

## CONDENSING COMMERCIAL GAS WATER HEATERS



Lochinvar  
**SMART SYSTEM™**

OPERATING CONTROL FEATURING  
A BUILT-IN CASCADING SEQUENCER

3 WALL MOUNT SPACE SAVING MODELS—  
125,000 BTU/HR AND 201,000 BTU/HR

FIRING RATE MODULATION TO 5:1

LESS THAN 20 PPM NOX

DIRECT-VENT FLEXIBILITY TO 100 FEET



DESIGNED ★ ENGINEERED ★ ASSEMBLED

**USA**

 **Lochinvar®**



## A WALL MOUNTED WATER HEATER

In Lochinvar's stainless steel, condensing Armor product family, the Armor Wall Mount offers an effective space saving solution. The Armor Wall Mount is available in two sizes, 125,000 and 199,000 Btu/hr input. The light weight but powerful water heaters hang on any wall to give you more free space in your mechanical room.

## THE "BETTER IDEA" SYSTEM AND INSTANTANEOUS WATER HEATERS

The water heater and tank combination is the heart of Lochinvar's "BETTER IDEA" water heating philosophy. The ARMOR water heater is always installed with a separate storage tank to provide an effective water heating package for commercial domestic water systems. The industry has made a few unsuccessful attempts at applying residential instantaneous water heating to commercial applications. Instantaneous products are outmatched by the faster, larger and variable hot water demands of a commercial application. Storage is essential to supply the water to a system at a variety of speeds and volumes.



## FULLY MODULATING WITH 5:1 TURNDOWN

ARMOR features advanced Negative Regulation (Neg/Reg) sealed combustion technology, permitting fan speed to constantly adjust the volume of fuel and air entering the burner. This ensures that ARMOR can safely and reliably operate with supply gas pressure as low as 4 inches water column.

ARMOR is equipped with fully modulating combustion with 5:1 turndown. This means ARMOR can fire as low as 20% of maximum input when water heating demand is lowest, and increase the firing rate up to 100% as demand increases. The result is better overall efficiency and less cycling, compared to all other tank-type units which are "on-off," which means they can only fire at 100% of maximum input.

## STAINLESS STEEL CONDENSING HEAT EXCHANGER

The stainless steel design provides superior resistance to corrosion caused by condensation from low entering water temperatures. Traditional commercial water heaters will fail early with low entering water temperatures; however, with the ARMOR the lower the supply water temperature the more efficiently it performs throughout the life of the heater.

## A STAINLESS STEEL STORAGE TANK

Available in 60, 80 and 119 gallon capacities, Lochinvar's Lock-Temp Stainless Steel storage tank makes a perfect companion to the Armor Floor Mount and Wall Mount water heaters. 14 gauge 316L stainless is formed, cut and fully welded into a light weight tank.

The stainless steel is "passivated" with a nitric acid treatment to re-establish the oxide level of the metal after welding and to ensure corrosion resistance. The tank is finished with a dent resistant polypropylene jacket and high density expanded foam insulation rated to exceed ASHRAE Energy Efficiency Standards for standby losses. Lochinvar backs its Stainless Steel Storage Tank with a 10 year limited warranty.



# Lochinvar SMART SYSTEM

## THE ULTIMATE WATER HEATER OPERATING CONTROL WITH GRAPHIC LCD DISPLAY

Water heaters with different inputs can be cascaded together to maximize turndown capability

Compatibility with Copper-Fin II® non-condensing water heater to create a front end loading system

### Night Setback Capabilities

- > Setback of Storage Tank Temperature

### Water heater pump control

- > Pump delay with freeze protection
- > Building Recirculation Pump Control\*
- > Pump exercise

### High-voltage terminal strip

- > 110 Vac input to water heater
- > Dry Contacts for Water Heater Pump Control
- > Dry Contacts for Building Recirc. Pump Control \*

### Low-voltage terminal strip

- with 28 points of connection
- > 0-10 VDC Water Heater Rate Output
- > 0-10 VDC Heat Demand Input
- > Modbus Contacts

USB Connection Point for optional SMART SYSTEM PC software with advanced setup and diagnostics

Modbus Compatibility (Optional)

*\* Exclusive to Lochinvar Smart System*

## LONG-LASTING "LIFE CYCLE" EFFICIENCY

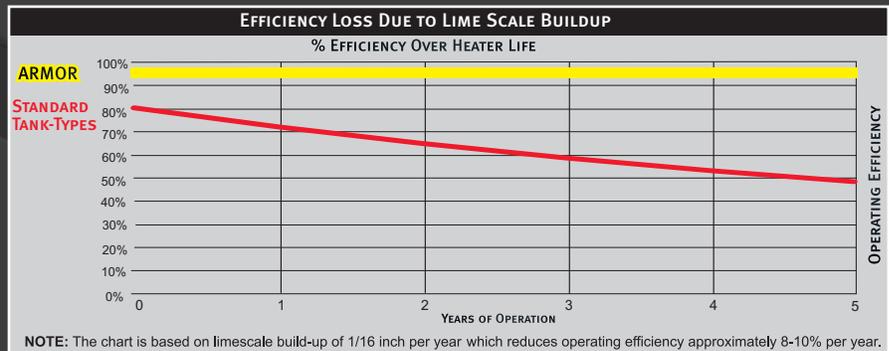
In a standard tank-type water heater, lime scale builds up over time on important heat transfer surfaces, insulating the water from the heat source. This buildup in the bottom of the tank and around the flue tubes can cause tank-type heaters to fail in as little as 2-3 years. This decreases thermal efficiency and increases operating cost. Just 1/4" of lime scale in the tank can increase operating costs as much as 25%!

ARMOR's "Better Idea" concept eliminates the impact of lime scale, maintaining a high-rated thermal efficiency and low operating cost throughout its long life cycle.

The chart below illustrates how ARMOR is a better way, delivering true "life cycle efficiency" compared to standard tank-type units.



Traditional tank-type water heater flue tubes with nearly 6" of lime scale buildup



## 5 FLEXIBLE VENTING OPTIONS - Up to 100 feet of air intake and 100 feet of exhaust vent with PVC, CPVC, Polypropylene or SS.

ARMOR offers 5 venting options and tremendous flexibility for placement of units within the building, because it permits direct-vent air intake and exhaust runs

up to 100 equivalent feet using either PVC, CPVC, Polypropylene or AL29-4C stainless steel vent pipe. Intake and exhaust runs can terminate horizontally through a sidewall or vertically through the roof.

### Direct Vent Sidewall



### Direct Vent Vertical



### Vertical w/Sidewall Air



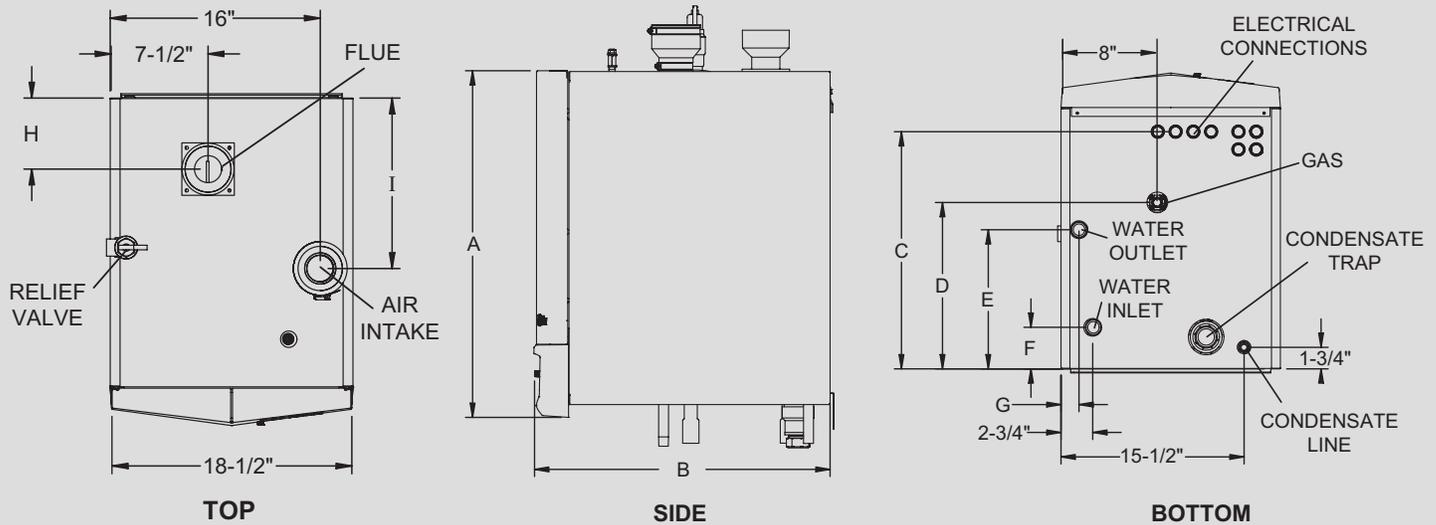
### Concentric Direct Vent Vertical



### Concentric Direct Vent Sidewall



# ARMOR™ WALL MOUNT WATER HEATER DIMENSIONS AND SPECIFICATIONS



Model Number Guide			
WA	N	125	PM
Model	Natural Gas	Btu/hr Input	Pump Mount

Wall Mount Armor Water Heater,  
Natural Gas,  
125,000 Btu/hr Input,  
Pump Mount

ARMOR WATER HEATER			DIMENSIONS AND SPECIFICATIONS													
Model Number	Btu/hr Input	GPH @ 100° Rise	A	B	C	D	E	F	G	H	I	Gas Conn.	Water Conn.	Air Inlet	Vent Size	Shipping Wt. (lbs.)
WAN125PM*	125,000	145	29-1/4"	18"	13"	7"	13"	3-1/2"	2-3/4"	5-1/2"	6"	1/2"	1"	3"	3"	145
WAN200PM*	199,000	232	29-1/4"	25"	20"	14"	11-3/4"	3-1/2"	1-1/2"	5-1/2"	13"	1/2"	1-1/4"	3"	3"	177
WAN201PM†	201,000	232	29-1/4"	25"	20"	14"	11-3/4"	3-1/2"	1-1/2"	5-1/2"	13"	1/2"	1-1/4"	3"	3"	177

\*Canada Only † AHRI Certified Models

## STANDARD FEATURES

- › † AHRI Certified 96% Thermal Efficiency
- › Wall Mounted Models
- › Modulating Burner with 5:1 Turndown
  - Direct-Spark Ignition
  - Low NOx Operation
  - Sealed Combustion
  - Low Gas Pressure Operation
- › Vertical & Horizontal Direct-Vent
  - PVC/CPVC, Polypropylene or SS up to 100 Feet
  - PVC/CPVC, Polypropylene Sidewall Vent Termination
- › Stainless Steel Heat Exchanger
  - All Welded Construction, Gasketless Design
  - 160 psi Working Pressure
  - Natural to L.P. Conversion Kit
  - Stainless Steel Circulating Pump
  - Flow Switch
  - Temperature & Pressure Relief Valve
  - Tank Sensor
  - Adjustable High Limit w/ Manual Reset
  - Automatic Reset High Limit
  - Condensate Trap
  - Zero Clearances to Combustible Material
  - 5 Year Limited Warranty (See Warranty for Details)
  - 1 Year Parts Warranty (See Warranty for Details)

## SMART SYSTEM™ FEATURES

- › SMART SYSTEM™ Digital Operating Control
- › Multi Color Graphic LCD Display
- › Built in Cascading Sequencer for up to 8 Water Heaters
  - Multiple Size Water Heater Cascade
  - Lead Lag
  - Efficiency Optimization
- › Building Management System Integration
  - Modbus Communication (Optional)
  - 0-10 VDC Input to Control Modulation or Set point
  - 0-10 VDC Modulation Rate Output
  - 0-10 VDC Input to Enable/Disable call for heat
  - Access to BMS Settings Through Graphic LCD Display
  - Low Water Flow Safety Control & Indication
  - Inlet & Outlet Temperature Sensors & Readout
  - Flue Temperature Sensor
  - Water Heater Pump Control
  - Pump Delay with Freeze Protection
  - Pump Exercise
  - Night Setback
  - Building Recirculation Loop Pump Control
  - Time Clock
- › Maintenance Reminder
  - Ability to program installer name and number into the product as service contact

- › High Voltage Terminal Strip
  - 120 VAC / 60 Hertz / 1 Phase Power Supply
  - Pump Control Contacts
  - Water Heater Pump Control Contacts
  - Building Recirculation Pump Control Contacts
- › Low Voltage Terminal Strip
  - 24 VAC Louver Relay
  - Louver Proving Switch Contacts
  - Flow Switch Contacts
  - Alarm Contacts
  - Runtime Contacts
  - Tank Sensor Contacts
  - Cascade Contacts
  - 0-10 VDC BMS External Control Contacts
  - 0-10 VDC Boiler Rate Output Contacts

## FIRING CONTROL SYSTEMS

M9 Standard Construction

## OPTIONAL EQUIPMENT

- Audible Alarm
- Condensate Neutralization Kit
- Concentric Vent Kit (3" PVC/CPVC only)
- Modbus or BACnet MSTP Communications
- BMS Gateway to LonWorks or BACnet IP
- SMART SYSTEM PC Software



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