GEMTEX
HEATING SOLUTIONS LTD

## Residential condensing boilers

# MYdens®

BOILERS COSMOGAS®
MADE IN ITALY

## Wall-mounted boilers from 15 to 34 kW

10 YEAR WARRANTY HEAT EXCHANGER
10 YEAR WARRANTY BURNER
AISI 316 Ti TITANIUM
1:8 TURNDOWN RATIO
D.H.W. 100% CONDENSING
SAP EXCELLENT RATINGS
EcoDesign ErP READY 2018
A
A XXL

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# SAVINGS AND WELLNESS

## THE NEW GENERATION OF RESIDENTIAL GAS CONDENSING BOILERS

**MYdens** 15, 24 and 34 is the new range of residential wall-mounted gas condensing boilers, completely patented and assembled by Cosmogas.

- **COMFORT AND DESIGN IN MINIMUM SPACE**
  Only 30.5 cm of depth to hold all the power of **MYdens** available on the market with a full range to deliver always maximum comfort. Thanks to its attractive and extremely compact design **MYdens** can be installed anywhere in the house and can easily fit in a kitchen cabinet. It has been given great attention to the user usability with simple and intuitive controls and ease of maintenance with front access to the boiler. **MYdens** is available in 3 different outputs (15, 24 and 34 kW) and 2 versions (heat only or heating and D.H.W. production).

- **R.V.C. AISI 316 Ti (Titanium) STAINLESS STEEL HEAT EXCHANGER**
  The R.V.C. heat exchanger is made without weld joints and can bear a working pressure up to 3 bar.

- **COMPATIBILITY AND FUNCTIONALITY**
  **MYdens** can operate and provide heating to any kind of heating installation: radiators, radiant panels, fan-coils, etc..

- **BROAD TURNDOWN RATIO 1:8**
  The COSMOMIX air/gas mixing system allows for a broad turndown ratio of 1:8.

- **ECOLOGIC PREMIX BURNER**
  The whole range of residential boilers is equipped with ecologic premix burners made of Fecralloy metal fibre.

- **EASY INSTALLATION AND MAINTENANCE**
  All **MYdens** components have a front access. All maintenance, adjustment and check operations are thus easy and quick. The front panel has a removable “peephole” for initial ignition adjustments.

MYdens®

wall-mounted
15 - 24 - 34 kW

## Why choose MYdens:

### Savings and efficiency
- "Double Condensing" technology
- Total flame modulation
- Certified efficiency up to 109 %
- Low power consumption

### Comfort
- Hot water immediately available abundantly and at a constant temperature
- Sleek design with back-lighting display
- Quiet and easy to use
- Operates with any system
- Easy installation and maintenance
- Reduced size and weight

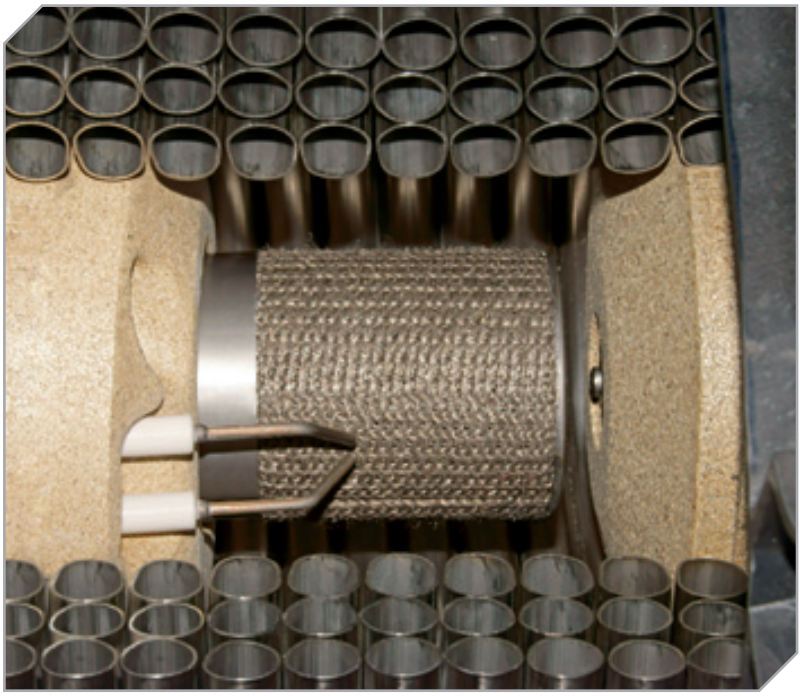
### Construction quality
- AISI 316 Ti stainless steel R.V.C. heat exchanger
- Stainless steel oversized plate heat exchanger
- Turndown ratio 1:8

### Ecology
- Fecralloy fibre premix burner
- Reduced gas emissions in the atmosphere
- Above class 5 (13 mg/kWh of NOx)


# A HEART OF TITANIUM

## PATENTED AISI 316 Ti (TITANIUM) STAINLESS STEEL R.V.C. PRIMARY HEAT EXCHANGER

- **PATENTED EXCLUSIVE DESIGN -** The R.V.C. heat exchanger, heart of the **MYdens system, is the result of research and intensive testing combined with the know-how of Cosmogas** which, for 50 years, has designed and patented heating and domestic hot water production systems.
- **EXCEPTIONAL RESISTANCE AGAINST CORROSION -** The 3 series of **AISI 316 Ti (TITANIUM)** stainless steel round tubes composing the R.V.C. heat exchanger are fastened **without weld joints** to keep stainless steel characteristics unaltered and provide the highest resistance against corrosion. All of this inside a resistant self-supporting single-piece unit made with an insulating compound to ensure durability.
- **HIGH EFFICIENCY** - The R.V.C. has been designed to reach an optimal exchange along the entire length of the exchanger and grant exceptional **efficiency up to 109%** with savings up to 35 % compared to conventional boilers.



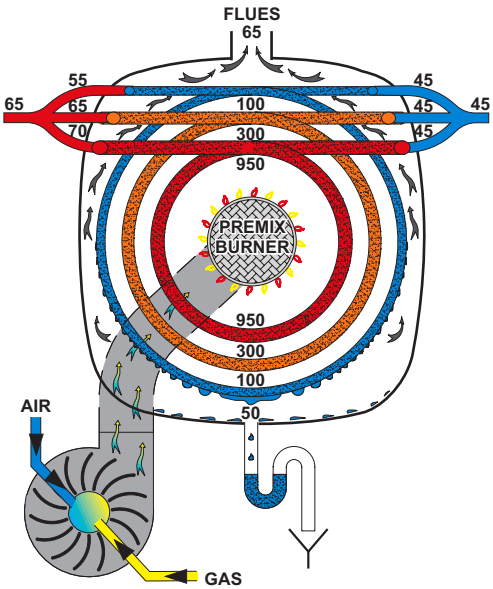
### R.V.C. - TECHNOLOGY MADE IN COSMOGAS

The R.V.C. heat exchanger is made of 3 series of round tubes (18 and 16 mm diameter), to avoid clogging and to grant:

- **LARGE WATER FLOW**
- **GREAT EXCHANGE SURFACE**
- **LARGE WATER LOAD**
- **HIGH WORKING PRESSURE (up to 3 bar)**

## R.V.C. RADIAL VARIABLE CIRCULATION

The "variable" circulation of the fluid allows a flue gas/water upstream thermal exchange, this sets up a high efficiency that quickly leads to flue gas condensing.
During the operating, return water is distributed on Ø16 and Ø18 mm round tubes series.
The advantage of such a system is to condense with 55/56°C temperatures of the return water and to have excellent outputs of the boiler even in radiators systems.

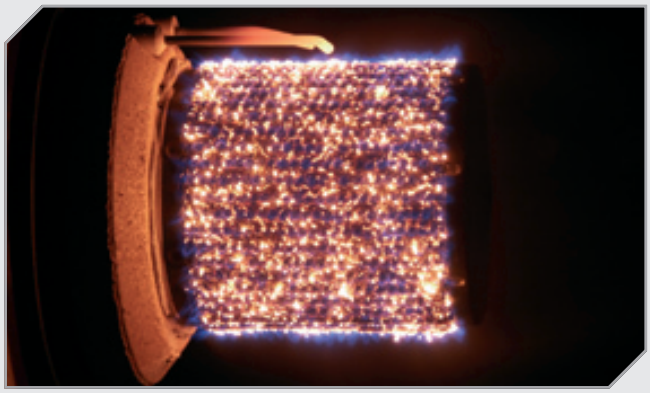



## COSMOMIX PATENTED PREMIX SYSTEM

The innovating premix control system employed in **MYdens** gas condensing boilers allows an exceptional turndown ratio of 1:8.

### ADVANTAGES:

- **Turndown ratio of 1:8**
- **Negative pressure gas valve**
- **It also operates with low gas inlet pressure up to 7,5 mbar**
- **Constant air/gas ratio**



## ECOLOGIC PREMIX BURNER

Ecologic premix boilers have a constant air/gas ratio in each point of the turndown range of the burner, decreasing polluting emissions and streamlining efficiency. Cosmogas premix burner is made of "Fecralloy" a special metal fibre and has a round shape. The premix burner spreads short and perfectly nourished flames.

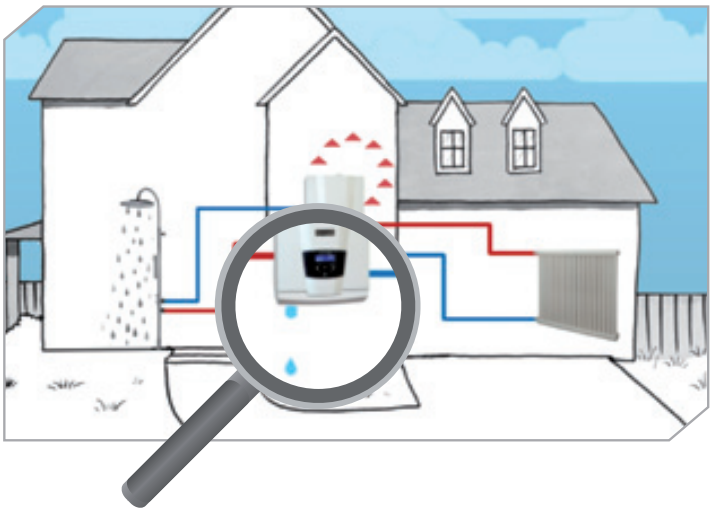
### ADVANTAGES:

- **High-efficiency combustion**
- **Low polluting emissions (CO<8 ppm and NOx<13 ppm)**
- **Natural gas and LP gas operating**

# DOUBLE CONDENSING

## THE IMPORTANCE OF CONDENSING DURING D.H.W. PRODUCTION

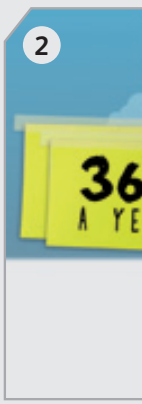
A new culture of living is being established, where proper use of resources in the perspective of energy sustainability leads to increasingly reduced heating needs. On the other hand, the need for a higher production of domestic hot water is emerging, due to modern habits and lifestyles, also favoured by the diffusion of multi-jet showers, cascade showerheads and Jacuzzis. If we consider that we use domestic hot water 365 days a year and at all latitudes, the choice of **MYdens** double condensing means a significant increase of savings.



## ALL YEAR LONG DOUBLE CONDENSING

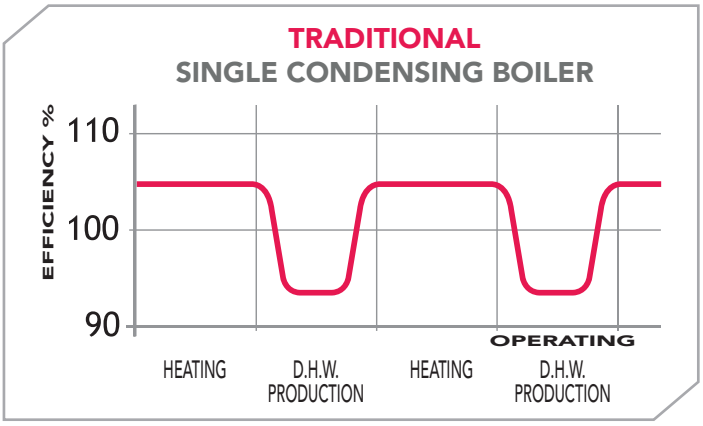
- Traditional condensing boilers only work in condensing mode at low temperatures and during heating production. (fig. 1)

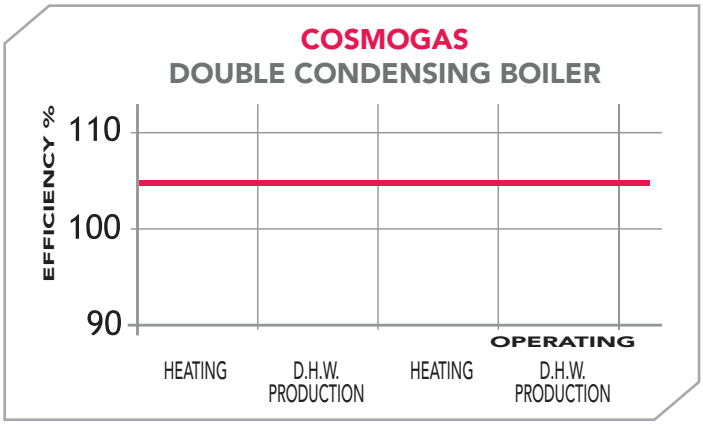

- **MYdens** works in condensing mode 365 days a year, both in heating and D.H.W. production, because it works in condensing mode even at high temperatures. (fig. 2)



## HIGH EFFICIENCY ALL YEAR LONG

To obtain double condensing it is necessary to have efficient thermal exchanges, considerably higher than traditional gas condensing boilers. The secret is enclosed in the use of patented large-surface heat exchangers that still allow the condensation at the temperature of the primary circuit of 55°C, like the R.V.C. one of its kind, that combined with the oversized secondary heat exchanger, guarantees high performance with very low costs.

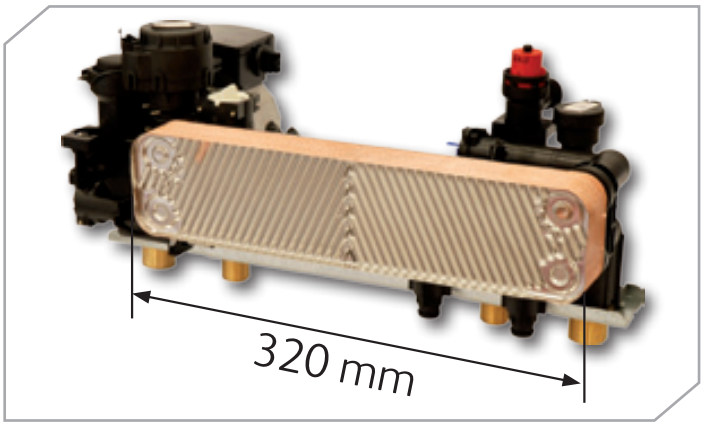


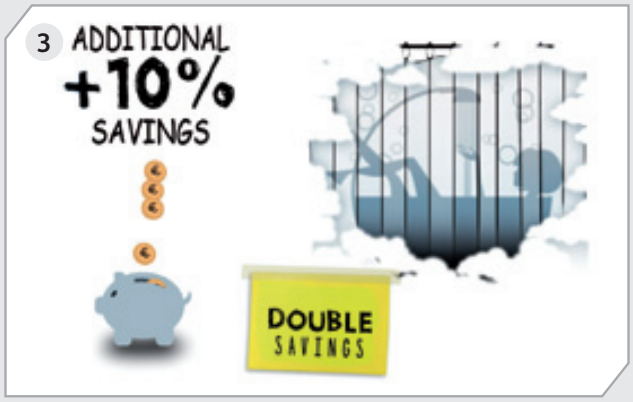

## OVERSIZED PLATE HEAT EXCHANGER

Domestic hot water is produced by an oversized stainless steel plate heat exchanger (L=320 mm), that allows great and quick availability of D.H.W.
Moreover **MYdens** always works in condensing mode, even during domestic hot water supply, thereby reducing the consumption and costs involved in the production of hot water of an additional 10%**.

** compared to boilers that do not condense during D.H.W. production




- Traditional gas condensing boilers guarantee savings up to 30% compared to older atmospheric boilers. With **MYdens** double condensing boiler you can save an additional 10% upon domestic hot water production. (fig. 3)



# DETAILS THAT MAKE THE DIFFERENCE

## COVER-BOX 15 - 24 - 34 CERTIFIED FOR OUTDOOR USE

**MYdens** is available for outdoor installation with the additional COVER-BOX, the ABS, anti-UV weather-resistant insulated cover. The fireproof polyethylene insulation, with high insulating power, provides an IP X5D protection degree and protects the water heater against frost.

**The COVER-BOX is provided as standard, complete with:**

- **ABS anti-UV cover**
- **Brackets**
- **Drilling template**
- **CR04 remote control to manage the device from within the house**

## SIMPLE AND INTUITIVE CONTROL PANEL

Control panel with digital back-lighting display for an easy and intuitive visualization of parameters, boiler phases, error messages, with electronic temperature control. Display back-lighting turns off after 5 minutes of inactivity (SAVE ENERGY).


## CR04 REMOTE CONTROL

CR04 remote control can be set as: timer, remote control and thermoregulator. CR04 remote control shows: alarms, boiler and indoor temperatures and boiler set parameters. When the outdoor sensor is installed, CR04 also acts as a thermoregulator and it is necessary to set up the compensation curves.

## BUILT-IN BACK FLUE PREVENTER (CLAPET)

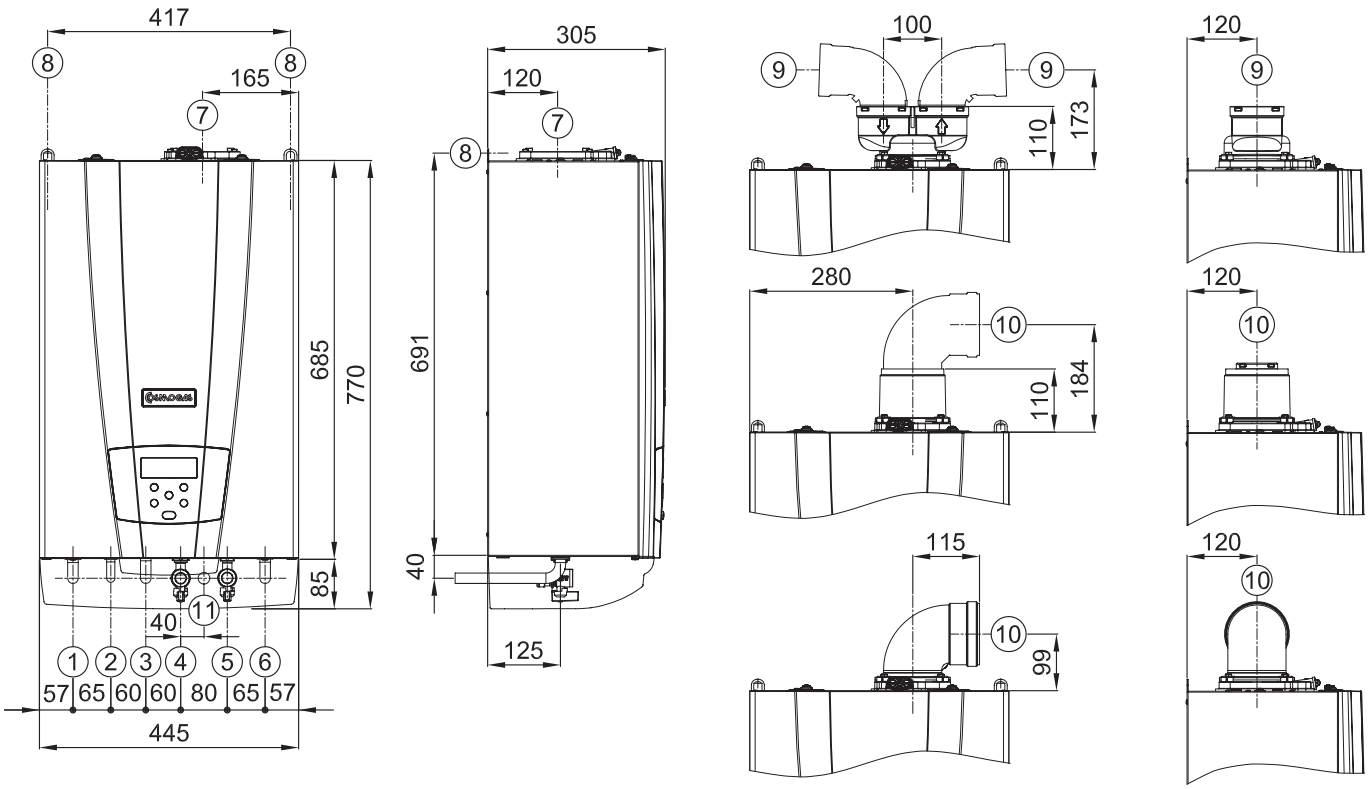
In cascade sequence installations, **MYdens** ecologic premix burner features, as standard equipment, a back flue preventer (clapet) on the combustion circuit to prevent possible flue gas recirculation between different exchangers.

## EASY MAINTENANCE

**MYdens** has been designed with a front access to all inner components for an easy maintenance.
**MYdens** is characterized by uniformity of functions and components, for a quick maintenance and management savings.

# SIZE AND CONNECTIONS

## MYDENS 15 - 24 - 34



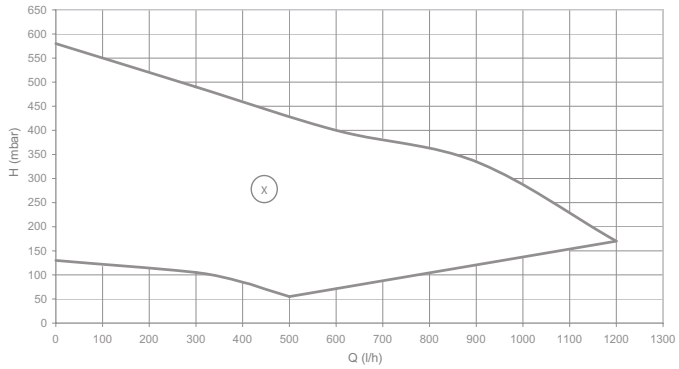

1 - Supply
3/4" in 15 and 24 models
1" in 34 model
2 - D.H.W. outlet 1/2" ✻
3 - Water storage tank return 3/4" ✻✻
4 - Gas inlet 3/4"
5 - Cold water inlet 1/2"
6 - Return
3/4" in 15 and 24 models
1" in 34 model
7 - Flue gas outlet
8 - Support brackets
9 - Split flue gas outlet
10 - Coaxial flue gas outlet
11 - Condensate drain Ø20

✻ - Water storage tank supply 3/4" in
MYdens B
Not available in MYdens C
✻✻ - Available for MYdens B only

| PIPES OVERALL MAXIMUM LENGTH | |
|---|---|
| PIPE MODEL | MYDENS 15 - 24 - 34 |
| SPLIT SMOOTH PIPE | Ø80/80 PP = 40 m |
| | Ø60/60 PP = 15 m |
| SPLIT CORRUGATED PIPE | Ø80/80 PP = 20 m |
| COAXIAL OUTLET | Ø60/100 PP = 10 m |
| FOR EACH 90° ELBOW, CONSIDER A LINEAR LOSS OF 1 m | |

# AVAILABLE HEAD CURVE AT THE HEATING INSTALLATION

## MYDENS 15 - 24 - 34 WITH STANDARD MODULATING PUMP




X Modulation range

# TECHNICAL DATA

| MYDENS TECHNICAL DATA | | M.U. | 15 | 24 | 34 |
|---|---|---|---|---|---|
| Type (Type of exhaust flue/combustion air intake) | | | B23; B23P; C13; C33; C43; C53; C63; C83; C93 | | |
| Category | | | II2H3P | II2H3P | II2H3P |
| CE type certificate (PIN) | | | 0476CQ1097 | 0476CQ1097 | 0476CQ1097 |
| Range Rated Certificate | | | APPROVED | APPROVED | APPROVED |
| Heating max. heat input "Q" | | kW | 14.0 | 25.5 | 32.0 |
| Domestic hot water minimum/max. heat input | | kW | / | 3.2/25.5 | 6.0/32.0 |
| Heating min. heat input | | kW | 3.2 | 3.2 | 6.0 |
| Heating max. useful heat output (80/60) "P" | | kW | 13.6 | 24.8 | 31.0 |
| Efficiency at 100 % load (80/60) | | % | 97 | 97 | 97 |
| Min. useful heat output (80/60) | | kW | 3.02 | 3.02 | 5.75 |
| Efficiency at min. useful heat output (80/60) | | % | 95 | 95 | 96 |
| Heating max. useful heat output (50/30) | | kW | 14.9 | 27.0 | 33.9 |
| Efficiency at heating max. useful heat output (50/30) | | % | 107 | 106 | 105 |
| Min. useful heat output (50/30) | | kW | 3.30 | 3.30 | 6.14 |
| Efficiency at min. useful heat output (50/30) | | % | 103 | 103 | 102 |
| Efficiency at 30 % of the load | | % | 108 | 109 | 107 |
| Losses at the chimney burner on (80/60) | | % | 1.5 | 1.5 | 1.5 |
| Losses at the chimney burner on at minimum power | | % | 0.5 | 0.5 | 0.5 |
| Losses at the chimney burner off | | % | 0.1 | 0.1 | 0.1 |
| Losses at the casing burner on/off | | % | 0.5/0.1 | 0.5/0.1 | 0.5/0.1 |
| Losses at zero load | | % | 0.3 | 0.3 | 0.3 |
| Gas flow rate | G20 | $m^3/h$ | 1.48 | 2.70 | 3.38 |
| | G25 | $m^3/h$ | 1.72 | 3.14 | 3.94 |
| | G30 | kg/h | 1.10 | 2.01 | 2.52 |
| | G31 | kg/h | 1.09 | 1.98 | 2.48 |
| Gas supply pressure | G20 | mbar | 20 | 20 | 20 |
| | G25 | mbar | 25 | 25 | 25 |
| | G30 | mbar | 30 | 30 | 30 |
| | G31 | mbar | 37 | 37 | 37 |
| Gas supply minimum/maximum pressure | G20 | mbar | 15/45 | 15/45 | 15/45 |
| | G25 | mbar | 15/45 | 15/45 | 15/45 |
| | G30 | mbar | 15/45 | 15/45 | 15/45 |
| | G31 | mbar | 15/45 | 15/45 | 15/45 |
| Primary heat exchanger with shared water circulation pipes | | l | 1.6 | 1.6 | 1.6 |
| Secondary heat exchanger water content | | l | / | 0.5 | 0.5 |
| Domestic hot water useful heat output | | kW | / | 27.5 | 34.2 |
| D.H.W. minimum flow rate | | l/min | / | 2 | 2 |
| Instantaneous D.H.W. production (Δt 30°C) | | l/min | / | 13.1 | 16.3 |
| Instantaneous D.H.W. adjustment range | | °C | / | 40-60 | 40-60 |
| D.H.W. with indirect water heater adjustment range | | °C | 40-70 | 40-70 | 40-70 |
| Design temperature | | °C | 95 | 95 | 95 |
| Minimum/Maximum heating temperature | | °C | 20/80 | 20/80 | 20/80 |
| Heating maximum pressure "PMS" | | bar | 3 | 3 | 3 |
| Heating minimum pressure | | bar | 0.5 | 0.5 | 0.5 |
| D.H.W. circuit maximum pressure | | bar | / | 7 | 7 |
| D.H.W. minimum pressure | | bar | / | 0.3 | 0.3 |
| Expansion tank pre-load pressure | | bar | 1 | 1 | 1 |
| Expansion tank capacity | | l | 10 | 10 | 10 |
| Rated power supply voltage/frequency | | V/HZ | 230/50 | 230/50 | 230/50 |
| Absorbed electric power | | W | 120 | 120 | 120 |
| Electric protection rating | | | IPX4D | IPX4D | IPX4D |
| Burner electrical power | | W | 70 | 70 | 70 |
| Electric power absorbed by the pump | | W | 50 | 50 | 50 |
| Exhaust flue/air intake pipe diameter (split) | | mm | 80 | 80 | 80 |
| Exhaust flue/air intake pipe max. length (split) (80) | | m | 20/20 | 20/20 | 12.5/12.5 |
| Exhaust flue pipe diameter (coaxial) | | mm | 60/100 | 60/100 | 60/100 |
| Exhaust flue pipe max. length (coaxial) | | m | 10 | 10 | 10 |
| Equivalent length of a bend | | m | bend 45° = 0.5m, bend at 90° =1m | | |

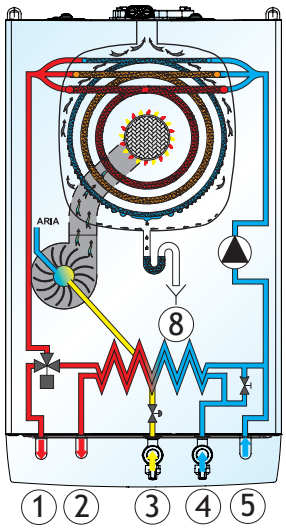
# TECHNICAL DATA

| MYDENS TECHNICAL DATA | | M.U. | 15 | 24 | 34 |
|---|---|---|---|---|---|
| Weighted CO (0% O2) | G20 | ppm | 5 | 20 | 25 |
| Weighted NOx (0% O2) (class 5 EN 483) | G20 | ppm | 16 | 20 | 16 |
| CO2 (%) at minimum/maximum power | G20-G25 | % | 8.5/9.0 | 8.5/9.0 | 8.5/9.0 |
| | G30-G31 | % | 10.0/10.5 | 10.0/10.5 | 10.0/10.5 |
| O2 (%) at minimum/maximum power | G20-G25 | % | 5.5/4.8 | 5.5/4.8 | 5.5/4.8 |
| | G30-G31 | % | 5.6/4.8 | 5.6/4.8 | 5.6/4.8 |
| Maximum recirculation of exhaust flue allowed in the event of wind | | % | 10 | 10 | 10 |
| Exhaust flue minimum/maximum temperature at boiler outlet | | °C | 30/75 | 30/75 | 30/75 |
| Δt temperature exhaust flue/return (at 100% of the load) (80/60) | | °C | 8 | 20 | 22 |
| Δt temperature exhaust flue/return (at 30% of the load) (37/30) | | °C | 7 | 4 | 3 |
| Mass flow of the exhaust flue | | kg/h | 25.4 | 42.3 | 55 |
| Mass flow of the exhaust flue at minimum power | | kg/h | 5.3 | 5.3 | 10.0 |
| Head available at exhaust flue | | Pa | 60 | 60 | 60 |
| Maximum temperature of the combustion agent air | | °C | 50 | 50 | 50 |
| Maximum CO2 content in the combustion agent air | | % | 0.9 | 0.9 | 0.9 |
| Exhaust flue maximum temperature for overheating | | °C | 90 | 90 | 90 |
| Max. negative pressure allowed in the exhaust flue exhaust/intake system | | Pa | 60 | 60 | 60 |
| Condensate maximum flow rate | | l/h | 1.9 | 3.2 | 4.0 |
| Condensate average acidity | | pH | 4 | 4 | 4 |
| Operating environment temperature | | °C | 0 ; +50 | 0 ; +50 | 0 ; +50 |
| Weight of the boiler | B | kg | 36 | 36 | 38 |
| | C | kg | 34 | 34 | 36 |
| | P | kg | / | 36 | 38 |
| Energy efficiency class Regulation (UE) n. 811/2013 | | | A / A XL | | A / A XXL |

# MYDENS AVAILABLE MODELS

## MYDENS P

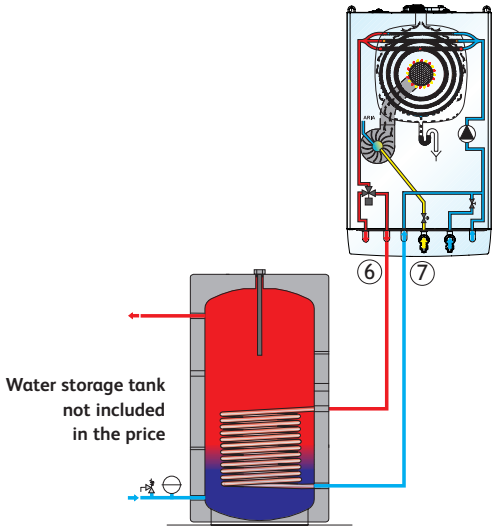
**Instantaneous D.H.W. and heating**




1 - Supply
2 - D.H.W. outlet

## MYDENS B

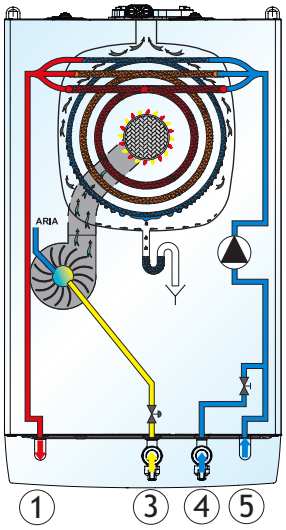
**D.H.W. from water storage tank and heating**




3 - Gas inlet
4 - Cold water inlet
5 - Return
6 - Water storage tank supply

## MYDENS C

**Heat only**




7 - Water storage tank return
8 - Oversized plate heat exchanger

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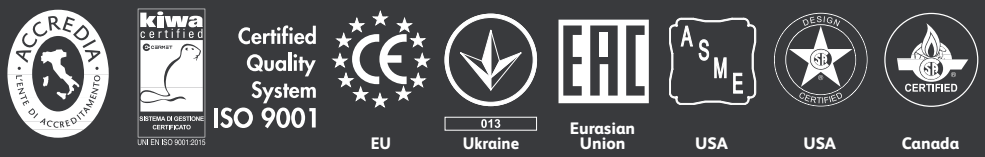
## COSMOGAS International Certifications

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