

Gas wall hung condensing boilers for new buildings and replacement







New design, same reliability

Luna Duo-tec E and Duo-tec Compact E: the well-known Baxi boilers have been redesigned with a new modern aesthetic with an eye on the new design tendencies that allows the boilers to be fitted in any housing. The control panel has been completely updated and it is equipped with a new back-lighted display even clearer and easier to use, thanks to dedicated push buttons.

The boilers, with the new restyling, present the **features that always characterized the Duo-tec range**:

Reliability. Durable components and reliable performance;

Efficiency and savings. The reduction of the number of switch on/off of the boiler means energy saving and low emissions;

A complete range. Heating only, combi and compact models are available. The range has further enlarged thanks to the outdoor installation option (Duo-tec Compact E).

Factory made. A Factory made hybrid system (Baxi Hybrid) can be created combining a Baxi split or monobloc heat pump.



Gas condensing boilers for new buildings and replacement

	Luna Duo-tec E	MAX heating heat output	MAX DHW heat output		Load profile
40	combi	32 kW	40 kW	A 🔊	XXL
33	combi	28 kW	33 kW	A 🔊	XXL
28	combi	24 kW	28 kW	🦗 🗛	XL
24	combi	20 kW	24 kW	🦗 🗛	XL
1.32	heating only	32 kW	-		-
1.28	heating only	28 kW	-		-
1.24	heating only	24 kW	-		-
1.12	heating only	12 kW	-		-



Gas condensing boilers with compact dimensions for new buildings and replacement

	Duo-tec Compact E				
28	combi	24 kW	28 kW	🖗 🗛	XL
24	combi	20 kW	24 kW	🖗 🗛	XL
20	combi	19,4 kW	20 kW	🖗 🗛	XL
1.24	heating only	24 kW	-		_



The new Duo-tec E range has been designed to fulfill the new Ecodesign and Labelling European directives, to be the ideal solution for new installations and the replacement of existing boilers. The energy efficiency class, identified by a letter, states an efficiency range in which the value of the product is included. The label is created for the final consumer to enable an informed choice about high efficiency products through comparable data.



Digital control panel

The Duo-tec range E is provided with a digital control panel with **back-lit LCD display**, easy to use thanks to the **dedicated and independent push-buttons** to set the water and heating temperatures.

The display shows all the information and allows to set the functioning parameters clearly and immediately.



Pre-heating burner

The Duo-tec E range boilers have been equipped with a **burner pre-heating function** that allows an **instantaneous DHW production** at the comfort temperature.

In fact, the water outlet, going through the plates of the pre-heated exchanger, is already at the desired temperature, **without waiting time**. The function can be easily enabled/disabled by mean of a dedicated parameter on the boiler.



Boiler info

Pushing on the dedicated button (*ip*), it is possible to display many information about the functioning of the boiler, as for example: water pressure of the heating circuit (pressure gauge transducer in the hydraulic group); flow/return temperature of the heating system; outdoor temperature (with outdoor sensor installed); DHW temperature.





Duo-tec E range: compatibility with Baxi Mago

The whole Duo-tec E is directly connectable with the Baxi Mago Smart Thermostat, available as optional. A smartphone can be used to remotely control the boiler, set room temperatures and obtain heating system status.



Luna Duo-tec E



Duo-tec Compact E

Baxi Mago: the comfort at fingertips







Modern design and **easy to use.** Thanks to the **knob** and the **back-lit display,** the screen is easy to read, and the temperature can be easily adjusted.



Multiple smartphones control option, so each member of the family can interact.



It is possible to create **up to five different scenarios** related to multiple temperature requirements ("day", "night", "evening", "out of home", etc.).



Baxi Mago helps **saving money** and keeps **consumptions under control,** providing weekly, monthly or annual consumptions graphs.

Duo-tec E

Features

Efficiency and saving

Wide modulation range:

• higher efficiency due to reduced switch on/off of the boiler: with a high modulating ratio, the reduction of the continuous switch on/off generates an important reduction of the consumptions (8-10%) and the same percentage of pollutant emission reduction;

• automatic adjustment of the heat output to the real needs avoiding an overheating/cooling of the rooms.

GAC: Gas Adaptive Control

Gas Adaptive Control system, thanks to the new electronics together with the new gas valve, grants an automatic control of the combustion maintaining the maximum efficiency.

Advantages:

- no manual intervention for adjustments or nozzle change is required;
- the boiler adapts to the quality of the gas and to the length of the flues maintaining a constant efficiency;
- the boiler regulates constantly to maintain the maximum efficiency values, with a reduction of the gas consumption and less pollution.

Modulating pump with de-aeration

The circulating pump can work at the maximum or minimum speed or in "auto" mode: in this case, the speed (min/max) will be set so that ΔT of the flow / return in heating mode remains constant at 20°C, granting a reduction of the consumption of the pump and, due to the lower mechanical stress (compared to a pump working always at max speed), also a reduction of the maintenance costs.

The de-aeration function operates at the commissioning of the boiler, just pushing the two dedicated buttons +.

This function allows the air venting of the heating circuit to avoid a possible blocking or overheating of the boiler.







Guidelines to replace a standard boiler with Duo-tec E boilers

There are 2 main problems during the replacement:

EXISTING CHIMNEYS AND FLUE TUBES

CONDENSATE DRAIN

To face this problems, Baxi suggests to:

- use a Ø50 mm flue pipe

24-kW models of the Duo-tec E range allow the ducting of existing chimneys thanks to the \emptyset 50 option (rigid and flexible flue pipes).

The condensing technology means low temperature flues suitable for PP tubes. The existing chimney must be realised in 316 stainless steel, while it is not possible to connect the boiler to alluminum pipes or chimeys, since aluminum is a metal that doesn't withstand the acidic condensates.



(*) Every Ø50 90° bend insertion reduces the flue pipe length by 4m.

- use a condensate drain pump

The kit collects the condensate of the domestic condensing boilers: the pump enables the condensate discharge where a natural drain near the boiler is not possible.

During its operation, a condensing boiler formes condensate, due to the principle of condensation. This "water" needs to be discharged through specific drains. If there is no proper slope for gravity drainage, a pump must be installed to convey the condensate to the drains. The pumps used are also equipped with appropriate non-return valves to prevent bacterial contamination due to potential stagnation and backflow of the drainage water. The use of these devices also avoid unaesthetic piping.



Accessories for the replacement

Hydraulic accessories for the replacement of a standard boiler with a condesing boiler:

Magnetic filter to protect from sludge and debris

Features:

- Compact dimension
- Minimal pressure loss
- Easy cleaning without disassembling the filter
- It extends the life of the system
- Effective protection for the system

Impurities circulating in the systems can damage pumps, valves, and heat exchangers: this filter removes both metallic and non-metallic particles, thanks to the steel mesh and the high-quality neodymium magnets. Its maintenance is simple, fast, and practical. Not compatible with Nuvola Duo-tec+.





Condensate drain pump kit

Features:

- PP flexible outlet pipe length 6 m x Ø 6 mm
- adapter for 22 mm and 28 mm pipes
- pipe adapter for flexible discharge pipes
- wall fastners
- 2-m power cable
- compact design for quick and easy installation under the boiler
- extremely quiet operation



Cod. 7213162

Bottom cover extension kit and bottom cover kit

The bottom cover extension kit is 180-mm high and covers the connections, the condensate drain pump and the magnetic magnetic sludge filter to improve the aesthetic of the boiler. It has to be installed under the boiler, with the bottom cover kit.



Cod. A7726434 (for Luna Duo-tec E) Cod. A7727745 (for Duo-tec Compact E)



Cod. A7727927 (for Luna Duo-tec E) Cod. A7736183 (for Duo-tec Compact E)



Outdoor installation

The upper cover for Duo-tec Compact E (available as optional), together with the bottom extention cover and the bottom cover, allow the **outdoor installation in partially protected locations**. Duo-tec Compact E range is equipped with an **electronic anti-frost protection** that grants a minimum working temperature of -5°C. The **IPX5D protection** safeguards the electronics from the water and atmospheric agents.



Installation scheme

Installation scheme with a condensing boiler Duo-tec E (heating only model) connected to a 160 litres single coil tank for DHW production (UB 160 SC).



Accessories to be ordered	Description	Code	Quantity
- 208 ° 757.	ON/OFF weekly timer and room thermostat magic time plus	KHG71408671	n° 2
	Hot water temperature sensor (the kit includes no. 1 sensor)	KHG71407681	n° l
	Outdoor sensor	7104873	n° l





Hydraulic system

3 way electric diverter valve (also heating only models)

Stainless steel premixing burner

- Stainless steel water/flue heat exchanger
- Stainless steel enhanced DHW exchanger to ensure condensation also in DHW mode

(Combi models)

Modulating fan with electronic speed adjusting system

Automatic by-pass

High efficiency full modulating pump of the heating circuit

System to prevent pump and diverter valve sticking operating every 24 hours Heating circuit relief valve set at 3 bar

Thermoregulation system Built-in climatic regulation

(outdoor sensor available as optional) Control of multi-zones system option

Control system

Overheat limit thermostat of the water/flue exchanger

Hydraulic pressure switch to prevent boiler operating in event of low water Safety NTC sensor against flues overheat

Electronic temperatures control by NTC sensors Full anti-frost device Electronic thermometer Digital heating circuit pressure gauge

* High temperature regime: 60°C return temperature at heater inlet and 80°C flow temperature at heater outlet ** Low temperature: 30°C return temperature (at heater inlet)

(1) without flow restrictor

Luna Duo-tec E

- New modern and elegant design
- Wide modulation ratio up to 1:7 (1:6 mod. 1.12 GA) better efficiency and noiseless operation
- Gas Adaptive Control (GAC) system: combustion automatic control to maintain constantly the highest level of efficiency
- High efficiency full modulating circulating pump
- Digital control panel with back-lit LCD display
- Remote control Baxi Mago available as optional
- Integration with solar system option
- Complete soundproofing of the generator
- Frontal access for advanced diagnostics
- Ø50 mm flue pipe mod. 24 kW, 40 m max length

			Сог	mbi			Heatir	ng only	
		24 GA	28 GA	33 GA	40 GA	1.12 GA	1.24 GA	1.28 GA	1.32 GA
Maximum heat input (DHW)	kW	24,7	28,9	34	41,2	-	-	-	-
Maximum heat input (heating)	kW	20,6	24,7	28,9	33	12,4	24,7	28,9	33
Minimum heat input	kW	3,5	3,9	4,8	5,9	2,1	3,5	4,1	4,7
Rated heat output for DHW circuit	kW	24	28	33	40	-	-	-	-
Useful heat output at rated heat output and high temperature regime* P_a	kW	20	24	28	32	12	24	28	32
Useful heat output at 30% of rated heat output and low temperature regime** P_1	kW	6,7	8	9,4	10,7	4	8	9,4	10,7
		24	NU	204	204				
		XL	XL	XXL	XXL	-	-	-	-
Seasonal space heating energy efficiency class		A	A	A	A	A	A	A	A
Water heating energy efficiency class		A	A	A	A	-	-	-	-
Seasonal space heating energy efficiency ηs	%	93	93	93	93	93	93	93	93
Useful efficiency at rated heat output and high temperature regime* ŋ4	%	88	87,9	88,1	87,9	88,1	87,9	87,9	87,9
Useful efficiency at 30% of rated heat output and low temperature regime** ŋ1	%	98	98	98,1	98	98,2	98	98	98
Efficiency Pn (lower calorific value) - average temperature 70 °C	%	97,7	97,6	97,8	97,6	97,8	97,6	97,6	97,6
Efficiency 30% (lower calorific value) - return temperature 30 °C	%	108,8	108,8	108,9	108,8	109	108,8	108,8	108,8
NOx emissions	mg/kWh	15	17	15	24	21	16	16	28
Minimum working temperature	°C	-5	-5	-5	-5	-5	-5	-5	-5
Expansion vessel capacity		8	8	10	10	8	8	10	10
Heating temperature range	°C	25-80	25-80	25-80	25-80	25-80	25-80	25-80	25-80
DHW temperature range	°C	35-60	35-60	35-60	35-60	-	-	-	-
Specific flow (EN 13203-1)	l/min	11,5	13,4	15,8	19,1	-	-	-	-
DHW production $\Delta T 25^{\circ}C^{(1)}$	l/min	13,8	16,1	18,9	22,9	-	-	-	-
Minimum capacity DHW flow rate	l/min	2	2	2	2	-	-	-	-
Minimum pressure heating circuit	bar	0,5	0,5	0,5	0,5	0,5	0,5	0,5	0,5
Minimum pressure DHW circuit	bar	0,15	0,15	0,15	0,15	-	-	-	-
Maximum pressure heating circuit	bar	З	З	З	З	З	З	З	З
Maximum pressure DHW circuit	bar	8	8	8	8	-	-	-	-
Coaxial flue system Ø 60/100 max length	m	10	10	10	10	10	10	10	10
Dual flue system Ø 80 max length	m	80	80	80	80	80	80	80	80
Maximum flue mass flow rate	kg/s	0,012	0,014	0,016	0,019	0,006	0,012	0,014	0,016
Minimum flue mass flow rate	kg/s	0.002	0,002	0,002	0,003	0,001	0,002	0,002	0,002
Maximum flue temperature	°C	80	80	80	80	75	80	80	80
Dimensions (h x w x d)	mm				763 x 4	50 x 34	-5		
Net weight	kg	38,5	38,5	39,5	41	34,5	34,5	36	37,5
Gas type					Natural	gas/LPG			
Rated power supply	W	85	99	106	120	72	85	99	91
Auxiliary electrical power consumption - Full load <i>elmax</i>	kW	0,030	0,042	0,041	0,035	0,030	0,042	0,047	0,035
Auxiliary electrical power - Partial load elmin	kW	0,013	0,013	0,013	0,013	0,013	0,013	0,013	0,013
Auxiliary electrical power - Stand-by P _{SB}	kW	0,003	0,003	0,003	0,003	0,003	0,003	0,003	0,003
Sound power level, indoor L _{WA}	dB	49	50	53	51	52	52	53	52
Grade of protection		IPX5D	IPX5D	IPX5D	IPX5D	IPX5D	IPX5D	IPX5D	IPX5D



Duo-tec Compact E

- New modern and elegant design
- Wide modulation ratio up to 1:7 better efficiency and noiseless operation
- Digital control panel with back-lit LCD display
- Remote control Baxi Mago available as optional
- Cover available as optional for outdoor installation (in partially protected locations)
- Ø50 mm flue pipe mod. 24 kW, 40 m max length
- Compact dimensions: 700x400x299 mm

3 way electric diverter valve Stainless steel premixing burner Stainless steel water/flue heat exchanger Stainless steel enhanced DHW exchanger

to ensure condensation also in DHW mode Modulating fan with electronic speed

adjusting system

Automatic by-pass

High efficiency full modulating pump of the heating circuit

System to prevent pump and diverter valve sticking operating every 24 hours

Heating circuit relief valve set at 3 bar

Thermoregulation system

Built-in climatic regulation

(outdoor sensor available as optional) Control of multi-zones system option

Control system

Overheat limit thermostat of the water/flue exchanger

Hydraulic pressure switch to prevent boiler operating in event of low water

Safety NTC sensor against flues overheat Electronic temperatures control by NTC sensors

Full anti-frost device

Electronic thermometer

Digital heating circuit pressure gauge

			LOMDI		Heating only
		20 GA	24 GA	28 GA	1.24 GA
Maximum heat input (DHW)	kW	19,9	24,7	28,9	-
Maximum heat input (heating)	kW	19,9	20,6	24,7	24,7
Minimum heat input	kW	3,5	3,5	3,9	3,5
Rated heat output for DHW circuit	kW	19,4	24	28	-
Useful heat output at rated heat output and high temperature regime* P_4	kW	19,4	20	24	24
Useful heat output at 30% of rated heat output and low temperature regime** <i>P</i> ₁	kW	6,5	6,7	8	8
Load profile		XL	XL	XL	-
Seasonal space heating energy efficiency class	,	A	A	A	A
Water heating energy efficiency class		A	A	A	-
Seasonal space heating energy efficiency ηs	%	93	93	93	93
Useful efficiency at rated heat output and high temperature regime* $\eta 4$	%	88	88	87,9	87,9
Useful efficiency at 30% of rated heat output and low temperature regime** $\eta 1$	%	98	98	98	98
Efficiency Pn (Iower calorific value) - average temperature 70 °C	%	97,7	97,7	97,6	97,6
Efficiency 30% (lower calorific value) - return temperature 30 °C	%	108,8	108,8	108,8	108,8
NOx emissions	mg/kWh	15	15	17	16
Minimum working temperature	°C	-5	-5	-5	-5
Expansion vessel capacity		7	7	7	7
Heating temperature range	°C	25-80	25-80	25-80	25-80
DHW temperature range	°C	35-60	35-60	35-60	-
Specific flow (EN 13203-1)	l/min	9,5	11,5	13,4	-
DHW production $\Delta T 25^{\circ}C^{(1)}$	l/min	11,4	13,8	16,1	-
Minimum canacity DHW flow rate	l/min	2	2	2	
Minimum prossure beating circuit	bar	0.5	0.5	0.5	
Minimum pressure DHW circuit	bar	0,5	0,5	0,5	
Maximum pressure beating circuit	har	3	3	3	
Maximum pressure DHW circuit	bar	8	8	8	
Coaxial flue system Ø 60/100 max length	m	10	10	10	10
Dual flue system Ø 80 max length	m	80	80	80	80
Maximum flue mass flow rate	kg/s	0.009	0.012	0.014	0.012
Minimum flue mass flow rate	kg/s	0.002	0.002	0.002	0.002
Maximum flue temperature	°C	80	80	80	80
Dimensions (h x w x d)	mm		700 x 40)0 x 299	
Net weight	kg	34	34	34	30
Gas type			Natural	gas/LPG	
Rated power supply	W	73	85	- 99	85
Auxiliary electrical power consumption - Full load <i>elmax</i>	kW	0,030	0,030	0,042	0,042
Auxiliary electrical power - Partial load elmin	kW	0,013	0,013	0,013	0,013
Auxiliary electrical power - Stand-by P _{SB}	kW	0,003	0,003	0,003	0,003
Sound power level, indoor L _{wa}	dB	49	49	48	52
Grade of protection		IPX5D	IPX5D	IPX5D	IPX5D

 ^{*} High temperature regime: 60°C return temperature at heater inlet and 80°C flow temperature at heater outlet
 ** Low temperature: 30°C return temperature (at heater inlet)
 ⁽¹⁾ without flow restrictor



Luna Duo-tec E and Combi 80L +

Luna Duo-tec E heating only models can be connected to a 79 I stainless steel indirect cylinder for DHW production.

- <u>12</u>0 -



Load profile XL

Features:

- 79 I stainless steel indirect cylinder for DHW production
 for connection with Luna Duo-tec E heating only models
- 4-litre DHW expansion vessel supplied as standard
- cylinder temperature sensor included
- indirect cylinder temperature controlled from the boiler's control panel
- magnesium anode
- boiler connection kit included



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frontal view

1642

A Heating system flow G 3/4" M B Heating system return G 3/4" M C Gas inlet G 3/4" M E Mains water G 1/2" M F DHW outlet G 1/2" M G DHW recirculation G 1/2" M H Condensing trap possible to connect on pipe Ø 22 I Safety valve drain

1016 954

540

lateral view

227.5

602

rear view

37

Technical data		Combi 80 L +
Cylinder capacity	l	79
Coil heat exchange (max)	kW	33
DHW temperature regulation	°C	35-60
Cylinder dimensions (hxwxd)	mm	977x450x550
Net weight cylinder (cylinder)	kg	45



Technical drawings



Technical drawings/graphs

Luna Duo-tec E





- Heating system flow G 3/4" 1
- DHW outlet G 1/2 2
- (for heating only models storage; tank flow G 3/4")
- Gas inlet G 3/4" 3 4 Mains water G 1/2"
- Heating system return G 3/4" 5
- 6
- Condensing trap possible to connect on a pipe Ø 22
- А Boiler hanging points. Distance between hanging points: 298 mm
- В Distance between hanging points and hydraulic connections



Installation template

Duo-tec Compact E





- Heating system flow G 3/4"
- DHW outlet G 1/2
- 2 3 Gas inlet G 3/4"
- 4 Mains water G 1/2"
- 56 Heating system return G 3/4"
- Condensing trap possible to connect on a pipe Ø 22
- Boiler hanging points. А Distance between hanging points: 246 mm
- В Distance between hanging points and hydraulic connections



Installation template



Coaxial flue



Dual flue

L1 = Intake pipe / L2 = Flue pipe



	RIGID FLUE PIPE										
	Length (m)			Length (m)			Length (m)				
Models	Intake pipe (L1) Ø80, flue pipe (L2) Ø80			Intake pipe (L1) Ø 80, flue pipe (L2) Ø 60			Intake pipe (L1) Ø80, flue pipe (L2) Ø50*				
	L max = L1+L2	L1 max	L2 max= L max- L1max	L max = L1+L2	L1 max	L2 max= L max- L1max	L max = L1+L2	L1 max	L2 max		
Luna Duo-tec E Duo-tec Compact E	80	15	65	40	10	30	40	10	30		

Models		*Ø50 flue pipe only					
		Leng	th (m)		maximum length of in-		
	Intake pip	oe (L1) Ø 80	D, flue pipe (L2) Ø 80	Intake pip	(L2 max) pipes can't be exceeded.		
	L max = L1+L2	L1 max	L2 max= L max- L1max	L max = L1+L2	L1 max	L2 max	For flue pipes Ø 80 and
Luna Duo-tec E Duo-tec Compact E	80	15	65	40	10	30	60, the maximum length of intake pipe (L1 max) can't be exceeded.

Models	RIGID FLUE PIPE									
	→ Ø 80 mm		→ Ø 6	0 mm	→ Ø 50 mm					
	Length reduction for each 90° bend insertion	Length reduction for each 45° bend insertion	Length reduction for each 90° bend insertion	Length reduction for each 45° bend insertion	Length reduction for each 90° bend insertion	Length reduction for each 45° bend insertion				
Luna Duo-tec E Duo-tec Compact E	0,5 m	0,25 m	1 m	0,5 m	3 m	1,5 m				

	FLEXIBLE FLUE PIPE								
Models	→Ø8	0 mm	→ Ø 50 mm						
	Length reduction for each 90° bend insertion	Length reduction for each 45° bend insertion	Length reduction for each 90° bend insertion	Length reduction for each 45° bend insertion					
Luna Duo-tec E Duo-tec Compact E	0,5 m	0,25 m	2 m	1 m					

All information considers the usage of Baxi flue systems.

Luna Duo-tec E





Accessories

Accessories	Description	Code
• 20.0° •	Chronothermostat Baxi Mago with integrated wi-fi module + adapter kit GTW16 (OpenTherm and ON/OFF)* Dimensions: Baxi Mago 120x90 mm, adapter kit 84x145 mm	7652303
	Remote controller and climatic regulator* Easy setting and fault analysis Dimensions: 120x73 mm	7114250
	Modulating room thermostat with timer* Advanced DHW management Dimensions: 120x98 mm	7104336
	Wireless modulating thermostat with timer - it includes wireless transmitter* Advanced DHW management Dimensions: thermostat 120x98 mm, transmitter 103x80 mm	7105432
• • • • •	Weekly timer and room thermostat with battery Daily/Weekly schedule with 2 temperature levels Battery supply: 2 x 1.5V AA Dimensions: 133 x 87 x 32 mm	KHG71408671
	Outdoor sensor	7104873
KE	Solar valve kit it is composed of thermostatic diverter and thermostatic mixing valves, copper pipes with telescopic nipples, gaskets and G 1/2" mains water valve	7115139

(*) only 1 controller can be directly connected to the boiler.







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