

RIELLO ARRAY SE



High Efficiency Condensing Boiler 399 – 500 MBH

RIELLO
Energy For Life

A Carrier Company

www.riello.com

HIGH PERFORMANCE IN A COMPACT DESIGN

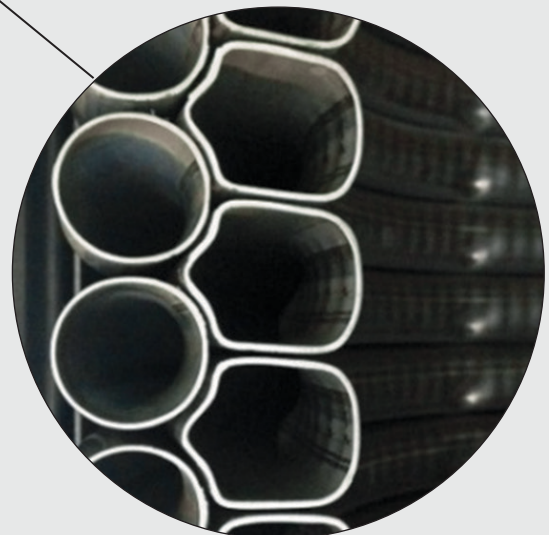
Riello ARRAY SE is a condensing pre-mixed, fan-induced modulating floor standing boiler, designed both for stand-alone and cascade applications up to 8 boilers. It is suitable for a wide variety of installations, from office buildings and sports facilities to schools and hotels.



- Ultra-high efficiency: 96.1% AHRI certified
- 10:1 turndown ratio per single boiler
- Cascade up to 8 units
- Integrated precision temperature controller and cascade management (same part number for lead and dependent boilers)
- Boiler includes built-in circulating pump
- Includes 4" intake/exhaust adapters for sealed combustion air and simplified venting. Universal design fits most common vent materials
- NPT gas and water connections
- Operation on natural gas or propane
- Low emissions - 'SCAQMD Certified'
- Riello heat exchanger in stainless steel, double coil type in vertical position, ASME approved. (Riello legendary design and manufacturing)

PATENTED RIELLO HEAT EXCHANGER

- Heat exchanger with a unique helix design
- Advanced design for superior reliability and industry leading longevity
- Large heat exchanger surface area in a compact design
- High water velocity and large tube diameter eliminates scaling
- Better heat transfer results in increased fuel savings and lower operating costs
- Vortex flow meter monitors and ensures correct flow through the heat exchanger
- The design ensures minimum waterside pressure drop and highly efficient heat transfer

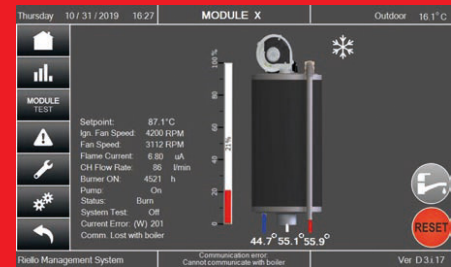


GRAPHIC TOUCHSCREEN CONTROL

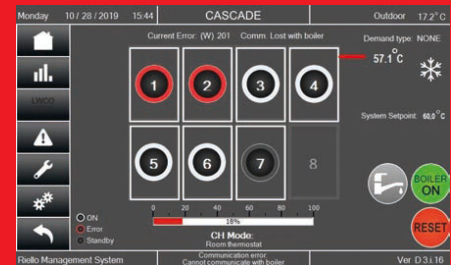
STANDARD ON-BOARD CONTROL FEATURES

- 7" color touch screen
- Graphic display of actual input rate for cascaded system or individual boilers
- User-Friendly text driven menus to monitor the boiler functions
- Immediate access to Supply, Return, Flue temperature and Fan speed
- Management of cascade systems up to 8 boilers
- Simple access to Settings, Commissioning, Maintenance procedures and Error Log through the touch screen
- Graphic outdoor reset adjustment
- In addition to integrated Modbus, optional BMS gateways available for BACnet, Metasys and Lon Works protocols
- Control provides remote operation through 0-10Vdc set point control

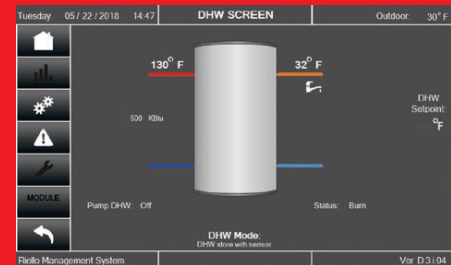
BOILER MANAGEMENT



CASCADE MANAGEMENT

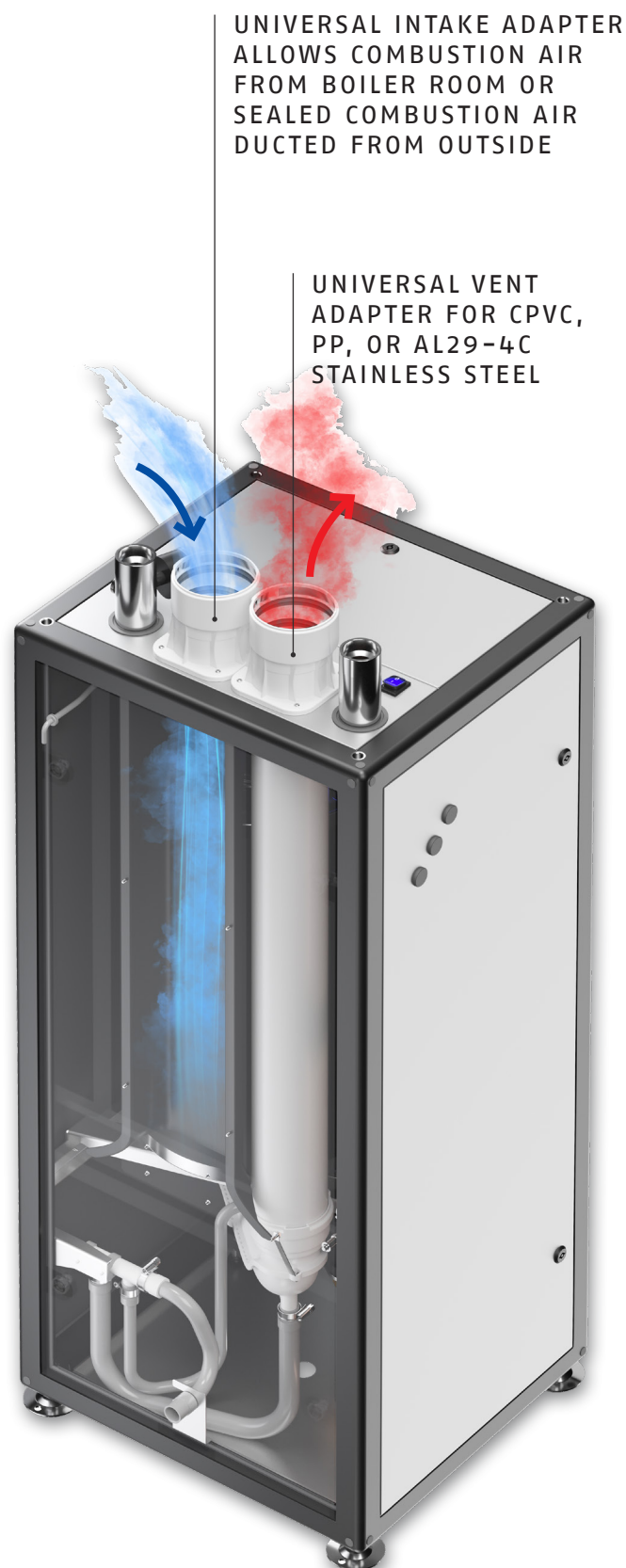


DHW MANAGEMENT



- Dedicated service display inside the cabinet
- Analog input for remote DDC operation
- Onboard ΔT limiting eliminates on/off cycles
- Integrated Modbus communications

VENTING



COMBUSTION

ADVANCED PRE-MIX BURNER

The Riello Array pre-mix combustion system is comprised of a stainless steel mesh burner integrated with a modulating gas valve and high performance variable speed fan.

The proportional control guarantees a consistent air to fuel ratio throughout the entire range of modulation resulting in clean, efficient combustion.



ADVANTAGES OF A 10:1 TURNDOWN RATIO

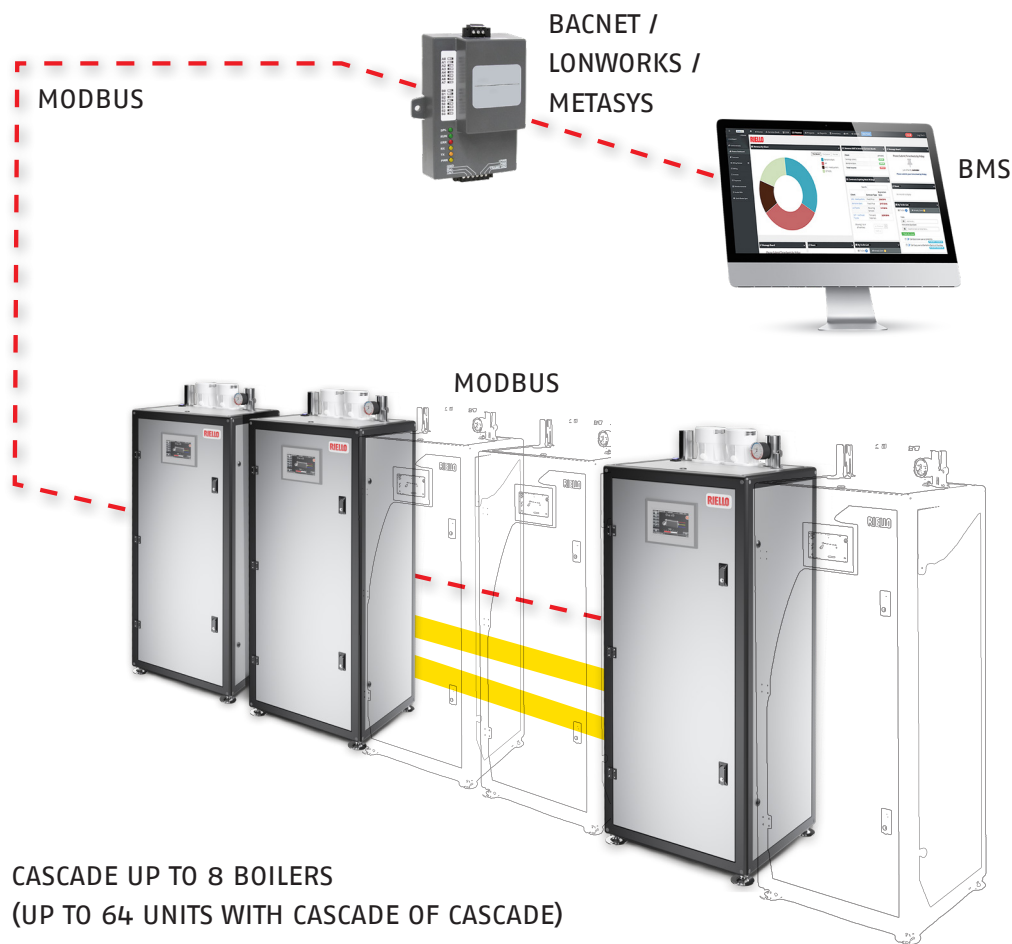
- Produces energy savings by minimizing on/off cycles
- Makes the boiler more suitable for integration with renewable heat sources
- Lowers CO₂ emission and creates a more environmentally responsible system
- Increases the application flexibility by creating a wider Btu range
- Produces high efficiency and low emissions at partial heating loads



CASCADE

ARRAY SE can be installed in cascade

- Easily connect up to 8 boilers together without any additional control device
- High performance algorithms ensure accurate temperature control to match system demand
- Proprietary algorithms also optimize operating efficiency of cascaded systems for maximum fuel savings
- Versatile solution for light commercial buildings or large domestic properties
- Cascade automatically rotates lead boiler for uniform wear across all boilers
- During maintenance, individual units can be taken offline without interrupting the remaining system
- Spare units in the system can be withheld as back-up boilers for emergency conditions
- Up to 80:1 system turndown allows design flexibility and ultra-high efficiency for partial load heating conditions



INSTALLATION ADVANTAGES

- 100% live-fire factory tested
- Simple commissioning
- Minimum training required
- Common venting possible for up to eight boilers
- Small footprint and minimal required service clearances
- Perfect for new installations or retrofit projects
- Compact design for easy transport through narrow passages

OPERATION & MAINTENANCE

- Low maintenance design
- Removable side & top panels for easy service access
- High quality, reliable components
- Provides friendly service reminders
- Whisper-quiet operation at low fire
- Error/lockout log provides easy troubleshooting

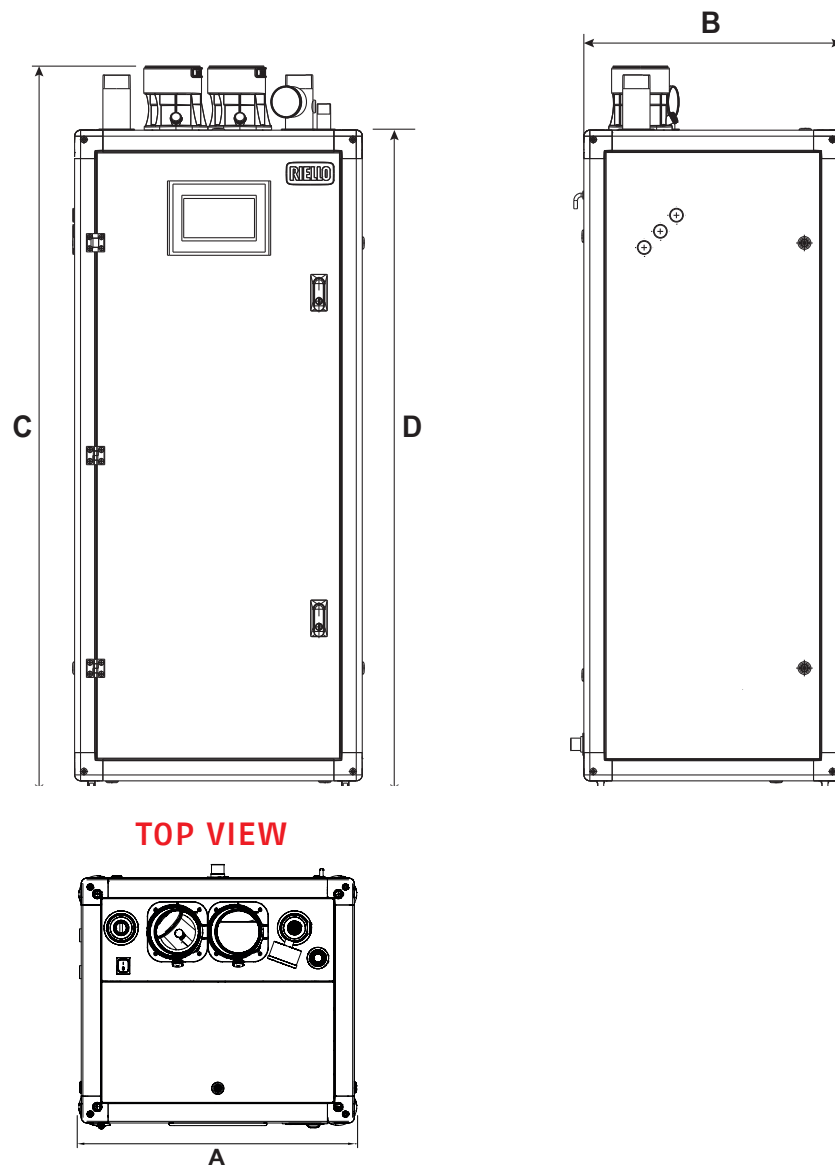
POWER RANGE



Model	Input Power MBH	AHRI Thermal Efficiency %	Turndown Ratio	Overall Dimensions WxHxD (inches)
ARRAY 399 SE	399,220	96.1%	10:1	24.8x62.8x23.4
ARRAY 500 SE	500,000	96.1%	10:1	24.8x62.8x23.4



DIMENSIONS



Description		ARRAY 399 SE	ARRAY 500 SE
A - Width	inch	24.8	24.8
	mm	630	630
B - Length	inch	23.4	23.4
	mm	595	595
C - Height	inch	62.8	62.8
	mm	1595	1595
D - Height	inch	57.3	57.3
	mm	1455	1455
Weight (Dry)	lbs	240	269
	kg	109	122

TECHNICAL SPECIFICATIONS

Model	Unit	ARRAY 399 SE	ARRAY 500 SE
Boiler Category		ASME Sect.IV	
Type of Gas (*)		Natural Gas, Propane	
Max input rate	BTU/hr (kW)	399,220 (117)	500,000 (146.5)
Min input rate	BTU/hr (kW)	39,922 (11.7)	50,000 (14.6)
Turndown	Rate	10:1	10:1
Gas Connections (NPT)	Ø Inch	1"	1"
Max. Gas Pressure (Nat. Gas)	Inch W.C. (mbar)	13.5 (33.6)	13.5 (33.6)
Min Gas Pressure (Nat. Gas)	Inch W.C. (mbar)	3.5 (8.7)	3.5 (8.7)
Max. Gas Pressure (LPG)	Inch W.C. (mbar)	13.5 (33.6)	13.5 (33.6)
Min. Gas Pressure (LPG)	Inch W.C. (mbar)	8 (19.9)	8 (19.9)
O ₂ Operating Range (Natural Gas)	%	4.4 – 5.8	4.4 – 5.8
CO ₂ Operating Range (Natural Gas)	%	8.5 – 9.5	8.5 – 9.5
Water Connections (NPT)	Ø Inch	1-1/2"	2"
Max. Allowable Working Pressure (MAWP)	PSI (bar)	80 (5.5)	80 (5.5)
Water Volume	Gallon (liter)	4.5 (17)	6.0 (23)
Vent / Air Inlet Connections	Ø Inch (Ø mm)	4" (110)	4" (110)
Venting Materials		CPVC, PP, Stainless Steel AL29-4C	
Max operating temperature	°F (°C)	194 (90)	194 (90)
Max HE allowable temperature	°F (°C)	210 (98.9)	210 (98.9)
Storage temperature	°F (°C)	5 to 158 (-15 to 70)	5 to 158 (-15 to 70)
Ambient Room Temperature Operating Range	°F (°C)	32 to 120 (0 to 49)	32 to 120 (0 to 49)
Total Heating Surface Area	SQFT (m²)	27 (2.5)	43 (4.0)
Standard Listings & Approvals		ETL, ASME, AHRI, CSD-1, SCAQMD	
Electrical Requirement	V/Ph/Hz FLA (**)	120/1/60 6.0	120/1/60 7.5

(*) For propane fuel applications, please contact factory.

(**) FLA (Full Load Amperage) – maximum current drawn by the boiler if pump reaches rated horsepower.

RIELLO NORTH AMERICA
35 Pond Park Road
Hingham, Massachusetts
U.S.A. 02043
www.riello.com

2165 Meadowpine Blvd
Mississauga, Ontario
Canada L5N 6H6

The manufacturer strives to continuously improve all products. Appearance, dimensions, technical specifications, standard equipment and accessories are therefore subject to change without notice.

RIELLO