

XFYRE[®] HIGHER PERFORMANCE



STAINLESS STEEL
DESIGN

SMARTER
CONTROLS

MAXIMUM
EFFICIENCY

Raypak[®]
A Rheem[®] Company

Maximum Efficiency and Performance

Key Features

- 5 models from 300 to 850 MBTUH
- 94% thermal efficiency hydronic AHRI; 95% water heaters CSA
- Equipped with 316L welded stainless steel heat exchanger and copper plumbing. ASME Section IV constructed and stamped. National Board registered.
- All models CSA indoor/outdoor construction
- Small footprint, less than 9-1/2 square feet
- Top water connections - allows side by side installation
- Multiple pump outputs - Boiler, System, and Indirect
- Dual flame sensing - Remote flame sensor and spark ignition rod
- Modulating gas valve and burner, up to 5:1 turndown
- On-board diagnostic center, with easy to understand messaging
- 0-10 VDC BMS Interface (setpoint or direct drive)
- Modbus BMS port
- Built-in cascade function
- Built-in outdoor reset functionality
- Complete cabinet protects all controls and wiring
- Tough rust-resistant powder coat finish
- Easy to service - air filter
- PVC, CPVC, Centrotherm™ Polypropylene or Stainless Venting Certified¹
- Suitable for altitudes up to 10,000 ft. (derate may apply)
- Meets all current Low NOx regulations, less than 20ppm

Options

- Outdoor air sensor (B-32)
- Indirect tank sensor (B-65)
- TruSeal® direct vent kit (D-21 factory installed, D-22 Loose)
- Condensate treatment kit (Z-12)

Built for easy installation and service

The Raypak XFyre offers state of the art features in one complete boiler package. XFyre is outdoor certified and utilizes cabinet and control protection technology already proven in thousands of installed Raypak products.

Mechanical engineers, architects and building owners now have extreme installation flexibility, high efficiency, space saving footprint, zero side clearance, direct vent capability, inexpensive PVC or polypropylene venting, and full service access.

Installers enjoy ease-of-commissioning, reliability, serviceability and long-term performance. XFyre's vertical water connections allow the units to be installed side by side, further reducing the footprint on multi-boiler installations. Our compact design makes it possible to install up to 3.4 million BTUH in under 67 ft² of floor space, plus front and rear clearance.

A combustion system built on over 70 years of experience

The XFyre is cutting edge technology with atmospheric simplicity. XFyre will precisely track the heating load with its built-in VERSA IC platform, eliminating costly overshooting. The optimum fuel-air ratio is maintained throughout the entire range of the load-tracking operation. Our 5:1 turndown ensures efficiency is maintained throughout the firing rate and actually increases during part load, right when you want it! The XFyre automatically self-tunes to accommodate the widest range of gas supply pressures. The high quality integrated blower-gas valve is self-correcting and allows smooth operation with fluctuating gas supply pressures.

High efficiency and vent flexibility

When the job requires high efficiency, XFyre meets your needs. Category IV - AHRI-certified 94% efficiency at full fire for hydronic boilers and CSA-certified 95% for domestic water heaters.

Combined vent and combustion air duct length of up to 200 equivalent feet.

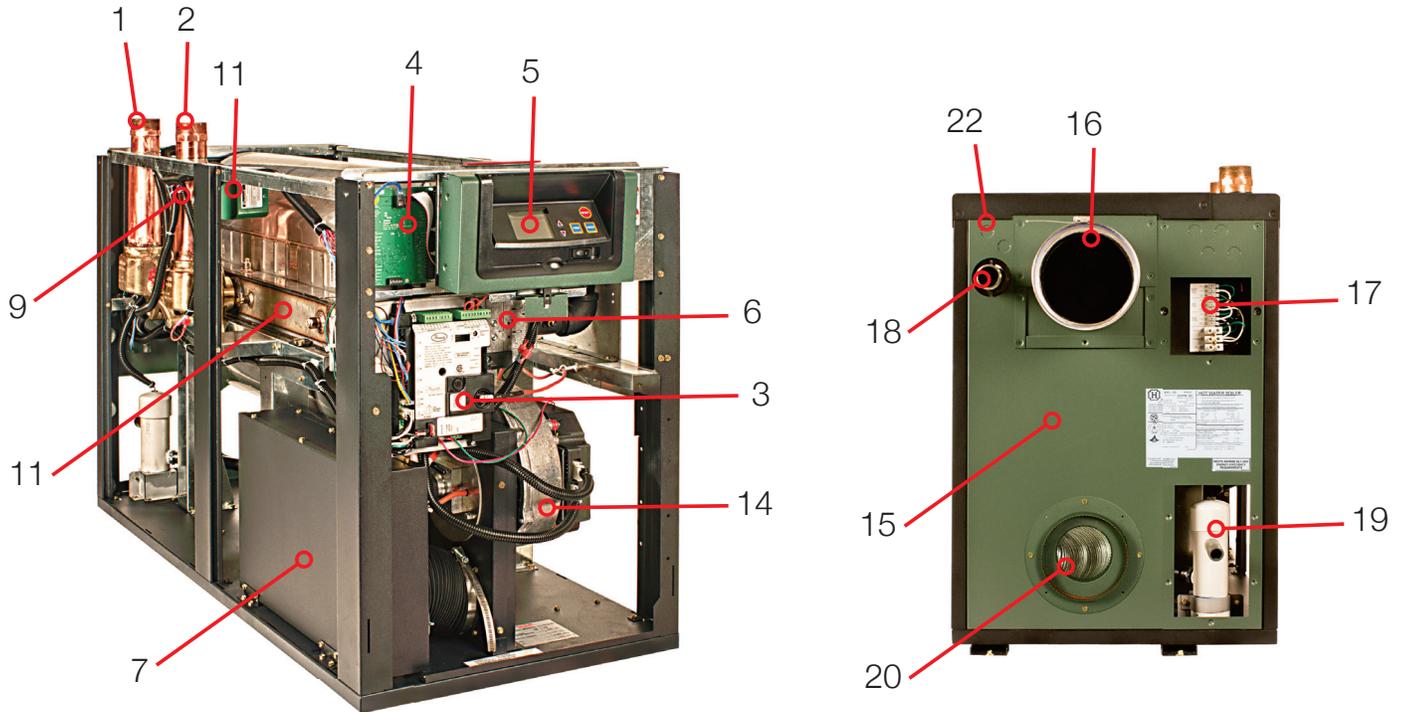
Models H7-300A thru 500A and WH7-300A thru 850A are certified to use PVC, CPVC, polypropylene or stainless steel for your project, depending on the return water temperature². Models H7-700A and H7-850A require water temperatures below 130°F for PVC venting.

Note 1: PVC venting on Models H7-700A and H7-850A is acceptable with system temperatures below 130°F only. See I & O Manual Cat. 1000.65

Note 2: Max 170°F return water & Max 180°F setpoint at 9.0% CO₂.

Purpose built for the contractor and service professional.

Completely serviceable from the front, top and rear!



1. Water Inlet – male NPT

As low as 50°F entering. All copper and brass factory installed vertical plumbing connections.

2. Water Outlet – male NPT

All copper and brass factory installed vertical plumbing connections.

3. Direct Spark Ignition

Dual electrode igniter to start the combustion cycle. After ignition, the spark rod also acts as a second flame sensor.

4. VERSA IC

Combined temperature, safety, and ignition control device.

5. Control Interface

Large easy to read (3.5") LCD display.

6. Air Fuel Ratio Gas Valve

Precision manufactured, main gas valve working in unison with the combustion air blower. Smooth and quiet light-offs while delivering a 5:1 turn down.

7. Intake Air Filter

Standard front access, easy to service, Merv 8 media, combustion air filter.

8. Manual Reset High Limit

Fully integrated into the VERSA IC.

9. Vent Switch

Senses possible obstructions in the flue vent pipe. (Not Shown)

10. Flow Switch

Flow switch mounted inside the cabinet to protect it during shipping and in the boiler room.

11. "Duo" Style Heat Exchanger

Combined 316L stainless steel dual chamber condensing and non condensing heat exchanger. Weld-sealed technology eliminates gaskets and o-rings. Special glycol seals are not required for hydronic applications. ASME Section IV constructed and stamped. National Board registered.

12. Flame Sense Electrode

After a call for heat, separate flame electrode monitors flame rectification. This helps to ensure proper carry over while also constantly monitoring the flame. (Not Shown)

13. Internal TruSeal Connection

Allows the XFyre to be direct vented up to 200 combined equivalent feet (vent and air intake) in a horizontal or vertical vent system. (Not Shown)

14. Smart Blower Technology

All metal, technologically advanced combustion blower. Air and fuel are precisely mixed.

15. Weather-Proof Jacket

Heavy gauge galvanized steel with a UV-resistant Polyutuf powder coat finish is impervious to weather and corrosion.

16. Flue Outlet

Category IV. Most models certified for PVC*, CPVC, polypropylene and stainless steel. XFyres ship PVC-ready models H7-300A through H7-500A and all WH models. (*PVC vent requires max 170°F return water & max 180°F setpoint at 9.0%CO₂)

17. High Voltage Wiring Box

120VAC main incoming power connections. Boiler pump, system pump, and indirect DHW pump wiring.

18. Gas Inlet

19. Condensate Drain and Trap

3/4"-NPT PVC connection for condensate removal. Built in condensate trap, overflow sensor and pressure switch for the flue accessible through an access panel. Optional condensate treatment kits (option Z-12) available.

20. Direct Vent Capability

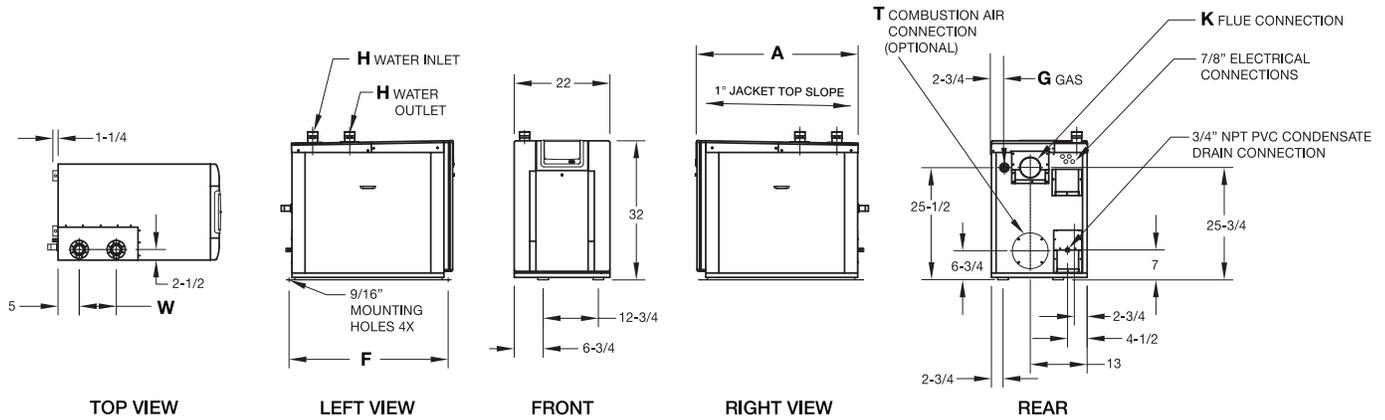
Optional combustion air adapter for direct vent. For factory installation, order (option D-21) TruSeal at time of order.

21. Easy Access Rating Plate Location

22. Low Voltage Knockouts

Separate conduit location for all sensor, communication, and low-voltage wiring.

Higher Performance



PHYSICAL DATA	Model	Dimensions (in.)						Ship Weight (lbs.)	Foot-Print (ft ²)	Amps*	
		A Length	F Mounting	G NPT	H NPT	K Flue Ø	T C/A Ø				W
	300A	28 - 1/4	27-9/16	3/4	1 - 1/2	4	4	8 - 1/2	410	4.3	3
	400A	30 - 3/4	32-5/16	1	2	4	4	7	465	4.7	4
	500A	37 - 1/4	39-9/16	1	2	4	4	8 - 1/2	505	5.7	4
	700A	47 - 3/4	49-5/16	1 - 1/4	2	6	6	10 - 5/8	550	7.3	5
	850A	54 - 1/4	53-9/16	1 - 1/4	2	6	6	10 - 5/8	580	8.3	5

For installations at elevations above 2,000 feet, derate may apply, please consult the factory for additional instructions. No mechanical changes required up to 10,000 feet.

*Current Draw is for heater only. (Supply breaker must have delayed trip.)

MBTUH	Model	MBTUH Input	Boiler (AHRI Certified)		MBTUH Input	Water Heaters (CSA Certified)		MBTUH Minimum Input
			Output	Efficiency		Output	Efficiency	
	300A	300	282	94%	300	285	95%	60
	400A	399	375	94%	399	379	95%	80
	500A	500	470	94%	500	475	95%	100
	700A	700	658	94%	700	665	95%	140
	850A	850	799	94%	850	808	95%	170

CLEARANCES	Heater Side	Certified Minimum	Service Minimum
Rear	24"	24"	
Right	0"	0"	
Left	0"	0"	
Top	12"	24"	
Floor*	0"	---	
Vent	1"	---	

*Do not install on carpeting
Note: Local codes may require increased clearances

Model	Standard Pump Models			
	H		WH	
	HP	Amps	HP	Amps
300A	1/8hp	1.3	1/4hp	5.7
400A	1/8hp	1.3	1/2hp	6.9
500A	1/4hp	5.7	1/2hp	6.9
700A	1/2hp	6.9	1hp	14.0
850A	1/2hp	6.9	1hp	14.0

Note: Current draw is for pump only

Max 75 equivalent feet

Water hardness above 15 gpg requires water softener.

Hydronic Boiler

TYPE H	Model	Rates Of Flow And Pressure Drops											
		20°F		30°F		35°F		Minimum Flow*			Maximum Flow		
		GPM	ΔP	GPM	ΔP [†]	GPM	ΔP [†]	GPM	ΔP [†]	ΔT	GPM	ΔP [†]	ΔT
300A	28	17	19	8	16	6	14	5	39	36	28	16	
400A	38	18	25	7	21	5	19	4	39	47	29	16	
500A	47	16	31	7	27	5	24	4	39	56	23	17	
700A	66	30	44	13	38	9	34	7	39	70	34	19	
850A*	80	40*	53	17	46	12	41	10	39	80	40	20	

*Closed systems only.

[†]See submittal note **.

Water Heater

TYPE WH	Model	Water Hardness					Flow Rates					Do not use when hardness exceeds 15 grains per gallon
		3-15 Grains Per Gallon					Minimum Flow			Maximum Flow		
		ΔT	GPM	ΔP	MTS	SHL	GPM	ΔP	ΔT	GPM	ΔP	
300A	24	24	12	1.5	17	20	9	29	36	28	16	
400A	20	38	18	2	20	26	8	29	47	29	16	
500A	20	48	16	2	19	33	8	29	56	23	17	
700A	20	67	30	2	36	46	14	29	70	34	19	
850A	23	70	30	2	36	56	19	29	80	40	20	

ΔT = Temperature rise, °F

ΔP = Pressure drop through heat exchanger, ft

MTS = Minimum Tube Size, inch.

SHL = System Head Loss, ft (based on max 75 equivalent ft. of piping).

TYPE WH	Model	Recovery Rates (GPH)									
		Temperature Rise (°F)									
		20	30	40	50	60	70	80	90	100	
300A	1728	1151	863	691	576	494	432	384	345		
400A	2297	1532	1149	919	765	656	575	511	459		
500A	2879	1919	1440	1151	959	823	720	640	576		
700A	4031	2687	2015	1612	1344	1151	1008	896	806		
850A	4894	3262	2446	1958	1632	1398	1224	1087	978		

Smarter Controls

Raypak's VERSA IC combines modulating temperature control, safety limits, and ignition programming into one user-friendly integrated control platform. With self-learning features that prevent equipment damage, this automated controller is easy to set-up, understand, and use making it as close to plug and play as possible.

Large easy to read 3.5" LCD display. Continuously monitored flame strength (μA), sensor temps, BMS signal (0-10V) setpoints, DeltaT, all safety signals, full diagnostics and fault history for last 15 events. Simple touch pad settings. Everything you need from set-up to service is at your fingertips, all in one location.

Easy front access to all field wiring including outdoor sensor, DHW sensor, system alarm, Modbus BMS port (standard), and 0-10V DC input connections. Inlet and outlet sensors factory-installed in boiler. Remote sensor for system included. Can drive and monitor external motorized auxiliaries such as extractors and louvers. Factory-equipped with cascade control capability.

Diagnostic Information

Safety Faults

- Sensor Failures
- Condensate Full
- Vent Temp Limit
- Low Water Level

- Low Water Flow
- High Temperature Limit
- Low Gas
- High Gas
- ΔT Error

- Blower Failure
- Blower Speed
- Low 24v Power
- History to 15 Faults

Ignition Control Faults

- Ignition Failure
- False Flame Sense

		Water Heaters (Type WH)	Boilers (Type H)
HEAT EXCHANGER	ASME Section IV, National Board Registered, 160 PSI	• H Stamp	●
	Heat Exchanger Tubes	• 316L Stainless Steel	●
	Stainless Steel	• CSA Certified CA AB-1953 low lead	●
	Pressure Relief Valve (loose)	• 60 PSI • 125 PSI • 30, 45, 75, 150 PSI	○ ● ○
	Temperature & Pressure Gauge (Loose)		●
	Pump	• 120V, Single-Phase	○
JACKET	Indoor/Outdoor Certified		●
	Vent Terminal	• Outdoor • Through-the-Wall	○ ○
	Combustible Floor Rated		●
	Fully-Enclosed Controls		●
OPERATING CONTROLS	120V Power Supply		●
	On/Off Switch		●
	Programmable Pump Time Delay, Single-Phase	• Included in Controller	●
	Terminal Block Connections (Front mounted)	• Enable / Disable • 0-10 VDC Setpoint/Direct Drive Input	● ●
	LCD diagnostic display with 15-Event History		●
	VERSA IC	• (up to 5:1 Turndown) • Outdoor Reset Sensor (B-32) • DHW Indirect Sensor	N/A ○ N/A
	External Multiple Boiler Controller	• TempTracker Mod+ Hybrid (up to 5:1 Turndown)	○
SAFETIES	Direct Spark Ignition System	• 1-try (C-6) • 3-try	○ ●
	High/Low Gas Pressure Switches		○
	Blocked Vent Switch		●
	High Limit Switch	• Manual Reset, Fixed • Automatic Reset, Fixed • Adjustable	● ○ ○
	Low Water Cut-Off, 24V	• With Manual Reset and Test Buttons (F-10)	○
	Flow Switch		●
GAS TRAIN	Combination Gas Valve		●
	Modulating Air Blower		●
	Additional Safety Valve	• Motorized (externally mounted) (M-1) • Solenoid (externally mounted) (M-10)	○ ○
OTHER	AHRI-Certified (H)	• 94% at Full Fire	N/A
	CSA-Certified Efficiency (WH)	• 95% at Full Fire • 99% at Part Load	● ●
	Air Filter		●
	TruSeal Direct-Vent (D-21 or D-22)		○
	Alarm Contacts		●
	CSD-1 / GE GAP Control System (G-1)		○
	Low NOx	• Meets all current requirements	●
	Condensate Drain and Trap		●
Condensate Treatment Kit (Z-12)		○	

● = Standard ○ = Optional

