

# High output condensing systems

## Luna Duo-tec MP/MP+ 50-150 kW



(1) Products with nominal output >70 kW are not subjected to energy labelling according to ErP regulation

- Wide modulation ratio up to 1:9 (1:5 mod. 1.130 and 1.150) better efficiency and noiseless operation
- The new models 1.130 and 1.150 have the same dimensions and connections of 90-110 kW models
- Digital control panel with back-lighted wide LCD display
- **High efficiency and wide modulation circulating pump included inside the boiler**
- Heat exchanger, with combustion chamber and hydraulic circuit, composed by stainless steel coils
- Metal frame that allows single and cascade installation of the boilers in the center of thermic rooms
- Enhanced electronics allows to manage cascade installations up to 16 boilers
- Simplified maintenance operations: frontal access to the internal components
- Maximum operating pressure: 4 bar (6 bar mod. 1.130 and 1.150)

## Outputs from 50 to 150 kW

### Hydraulic system

Modulating pump included in the boiler  
(Luna Duo-tec MP models)  
High efficiency full modulating pump with enhanced head pump (Luna Duo-tec MP+ models)  
System to prevent pump sticking operating every 24 hours  
Flow and return NTC sensors  
Water tray for condensate drain from supply air duct

### Thermoregulation system

Built-in climatic regulation (outdoor sensor supplied as optional)  
Mixed zones systems (high and low temperatures) installation option  
Cascade system installation option (up to 16 boilers)  
NTC sensor for DHW cylinder control option  
Heating and DHW timers integrated in the control panel

### Control system

Full electronic anti-frost device  
Electronic thermometer  
Central heating pressure gauge  
Flow over-temperature thermostat

		Heating only						
Luna Duo-tec MP+		1.50	1.60	1.70	1.90	1.110	1.130	1.150
Maximum heat input (heating)	kW	46,3	56,5	65,9	87,4	104,9	123,8	143
Minimum heat output	kW	5,1	6,3	7,4	9,7	11,7	24,8	28,6
Rated heat output (80/60°C) <i>Prated</i>	kW	45	55	65	85	102	121,5	140,3
Minimum heat output (80/60°C)	kW	5	6,1	7,2	9,4	11,4	24,3	28,1
Maximum heat output (50/30°C)	kW	48,6	59,4	70,2	91,8	110,2	130,6	150,9
Minimum heat output (50/30°C)	kW	5,4	6,6	7,8	10,2	12,3	25,2	30,2
Useful heat output at 30% of rated heat output and low temperature regime** <i>P<sub>u</sub></i>	kW	14,9	18,2	21,5	28,2	33,8	40,4	46,6
Seasonal space heating energy efficiency class		A	A	A				
Efficiency <i>P<sub>h</sub></i> (lower calorific value) - Average temperature 70°C	%	97,4	97,2	97,2	97,3	97,2	98,1	98,1
Efficiency at 30% (lower calorific value) - Return temperature 30°C	%	107,8	107,4	107,1	107,5	107,4	108,6	108,6
Useful efficiency at rated heat output and high temperature regime* <i>η<sub>d</sub></i>	%	87,7	87,6	87,6	87,7	87,6	88,4	88,4
Useful efficiency at 30% of rated heat output and low temperature regime** <i>η<sub>L</sub></i>	%	97,1	96,8	96,5	96,8	96,8	97,8	97,8
Seasonal space heating energy efficiency <i>η<sub>s</sub></i>	%	92	92	92	93	93	93	93
NOx emissions	mg/kWh	29	31	31	31	22	17	23
Maximum pressure heating circuit	bar	4	4	4	4	4	6	6
Maximum inlet temperature heating circuit	°C	90	90	90	90	90	90	90
Heating temperature range	°C	25-80	25-80	25-80	25-80	25-80	25-80	25-80
Water content	l	4	5	6	9	10	10	11
Dual flue system	mm	80	80	80	110	110	110	110
Maximum flue mass flow rate	kg/s	0,021	0,026	0,031	0,04	0,047	0,056	0,064
Minimum flue mass flow rate	kg/s	0,002	0,003	0,004	0,005	0,005	0,012	0,014
Maximum flue temperature	°C	80	80	74	70	70	70	70
Dimensions (hxxwxd)	mm	766x50x377	756x50x505	552x600x54				
Net weight	kg	40	40	50	83	93	93	96
Gas type		Natural Gas/LPG						
Power consumption	W	230	230	230	275	320	360	460
Auxiliary electrical power consumption - Full load <i>el<sub>max</sub></i>	kW	0,080	0,095	0,095	0,130	0,165	0,187	0,283
Auxiliary electrical power - Partial load <i>el<sub>min</sub></i>	kW	0,020	0,020	0,020	0,017	0,018	0,051	0,052

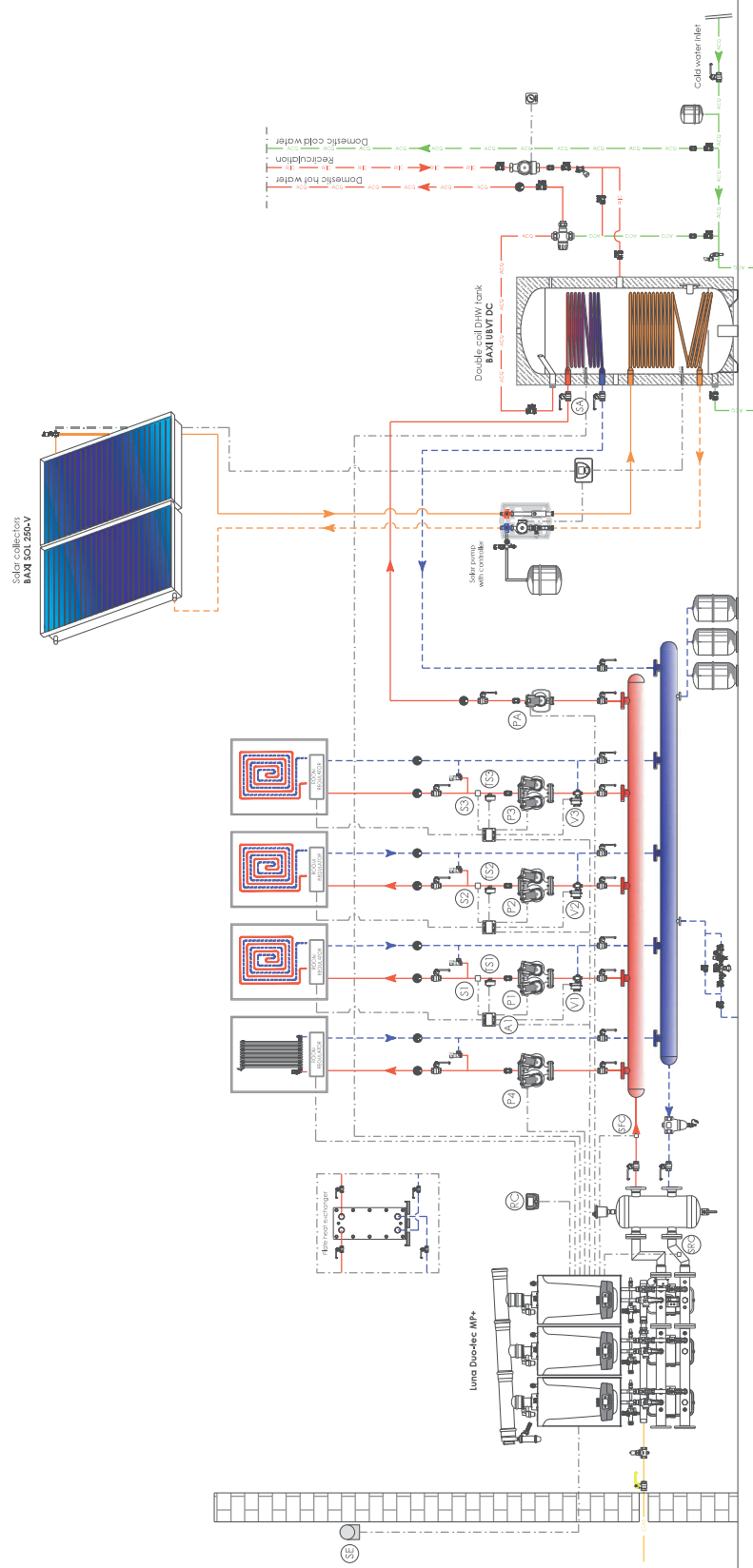
\*High temperature regime: 60°C return temperature at heater inlet and 80°C flow temperature at heater outlet

\*\*Low temperature: 30°C return temperature (at heater inlet)

## Cascade installation scheme

### HYDRAULIC SCHEME - CONNECTIONS

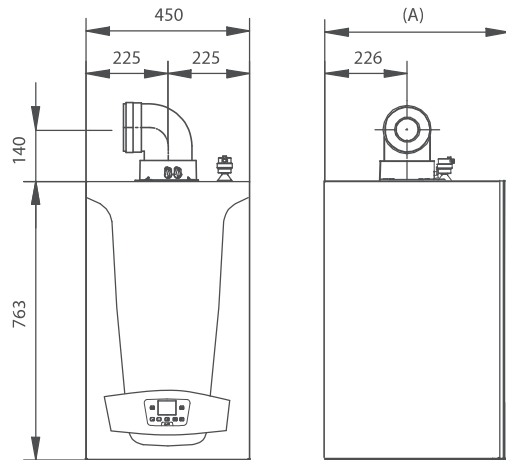
Cascade of Luna Duo-tec MP+ boilers for heating (1 direct zone + 3 mixed zones), solar system with double coil tank and boiler integration.



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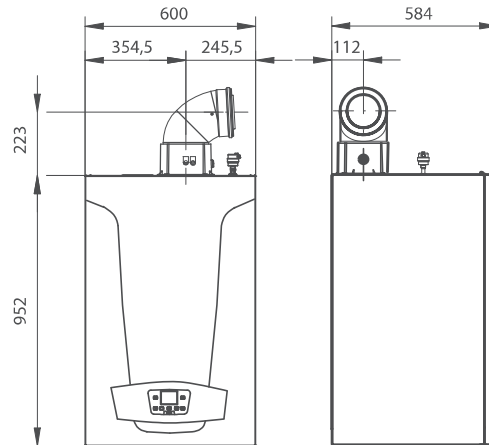
## Dimensions Luna Duo-tec MP/MP+

Luna Duo-tec MP/MP+ 1.50-1.60-1.70  
Coaxial flue system ø 80/125

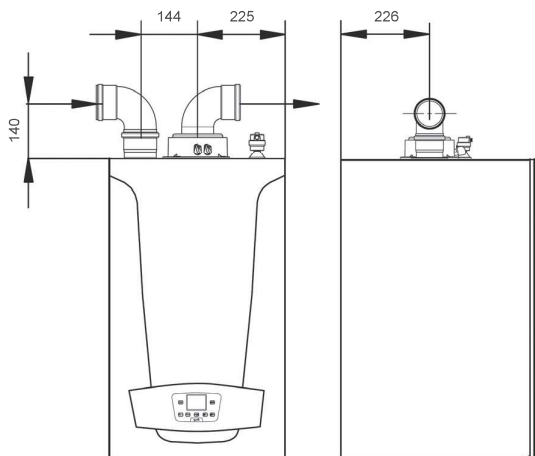


(A) 377 mm Mod. 1.50-1.60  
505 mm Mod. 1.70

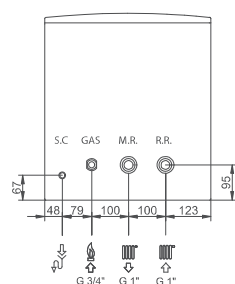
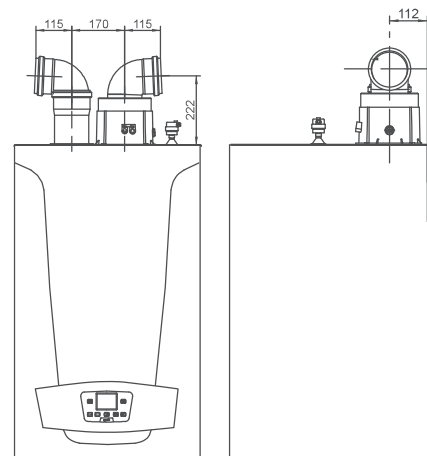
Luna Duo-tec MP/MP+ 1.90-1.150  
Coaxial flue system ø 110/160



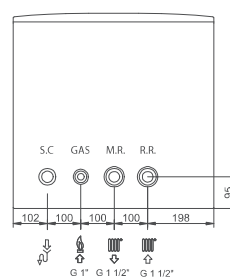
Luna Duo-tec MP/MP+ 1.50-1.60-1.70  
Dual flue system ø 80



Luna Duo-tec MP/MP+ 1.90-1.150  
Dual flue system ø 110



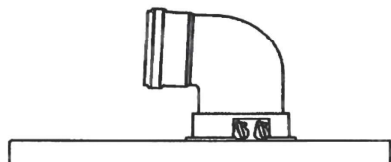
GAS Gas inlet G 3/4"  
M.R. Heating system flow (G1")  
with cylinder connection option  
R.R. Heating system return (G1")  
with cylinder connection option  
S.C. Condensate drain



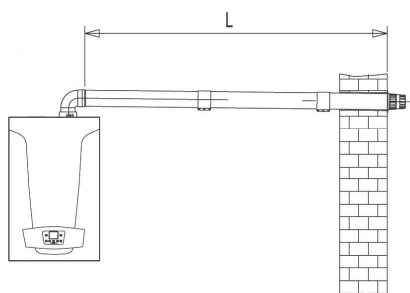
GAS Gas inlet G 1"  
M.R. Heating system flow  
(G1-G1/2") with cylinder  
connection option  
R.R. Heating system return  
(G1-1/2") with cylinder  
connection option  
S.C. Condensate drain

## Flue systems Luna Duo-tec MP/MP+

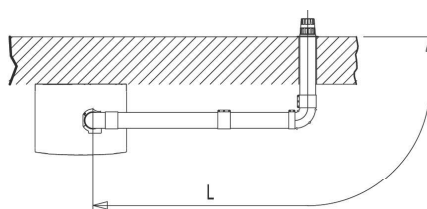
### Coaxial flue



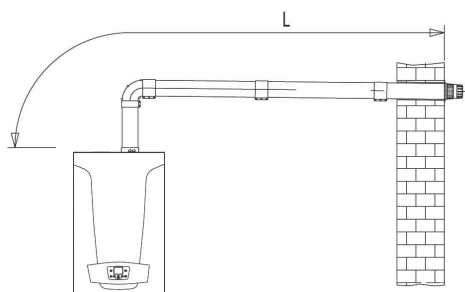
Luna Duo-tec MP/MP+ 1.50 - 1.60 - 1.70 = Ø 80/125 mm  
Luna Duo-tec MP/MP+ 1.90 - 1.150 = Ø 110/160 mm



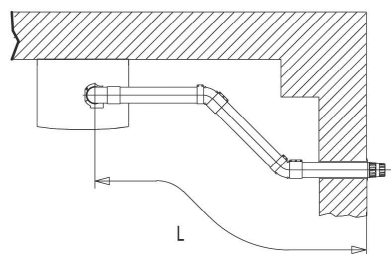
$L_{max} = 10 \text{ m mod. } 1.50 - 1.60 - 1.70 - 1.90 - 1.110$   
 $L_{max} = 8 \text{ m mod. } 1.130 - 1.150$



$L_{max} = 9 \text{ m mod. } 1.50 - 1.60 - 1.70 - 1.90 - 1.110$   
 $L_{max} = 7 \text{ m mod. } 1.130 - 1.150$



$L_{max} = 10 \text{ m mod. } 1.50 - 1.60 - 1.70 - 1.90 - 1.110$   
 $L_{max} = 8 \text{ m mod. } 1.130 - 1.150$

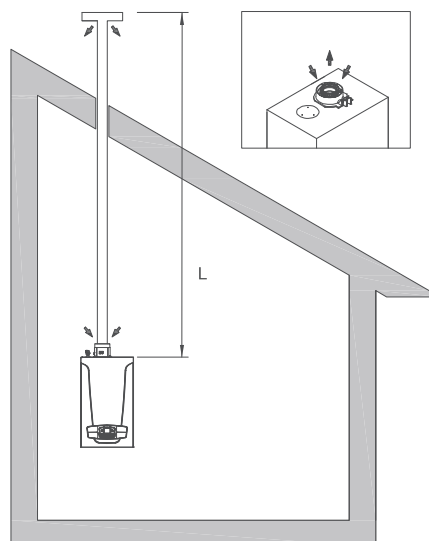


$L_{max} = 9 \text{ m mod. } 1.50 - 1.60 - 1.70 - 1.90 - 1.110$   
 $L_{max} = 7 \text{ m mod. } 1.130 - 1.150$

B<sub>23</sub>

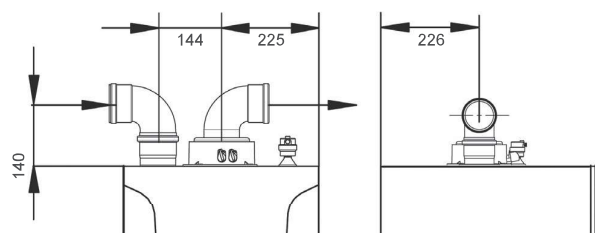
The below table shows the maximum length of the flue pipe connected to a chimney using flue systems provided by BAXI with air taken from the boiler room and outdoor flue discharge.

Flue type	B <sub>23</sub>	
	VERTICAL	
	Flue pipe Ø [mm]	Maximum length L [m]
Luna Duo-tec MP+ 1.50	80	60
Luna Duo-tec MP+ 1.60	80	40
Luna Duo-tec MP+ 1.70	80	30
Luna Duo-tec MP+ 1.90	110	27
Luna Duo-tec MP+ 1.110	110	27
Luna Duo-tec MP+ 1.130	110	20
Luna Duo-tec MP+ 1.150	110	20

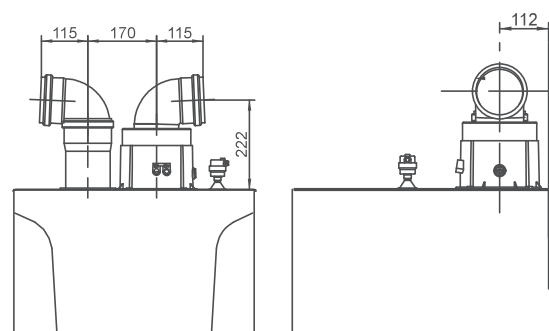


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## Dual flue



Luna Duo-tec MP+ 1.50 - 1.60 - 1.70 = Ø 80+80 mm

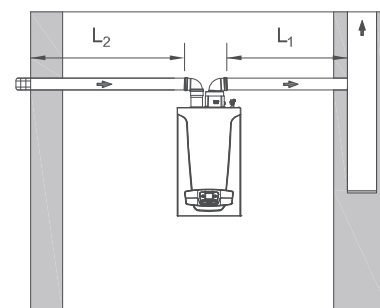
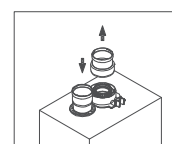


Luna Duo-tec MP+ 1.90 - 1.110 - 1.130 - 1.150 = Ø 110+110 mm

C<sub>53</sub>

The below table shows the maximum length of the flue pipe connected to a chimney using flue systems provided by BAXI with dual flue outdoor air inlet and flue discharge.

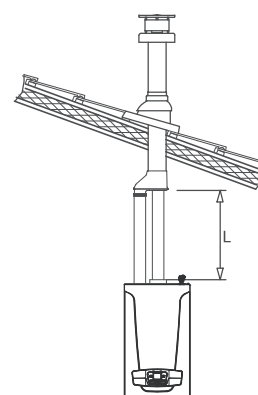
Flue type	C <sub>53</sub>		
	HORIZONTAL		
	Dual flue Ø [mm]	Maximum length L <sub>1</sub> +L <sub>2</sub> [m]	Inlet pipe maximum length L <sub>2</sub> [m]
Luna Duo-tec MP+ 1.50	80+80	60	15
Luna Duo-tec MP+ 1.60	80+80	40	15
Luna Duo-tec MP+ 1.70	80+80	30	15
Luna Duo-tec MP+ 1.90	110+110	27	7
Luna Duo-tec MP+ 1.110	110+110	27	7
Luna Duo-tec MP+ 1.130	110+110	20	10
Luna Duo-tec MP+ 1.150	110+110	20	10



Do not fit the flue and air duct terminals on opposite walls of the building.

Note: the minimum slope of the flue pipe toward the boiler must be 5 cm every meter of length.

Flue type	C <sub>53</sub>	
	VERTICAL	
	Dual flue Ø [mm]	Maximum length L [m]
Luna Duo-tec MP+ 1.50-1.60-1.70-	80+80	15
Luna Duo-tec MP+ 1.90-1.110-1.130-1.150	110+110	15



For flue pipes provided by BAXI (flue type B23 and C53):

Flue type	Length reduction for each 90° bend insertion [m]	Length reduction for each 45° bend insertion [m]
Coaxial flue Ø 80/125, Ø 110/110	1	0,5
Vertical Dual flue Ø 80+80*, Ø 110/110*	0,5	0,25
Horizontal Dual flue Ø 80+80*, Ø 110/110*	0,5	0,25

\* Air inlet pipe maximum length = 15 m

Pipes maximum lengths are subjected to technical evaluation and must meet the requirements of the prevailing installation standards in the country.

For further information on flue systems, see the boiler installation manual.