Technical Data Sheet

Centurion®

Water Heater

The PVI Centurion water heater utilizes state-of-the-art technology to easily meet highly diverse, demanding commercial and industrial hot water requirements in a compact and reliable condensing design. The durable, highly reliable AquaPLEX® stainless steel firetube heat exchanger assembly is thermal shockproof, inherently immune to aqueous corrosion and chloride stress corrosion cracking for extended life. The AquaPLEX construction maximizes longevity in the condensing application and the corrugated tubes increase effective heat transfer surface area for optimal thermal efficiencies. Centurion provides safe, instant hot water while mitigating Legionella and scalding risks due to lower set points, continual circulation and minimum water storage as buffer.

The advanced Edge® Controller incorporates dynamic feed-forward sensing for precise modulation of its high turndown air/fuel delivery system. The Edge fires the unit to accurately match load requirements and produce tight hot water outlet temperature control. Edge includes onboard multi-unit sequencing logic for up to 16 units, eliminating a need for a separate sequencing panel. Wasteful overshooting and cycling are virtually eliminated as is the need for storage tanks, mixing valves and other temperature averaging components in most applications.

The set point is adjustable from 50°F to 190°F, and control to ± 4°F is easily achieved. With its tight temperature control, high efficiency, reliability and longevity, Centurion is a truly unique and advanced design. Centurion comes standard with an innovative O_2 trim system that self-adjusts and maintains air/fuel ratios at optimum levels for peak efficiency, low emissions and maximum uptime reliability in event of any site condition changes. Oxygen levels can be directly displayed on the unit in real time or be remotely monitored, giving our customers the ability to measure the emissions level and fuel economy of the heater without traditional combustion calibration devices. Sidewall, through–the–roof, and ducted combustion capabilities provide broad installation flexibility. The small footprint, doorway size and quiet operation make it ideal for retrofit. With its tight temperature control, high efficiency, reliability and longevity the Centurion is truly a unique and advanced design.
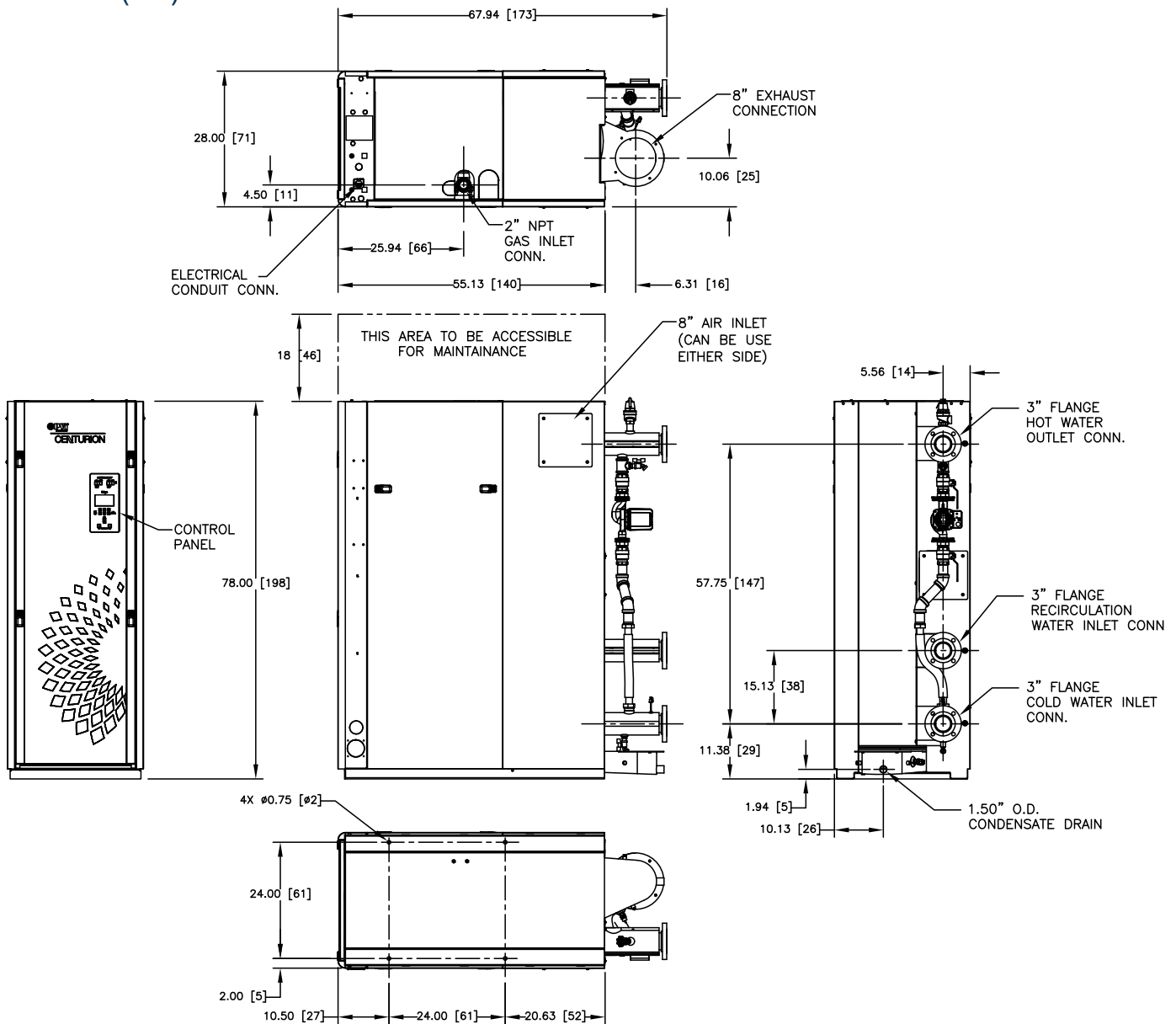
Features

- 1600, 2000 MBH with fully modulating, condensing design
- Precise temperature control ±4°F
- Advanced Edge Controller with O_2 Trim that self-adjusts and maintains optimal air-fuel ratios for peak efficiency, low emissions and maximum reliability
- Integrated Water Heater Management (WHM) multi-unit sequencing (up to 16 units)
- Corrosion-resistant AquaPLEX duplex stainless steel fire tube heat exchanger backed by a 15-year warranty
- Compact, space efficient design
- Natural gas
- Outlet water temperature of 50° to 190°F
- UL, cUL listed for closet installation on combustible flooring
- 160 PSIG ASME Working Pressure Certified
- Direct or conventional vent with, PVC, CPVC, Polypropylene or AL29-4C materials
- Integrated BACnet IP, BACnet MS/TP, Modbus IP and Modbus RTU communication
- Remote alarm contacts
- Ducted combustion air capable
- UL, cUL listed, FM compliant, ASME section IV (HLW) stamped

Recovery Capacity*

Centurion 1600 (CEN 1600)

Temperature Rise (°F)	60°	70°	80°	90°	100°	110°	120°	130°	140°
Gallons Per Minute (gpm)	51.1	43.0	37.6	33.4	30.1	27.3	25.1	23.1	21.5
Gallons Per Hour (gph)	3006	2580	2256	2004	1806	1638	1506	1386	1290

Centurion 2000 (CEN 2000)

Temperature Rise (°F)	60°	70°	80°	90°	100°	110°	120°	130°	140°
Gallons Per Minute (gpm)	64.0	54.9	48	42.7	38.4	34.9	32.0	29.5	27.4
Gallons Per Hour (gph)	3840	3294	2880	2562	2304	2094	1920	1770	1644

*In condensing mode <2000 ft above sea level

Dimensions
inches (cm)

Technical Data

	CEN 1600	CEN 2000
Adjustable Temperature Control	50°F to 190°F	
Ambient Temperature	0°F to 130°F	
Accuracy	+/-4°F	
Input	1,600 MBH	2,000 MBH
Certified Efficiency (DOE 10 CFR Part 431)	94%	96%
Turndown Ratio	16:1	20:1
Flue/Air Intake Connections	8" Inch	
Flue Material (per local code)	PVC, CPVC, Polypropylene or AL29-4C	
Water Inlet, Outlet, and Recirc. Conn.	3" Flanged	
Gas Connection - Natural Gas/Propane	2" NPT Male/1-1/2" NPT Male	
Gas Pressure Requirements - Natural Gas/Propane	14" WC Max/14" WC Max 4" WC Min/8" WC Min @ Full Load	
Maximum Continuous Water Flow	130 GPM	
Condensate Trap Connection	3/4" NPT Female	
Maximum Condensate Flow	16 GPH	
Pressure Rating	160 PSIG @ 210°F	
NOx Emissions	< 20 ppm NOx. (SCAQMD)	
Standard Listing and Approvals	UL, cUL, ASME, (HLW)	
Gas Train Options	FM Compliant or Factory Installed DBB (IRI)	
Electrical Requirements	208VAC / 3Phase / 60Hz / 20A (10 FLA) 460VAC / 3Phase / 60Hz / 15A (5 FLA)	
Water Pressure Drop @ 50 gpm	2.1 psi	
Sound Rating	72 dbA	
Water Volume	64.0 gallons	
Weight, Installed	1,650 lbs. (dry) 2,203 lbs. (wet)	
Weight Shipping	1,850 lbs.	

Accessories & Optional Equipment

Centurion 1600/2000 Natural Gas Trim Kit - PN 58212-1
Centurion 1600/2000 Propane Trim Kit - PN 58212-2
Sequencing Isolation Valve kit (with 3" Flanged Inlet Spool Piece) - PN 24773-1
Sequencing Isolation Valve kit (with 3" Flanged Inlet & Outlet Spool Pieces) - PN 24773-2
Zero-Side Clearance Installation Kit (2-Unit Pairs) - PN 58079-1
Maxitrol RV-91 Gas Pressure Regulator, Up to 14" WC inlet pressure, 2" x 2" conn, 1/2" vent - PN 123628C
Jeavons JADDA Gas Pressure Regulator, >14" WC to 1 psi inlet pressure, 2" x 2" conn, 1/4" vent - PN 124261C
Jeavons JAB8A Gas Pressure Regulator, >1 psi to 2 psi inlet pressure, 1.25" x 1.25" conn, 1/4" vent - PN 124259C
Condensate Neutralizer Tank (Up to 6,400 MBH) - PN 89030
PROTONODE Communications Gateway - Auto Discover – Johnson N2 - PN 69281-1
PROTONODE Communications Gateway - Auto Discover – LonWorks - PN 69281-2
Gateway 120VAC/24VAC Transformer - PN 62010
8" Exhaust Muffler – HeatFab CI Plus - PN 124012C
8" Exhaust Muffler – Flanged Ends/Universal - PN 99190

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A WATTS Brand