

## Product Information Sheet

### Sustainable Energy Production Trainer



Our STEM learning packages have been designed to provide practical real world problem solving tasks and activities within the classroom or lab environment.

These activities will provide an engaging approach that helps instructors show contextualized linkages between Science, Technology, Engineering, and Mathematics.

Students will have access to hands on learning opportunities within our optional cloud-based STEM curriculum software packages. This easy to use software also contains theory presentations, virtual investigations, and support materials to underpin the practical tasks.

The Sustainable Energy Production Hardware Pack offers a set of demonstrator based resources for practical investigation of alternative energy production techniques.

#### The Pack Consists of the Following Demonstrators:

- Solar Furnace – A parabolic dish assembly designed to concentrate the sun's energy on a focal point to create heat. The standard configuration includes a receptacle for monitoring water temperature increase due to the heat created as a demonstration activity.
- Thermo-acoustic Engine – this device demonstrates how a heat source can generate a standing wave in a gas. The oscillation can be used in this case to drive a piston and flywheel, which is in turn connected to a small generator. The power can be monitored via the 2mm connection points. This unit can also be located in the solar furnace assembly which can be used to replace the burner as a heat source to demonstrate a fully sustainable energy source.

- Stirling Engine – this bench top model demonstrates how cyclic compression of a gas can be used to convert heat energy into mechanical energy. The unit includes a metal bowl which is filled with hot water to provide the heat source.

#### Typical Tasks Include:

- Heating water using a solar furnace
- Recording energy output from a thermo-acoustic engine
- Identify the operation of a Stirling Engine

#### Items Included:

- Solar Furnace
- Thermo-acoustic Engine
- Stirling Engine
- Spirit Burner
- Storage Box
- Inventory List
- Water Bowl
- Stopwatch
- Thermometer
- PPE Equipment

#### Other Items Required:

- LJ Create Engineering or Technology Content
- Computer
- Hot Water Supply
- Denatured Alcohol (Methylated Spirit)

#### General Information:

Packed Volume: Approx. 0.159 m<sup>3</sup>  
Packed Weight: Approx. 20 kg

**Order Code: 100-01**

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For more information visit [www.ljcreate.com](http://www.ljcreate.com)

**FOR MORE INFORMATION CONTACT US!**



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