 2-stage (EcoBoiler 140 Flat / 140 Flat+), 24h comfort zone on top: 1000 W, PV zone middle and bottom: 500 W each installed in a hull tube welded to the flange cover. Incl. thermostatic control with layer charging and all-pole safety temperature limiter (95%) as well as integrated control relay (230 V, 1~) for the PV zone.	
Operating elements	Operation via panel on the front: Continuous temperature control of the 24h comfort range with energy-saving setting and frost protection setting.	

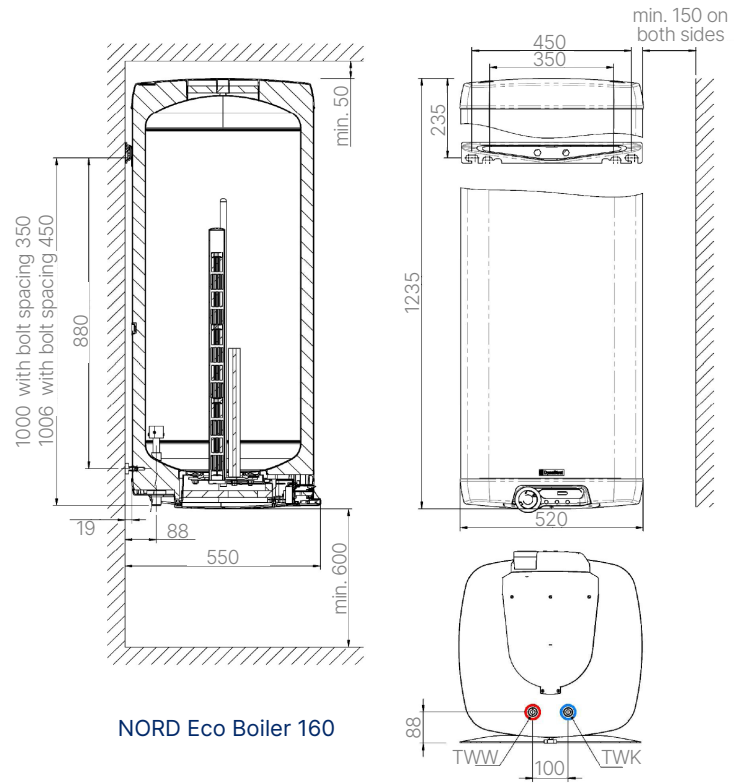
## CONNECTIONS

Cold water	DN20 - 3/4"AG male thread	DN20 - 3/4"AG male thread
Hot water	DN20 - 3/4"AG male thread	3/4"AG male thread (plastic sampling pipe inside)
Earthing	M8 thread	Via connection cable or ring cable lug up to max. 10 mm <sup>2</sup>
Electrical connection	Terminal area for power supply 230 V, 1~, max. 2kW; terminal area for release PV zone 230 V, 1~, (internal relay)	

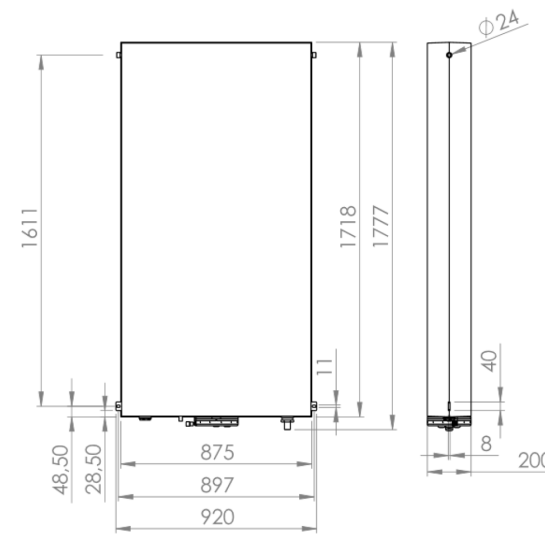
## AVAILABLE ACCESSORIES

Extra	Suspended storage tank connection set incl. safety group	Universal frame, inspection door Various hydraulic modules (sanitary connections)
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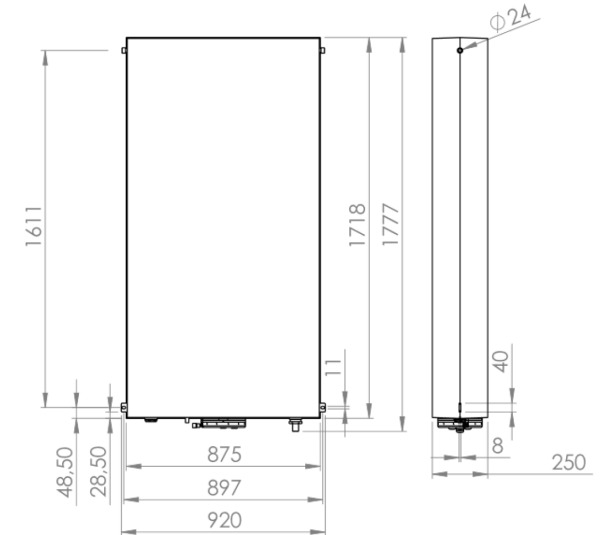
# Dimensions



NORD Eco Boiler 160



NORD Eco Boiler 140 Flat



NORD Eco Boiler 140 Flat+

[www.nord-solution.com](http://www.nord-solution.com)

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