

New
Features



RIELLO ARRAY^{v2.0}

High Efficiency Condensing Boiler
1000–4000 MBH

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 exchanger** modules, providing high turndown and multiple boiler redundancy in one packaged unit.

A single Array boiler provides **superior uptime reliability** that is only found in **larger boiler plants and multi boiler systems**.



NEW ENHANCED BENEFITS

- Reduced head loss provides for greater design flexibility
- Increased vent lengths
- Improved serviceability
- Enhanced software capabilities

KEY FEATURES

- One platform, multiple capacities
- Built in redundancy. Each 500 MBH module is independent and "stand-alone" ensuring continued boiler operation if an adjacent module is turned off or even removed
- Extremely simple plug & play installation, service & maintenance
- Dedicated pump for each module eliminates need for boiler circulating pump
- Standard integrated boiler cascade capability for up to 8 boilers
- Factory installed flue exhaust damper on each module allows common venting capability of Array boilers in cascade and eliminates off cycle heat loss
- Heat Exchanger Protection: Control monitors supply and return temperature and prevents heat exchanger from excessive temperature rise
- Standard integrated boiler freeze protection

HIGH PERFORMANCE

- High quality AISI 316L stainless steel heat exchanger
- True counterflow 4-pass design
- Efficiency up to 99%
- NOx emissions less than 9 PPM at 3% O₂
- Turndown ratio up to 40:1 per boiler; up to 320:1 per system
- ASME Design Pressure 80 PSI
- Low noise operation (each module <48 dBA)
- Low pressure gas capability

FLEXIBLE INSTALLATION

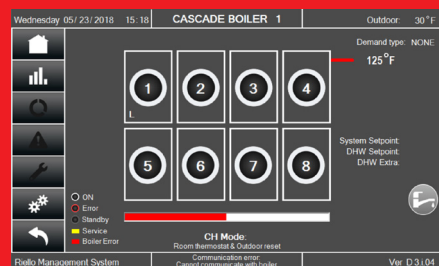
- Single point connections for hydronic, electrical, fuel and venting
- Small footprint, fits through standard doorway
- Venting flexibility including sidewall, through the roof and direct vent options up to 100 equivalent feet exhaust vent length
- Venting Materials: CPVC, Polypropylene or AL29-4C stainless steel

GRAPHIC TOUCHSCREEN CONTROL

STANDARD ON-BOARD CONTROL FEATURES

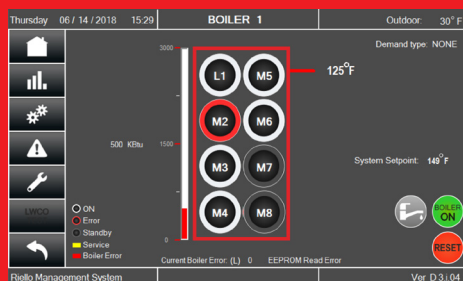
- 7" color touch screen
- Graphic display of actual input rate for cascade, boiler and modules
- User-Friendly text driven menus to monitor the whole cascade (up to 8 boilers) or each single module
- Immediate access to Cascade, Supply, Return, Flue temperatures and Fan speed of each module
- Simple access to Settings, Commissioning, Maintenance procedures and Error Log through the touch screen
- Graphic outdoor reset adjustment
- In addition to integrated Modbus, additional BMS gateways available for BACnet, Metasys and Lon Works protocols
- Control provides remote operation through 0-10Vdc set point control

CASCADE MANAGEMENT

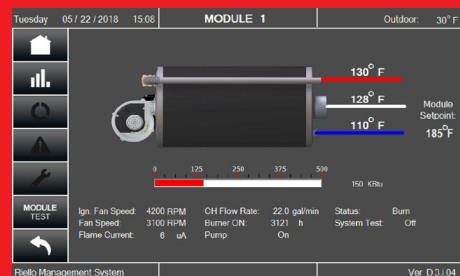


- Dedicated service display inside the cabinet
- Analog input for remote DDC operation
- Onboard ΔT limiting eliminates on/off cycles
- Integrated Modbus communications

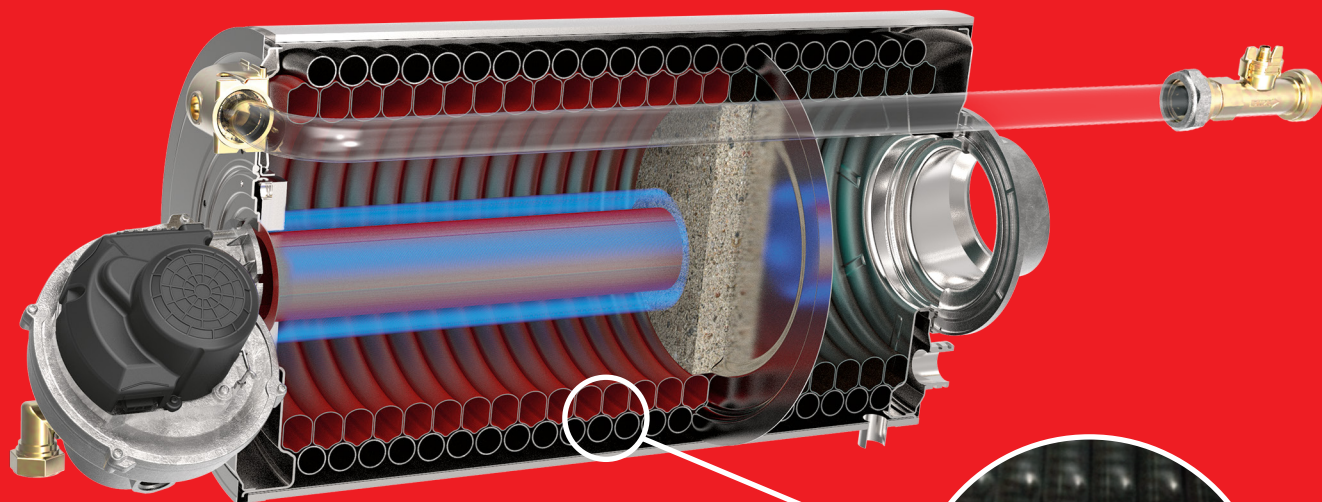
BOILER MANAGEMENT



MODULE MANAGEMENT



LOOKING INSIDE



ADVANCED PRE-MIX BURNER

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

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 meters monitor and ensure correct flow through each heat exchanger
- The design ensures minimum waterside pressure drop and highly efficient heat transfer



- Fully redundant design ensures zero downtime during heat exchanger service or maintenance
- Single point connections for hydronic, electrical, fuel and venting
- Smallest installed footprint enables easy installation and minimizes mechanical room space
- Individual pump for each heat exchanger eliminates need for boiler circulating pump
- Independent service controller for detailed commissioning and troubleshooting
- Every boiler is 100% live fire tested prior to shipment

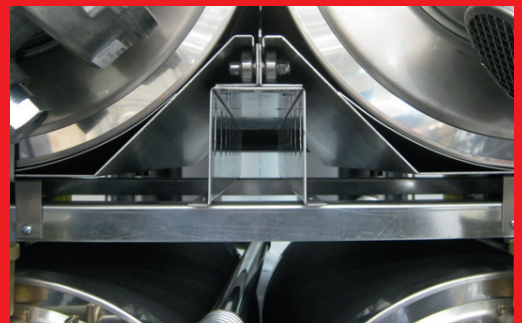


INSTALLATION ADVANTAGES

- Ease of commissioning & maintenance
- Minimum training required
- Saves space and easy to install
- Perfect for new installation and retrofit projects
- Cascade up to 8 boilers (64 modules) for a maximum system turndown up to 320:1

OPERATION & MAINTENANCE

- 100% 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 allows for easy removal, service and maintenance



POWER RANGE



ARRAY 1000 - 2000



ARRAY 3000 - 4000

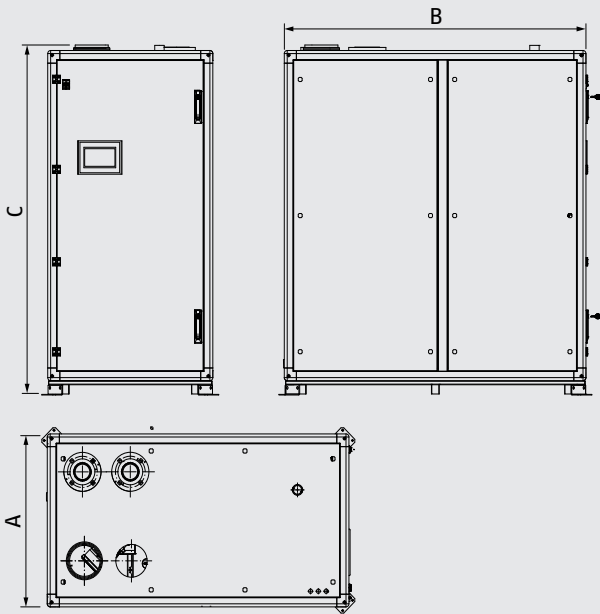
Model	Input Power MBH	Number of Modules	AHRI Thermal Efficiency %	Turndown Ratio	Overall Dimensions (*) WxHxD (inches)
AR 1000	1000	2	96.1%	10:1	33.3x67.2x60.8
AR 1500	1500	3	96.1%	15:1	33.3x67.2x60.8
AR 2000	2000	4	96.1%	20:1	33.3x83x60.8
AR 3000	3000	6	96.1%	30:1	35.4x83x72.8
AR 4000	4000	8	96.1%	40:1	35.4x83x72.8

(*) Bottom feet may be removed to reduce overall height by 2" during installation if required

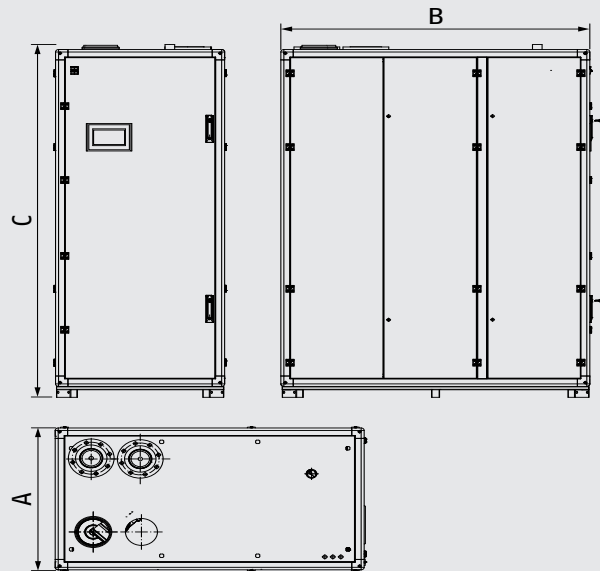


DIMENSIONS

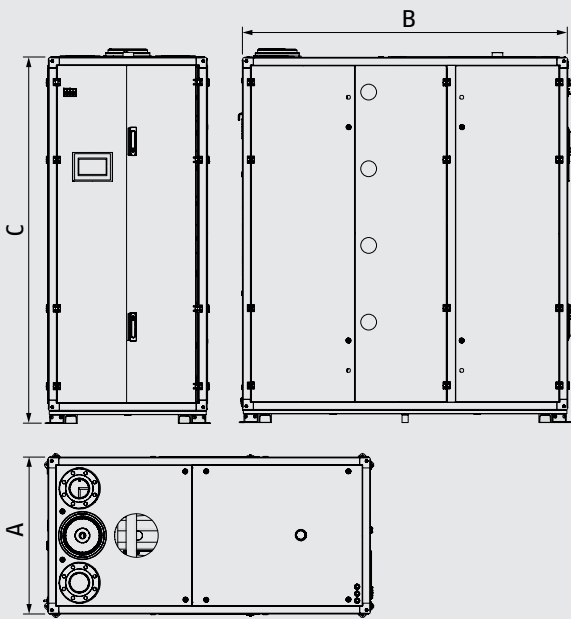
ARRAY 1000 - 1500



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

(*) Bottom feet may be removed to reduce overall height by 2" during installation if required

TECHNICAL SPECIFICATIONS

Model	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)	4.0 (10.0)	4.0 (10.0)	4.0 (10.0)	4.0 (10.0)	4.0 (10.0)
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 (slip-on) / Air Inlet Connections	Ø Inch (Ø mm)	6"/6" (150/150)		8"/8" (200/200)	[8" or 10"]/10" (*) ([200 or 250]/250)	
Venting Materials	CPVC, PPs, 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)
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 Room Temperature Operating Range	°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)
Total Heating Surface Area	SQFT (m²)	86 (8)	129 (12)	172 (16)	258 (24)	344 (32)
Standard Listings & Approvals	ETL, ASME, AHRI, CSD-1 and SCAQMD					
Electrical Requirement	V/Ph/Hz FLA (**)	120/1/60 20.3	120/1/60 24.0	230/1/60 20.1	230/3/60 20.1	230/3/60 30.2
Weight (Dry)	lbs (kg)	1058 (480)	1323 (600)	1676 (760)	2315 (1050)	2998 (1360)
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

(*) The boiler is supplied with a removable vent reducer

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

(***) Bottom feet may be removed to reduce overall height by 2" during installation if required

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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.

RIELLO