

And SHIELD provides a 100% defense against a water heater's worst enemy...  
**Lime Scale Buildup.**

It's a fact...lime scale quickly turns most water heaters into a money-wasting lemon. When you heat water, tiny particles of dissolved lime and sediments "precipitate" into solid form.

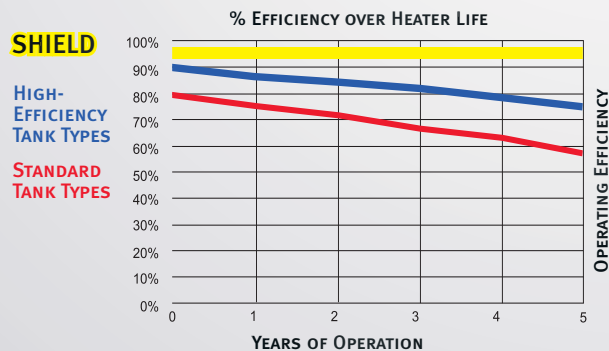
From day one, these solid particles build up in the tank... on the bottom, on flue tubes and other areas where heat transfer to the water takes place. Lime scale forms an insulating barrier between the water and the heat source, decreasing thermal efficiency, and increasing operating costs.



Just 1/4" of lime scale buildup will increase energy usage and raise operating costs as much as 25%

The impact of lime scale starts the day the water heater is installed, and after years of operation can decrease operating efficiency by 40 percent or more, and cost you literally thousands of wasted energy dollars. **But NOT with SHIELD!**

**EFFICIENCY LOSS DUE TO LIME SCALE BUILDUP**



Lochinvar...a leader in technology for heating water.

Lochinvar Corporation has focused on providing its customers with residential and commercial water heaters, heating boilers and pool heaters that deliver year after year of superior performance AND service, with outstanding efficiency that saves money on energy costs.

Lochinvar, a family-owned Tennessee-based company, has been "thinking green" for over 90 years!



300 Maddox Simpson Parkway, Lebanon, TN 37090  
 615-889-8900 | fax: 615-547-1000 | www.Lochinvar.com

Are you looking for the *perfect* Commercial Water Heater?

**You just found it.**





## Sustained thermal efficiency brings years to your hot water systems.

Lochinvar innovation makes SHIELD different and better than other commercial water heaters, simply because there are no flue tubes or other heat exchanger components inside the tank. The advanced stainless steel SHIELD heat exchanger is completely separate from the glass-lined tank.

This unique design eliminates the energy-robbing effects of lime scale buildup on the heat transfer surfaces. SHIELD is 96% efficient, and designed to stay that way throughout its life cycle!

The SHIELD Smart Control™ System features temperature setback and a time clock, so you can set schedules to reduce energy consumption when hot water is not needed.

And unlike water heaters with noisy combustion systems, SHIELD is also whisper quiet, so it will never disturb your guests or employees.

## Compare SHIELD efficiency to competitive water heaters over 5 years...

The estimated comparisons below show the effects of lime scale buildup on thermal efficiency and yearly operating cost for the 96% efficient SHIELD versus a standard 80% efficient tank-type water heater. **Bottom line, because of its 96% efficiency and immunity to lime scale, SHIELD will pay back the initial cost difference in energy savings alone in just 1.43 years!**

## 96% Efficiency – For Life.

With 96% thermal efficiency, the Lochinvar SHIELD™ is one of the most energy-saving “green” commercial water heaters on the market. But what does that mean to you in terms of the cost of running your business. It’s easy to understand if you compare dollars and cents!

## Standard Efficiency: 80%

From every dollar spent on energy...

**80¢ actually heats water.**

20¢ is *lost* through exhaust gases.



## High-Efficiency SHIELD: 96%

From every dollar spent on energy...

**96¢ actually heats water.**

Only 4¢ on the dollar is lost through exhaust gases.



**SHIELD saves you 16¢ on every heating dollar you spend!**

| SHIELD™ Payback Calculator | SHIELD™ WATER HEATER |                | STANDARD 80% EFFICIENT UNIT |                | OPERATING COST DIFFERENCE |            |
|----------------------------|----------------------|----------------|-----------------------------|----------------|---------------------------|------------|
|                            | EFFICIENCY           | OPERATING COST | EFFICIENCY                  | OPERATING COST | YEARLY                    | CUMULATIVE |
| Year 1                     | 96%                  | \$7,930        | 75%                         | \$10,123       | \$2,193                   | \$2,193    |
| Year 2                     | 96%                  | \$7,930        | 71%                         | \$10,769       | \$2,839                   | \$5,032    |
| Year 3                     | 96%                  | \$7,930        | 66%                         | \$11,456       | \$3,526                   | \$8,558    |
| Year 4                     | 96%                  | \$7,930        | 62%                         | \$12,188       | \$4,258                   | \$12,816   |
| Year 5                     | 96%                  | \$7,930        | 58%                         | \$13,125       | \$5,195                   | \$18,011   |

Comparison based on 200,000 Btu/hr units delivering 2,000 gallons of hot water per day, 365 days/year, at an 80°F temperature rise, with a natural gas rate of \$1.58/therm.

# CONDENSING COMMERCIAL GAS WATER HEATERS



5 MODELS FROM  
150,000 TO 500,000 BTU/HR

NO EFFICIENCY LOSS FROM LIME SCALE

VIRTUALLY SILENT OPERATION

ADVANCED SMART CONTROL™

VENTING UP TO 100 FEET



**96% THERMAL EFFICIENCY**



[Lochinvar.com](http://Lochinvar.com)



# SHIELD™

## COMMERCIAL WATER HEATER

### 96% EFFICIENCY – FOR LIFE.

The SHIELD™ commercial water heater delivers best-in-class innovation from Lochinvar. It operates at 96% thermal efficiency, with inputs up to 500,000 Btu/hr, and provides a 100% effective defense against a water heater’s worst enemy—lime scale buildup inside the tank.

SHIELD uses the industry’s most advanced stainless steel heat transfer system. Sealed combustion technology delivers a quiet and environmentally friendly supply of heat to the system. Plus, with drawdown capacity as much as 15% higher than typical tank-type heaters, you get more usable hot water than any other competing models.

The result is quiet, long-lasting green performance...**life cycle efficiency** that keeps saving money, year after year.

### LONG-LASTING LIFE CYCLE EFFICIENCY

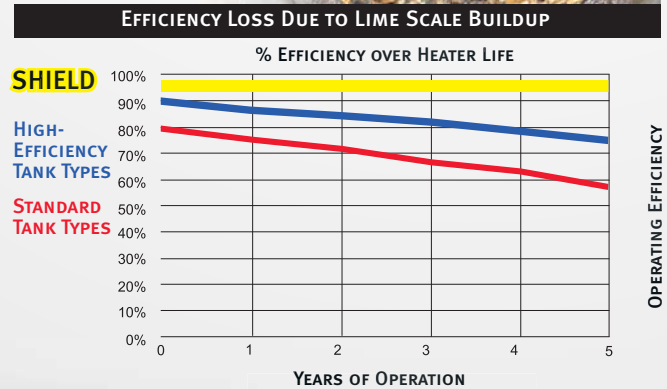
High-efficiency tank-type water heaters have one thing that SHIELD does not, energy-robbing lime scale buildup.

This insulates the water from the heat source, decreasing thermal efficiency, which increases operating costs. Additionally, the rate of scaling increases with temperature and usage. Just a 1/4" of lime scale buildup will cause increased fuel consumption and raise operating costs as much as 25%. Lime scale buildup also requires periodic

acid washes in the tank that will simply result in a shorter useful life of the equipment.

Because SHIELD has no flue tubes inside the tank, the impact of lime scale is eliminated, ensuring high efficiency and low operating costs throughout its life cycle. The chart below illustrates SHIELD’s consistent “life cycle efficiency” compared to both standard and high-efficiency tank-type units which utilize flue tubes for heat transfer.

“In-tank” flue tubes and heat exchangers suffer from lime scale buildup beginning from the first hours of operation.

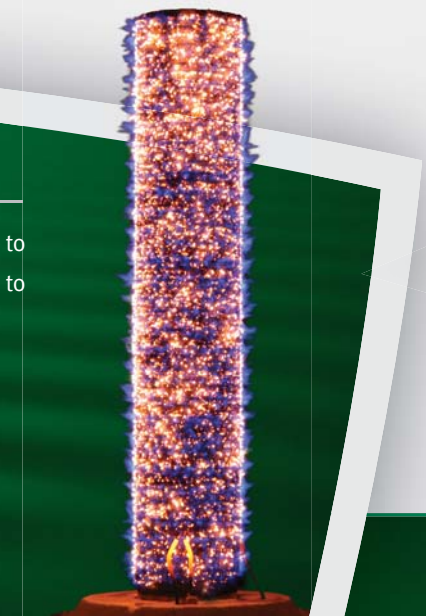


### FULLY MODULATING BURNER WITH 5:1 TURNDOWN

SHIELD can fire as low as 20% of maximum input when water heating demand is lowest, and increase to 100% for peak-demand periods. This results in better overall efficiency and less cycling compared to “on-off” tank-type units that can only fire at 100%.

### ‘NEG/REG’ SEALED COMBUSTION TECHNOLOGY

SHIELD utilizes an advanced combustion system which provides NOx ratings compatible with the most stringent air quality standards. Additionally, the NEG/REG sealed combustion technology allows the unit to operate with inlet gas pressure as low as 4 inches water column.



# ADVANCED ELECTRONIC CONTROL

# SMART CONTROL

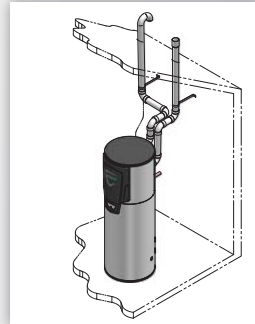
SHIELD features the ultimate water heater control which makes system setup, service and operation a breeze. A 2-line, 16-character backlit LCD display gives readouts of setup, system status and diagnostic information in words, not codes. SMART CONTROL™ also includes:

- › Night Setback
- › Time Clock
- › Alarm Contacts
- › Runtime Contacts
- › Service Mode
- › Last 10 Lock-Outs

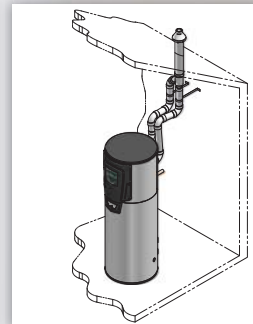


## 7 VENTING OPTIONS!

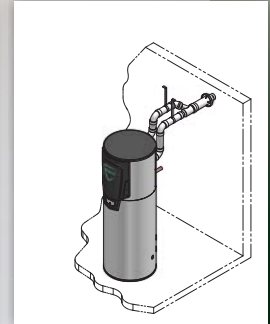
Direct Vent Vertical



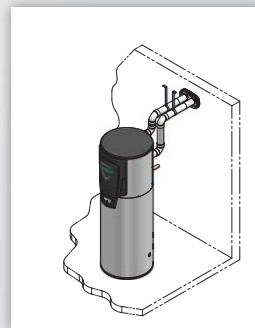
Direct Vent Vertical\*



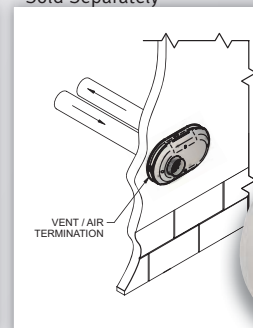
Direct Vent Sidewall\*



Sidewall



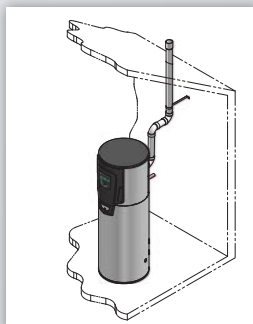
\*Optional Concentric Vent Kit Sold Separately



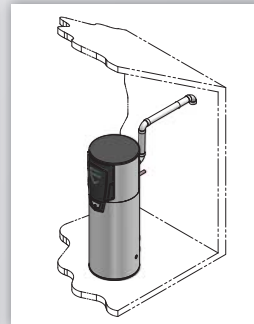
**SIDEWALL VENT TERMINATION FACTORY SUPPLIED AND SHIPPED STANDARD WITH EVERY MODEL**



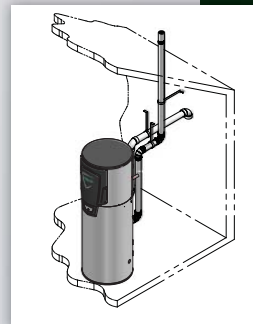
Room Air Vertical



Room Air Sidewall



Vertical W/ Sidewall Air



## MULTI-UNIT INSTALLATIONS

The outstanding life cycle efficiency and performance of SHIELD can serve the highest demand applications through manifolded installation of multiple units. For example, five SNA500 units will provide total storage of 625 gallons with a total maximum input of 2.5 million Btu/hr.

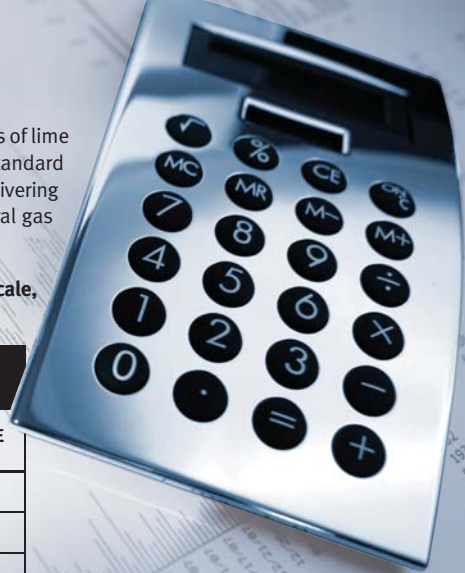


# SHIELD™ PAYBACK CALCULATOR

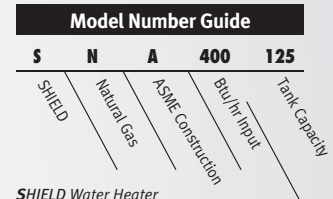
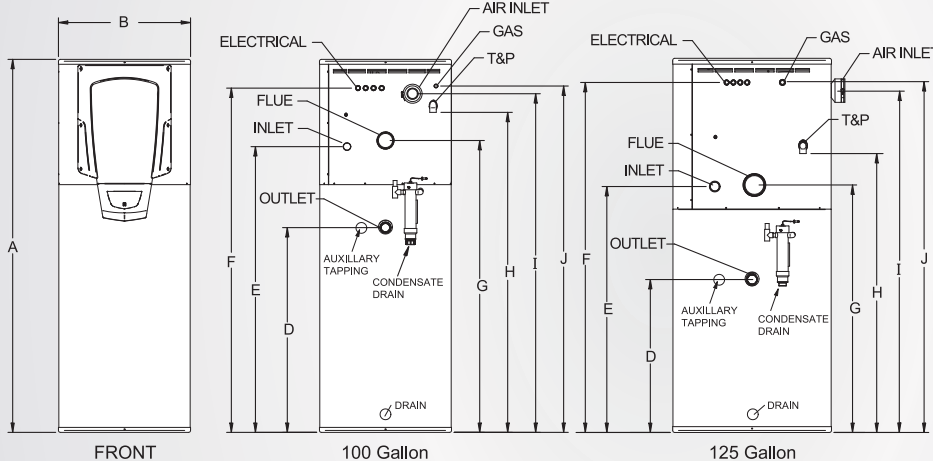
**SHIELD™ innovation makes the difference!** The following estimated comparisons show the effects of lime scale buildup on thermal efficiency and yearly operating cost for the 96% efficient SHIELD and a standard 80% efficient tank-type commercial water heater. Comparison is based on 200,000 Btu/hr units delivering 2,000 gallons of hot water per day, 365 days per year, at an 80°F temperature rise, with a natural gas rate of \$1.58 per therm.

**Bottom line, these numbers show that because of its 96% efficiency and immunity to lime scale, SHIELD will pay back the initial cost difference in energy savings alone in just 1.43 years!**

|               | SHIELD™ WATER HEATER |                | STANDARD 80% EFFICIENT UNIT |                | OPERATING COST DIFFERENCE |                 |
|---------------|----------------------|----------------|-----------------------------|----------------|---------------------------|-----------------|
|               | EFFICIENCY           | OPERATING COST | EFFICIENCY                  | OPERATING COST | YEARLY                    | CUMULATIVE      |
| <b>Year 1</b> | 96%                  | \$7,930        | 75%                         | \$10,123       | <b>\$2,193</b>            | <b>\$2,193</b>  |
| <b>Year 2</b> | 96%                  | \$7,930        | 71%                         | \$10,769       | <b>\$2,839</b>            | <b>\$5,032</b>  |
| <b>Year 3</b> | 96%                  | \$7,930        | 66%                         | \$11,456       | <b>\$3,527</b>            | <b>\$8,559</b>  |
| <b>Year 4</b> | 96%                  | \$7,930        | 62%                         | \$12,188       | <b>\$4,258</b>            | <b>\$12,817</b> |
| <b>Year 5</b> | 96%                  | \$7,930        | 58%                         | \$13,125       | <b>\$5,195</b>            | <b>\$18,012</b> |



## SHIELD™ WATER HEATER DIMENSIONS AND SPECIFICATIONS



SHIELD Water Heater  
Natural Gas  
ASME  
400,000 Btu/hr Input  
125 Gallon Tank

| Model Number | Btu/hr Input | Capacity (Gal) | GPH @ 100° Rise | First Hour | A   | B   | D       | E       | F       | G       | H       | I       | J       | Gas Conn. | Water Conn. | Air Inlet | Vent Size | Shipping Wt. (lbs.) |
|--------------|--------------|----------------|-----------------|------------|-----|-----|---------|---------|---------|---------|---------|---------|---------|-----------|-------------|-----------|-----------|---------------------|
| SNR150-100   | 150,000      | 93             | 175             | 249        | 80" | 28" | 44"     | 61-1/4" | 73-3/4" | 62-1/2" | 68-3/4" | 72-3/4" | 74-1/4" | 1/2"      | 1-1/2"      | 3"        | 3"        | 700                 |
| SNR200-100   | 199,999      | 93             | 233             | 307        | 80" | 28" | 44"     | 61-1/4" | 73-3/4" | 62-1/2" | 68-3/4" | 72-3/4" | 74-1/4" | 1/2"      | 1-1/2"      | 3"        | 3"        | 725                 |
| SNA285-125   | 285,000      | 125            | 332             | 432        | 80" | 34" | 32-3/4" | 52-3/4" | 75"     | 53"     | 59-3/4" | 73-1/4" | 70-1/2" | 3/4"      | 2"          | 4"        | 4"        | 800                 |
| SNA400-125   | 399,999      | 125            | 465             | 565        | 80" | 34" | 32-3/4" | 52-3/4" | 75"     | 53"     | 59-3/4" | 73-1/4" | 73-1/4" | 1"        | 2"          | 4"        | 4"        | 850                 |
| SNA500-125   | 500,000      | 125            | 582             | 682        | 80" | 34" | 32-3/4" | 52-3/4" | 75"     | 53"     | 59-3/4" | 72"     | 75"     | 1"        | 2"          | 4"        | 4"        | 875                 |

Change "N" to "L" for LP Gas. All information is subject to change. **Electrical Requirements:** 120VAC/60Hz/1 phase

### STANDARD FEATURES

- › 96% Thermal Efficiency
- › Modulating Burner with 5:1 Turndown
- › Operates at Temperatures up to 180°F for Sanitizing Applications
- › Stainless Steel Heat Exchanger
- › Glass-Lined Steel Tank
- › 150 PSI Working Pressure
- › ASME Construction (SNA285–500)
- › Zero Clearances to Combustible Material
- › PVC, CPVC, Polypropylene and Stainless Steel Venting up to 100 Equivalent Feet
- › Direct-Vent Sealed Combustion
- › Brass Drain Valve
- › Rooftop and Sidewall Venting
- › Sidewall Vent Termination
- › Room Air Venting up to 100 Equiv. Feet
- › Advanced Electronic Control, with:
  - › 2-Line, 16-Character LCD Display
  - › Time Clock
  - › Night Setback
  - › Alarm Contacts
  - › Runtime Contacts
  - › Manual Reset High Limit
  - › 3 Water Temperature Sensors
  - › Flue Temperature Sensor
- › Low-NOx Operation
- › Low Gas Pressure Operation
- › Direct-Spark Ignition
- › Certified for Installation on Combustible Floors
- › ASME Temperature and Pressure Relief Valve
- › 8-Foot Power Cord
- › 3-Year Limited Warranty
- › 1-Year Parts Warranty

### OPTIONAL EQUIPMENT

- › Alarm Bell
- › Concentric Vent Kit
- › Condensate Neutralization Kit
- › Low Water Cutoff

