

# **Solar Hot Water with Internal Electric Backup** **One Tank Solution**

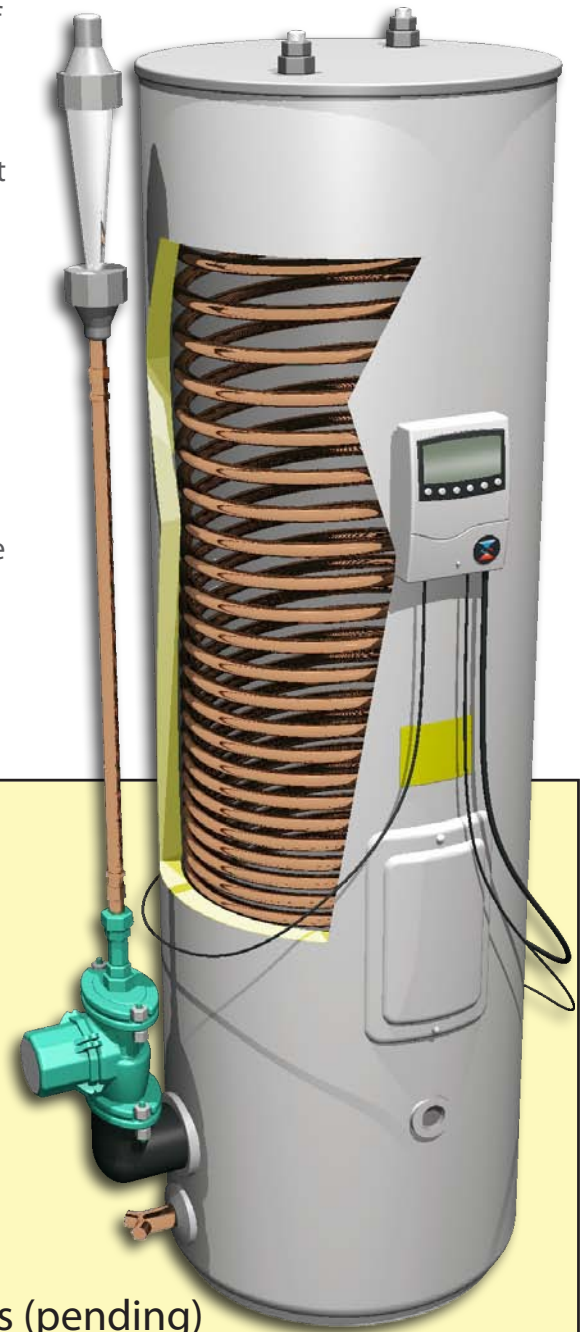
Solar Heat Exchange Manufacturing (SHEM) offers a full line of solar thermal products. Our patented drainback systems can provide 70-80% of your annual hot water using clean, renewable solar energy. The SHEM 80E is equipped with an internal electric element that provides hot water when the sun doesn't shine. The SHEM 80E, a one tank solution providing reliable hot water 365 days a year.

## **How It Works**

The SHEM 32E controller features a timer with a battery backup that restricts the electric element's operation to certain times of the day given defined temperature ranges. During prolonged periods of no sun, the fully programmable controller is set to produce 52-55 gallons of 110 degree hot water in the morning and another 48-52 gallons of 110 degree hot water in the early evening. The controller recognizes when the sun provides energy, and prohibits the element from operating, preserving solar fraction.

## **✓ SHEM 80E Features**

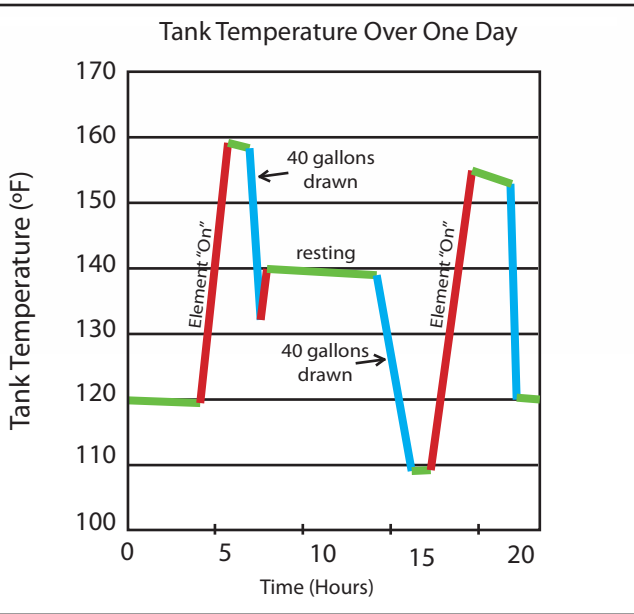
- 10-year limited tank warranty, 25+ expected life
- Freeze protected, even in harsh climates
- Factory assembled, wired, & programmed
- Industry highest-efficiency heat exchanger
- 3900 watt electrical element backup
- Sizing & installation support
- Easily adapted for radiant heat
- 22½" diameter X 72" height
- SRCC OG-300 rated with Solene Aurora collectors (pending)
- Dealer inquiries welcome



**Solar Heat Exchange Manufacturing**  
*standard & custom engineered solar hot water systems*

**www.simpledrainback.com ♦ (888) SUN-4H2O or (888) 786-4426**

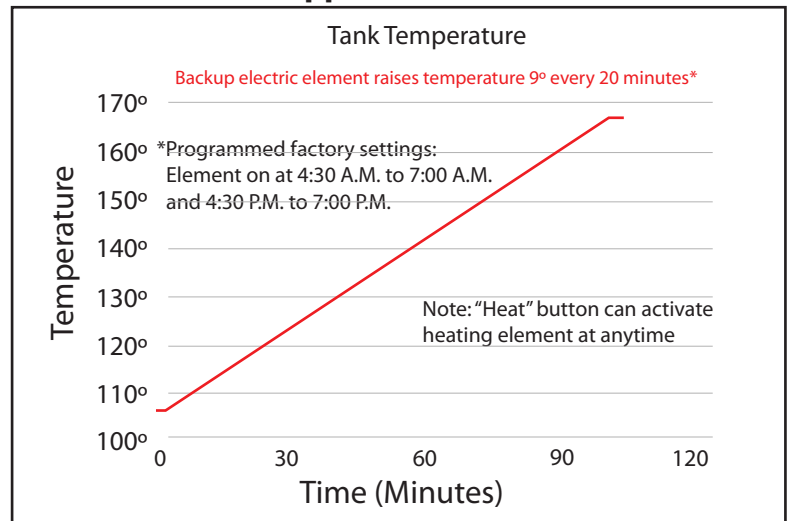
**The SHEM 80E** is an 80 gallon drainback with backup internal electric element. The SHEM 32E controller limits the activation of the element to maximize solar fraction and cost savings. Operating exclusively on the element, the SHEM 80E produces 120 gallons of hot water a day or more. The controller features a "heat" button that activates the element at other than preset times. Whether you use a single 4' X 10' or two 4' X 8 collectors, the electric element provides sufficient hot water backup.



**Element produces 120 gallons per day**

The graph to the left shows the 80E operating only with the electric element. In this graph 40 gallons of 113°F water was drawn at 7:00 A.M., 3:00 P.M. and 11:00 P.M. for a total of 120 gallons. The system was operating at factory settings. The electric element came on at 4:00 A.M. and 4:00 P.M. This graph demonstrates the system's ability to produce hot water without sunlight. With a 25+ years expected life, the SHEM 80E is an appropriate replacement water heater or perfect for new construction.

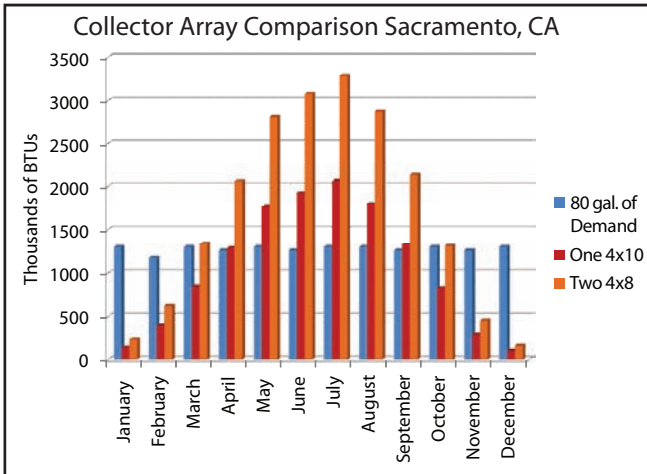
**Heat button supplies additional hot water**



Expecting company? Pressing the "Heat" button activates the 3900 watt element which recovers 1° every 2 minutes, as shown in the graph.

Visit [www.SimpleDrainback.com](http://www.SimpleDrainback.com) to view the web monitored BTU production of a SHEM 80E. This system is connected to a single 4' X 10' Solene Aurora collector in Perry, Kansas.

**Solar Heat Production Example**



The graph above illustrates the BTUs necessary to produce 80 gallons of hot water in Sacramento, CA (blue) vs. the BTUs produced by two different collector configurations; one 4' X 10' collector (red), and two 4' X 8' collectors (orange). This graph illustrates the need for backup hot water provided by the SHEM 80E. The SHEM 80E integrates solar and electric energy into one tank, eliminating the need for a backup system. A complete One Tank Solution.



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