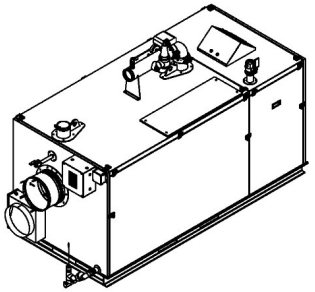
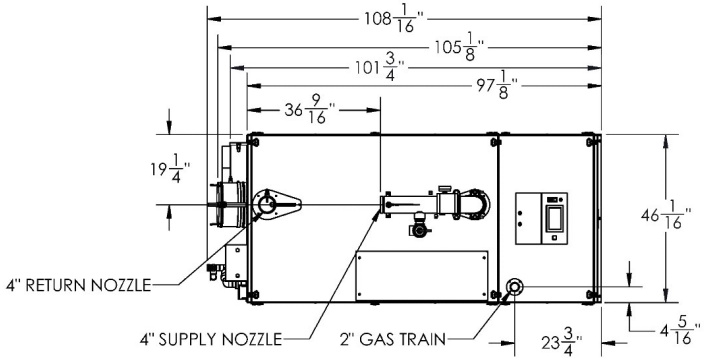
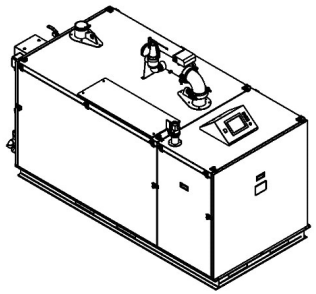
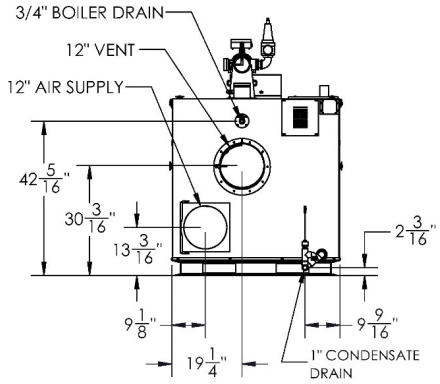
Dual Fuel DHW Submittal Data Sheet



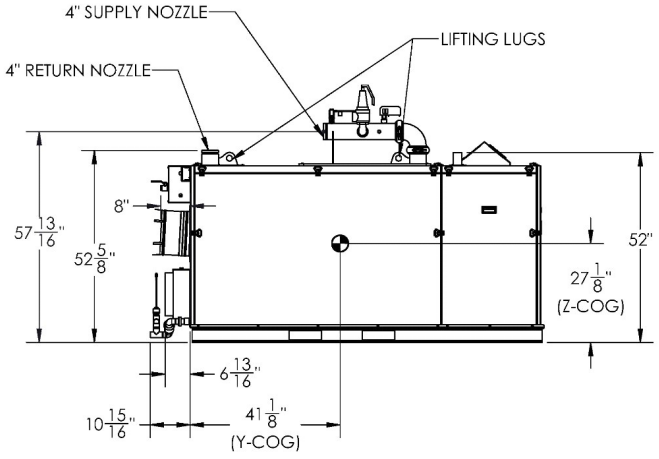


TOP VIEW

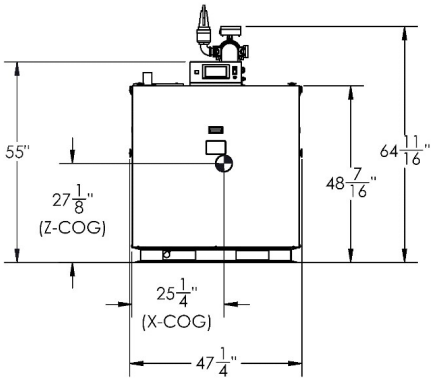




REAR VIEW



LEFT SIDE VIEW



FRONT VIEW

THERMAL SOLUTIONS PO BOX 3244 | LANCASTER, PA 17601	AMPW-1250 DF Dual Fuel	INNOVATIVE EQUIPMENT FOR HOT WATER SYSTEMS WWW.THERMALSOLUTIONS.COM	Updated 8/20/2025 ABCPV-20250802

Dual Fuel DHW Submittal Data Sheet

RATINGS AND CAPACITIES		
Input - Low flre:	**500,000**	BTU/HR
Input - High Fire:	**2,500,000**	BTU/HR
Output - High Fire:	**2,425,000**	BTU/HR
Boiler Horsepower:	**72.4**	BHP
Thermal Efficiency:	**97.0%**	
Low Fire Thermal Efficiency:	**Up to 99%**	
Heating Surface:	**91.6**	Sq.Ft.
Water Content:	**11.0**	Gallons
Fuel:	**Natural Gas / Propane**	
Firing Rate:	**Full Modulation**	
Burner Turndown:	**5:1**	
Low NOx Emissions:	**< 10 ppm**	
Inlet Gas Pressure (NG):	**4" wc**	Min.
Inlet Gas Pressure (LP):	**8" wc**	Min.
	14" wc	Max.
Shipping Weight, Approximate:	**922**	lbs

ASME Section IV (Max 160 PSIG / 210°F)
Setpoint range is 60-185°F
Adjustable, manual reset high limit setting of ≤ 200°F.
ASME HLW stamp MAWT is 210°F for the vessel. (For max setpoint, see Setpoint range.)
ETL Certified to ANSI Z21.13 / CSA 4.9
ETL Certified to UL 795 / CSA 3.1

DIMENSIONS / CONNECTIONS		
Height:	**42-3/4"**	(Note 1)
Width:	**34-1/4""**	(Note 2)
Length:	**45-1/2"**	(Note 3)
Supply Connection:	**3" Grooved**	
Return Connection:	**2-1/2"" Grooved**	
Vent / Air Intake Connections:	**8"**	
Condensate / Boiler Drain Connection:	**1"**	
Gas Connection:	**1" NPT**	

FLOWS AND PRESSURE DROPS		
Delta T	**Flow (GPM)**	**△ P (Ft. Hd)**
20°F △ T	**121**	**15.8**
30°F △ T	**81**	**8.3**
40°F △ T	**61**	**5.3**

Electrical Requirements: (Appliance Only)				
Model	**Voltage**	**Phase**	**Hz**	**Max. Amp Draw**
1000-1250	**120**	**1**	**60**	**11**
	208			**7.4**
	240			**6.5**
1500-2500	**120**	**1**	**60**	**13.5**
	208			**8.2**
	240			**7.7**
	208	**3**	**60**	**11**
	240			**9.9**
	480			**6.4**
3000	**208**	**1**	**60**	**14.1**
	240			**12.6**
	208	**3**	**60**	**9.9**
	480			**6.4**
3500-4000	**208**	**3**	**60**	**11**
	240			**9.9**
	480			**6.4**

NOTES:
1. Height dimension is from floor to top of jacket.
2. Length is from jacket front to jacket rear.
3. Dimensions shown are for reference only
4. Refer to manual for gas supply piping charts

Dual Fuel DHW Submittal Data Sheet

STANDARD EQUIPMENT

PRESSURE VESSEL DESIGN

Stainless Steel Heat Exchanger
ASME Section IV Certified, "H" Stamp
MAWP 160 PSIG & Max Temp 210°F
- Setpoint range is 60-185°F
- Adjustable, manual reset high limit setting of ≤ 200°F.
- ASME H stamp MAWT is 210°F for the vessel. (For max setpoint, see Setpoint range.)

Ten Year Limited Pressure Vessel Warranty

COMBUSTION DESIGN

Stainless Steel Pre-Mix Burner
Low NOx Emissions (< 10 ppm)
Full Modulation, 5:1 Turndown
Natural Gas, Propane or Dual Fuel (Gas/Gas)
4" wc (8" wc Propane) to 14" wc inlet gas pressure
High/Low gas pressure switches, manual reset
Zero governor gas valve
Variable Speed Combustion Blower
Air Proving Switch
Blocked Vent Switch
Manual fuel changeover switch (Dual Fuel Only)
Direct Spark Ignition System with UV Scanner

VENTING

Category II or IV Venting
Indivdual or Common (Engineered) Vent System
Vertical or Horizontal
CPVC, PP or SS Venting *Materials Acceptable
Combustion Air Intake - Sealed or Room

BOILER EQUIPMENT

Concert ™ Control (24 Vac)
High Limit Temp Control, Manual Reset
Low water cutoff, manual reset
Supply & Return Water Temperature Sensors
AMSE 150 PSE Relief Valve Standard
Water Flow Switch
Condensate trap
Blocked Condensate Switch
Pressure & Temperature Gauge
Flue Gas Temperature Sensor

ELECTRICAL DESIGN

Models 1000-2500:
- 120-208-230VAC/60HZ/1PH - High Voltage
  (1500 to 2500 - Optional 208-230-460VAC/60HZ/3PH)

Models 3000:
- 208-230-240VAC/60HZ/1PH - High Voltage
- 208-230-240-460VAC/60HZ/3PH - High Voltage

Models 3500-4000:
- 208-230-240-460VAC/60HZ/3PH - High Voltage
- PCB (Printed Circuit Board) Fused Connections

24VAC/5VDC - Low Voltage PCB
- EMS Communications
  (Dual RJ45 Jacks for Peer-To-Peer or ModBus)
- Boiler Options (Sensors)
- Pumps (Boiler, DHW, System) & Auxiliary Devices

* Flue system material shall be capable of continuous operation at 210°F or higher and shall be certified to UL 1738 – venting system for gas-burning appliances cat II, III and IV.

OPTIONAL EQUIPMENT

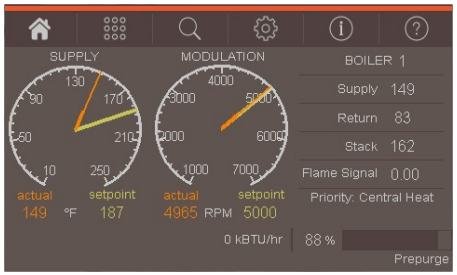
- ☐ Hydronic Kit (Boiler Circulation Pump, Pump Flange Kit and Condensate Neutralizer)
- ☐ External High Limit Temperature Control, Manual Reset
- ☐ Condensate Neutralizer
- ☐ Supply Header Temperature Sensor: ☐ Direct Immersion ☐ Well Immersion (with Well)
- ☐ Outdoor Air Temperature Sensor: ☐ Wired ☐ Wireless
- ☐ EMS Signal Converter Kit (Converts Energy or Building Management System 0-10v signal to 4-20mA)
- ☐ Motorized Isolation Valves
- ☐ Alarm Buzzer with Silencing Switch
- ☐ Gas Valve Proving Switch
- ☐ Vent Adapter - CPVC
- ☐ Universal Communications Gateway (BACnet, Metasys, Modbus or Lonworks)
- ☐ Stackable Rack
- ☐ Conductor Sequencing Panel

The Conductor manages multiple condensing & non-condensing, small & large heat output, new and/or existing boilers (full modulation or on-off), and steam or hot water applications. It helps improve system efficiency by selecting and modulating the right boiler to match operating conditions. The Conductor offers a single point boiler plant Energy Management System (EMS) interface including Modbus TCP/IP, Modbus RTU RS485, BACnet/IP and BACnet MSTP standard. If Lonworks needed, add for the separate Lonworks gateway.

- ☐ **Extended Warranty**
  ☐ 3-Year Parts ☐ 5-Year Parts ☐ 10-Year Parts ☐ 5-Year Parts/Labor ☐ 10-Year Parts/Labor

Dual Fuel DHW Submittal Data Sheet

CONCERT CONTROL FEATURES



Dashboard - Color Touchscreen Display, 4"

Intuitive Icon Navigation
- "Quick" Setup Menus
- *Real Time BTU/H Display

Two (2) Temperature Demand Inputs

Outdoor Air Reset Curve for Each Input
Time of Day Setback Capability
- (Enviracom Thermastat must be installed)

Three (3) Pump Control

Boiler Pump With On/Off or Variable Speed Control
Domestic Hot Water (DHW) Pump
System Pump
Alternative Control to Combustion
- Air Damper or Standby Loss Damper

Pump Overun for Heat Dissipation
Pump Exercise
Pump Rotor Seizing Protection

Peer-to-Peer Boiler Communications

Multiple Size Boiler Sequencing Up to 8 Units
*Two (2) Boiler Start/Stop Trigger
Lead Boiler Automatic Rotation

Energy Management System (EMS) Interface

*Firing Rate and Water Temperature Based
- Algorithms for Multiple Boilers; loss of EMS
- signal defaults to local boiler settings

420mAdc Input/Output (010Vdc Optional Converter)
ModBus Input/Output (BACnet or LonWorks
- Optional Gateway)

Simultaneous Interface with Peer-to-Peer

USB Data Port Transfer

Upload Settings Between Boilers
Download Parameters for Troubleshooting
Import Data into .CRV Formatted Files for Performance
- Analysis

*** Unique to Concert**

Energy Efficiency Enhancer

AntiCycling Technology
Multipler boiler base load common rate
Outdoor Air Temperature Reset Curve
Warm Weather Shutdown
Boost Temperature & Time
Ramp Delay
OverTemperature Safeguarding

Self-Guiding Diagnostics

Identifies Fault
Describes Possible Problems
Provides Corrective Actions
Time/Date Stamp on Alarms and Lockouts

Unmatched Archives

Historical Trends Collects Up to 4 months Data
Event History Up to 3000 Alarms, Lockouts and Cycle & Run Times
Alarm Limit String Faults, Holds, Lockouts and Others
Cycle & Run Time Boilers & Pumps
Resettable (Lockouts/Alarms/Cycles & Run Time)

Domestic Hot Water Priority

DHW Tank Piped With Priority in the Boiler Loop
DHW Tank Piped as a Zone in the System With
- the Pumps Controlled by the Concert Control

DHW Modulation Limiting
Status Screens
Sensor Monitoring and Control

Other Features

Factory Default Settings
- Three Level Password Security
- Frost Protection

Contractor Contacts (Up to 3)
Low Water Flow Safety Control & Indication
Proportion Integral Derivative (PID) Parameters for
- Central Heat, DWH, Sequencer and Fan