

Dachs InnoGen

The innovative CHP solution for low heating demand

Until now the smart principle of simultaneously producing electricity and heat at the point of use has been the preserve of buildings requiring a large amount of heat. The Dachs InnoGen now makes combined heat and power (CHP) an attractive option for new and existing buildings whose energy systems are being revamped. Innovative fuel cell technology makes this possible by providing high comfort in supplying space heating and domestic hot water combined with a high electricity yield.

„Cold combustion“ for warm rooms



Because the fuel cell provides thermal and electrical energy at the same time, it's a CHP unit. It does however work very differently from the standard Dachs gas engine based cogeneration unit. A chemical reaction between hydrogen and oxygen takes place inside the unit, producing usable heat and electrical voltage. Standard natural gas provides the hydrogen needed.





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Modular system setup

- PEM fuel cell unit (PEMFC)
- 4.8 – 20 kW peak load boiler (26 kW DHW)
- 300 l buffer vessel with hot water module
- Hydraulic module with up to two controlled heating circuits and domestic hot water (DHW) module (27 l/min)
- Energy manager with touchscreen
- Integrated communication interface

System benefits for consultants and installers

- Simple logistics and installation thanks to modular design
- Height of 1.80 m also ideal for installation in rooms with low ceilings (room height of at least 2.00 m; recommended height 2.10 m)

More benefits and better service for end-users

- Direct energy conversion for very good power/heat ratio
- Innovative technology by experienced producer
- Modulation options (250 to 700 W) and buffer vessel mean the unit can be operated all year round
- Reduced energy costs
- Major maintenance of fuel cell unit only required every 3 years
- Daily shut down for regeneration is not necessary. 50 to 400 Start/Stop-cycles per year possible
- Proven to have low exhaust gas and noise emissions. Easily complies with limit values of Germany's „Technical Instructions on Air Quality Control“ (TA Luft).



Technical data Dachs InnoGen

Fuel cell unit:

Type of fuel cell:	Polymer electrolyte membrane (PEM)
Electric output:	250 - 700 W _{el} (modulation range)
Thermal output:	210 - 950 W _{th} (modulation range)
Electric efficiency ² (H ₂):	37.7 %
Thermal efficiency ² (H ₂):	51.4 %
Application mode:	all year round
Stack lifetime:	80.000 h @ 1000 Start/Stop-cycle

Peak load boiler¹:

Rated thermal input:	5.2 - 21.8 kW (adjustable)
Thermal output DHW:	28 kW
Thermal efficiency (H ₂):	105.8%

System:

Fuel:	Natural gas type E and LL
Seasonal space heating energy efficiency class ² :	A++
Water heating energy efficiency class ² :	A
Installation space required (width x depth x height):	125 x 106 x 180
Room needed in cm (with space for service):	214 x 176
Weight when empty (FC):	ca. 355 kg

Subject to technical modifications and errors

¹ at 50°C/30°C

² According to DIN EN 50465:2015



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