



- 95% Thermal efficiency
- 1,000–3,000 MBH
- Stainless One-Piece Design
- Full or Variable Flow Piping
- 100°F Delta-T with 0.8 PSI Pressure Drop
- L.I.F.T.™ Technology – Reduces Resistance to Flow
- Field Repairable
- Weld-free Design, Increased Reliability
- 5:1 Turndown
- Designed and Made in the U.S.A.
- Concert™ Commercial Boiler Control

ARCTIC™

Stainless Steel, Condensing, Gas-Fired Commercial Boiler

The Watertube with Firetube Pressure Drops



THERMAL®
SOLUTIONS
Innovative Equipment for Hot Water Systems



Better...by Design

The best new concepts are often improvements to time-tested and proven techniques. Thermal Solutions expands upon this age-old adage by uniquely combining the merits of watertube and firetube designs into an all new series of condensing product, the **Arctic**.

Watertube by Choice

Renown for longevity and tolerance to various hot water system conditions, Thermal Solutions values and places a premium upon this trait. Designed to naturally move with the expansion and contraction of heating while holding it's mechanical seal, watertube designs are unmatched in absorbing intense heat of today's burners making them the most durable boiler design available.

Firetube-based products have one design characteristic Thermal Solutions wanted to incorporate into the Arctic, low waterside pressure drop. This leads to smaller sized pumps promoting greater electrical savings and accomodative to both primary-secondary or variable flow piping applications increasing overall system efficiency.

New L.I.F.T.™ Transformative Tube Technology

Lowering waterside pressure drop required a focus on reducing resistance to flow. The result, the new **L.I.F.T. Transformative Tube Technology**... designed, not bent. Improved geometry in the counterflow design by using the latest simulation software increased water velocities, natural circulation, and heat transfer boosting efficiency to 95% AHRI certified to BTS-2000 standard while minimizing pump flow requirements.

Proven Platform For Today's Condensing Challenges

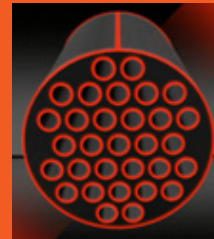
With no welds in the heat exchanger, the potential for leakage is greatly minimized making it shock-proof and backed by a lifetime warranty. This time-tested design is a true testament of its longevity, making it the clear choice in today's challenging condensing market. Our proven tube joining method permits field change-out simple and easy with no special tools. The only repairable condensing boiler in the market!

The Arctic redefines what a condensing boiler can be. Built to last, yet accomodative to piping and minimal pump requirements. Thermal Solutions fully merges the best of both watertube and firetube designs. You deserve the best of both, only the Arctic can deliver.



Why Watertube?

It naturally moves with heat expansion and contraction



Why Firetube?

Low waterside pressure drop creates electrical savings



Advanced Commercial Boiler Control...Putting your System in Tune

The Concert™ Boiler Control includes features and functions designed to save energy, optimize long-term efficiency, and integrate seamlessly with all Energy Management Systems (EMS). Built on a proven control platform, Concert is the most comprehensive commercial boiler control on the market - from Intuitive Icon Navigation, to Self Guiding Diagnostics, to Unmatched Archives, to USB Data Sharing, and to other unique features & optional system enhancements that separate this control from all the others!



Intuitive Icon Navigation - "Touch" and move through our control menus effortlessly. Whether it be commissioning the boiler with our "Quick Setup" menu, pinpointing fault codes with corrective actions in seconds or seamlessly connecting to an EMS. Extensive data archives with graphical displays are available to evaluate boiler performance and make value-added adjustments to maximize boiler & system efficiency.

Self-Guiding Diagnostics - Troubleshooting boiler issues has never been this easy. The industry-leading fault identification and correction feature allows the service technician to quickly drill down on the issue(s) with possible causes and corrective measures.

Unmatched Archives - With the largest collection of stored operational data (4 months) and vast log of alarm fault codes (3000 alarms), no stone is left unturned when it comes to evaluating a boiler's performance and pinpointing adjustment for improvement. The boiler's onboard energy management system is a true step above all others!

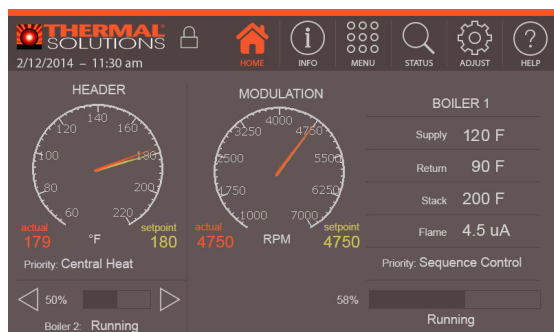
USB Data Sharing - Make room on the tool belt for a flash drive as the USB data sharing port has become another important device to have in commissioning (upload/download settings from one boiler to the next), servicing (download data and email file to factory for assistance) and analyzing boiler operation (historical info can be downloaded & saved in .CRV formatted files).



Unique Features:

- Complete EMS Interface - Read and write firing rate demand & setpoint.
- A.I.D. (Advanced Input Determination) - Firing rate and water temperature based algorithms for multiple boilers.
- Factory Default Settings - Restore control parameters back to factory settings.
- Real Time BTU/Hr Display
- Time/Date Stamp - On all logged events.
- Two (2) Boiler Start/Stop Trigger - Support large domestic hot water demands.
- USB Data Sharing Port - Easily Transfer parameters from boiler to boiler.

Options:



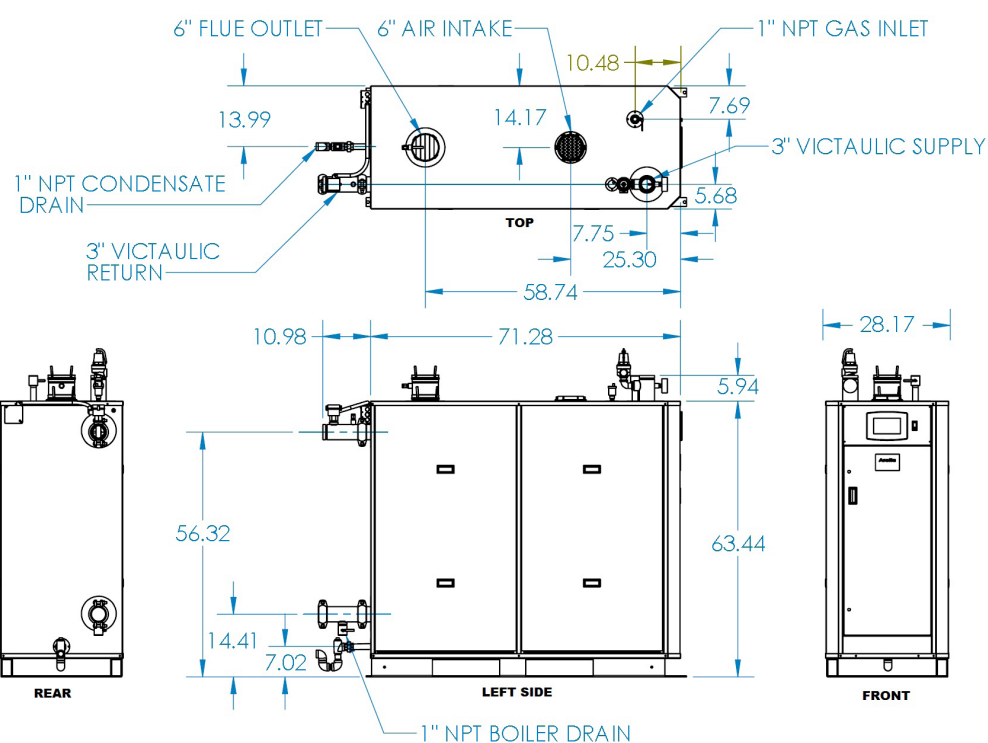
- Vari-Speed Pump - Provides 0-10vdc variable speed pump output for energy savings.
- Motorized Isolation Valves - Maintain energyefficient flow requirements for variable flow systems.
- 0-10 vdc Input - Converts 0-10vdc signal from EMS to 4-20mAdc for our control.
- Wireless Outdoor Sensor - Saves installation time.
- BACnet, Metasys N2, LonWorks and Modbus -Communication gateway translates effectively to various EMS protocols.

Specifications & Ratings

MODEL	RATINGS			NET RATING (MBH)	THERMAL EFFICIENCY	WATER CONTENT (Gal.)	HEATING SURFACE (SQ. FT.)	APPROX. SHIPPING WEIGHT (LBS.)
	MIN. INPUT (MBH)	MAX. INPUT (MBH)	GROSS OUTPUT (MBH)					
ARC-1000	200	1000	950	826	95.0%	19.7	125	1185

Dimensions

MODEL	LENGTH	WIDTH	HEIGHT	NPT GAS CONNECTION	SUPPLY/ RETURN CONNECTION	AIR INTAKE/ VENT DIAMETER	NPT CONDENSATE	NPT DRAIN CONNECTION
ARC-1000	84"	29"	71"	1"	3"	6"	1"	1"



Standard Equipment

- ASME stainless steel heat exchanger
- Stainless steel mesh pre-mix burner
- Full modulation, 5:1 turndown
- <20 ppm NOx emissions
- Variable speed combustion blower
- Concert™ boiler operating control (24v)
- High limit temperature control, manual reset
- Blower motor, 1/2 HP
- Water flow switch
- Low water cutoff
- Condensate trap
- Blocked condensate switch
- Pressure relief valve (30, 50, 60, 75, 100, 125, or 150 psig)
- Pressure/temperature gauge
- Supply & return temperature sensors
- Flue gas temperature sensor
- Modulating gas valve
- Direct spark ignition/flame rod
- High/low gas pressure switches
- High/low pre-mix pressure switches
- 120/1/60 line voltage (6.6 amps)
- Category IV venting – up to 100 equivalent feet
- Sealed or room combustion intake

Optional Equipment

- Condensate neutralizer
- Header sensor



©2015 Thermal Solutions Products, LLC P.O. Box 3244,
Lancaster, PA 17604-3244 PH:717-239-7642, Fax: 877-501-5212
www.thermalsolutions.com