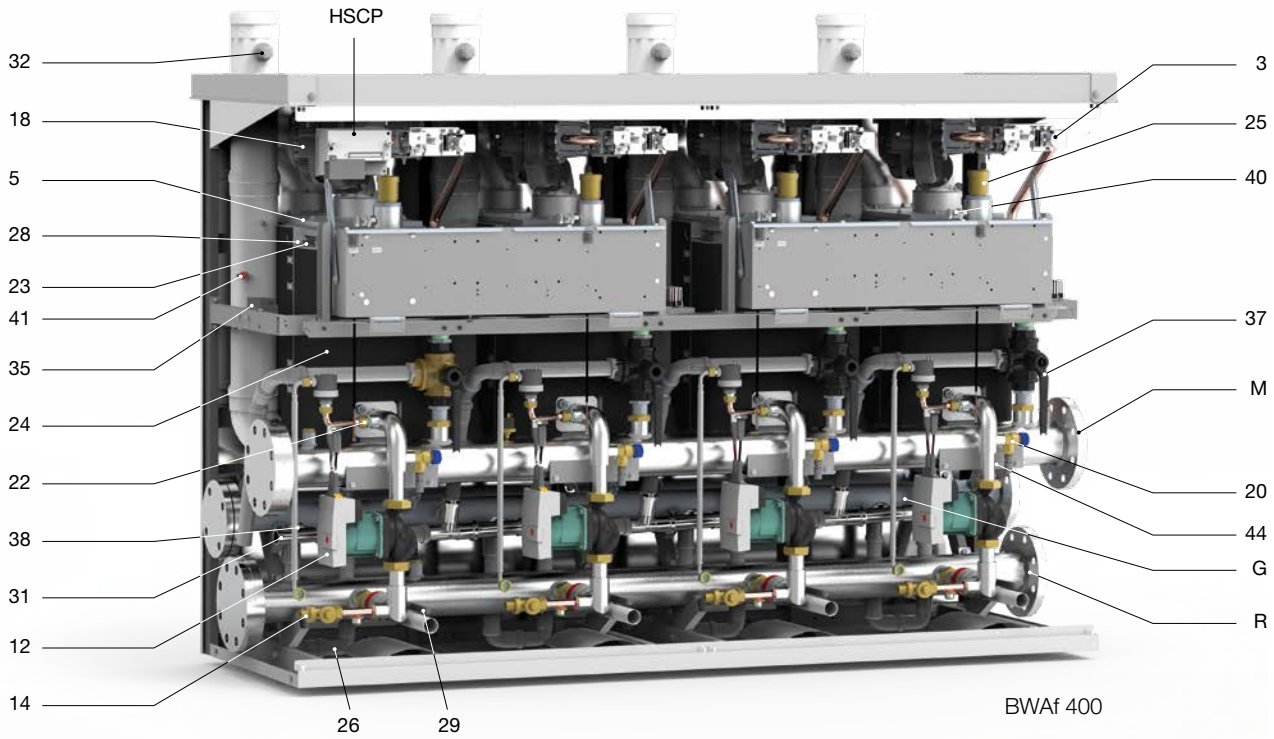
BWAf 200-400

BWAf 400

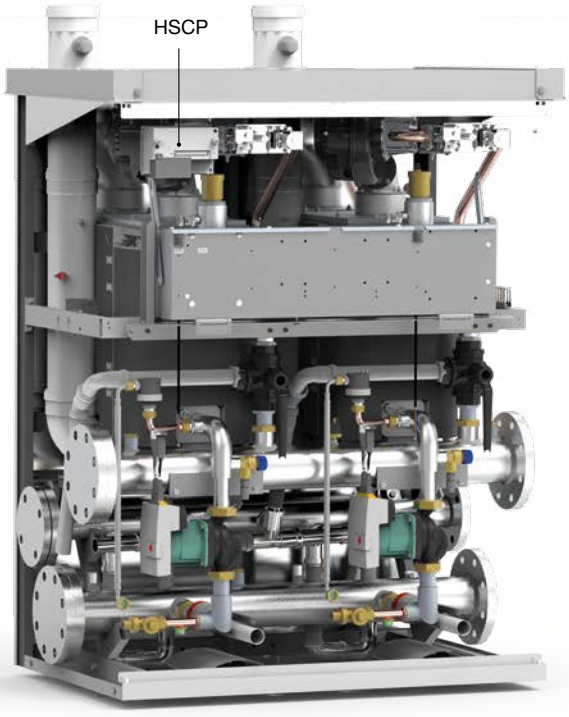
BWAf 200

FLOOR STANDING, MODULATING CONDENSING BOILER WITH LOW NO_x PREMIX BURNER - FOR INDOOR & OUTDOOR INSTALLATION		
OUTPUT RANGE	from 200 to 400 kW	
WORKING TEMPERATURE	no limit on the return temperature	
SUPPLY	Natural Gas or LPG	
MODELS	BWAf 200	BWAf 400
SEASONAL EFFICIENCY	**A**	
low water content - Heat exchanger in Aluminium / Silicium / Magnesium - IPX5D (for Outdoor installation)		

MAIN COMPONENTS



BWAf 400



BWAf 200

3 Gas valve
5 Burner
12 Modulating Pump
14 Boiler drain valve
18 Modulating Fan
20 Safety valve
22 Return temperature sensor
23 Flue gas collector safety thermostat
24 Aluminium Heat Exchanger/Capacitor
25 Vent valve
26 Condensation drain trap
28 Ignition electrode
29 Return shut-off (3 Way) valve
31 Condensation drain trap
32 Outlet flue inspection
35 Ignition transformer
37 Flow shut-off (3 Way) valve
38 Gas pressure switch
40 Manual Vent valve
41 Smoke Thermostat
44 Differential pressure switch

G Gas inle DN50
M Heating system flow DN80
R Heating system return DN80

PRODUCT PLUS VALUES

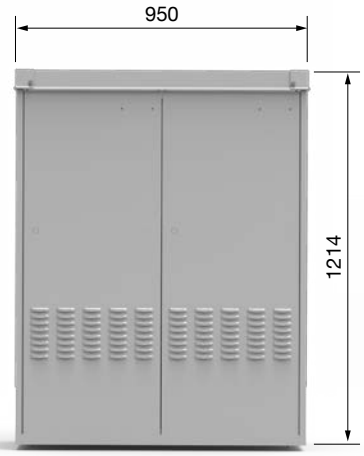
- Special containing cabinet for outdoor installation
- Hydraulic connection flanges between more units, DN 80
- Three way valve for hydraulic interception on the flow and outlet in atmosphere
- Two way valve for hydraulic interception on the return with Flow-stop
- Gas connection flange between more units, DN 50
- Smokes evacuation duct 100 mm dia. with analysis sampling nipple
- Cabinets front door with airing slots
- Minimum feeding gas pressure: 15 mbar
- Maximum allowable pressure at the chimney base: 150 Pa
- Maximum allowable temperature: 100°C
- Maximum working temperature: 90°C
- Modulation ratio 1:10 (mod. 200 kW), 1:20 (mod. 400 kW)
- Two or four primary heat exchangers in Al/Si/Mg alloy, according to the model, entirely irrigated, ultracompact with high water circulation
- Digital electronic regulator HSCP with function of: thermo-regulator and cascade controller and manager
- Additional functions: diagnosis of operational parameters and errors, antifreeze, technical services, post-circulation and digital errors indication
- BCM 2.0: with 0-10 Volt connection port for external control of the boiler temperature modulation
- Very low polluting emissions, Low NOx, class 6 according to EN 15502-1
- High efficiency modulating pumps (2x or 4x, according to the model) standard supplied
- Minimum gas pressure switch
- Minimum water pressure switch (2x or 4x, according to the model)
- Safety level switch on condensate drain (2x or 4x, according to the model)
- Isolation Protection IP X5D
- Blind flange

Options:
- Empty cabinet for housing of the additional safety devices
- Multifunction module SHC for zones management
- N. 3 additional control sensors (possibility of management up to a maximum of 4 SHC cards)
- Additional safety devices kit (Kit INAIL)

DIMENSIONS

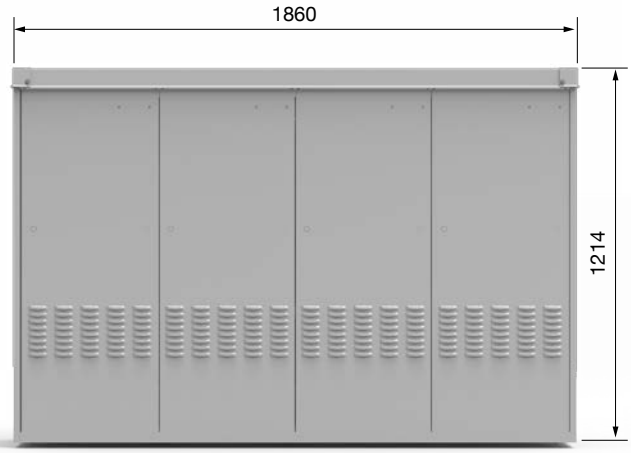
BWAf 200

FRONT VIEW



SIDE VIEW

BWAf 400



TECHNICAL DATA

ELECTRICAL, HYDRAULIC, INSTALLATION DIAGRAMS AND CONTROLLERS can be unloaded from the web site www.schusterboilers.com at the page of the product

		BWAf 200	BWAf 400
Appliance category		II_{2H3P}	II_{2H3P}
Modulation Ratio		1:10	1:20
Nominal Heat Input on P.C.I. Qn	kW	199	398
Minimum Heat Input on P.C.I. Qmin	kW	20	20
Nominal Output (Tr 60 / Tm 80 °C) Pn	kW	195	391
Minimum Output (Tr 60 / Tm 80 °C) Pn min	kW	19.1	19.21
Nominal Output (Tr 30 / Tm 50 °C) Pcond	kW	206	413
Minimum Output (Tr 30 / Tm 50 °C) Pcond min	kW	21.2	21.2
Efficiency at max. output (Tr 60 / Tm 80°C)	%	97.9	97.8
Efficiency at min. output (Tr 60 / Tm 80°C)	%	95.6	95.6
Efficiency at max. output (Tr 30 / Tm 50°C)	%	104	104
Efficiency at min. output (Tr 30 / Tm 50°C)	%	106	106
Efficiency at 30% output (Tr 30°C)	%	108.9	108
Combustion efficiency with nominal load	%	98.02	98.26
Combustion efficiency with minimum load	%	98.2	98.2
Heat loss at casing with burner in operation (Qmin)	%	2.6	2.56
Heat loss at casing with burner in operation (Qn)	%	0.14	0.05
Flue gas temperature tf-ta (min)(*)	°C	34	34.5
Flue gas temperature tf-ta (max)(*)	°C	40	35.6
Maximum allowable temperature	°C	100	100
Maximum operating temperature	°C	85	85
Flue gas mass flow rate (min)	kg/h	34.31	34.31
Flue gas mass flow rate (max)	kg/h	319.57	639.14
Excess λ air	%	23	23
Flue losses with burner in operation (min)	%	1.8	1.8
Flue losses with burner in operation (max)	%	2.0	1.74
Minimum heating circuit pressure	bar	0.5	0.5
Maximum heating circuit pressure	bar	6	6
Water content	l	22	44
Gas Consumption Natural (20 mbar) gas G 20 a Qn	m^3/h	21.04	42.1
Gas Consumption Natural gas (20 mbar) G 20 a Qmin	m^3/h	2.11	2.11
Gas Consumption G25 (supply pressure 25 mbar) Qn	m^3/h	24.5	49
Gas Consumption G25 (supply pressure 25 mbar) Qmin	m^3/h	2.46	2.46
Gas Consumption G31 (supply pressure 37/50 mbar) Qn	kg/h	15.5	31.0
Gas Consumption G31 (supply pressure 37/50 mbar) Qmin	kg/h	1.55	1.55
Max. available pressure at the chimney base	Pa	150	150
Condensate production max	kg/h	12.8	26.0
Emissions			
CO at Minimum Heat Input with 0% of O_2	mg/kWh	153	156
NO_x at Nominal Heat Input with 0% of O_2	mg/kWh	68	70
NO_x Class		6	6
Electrical Data			
Voltage/Frequency electric power supply	V/Hz	230/50	230/50
Fuse on main supply	A (R)	4	4
Insulation degree	IP	X5D	X5D

Room Temperature = 20°C - I dati presenti sono rilevati secondo UNI EN 15502-1

(*) Temperature detected with appliance operation flow rate 80°C / ret. 60°C

Seasonal space heating energy 2009/125 CEE (<=400kW) η_s - see ErP table

Stand-by heat loss ΔT 30°C - P_{stby} - see ErP table

Consumption in stand-by - P_{sb} - see ErP table

DATA ACCORDING TO ErP DIRECTIVE

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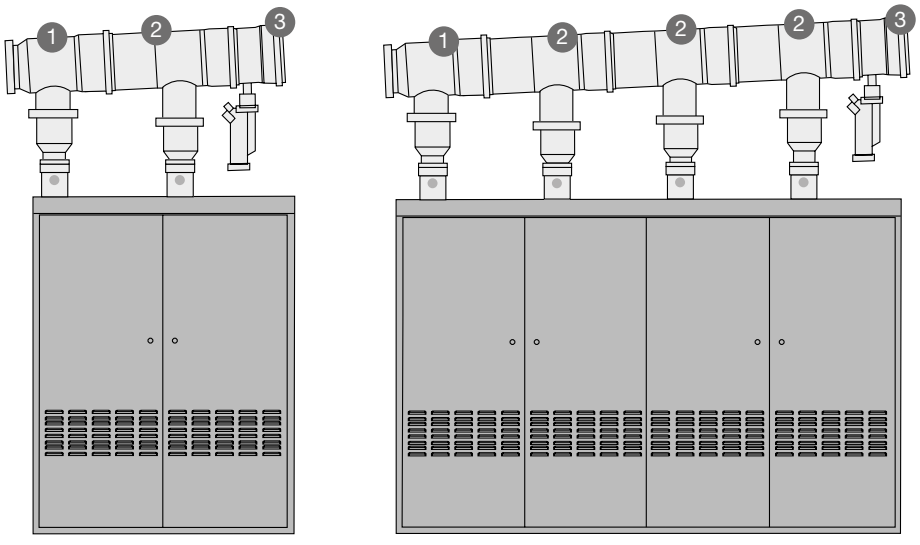
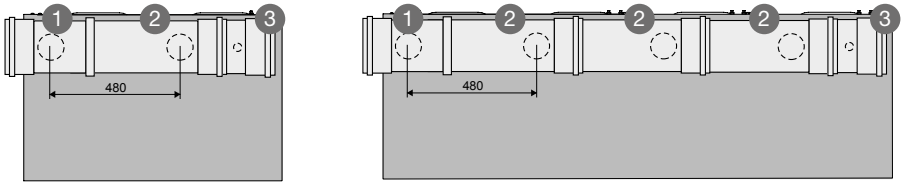
			BWAf 200	BWAf 400
NOMINAL HEAT OUTPUT	P_n	kW	195	388
SEASONAL SPACE HEATING ENERGY EFFICIENCY	η_s	%	93	92
SEASONAL EFFICIENCY CLASS IN HEATING MODE			**A**	**A**
FOR CH ONLY AND COMBINATION BOILERS: USEFUL HEAT OUTPUT				
USEFUL HEAT OUTPUT in high temperature regime (Tr 60 °C / Tm 80 °C)	P_4	kW	195	391
USEFUL EFFICIENCY AT NOM. HEAT OUTPUT in high-temperature regime (Tr 60°C / Tm 80°C)	η_4	%	88,2	88,5
USEFUL HEAT OUTPUT AT 30% OF NOM. HEAT OUTPUT in low-temperature regime (Tr 30°C)	P_1	kW	65,0	129,0
USEFUL EFFICIENCY AT 30% OF NOM. HEAT OUTPUT in low-temperature regime (Tr 30 °C)	η_1	%	98,1	97,3
RANGE-RATED BOILER: YES / NO			NO	NO
AUXILIARY ELECTRICITY CONSUMPTION				
AT FULL LOAD	el_{max}	kW	0,580	1,160
AT PART LOAD	el_{min}	kW	0,156	0,156
IN STAND-BY MODE	P_{SB}	kW	0,025	0,032
OTHER ITEMS				
STAND-BY HEAT LOSS	P_{stby}	kW	0,962	0,924
EMISSIONS OF NITROGEN OXIDES rif. PCI (PCS)	NO_x	mg/kWh	46 (41)	46 (41)
ANNUAL ELECTRICITY CONSUMPTION	Q_{HE}	GJ	606	1220

SMOKE EVACUATION ACCESSORIES (Ø 200)

FRONTAL VIEW



VIEW FROM ABOVE



1 

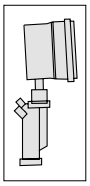
SINGLE FLUE MANIFOLD

2 

FLUE DUCT EXTENSION W/BOILER CONNECTION

3 

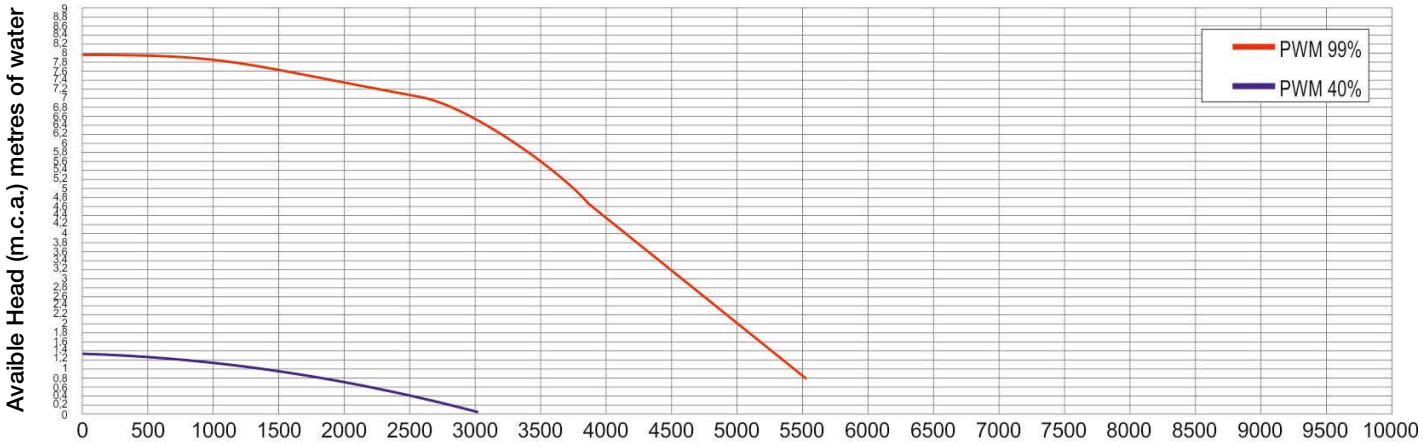
SIPHON



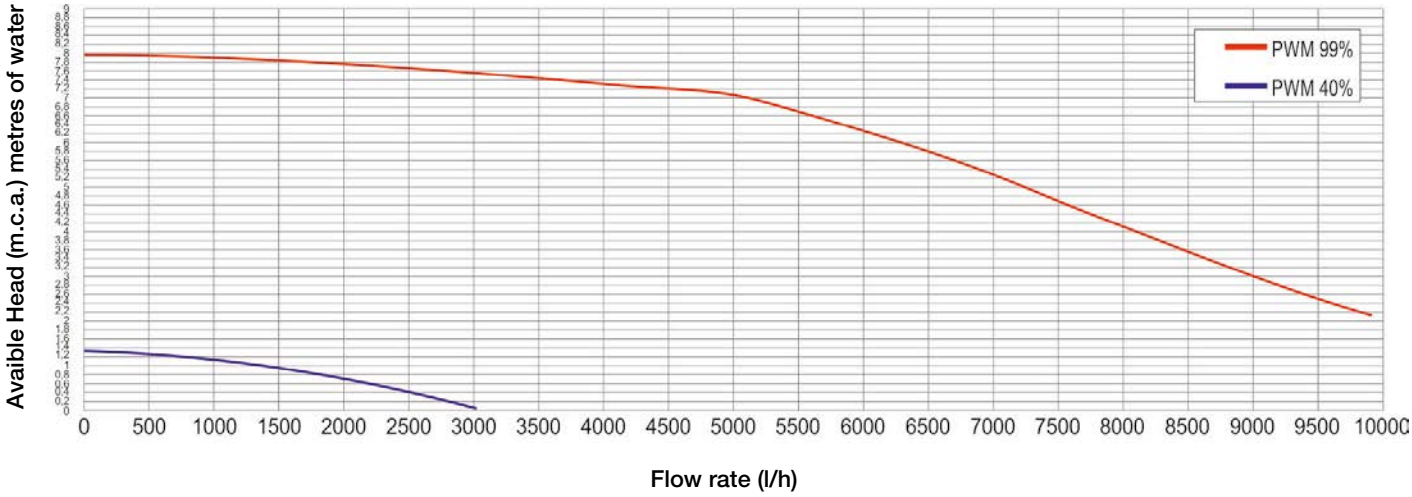
FLUE DUCT EXTENSION

DIAGRAM OF FLOW RATE/PRESSURE AVAILABLE FOR INSTALLATION

n. 1 Circulator Qnom n. 1 Circulator Qmin



n. 2 Circulator Qnom n. 1 Circulator Qmin



		BWAf 200	BWAf 400
Power supply	kW	199	398
Max flow rate demanded l/h (Δt 15 K)	l/h	11400	22818
Nominal flow rate request (Δt 20 K)	l/h	8860	17110
Power supply in condensation (50/30)	kW	210	420
Max flow rate demanded l/h (Δt 15 K)	l/h	12040	24080
Nominal flow rate request (Δt 20 K)	l/h	9030	18060

The Δt between supply and return boiler must never be less than 15 °K.

NOTE: The use of a mixing header fitted between the boiler circuit and the system circuit is always advisable.
It becomes INDISPENSABLE if the system requires flow rates superior to the maximum permitted boiler flow rates, which is to say lower than 15K.