

# Solar/ Wind Renewable Energy Training Systems

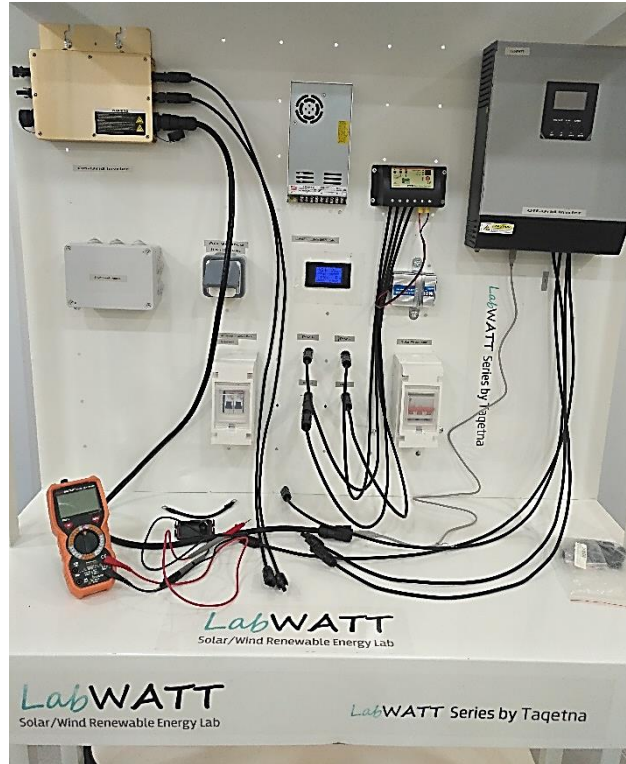
LabWATT Specification | Datasheet Sheet



## Description

The Solar Energy Training System forms a complete professional-energy training solution. This training system demonstrates how solar cells are being used in the consumer and industrial markets to supplement the world's power needs. It constitutes a modular program that covers the history, *fundamentals*, *installation*, *operation*, *maintenance*, and servicing of different types of solar energy systems such as Grid tie solar PV systems, off-grid solar PV system and hybrid Grid tie solar PV systems with storage.

The program explores sunlight as a main energy source that can be used to help reduce dependence on non-renewable fuel sources. It helps students gain a complete perspective of the field by studying the economics, efficiency, and low-environmental impact of producing energy from non-polluting, renewable sources.



LabWATT is made from real-world components that are used in industry. These are the same components that students see in their homes, schools, and workplaces. All training systems are engineered for both ease of use and durability, and are manufactured to the highest quality standards.

## Features & Benefits

- Includes everything required to operate as a **stand-alone** and **Grid connected**, hands-on training system
- Made with high-quality components currently used in residential, commercial, and industrial applications
- Easy and safe to use, durable, and manufactured to the highest quality standards
- Perforated work surfaces to allow custom configurations
- Comprehensive curriculum consisting of fully illustrated student manuals and instructor guides
- Complied with CSA/UL certifications
- Identified wires allow students to save time
- Networked data acquisition available as an option

## Topic Coverage

- Energy Fundamentals
- Trainer Familiarization and Safety
- Solar Module
- Solar System Components
- Off-Grid System
- On-Grid System
- How to Scale-Up
- Lockout/Tagout Procedure



## Components Description

Solar Power Training System Consisting of:

<b>1.00</b>	<b>Solar Energy Training System</b> (LabWATT Ref. 46120-F5_220V, 50Hz)
<b>1.01</b>	Solar/Wind Energy Mobile Workstation
<b>1.02</b>	Battery Bank
<b>1.03</b>	Battery Bank Junction Box
<b>1.04</b>	Electrical AC Outlet
<b>1.05</b>	Ammeter
<b>1.06</b>	DC Power Distribution Panel
<b>1.07</b>	Horizontal-Mount Disconnect Switch
<b>1.08</b>	Vertical-Mount Disconnect Switch
<b>1.09</b>	Diversion Load Controller
<b>1.10</b>	Dump Load
<b>1.11</b>	DC Circuit Breaker
<b>1.12</b>	kWh Meters with AC Circuit Breaker Box
<b>1.13</b>	AC/DC Wall Switch
<b>1.14</b>	Lockout/Tagout Module
<b>1.15</b>	Power Bus Bar
<b>1.16</b>	Power Inverter with Remote Control
<b>1.17</b>	Solar Charge Controller
<b>1.18</b>	DC Lamp Socket
<b>1.19</b>	Photovoltaic (PV) Module Assembly
<b>1.20</b>	Solar Array Junction Box
<b>1.21</b>	Sun Simulator Assembly

<b>1.22</b>	Accessories Package
<b>1.23</b>	Connection Cables Kit
<b>1.24</b>	Photovoltaic Systems Textbook (author, Eng Mahmoud Shattel) (Student Manual)
<b>1.25</b>	Energy Fundamentals (Job Sheets - Student)
<b>1.26</b>	Energy Fundamentals (Job Sheets - Instructor)
<b>1.27</b>	Trainer Familiarization and Safety (Job Sheets - Student)
<b>1.28</b>	Trainer Familiarization and Safety (Job Sheets - Instructor)
<b>1.29</b>	Solar Module (Job Sheets - Student)
<b>1.30</b>	Solar Module (Job Sheets - Instructor)
<b>1.31</b>	Solar/Wind Systems (Job Sheets - Student)
<b>1.32</b>	Solar/Wind Systems (Job Sheets - Instructor)
<b>1.33</b>	Going Green (Job Sheets - Student)
<b>1.34</b>	Going Green (Job Sheets - Instructor)
<b>1.35</b>	Power Usage Monitor
<b>1.36</b>	Multi-meter