

# TECHNICAL DATA SHEET

## PRODUCT: Buderus GB402 Boiler

### GB402 Floor Standing Condensing Boiler:

GB402 – 320	66.7	– 320.0kW @50/30
GB402 – 395	80.5	– 395.0kW @50/30
GB402 – 470	95.6	– 468.8kW @50/30
GB402 – 545	113.0	– 545.0kW @50/30
GB402 – 620	127.6	– 621.4kW @50/30



- ▶ Individual Boiler outputs from 320-630kW
- ▶ Suitable for installation in multiple boiler cascades
- ▶ Highest efficiency up to 110% (NCV), 96% Seasonal efficiency (L2B)
- ▶ Aluminium heat exchanger
- ▶ Modulating pre-mix gas burner with NOx emissions of 40mg/kWh
- ▶ Easy transport, assembly and installation
- ▶ Simple service and maintenance
- ▶ SAFe – Digital combustion control
- ▶ Energy Management system (EMS) controls
- ▶ Extremely quiet with noise levels below 60 db(A) at full load

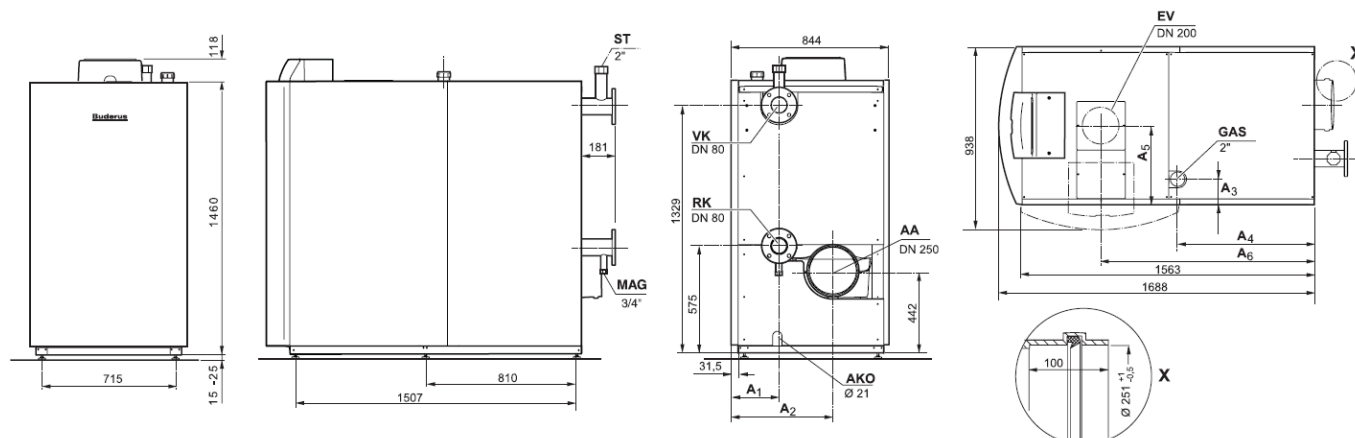
Whilst it is always our intention to fully assist, it is essential to recognise that all information given by the company in response to an enquiry of any nature is provided in good faith and based upon the information provided with the enquiry. We recommend that advice should always be checked with your installer or contract partner. Consequently, the company cannot be held responsible for any liability relating to the use or repetition of such information or part thereof. In addition, whilst making every reasonable effort to monitor the performance and quality of our supply, installation and service network, we do not accept responsibility for the workmanship or operation of any third party company that the company may have promoted either in conversation, e-mail or other communication.

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### GB402 Dimensions:



GB402		Unit	320	395	470	545	620
Height (max incl Controls)		mm	1593 - 1603				
Depth*		mm	844 - 938*				
Width*		mm	1744 - 1869*				
Transport (WxDxH)		mm	781x1740x1542				
Clearance (Boiler feet)		mm	1507				
Weight (excluding casing)		kg	410	438	465	493	520
Condensate outlet	AKO	Inch	3/4	3/4	3/4	3/4	3/4
Flue gas connection	Ø D <sub>AA</sub>		DN250	DN250	DN250	DN250	DN250
	H <sub>AA</sub>	mm	442	442	442	442	442
	A <sub>2</sub>	mm	542.5	542.5	542.5	542.5	542.5
Boiler flow connection	Ø VK	mm	DN80	DN80	DN80	DN80	DN80
	H <sub>VK</sub>	mm	1329	1329	1329	1329	1329
	A <sub>1</sub>	mm	251.5	251.5	251.5	251.5	251.5
Boiler return connection	Ø RK	mm	DN80	DN80	DN80	DN80	DN80
	H <sub>RK</sub>	mm	575	575	575	575	575
	A <sub>1</sub>	mm	251.5	251.5	251.5	251.5	251.5
Gas connection	Ø GAS	Inch	R2	R2	R2	R2	R2
	A <sub>3</sub>	mm	135	135	135	135	135
	A <sub>4</sub>	mm	732	732	732	732	732
**Safety valve connection	ST	Inch	R2	R2	R2	R2	R2
Balanced flue connection **(Optional)	Ø EV	mm	DN200	DN200	DN200	DN200	DN200
	A <sub>5</sub>	mm	422	422	422	422	422
	A <sub>6</sub>	mm	1142	1142	1142	1142	1142

\*Width and depth dimensions are dependent on orientation of boiler controls.

\*\*Safety equipment and balanced flue connection pieces available as an accessory, for more information please contact your local sales manager.

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### GB402 Technical Specification:

GB402		Unit	320	395	470	545	620
Nominal heat output @ 50/30 °C	Full load	kW	320.0	395.0	468.2	545.0	621.4
	Part load	kW	66.7	80.5	95.6	113.0	127.6
Nominal heat output @ 80/60 °C	Full load	kW	297.2	367.4	435.8	507.0	577.1
	Part load	kW	58.9	72.6	85.2	100.7	114.9
Rated heat input	Full load	kW	304.8	376.2	447.6	519.0	590.0
	Part load	kW	61.0	75.2	89.5	103.8	118.0
Net efficiency (NCV)		%	110	110	110	110	110
Seasonal efficiency (L2B)		%	96.4	96.8	96.7	97.0	96.8
Max flow temperature		°C	85				
Max working pressure		bar	6				
Safety temperature cut-out		°C	100				
Water content		l	47.3	53.3	59.3	65.3	75.3
Water flow resistance	ΔT 20k	mbar	99	105	95	108	113
	ΔT 11k	mbar	330	344	311	358	375
Flue gas temperature @ 50/30 °C	Full load	°C	45	44	44	43	44
	Part load	°C	30	30	30	30	30
Flue gas temperature @ 80/60 °C	Full load	°C	65	65	65	65	65
	Part load	°C	57	58	58	58	58
Flue gas mass flow rate	Full load	g/s	142.4	174.5	207.1	240.6	271.9
	Part load	g/s	28.7	36.8	40.6	48.0	53.2
CO <sub>2</sub> content	Full load	%	9.1				
	Part load	%	9.3				
NO <sub>x</sub> rating @ 0% oxygen, dry		mg/kWh	40				
Available flue pressure		Pa	100				
Sound emission level @1m	Full load	dB(A)	57.6	59.9	58.9	59.9	59.8
Electrical power consumption	Full load	W	395	449	487	588	734
	Part load	W	40	45	42	45	49
Power supply			230 VAC / 50 Hz				
Electrical ingress protection			IP X0D				
CE certification, product ID no.			CE0085BU0332				
Gas pressure – Natural Gas (G20)			17 - 25 mbar				
Gas rating – Natural Gas (G20)		m <sup>3</sup> /hr	32.3	39.8	47.4	55.0	62.5

### Water Quality

As with all high performance commercial condensing boilers with aluminium heat exchangers, it is important to fill and top up the system with water that does not contain a lot of calcium carbonate. In areas where the water hardness is described as moderately hard, hard or very hard (i.e. water hardness is above 10.6° English (Clarke) hardness or has a level of calcium carbonate above 50 mg/l) it is important that the water is treated. The information about local water hardness is readily available from the supplying water company or simple testing kits available. In cases where water treatment is required Buderus recommends the use of Sentinel X100. Failure to manage water hardness can reduce the performance of the boiler or cause boiler failure which is not covered by the guarantee.

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