

# 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

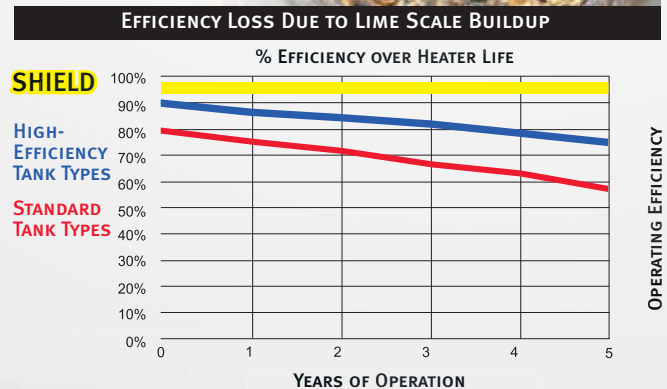
High-efficiency tank-type water heaters have one thing that SHIELD does not, energy-robbing lime scale buildup.

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.

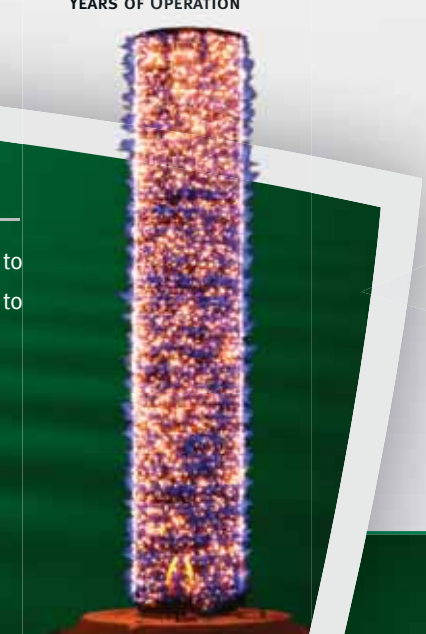


### FULLY MODULATING BURNER WITH 5:1 TURNDOWN

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 advance 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™

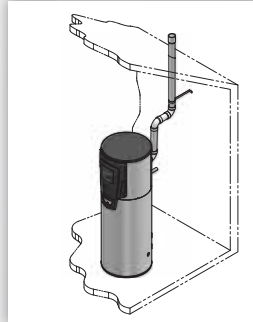
SHIELD features the ultimate water heater control which makes system setup, service and operation a breeze. A 2-line, 16-character backlit LCD display gives readouts of setup, system status and diagnostic information in words, not codes. SMART CONTROL™ also includes:

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

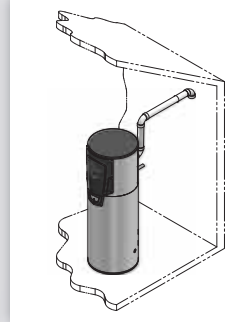


## 7 VENTING OPTIONS!

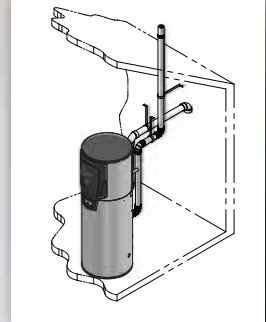
Room Air Vertical



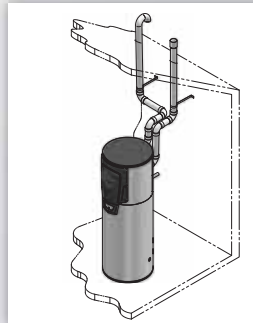
Room Air Sidewall



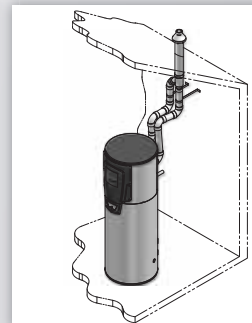
Vertical W/ Sidewall Air



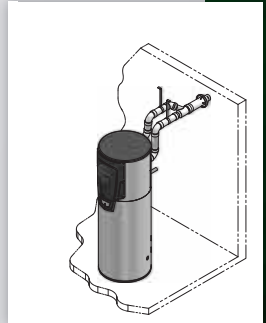
Direct Vent Vertical



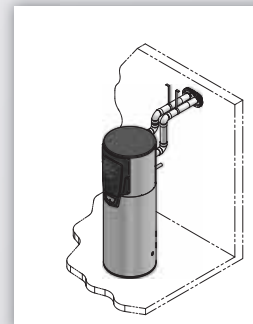
Direct Vent Vertical\*



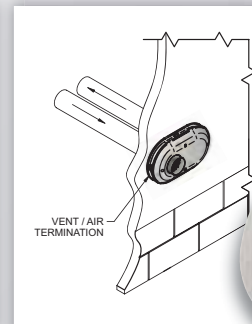
Direct Vent Sidewall\*



Sidewall



\*Optional Concentric Vent Kit Sold Separately



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



## 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

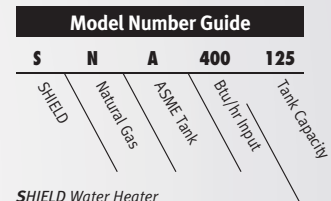
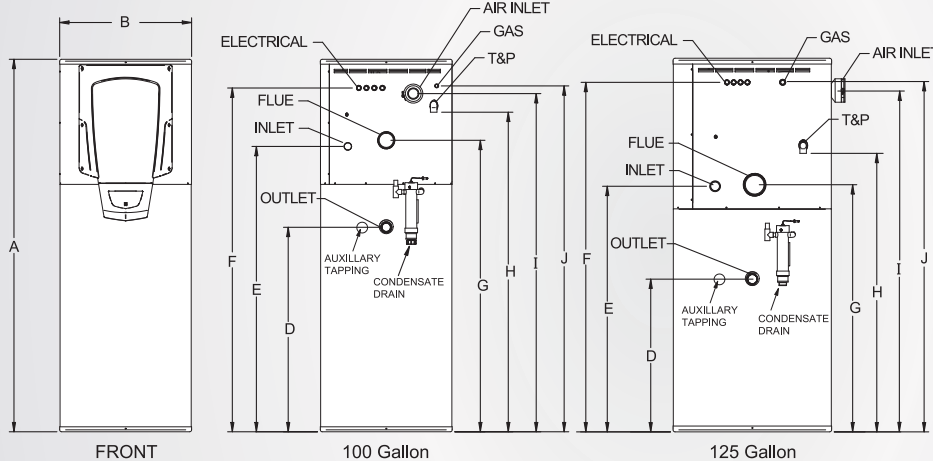
**SHIELD™ innovation makes the difference!** The following estimated comparisons show the effects of lime scale buildup on thermal efficiency and yearly operating cost for the 96% efficient SHIELD and a standard 80% efficient tank-type commercial water heater. Comparison is based on 200,000 Btu/hr units 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"	620
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"	640
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"	835
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"	855
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"	895

Change "N" to "L" for LP Gas. All information is subject to change.

### 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 Tank Construction (SNA285–500)
- › Zero Clearances to Combustible Material
- › PVC, CPVC and Stainless Steel Venting up to 100 Equivalent Feet
- › Direct-Vent Sealed Combustion
- › Brass Drain Valve
- › Rooftop and Sidewall Venting
- › Sidewall Vent Terminal
- › 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 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

