



RIELLO ARRAY

High Efficiency Condensing Boiler
1000–4000 MBH

POWER RANGE



MODEL	Max Input Btu/hr	Max Output Btu/hr	Number of Modules	AHRI Thermal Efficiency %	Turndown Ratio	Overall Dimensions W x H x D (inches)
AR 1000	1,000,000	961,000	2	96.1%	10:1	33.3x67.2x60.8
AR 1500	1,500,000	1,441,500	3	96.1%	15:1	33.3x67.2x60.8
AR 2000	2,000,000	1,922,000	4	96.1%	20:1	33.3x83x60.8
AR 3000	3,000,000	2,883,000	6	96.1%	30:1	35.4x83x72.8
AR 4000	4,000,000	3,844,000	8	96.1%	40:1	35.4x83x72.8



THE ULTIMATE IN EFFICIENCY, REDUNDANCY & RELIABILITY

The Riello Array is a **pre-packaged boiler plant**, the new standard in boiler efficiency, redundancy and reliability.

Each Array boiler utilizes multiple heat engine modules, providing high turn down and multiple boiler redundancy in one packaged unit.

A single Array boiler provides superior uptime reliability previously found only in larger multiple boiler systems.



KEY FEATURES

One platform, multiple sizes

Built in redundancy. Each 500 MBH module is fully independent and "stand alone" thus allowing boiler operation even if an adjacent module is turned off

Plug&Play installation

Extremely simple to service and maintain

For operation with natural gas or propane

Factory installed flue exhaust damper on each module, allows common venting capability of Array boilers in cascade

Heat Exchanger Protection: Control monitors supply and return temperature and prevents heat exchanger from excessive temperature rise

HIGH PERFORMANCES

Efficiency up to 99%

NOx emissions of 9 PPM at 3% O₂

Turndown ratio up to 40:1

ASME Design Pressure 80 PSI

Low noise operation (each module <48 dB)

SUPERIOR DESIGN: STRUCTURE AND MATERIALS

Multi modules design

Horizontal modules

High quality stainless steel heat exchanger (AISI 316L)

Direct vent / Room sealed combustion

FLEXIBLE INSTALLATION

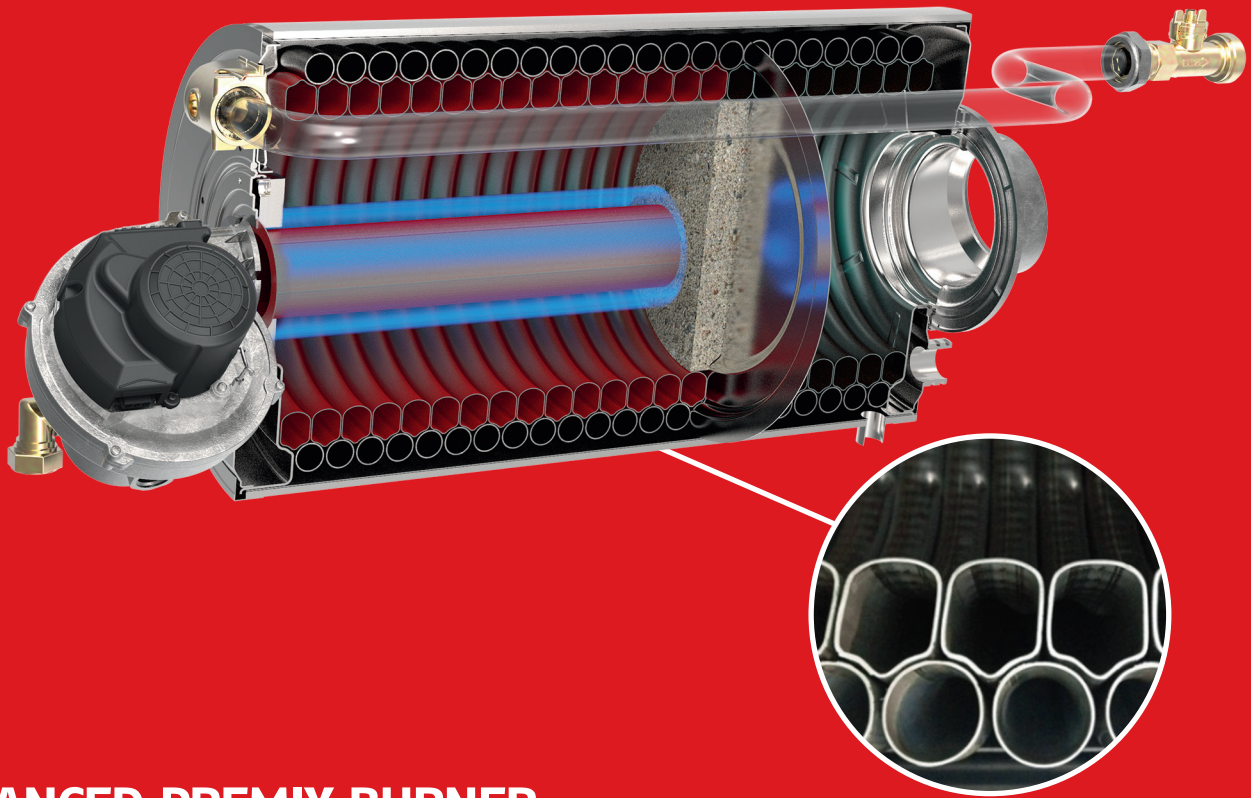
Direct vent air intake and exhaust up to 100 equivalent feet

6" to 10" venting system that can run horizontally or vertically

Venting Materials: CPVC, Polypropylene or AL29-4C stainless steel

Available with an air inlet damper for cold climates to prevent outdoor air from entering the heat exchanger in standby mode

LOOKING INSIDE



ADVANCED PREMIX BURNER

The Riello Array Premix combustion system is comprised of a modulating gas valve integrated with a high performance fan and stainless steel mesh burner. The proportional control guarantees a consistent air/fuel: ratio throughout the entire range of modulation resulting in a clean low temperature flame.

HIGH QUALITY HEAT EXCHANGER

- Heat engine with a unique "Helix" style design
- Advanced design for greater reliability and an extended life
- The heart of the Array boiler is the power unit module
- Patented heat exchanger geometry consists of two stainless steel smooth pipes working in parallel eliminating the need for internal baffles
- The design allows minimum waterside pressure drop and efficient heat exchange



LOOKING INSIDE

- Constructed for high reliability and long life
- All water, gas, and venting connections on top
- Small installed footprint
- Assured minimum water flow rate for each module
- One pump for each module
- Stand-alone operation of each module to assure continuous functioning
- No additional boiler pumps or valves are required
- Color touch screen control

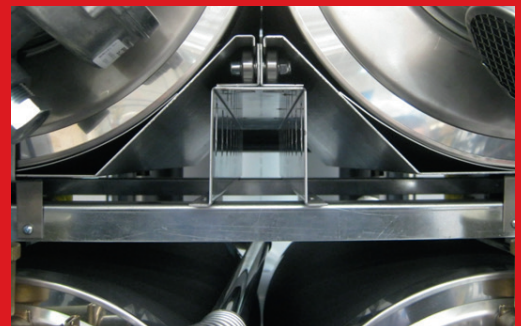


INSTALLATION ADVANTAGES

- Ease of commissioning & maintenance
- Minimum training required
- Saves space and easy to install
- Perfect for new installation and retrofit projects
- Quick-to-install, cost-efficient accessories
- Cascade up to 8 boilers (64 modules) allows to reach a modulation up to 320:1

OPERATION & MAINTENANCE

- Internal cascade redundancy always delivers reliable performance with no downtime
- Simple maintenance: each module can be serviced while the others are running
- Easy roll-out module configuration: the boiler can work with one or more modules removed

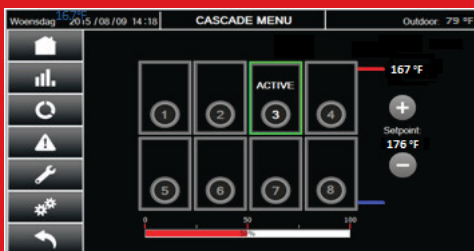


CONTROLS

STANDARD ON-BOARD CONTROL FEATURES

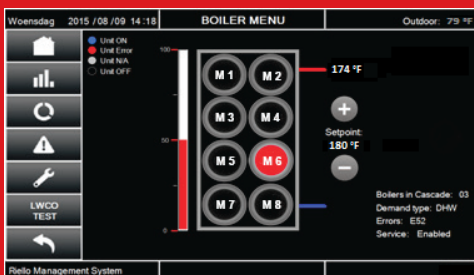
- 7" color touch screen outside the boiler cabinet
- Graphic display of actual input rate of cascade, boiler and modules
- User-Friendly menus to monitor the whole cascade (up to 8 boilers) or each single module
- Immediate access to Cascade, Supply, Return, Flue temperatures and Fan speed of each module
- Easy access to Settings, Service reminder, Outdoor reset capability, Error log
- Control provides remote operation through the 0-10Vdc for set point

CASCADE MANAGEMENT

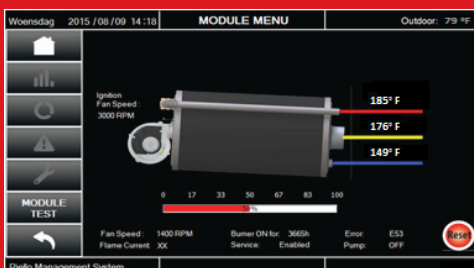


- Service display inside the cabinet
- Analog input for remote DDC operation
- Onboard ΔT limiting eliminates on/off cycles
- Communication protocol Modbus

BOILER MANAGEMENT

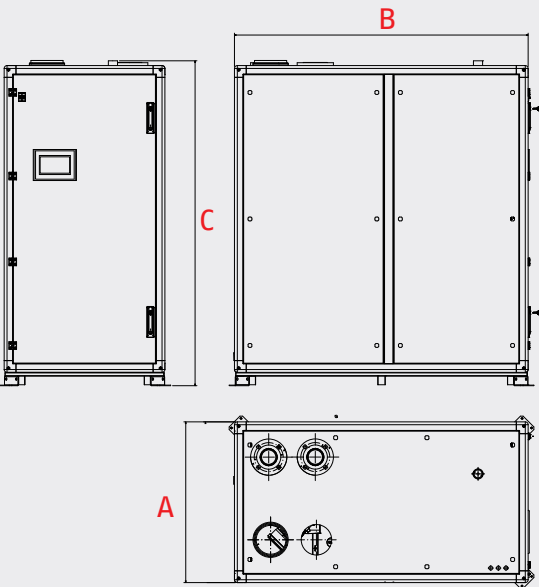


MODULE MANAGEMENT

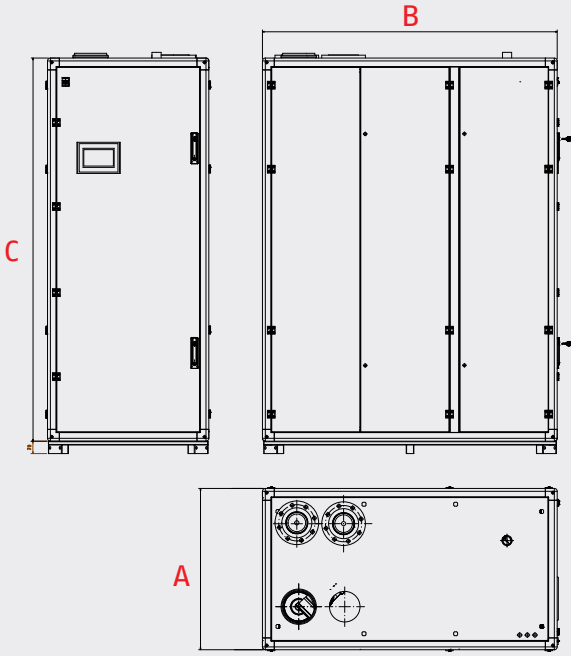


DIMENSIONS

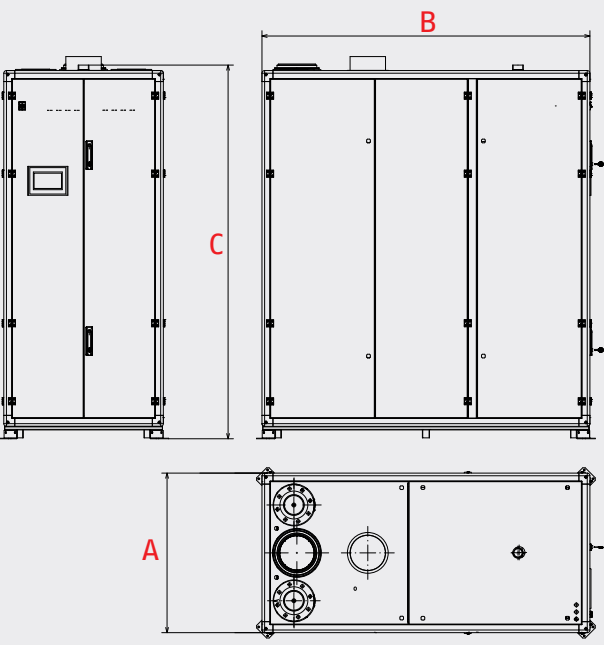
ARRAY 1000 - 1500



ARRAY 2000



ARRAY 3000 - 4000



Description	AR 1000	AR 1500	AR 2000	AR 3000	AR 4000
A - Width	inch 33.3"	33.3"	33.3"	35.4"	35.4"
	mm 846	846	846	899	899
B- Length	inch 60.8"	60.8"	60.8"	72.8"	72.8"
	mm 1544	1544	1544	1849	1849
C - Height	inch 67.2"	67.2"	83"	83"	83"
	mm 1707	1707	2108	2108	2108

TECHNICAL SPECIFICATIONS

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	Unit	AR 1000	AR 1500	AR 2000	AR 3000	AR 4000
Boiler Category	ASME Sect.IV					
Type of Gas	Natural Gas, Propane					
Max Input Rate	BTU/hr (kW)	1,000,000 (293)	1,500,000 (440)	2,000,000 (586)	3,000,000 (879)	4,000,000 (1172)
Min Input Rate	BTU/hr (kW)	100,000 (29)	100,000 (29)	100,000 (29)	100,000 (29)	100,000 (29)
Turndown	Rate	10:1	15:1	20:1	30:1	40:1
Gas Connections (NPT)	Ø Inch	1 1/2"	1 1/2"	1 1/2"	2"	2"
Max. NG Pressure	Inch W.C. (mbar)	20 (50)	20 (50)	20 (50)	20 (50)	20 (50)
Min. NG Pressure	Inch W.C. (mbar)	3.5 (8.7)	3.5 (8.7)	3.5 (8.7)	3.5 (8.7)	3.5 (8.7)
Max. LPG Pressure	Inch W.C. (mbar)	20 (50)	20 (50)	20 (50)	20 (50)	20 (50)
Min. LPG Pressure	Inch W.C. (mbar)	8 (19.9)	8 (19.9)	8 (19.9)	8 (19.9)	8 (19.9)
Water Connections	Ø Inch	3"	3"	4"	4"	4"
Max. Allowable Working Pressure (MAWP)	PSI (bar)	80 (5.5)	80 (5.5)	80 (5.5)	80 (5.5)	80 (5.5)
Water Volume	Gallon (liter)	12 (46)	18 (69)	24 (92)	36 (138)	48 (184)
Vent/Air Intake Connections	Ø Inch (Ø mm)	6 (160)	6 (160)	6 (160)	8/10 (200/250)	8/10 (200/250)
Venting Materials	CPVC, PP, Stainless Steel AL29-4C					
Max Operating Temperature	°F (°C)	194 (90)	194 (90)	194 (90)	194 (90)	194 (90)
Max HE Allowable Temperature	°F (°C)	210 (98.9)	210 (98.9)	210 (98.9)	210 (98.9)	210 (98.9)
Ambient Storage Temperature	°F (°C)	5 to 158 (-15 to 70)	5 to 158 (-15 to 70)	5 to 158 (-15 to 70)	5 to 158 (-15 to 70)	5 to 158 (-15 to 70)
Ambient Operating Temperature	°F (°C)	32 to 120 (0 to 49)	32 to 120 (0 to 49)	32 to 120 (0 to 49)	32 to 120 (0 to 49)	32 to 120 (0 to 49)
Heat Exchanger Surface Area	SQFT (m2)	12.91 (1.2)	12.91 (1.2)	12.91 (1.2)	12.91 (1.2)	12.91 (1.2)
Standard Listings & Approvals	ETL, ASME, AHR					
Electrical Req. 230-120V/1PH/60Hz		120VAC 11.5 FLA*	120VAC 17.2 FLA*	120VAC 23 FLA*	230VAC 18 FLA*	230VAC 24 FLA*
Weight (dry)	lbs (kg)	992 (450)	1,212 (550)	1,543 (700)	2,204 (1000)	2,866 (1300)
Dimensions WxHxD	Inch (mm)	33.3x67.2x60.8 846x1707x1544	33.3x67.2x60.8 846x1707x1544	33.3x83x60.8 846x1707x1544	35.4x83x72.8 899x2108x1849	35.4x83x72.8 899x2108x1849

(*) FLA (Full Load Amperage) – maximum current drawn by the boiler if all pumps reach rated horsepower

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The manufacturer strives to continuously improve all products. appearance, dimensions, technical specifications, standard equipment and accessories are therefore liable to modification without notice.

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