ARRAY TH2O

INSTANTANEOUS DOMESTIC HOT WATER



High efficiency modular condensing hot water heater with built-in redundancy for commercial applications

RIELLO
Energy For Life

www.riello.com/north-america

ARRAY TH20

RIELLO PRESENTS ARRAY TH2O, THE NEW FULLY MODULATING, HIGH EFFICIENCY CONDENSING HOT WATER HEATERS, OFFERING INSTANTANEOUS DHW PRODUCTION.

Featuring high performance and high efficiency, together with a high turndown ratio of 20:1 - 30:1, ARRAY TH2O result from Riello technological research, characterized by continuous innovation and attention to the environment. The range, designed for large residential, commercial and industrial applications, consists of 2 sizes (1000 - 1500 MBtu/h).

Thanks to their modular design and built-in redundancy, ARRAY TH2O supports continuous operation, contributing to reliable system performance. Components are already pre-packaged inside the cabinet for fast installation, offering strong performance.
Embedded within the product, the Riello ARRAY Premix combustion system offers a consistent air to fuel ratio throughout the entire range of modulation, resulting in efficient combustion with low emissions.

ARRAY TH2O integrates performance monitoring systems and predictive algorithms to signal the need for maintenance and represents an ideal solution both for new installation and retrofit projects.

BUILT-IN REDUNDANCY
Continuous operation with reduced downtime

TANKLESS DHW PRODUCTION
No storage
No standby losses

UP TO 30:1 TURNDOWN RATIO
Optimized efficiency across a wide range of loads

UP TO 1.5 MMBtu/hr
UP TO 56 GPM*
instantaneous DHW production

COMPLETE SYSTEM IN ONE BOX
Easy and quick installation

EASY SERVICING
Designed for easy maintenance and access

* approx. 212 l/min @ 50 °F ΔT GPM
refer to US units

LOOKING INSIDE

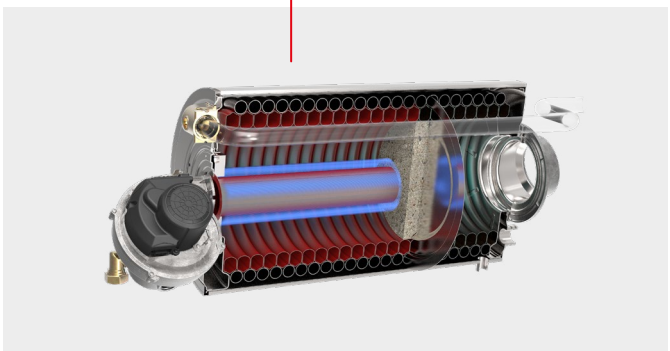
EACH MODEL OF THE RANGE ARRAY TH2O FEATURES MULTIPLE HEAT EXCHANGER MODULES (2 OR 3, ACCORDING TO THE MODEL), WORKING IN CASCADE, PROVIDING A HIGH TURNDOWN AND ENABLING CONTINUOUS OPERATION.

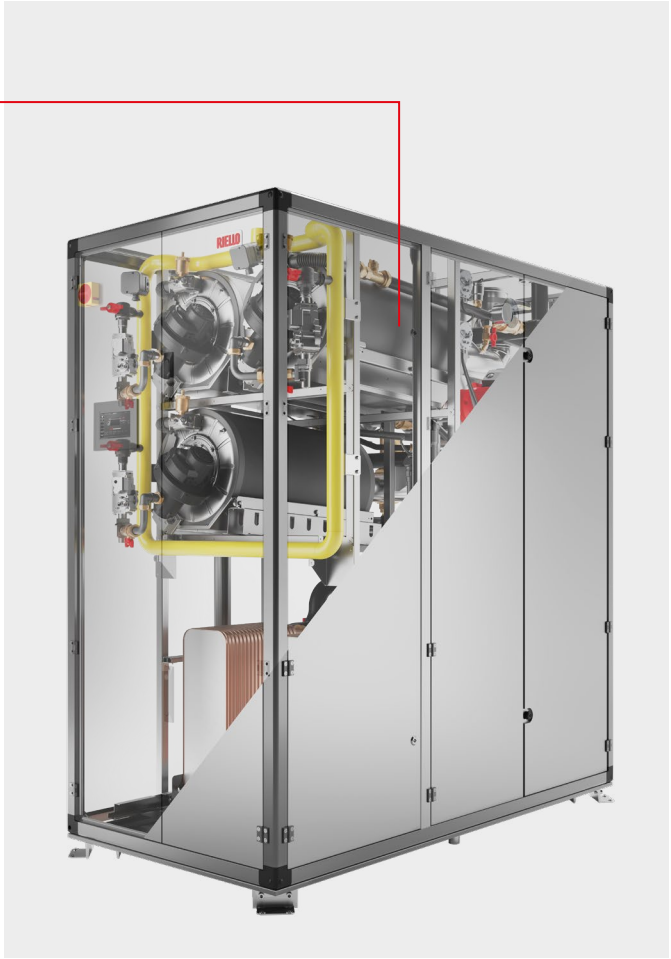
ADVANCED PRE-MIX BURNER

The ARRAY TH2O combustion system consists of a stainless steel mesh burner integrated with a modulating gas valve and high performance variable speed fan.
The proportional control provides a consistent air to fuel ratio throughout the entire range of modulation resulting in efficient combustion with low emissions, helping reduce environmental impact.

PATENTED RIELLO HEAT EXCHANGER

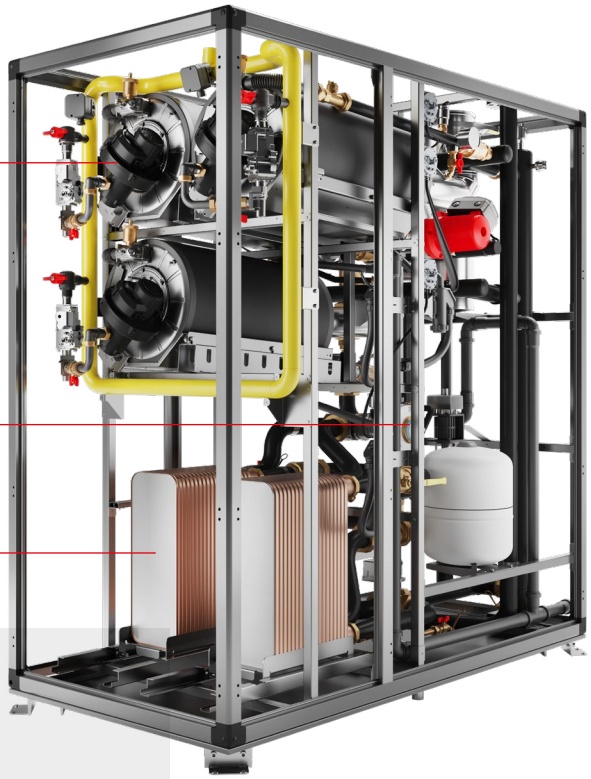
- Heat exchanger with a unique double helix design
- Advanced design engineered for reliability and long service life
- Large heat exchanger surface area in a compact design
- Enhanced heat transfer can contribute to improved energy efficiency and reduced operating costs
- Vortex flow meter monitors and provides correct flow through the heat exchanger
- The design offers minimum waterside pressure drop and highly efficient heat transfer





TECHNICAL FEATURES

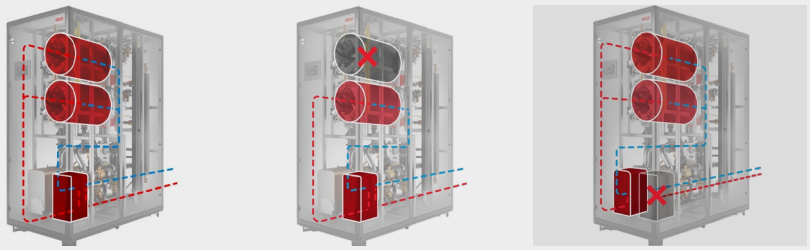
- Multiple combustion modules of primary circuit



- Automatic diverter valve helping reduce downtime via automatic switchover of plate exchangers

REDUNDANCY TECHNOLOGY

Built-in redundancy design supports continuous operation, thanks to multiple primary heat exchangers (two or three, depending on the model) operating in cascade and dual single-wall domestic hot water plate heat exchangers, with one operating and the other serving as backup.

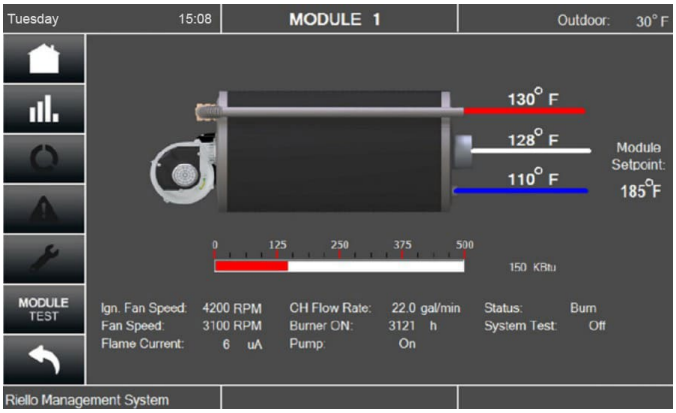


- Instantaneous production of DHW via plate heat exchanger (no storage tank)
- Efficiency performance exceeds applicable DOE requirements
- Anti-legionella cycles
- Integrated electronic control, specifically designed to manage firing rate and water flow, provides stable water temperature control
- Premix combustion with low NOx emissions
- Fully modulating with high tourndown ratios (20:1 and 30:1)
- User-Friendly Dual Displays: 7” color graphic operator touchscreen and dedicated internal service display
- BMS: BACnet®

HIGH TURNDOWN

The high turndown of ARRAY TH2O (20:1 or 30:1, according to the model) produces different advantages:

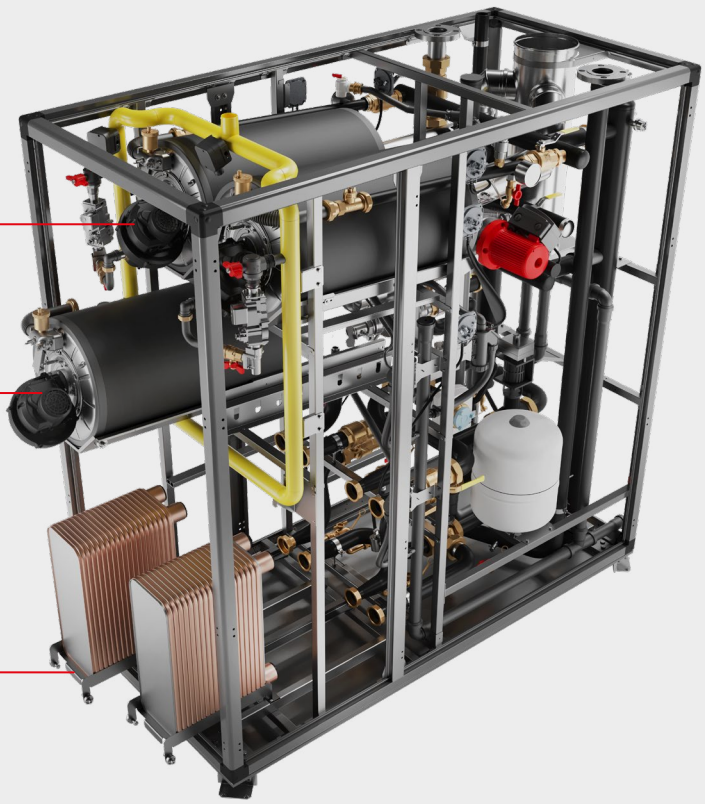
- Improved responsiveness to load variations, supporting efficient operation and potential energy savings
- Improved control and stability of DHW temperature
- Reduced component wear associated with frequent cycling, helping support reliable operation and simplified maintenance



EASY TO INSTALL, MAINTENANCE AND SERVICE

ARRAY TH2O is proposed as a “pre-packaged” single cabinet configuration, with components already mounted and connected inside the cabinet for plug & play installation.

- Roll out trays for quick removal of heat exchangers, enabling easy maintenance and service. component wear associated with excessive starting and stopping can contribute to simplified maintenance and reliable operation



- Plate heat exchanger redundancy helps support preventive maintenance planning, contributing to service continuity and simplified maintenance.

TECHNICAL SPECIFICATIONS

	UoM	TH20 1000 - 300 SW/2A	TH20 1500 - 450 SW/2A
VENT CATEGORY		**CAT. IV**	**CAT. IV**
TYPE OF GAS		Natural Gas, LP	
MAX INPUT RATE	BTU/hr	1,000,000	1,500,000
	(kW)	293.0	439.6
MIN INPUT RATE	BTU/hr	50,000	50,000
	(kW)	15	15
TURNDOWN	Rate	20:1	30:1
MAX DHW SAFETY PRESSURE	PSI	150	150
	(bar)	10.3	10.3
MAX DHW OPERATING TEMPERATURE	°F	158	158
	(°C)	70	70
MAX DHW OPERATING TEMPERATURE DURING ANTILEGIONELLA	°F	194	194
	(°C)	90	90
AMBIENT FUNCTIONING TEMPERATURE	°F	32 to 104	32 to 104
	(°C)	0 to 40	0 to 40
STANDARD LISTINGS & APPROVALS		ETL. ASME. AHRI. CSD-1. SCAQMD. NSF 372	
GAS CONNECTION (NPT)	Ø Inch	1.5	1.5
MAX. NG PRESSURE	Inch w.c.	20	10.5
	(Kpa)	5.0	2.6
MIN. NG PRESSURE	Inch w.c.	4.0	3.5
	(Kpa)	1.0	0.9
WATER CONNECTIONS (ANSI #150 FLANGE RAISED)	Ø Inch	2	2
	mm	50	50
WATER RECIRCULATION INLET (NPT MALE)	Ø Inch	1.5	1.5
	mm	40	40
RELIEF DRAIN CONNECTION (NPT FEMALE)	Ø Inch	2.5	2.5
	(Ø mm)	65	65
CONDENSATE DRAIN CONNECTION (PVC FEMALE)	inch	1	1
	(Ø mm)	40	40
FLUE OUTLET (FEMALE)	Ø Inch	6/8	6/8
	(Ø mm)	200	200
AIR INLET (ROUND SHEET-METAL OPENING)	Ø Inch	8	8
	(Ø mm)	200	200
SUITABLE VENT MATERIALS		CPVC, PP, Stainless Steel AL29-4C and AISI 316L	
SINGLE-POINT ELECTRICAL CONNECTION		120Vac/1Ph/60Hz	120Vac/1Ph/60Hz
ELECTRICAL SUPPLY TERMINALS		L1. N. GND	L1. N. GND
ELECTRICAL FLA	A	20.5	28.7
ELECTRICAL MOCP	A	25	35
ELECTRICAL – MCA	A	21	30
FUSE	A	30T	30T
WEIGHT (DRY)	lbs	1235	2102
	(kg)	560	953.5
DIMENSION W x H x D *	Inch	35 x 77 x 73	35 x 77 x 73
	(mm)	900 x 1950 x 1850	900 x 1950 x 1850

For propane fuel applications, please contact factory

(*) Mounting feet may be removed during installation to reduce the overall height by 2". Feet must be re-installed once boiler is in.

H

U M

AHRI CERTIFIED® www.ahridirectory.org Commercial Water Heaters DOE 10 CFR Part 431

C AHRI CERTIFIED® www.ahridirectory.org Commercial Water Heaters DOE 10 CFR Part 431

C ETL LISTED US Intertek

PERFORMANCE TABLES

ARRAY TH2O 1000

DHW side performance

Temperature				Flow		ΔP	
Inlet (°F)	Outlet (°F)	Inlet (°C)	Outlet (°C)	GPM	l/min	PSI	mbar
40	100	4.4	37.8	31	117.3	4.7	324.1
40	110	4.4	43.3	27	102.2	3.5	241.3
40	120	4.4	48.9	23	87.1	2.7	186.2
40	140	4.4	60.0	19	71.9	1.8	124.1
40	158	4.4	70.0	16	60.6	1.3	89.6
50	100	10.0	37.8	37	140.1	6.6	455.1
50	110	10.0	43.3	31	117.3	4.7	324.1
50	120	10.0	48.9	27	102.2	3.5	241.3
50	140	10.0	60.0	21	79.5	2.2	151.7
50	158	10.0	70.0	17	64.4	1.5	103.4
60	110	15.6	43.3	37	140.1	6.6	455.1
60	120	15.6	48.9	31	117.3	4.7	324.1
60	140	15.6	60.0	23	87.1	2.7	186.2
60	158	15.6	70.0	19	71.9	1.9	131.0
70	120	21.1	48.9	37	140.1	6.6	455.1
70	140	21.1	60.0	27	102.2	3.5	241.3
70	158	21.1	70.0	21	79.5	2.3	158.6

ARRAY TH2O 1500

DHW side performance

Temperature				Flow		ΔP	
Inlet (°F)	Outlet (°F)	Inlet (°C)	Outlet (°C)	GPM	l/min	PSI	mbar
40	100	4.4	37.8	46	174.1	8.9	613.6
40	110	4.4	43.3	40	151.4	6.6	455.1
40	120	4.4	48.9	35	132.5	5.0	344.7
40	140	4.4	60.0	28	106.0	3.2	220.6
40	158	4.4	70.0	24	90.8	2.3	158.6
50	100	10.0	37.8	56	212.0	12.8	882.5
50	110	10.0	43.3	46	174.1	8.9	613.6
50	120	10.0	48.9	40	151.4	6.6	455.1
50	140	10.0	60.0	31	117.3	4.0	275.8
50	158	10.0	70.0	26	98.4	2.8	193.1
60	110	15.6	43.3	56	212.0	12.8	882.5
60	120	15.6	48.9	46	174.1	8.9	613.6
60	140	15.6	60.0	35	132.5	5.0	344.7
60	158	15.6	70.0	28	106.0	3.4	234.4
70	120	21.1	48.9	56	212.0	12.8	882.5
70	140	21.1	60.0	40	151.4	6.6	455.1
70	158	21.1	70.0	32	121.1	4.2	289.6

NOTE: The GPM shown in the table refer to US units”

RIELLO

RIELLO S.p.A.
Via Ing. Pilade RIELLO, 7
37045 Legnago (VR) Italy
tel. +39 0442 630111
www.riello.com

RIELLO Canada Inc.
2165 Meadowpine Boulevard
Mississauga, Ontario L5N 6H6
tel. +1 905 542-0303
Toll free: 1-800-474-3556
Fax: +1 855 878-6599

RIELLO America LLC
Toll free: 1-800-474-3556

RIELLO
ARRAY TH20



[1]
BURNERS PRODUCTION PLANT
S. PIETRO, LEGNAGO (VERONA) - ITALY



[2]
HEADQUARTER BURNERS DIVISION
S. PIETRO, LEGNAGO (VERONA) - ITALY



[3]
RIELLO CANADA INC., MISSISSAUGA,
ONTARIO - CANADA

Riello reserves the right to change the information and specifications contained herein at any time without notice. The contents and information provided herein are for informational purposes only and are not intended to provide legal or professional advice. This document, therefore, cannot be considered binding on third parties.

©Riello S.p.A. All Rights Reserved.

27025040 - rev.02 - EN 11/2026