



DEPARTMENT OF ELECTRICAL ENGINEERING



High Performance Lab

We Focus on Efficiency, Clarity, and Future-Ready Solutions

- Transformer systems
- Solar energy
- Wind energy
- Power protection

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ELECTRICAL POWER UTILIZATION TRAINER



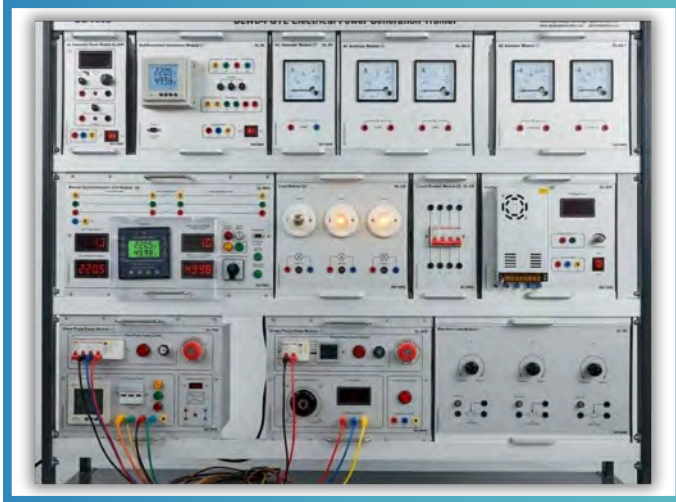
- **DLWD-LDR01 Electrical Power Utilization Trainer**
- **Primary Function:** Analysis of power distribution and smart consumption management.
- **Specifications:**
 - Integrated SCADA Interface for real-time data acquisition and system monitoring via PC.
 - Includes industrial-grade digital metering .
 - Features resistive and inductive load modules to simulate urban and industrial power grids.
- **Application:** Training in power quality analysis, energy efficiency, and smart metering systems.

INDOOR SOLAR TRAINER



- **DLXNY-ISET Indoor Solar Energy Training System**
- **Primary Function:** Analysis of solar energy conversion and practical training in indoor power generation.
- **Specifications:** Includes an integrated 1000W Sun Simulator consisting of high-intensity lights to simulate solar radiation for indoor operation. The system is 500W supported, featuring a solar panel array that allows for manual rotation and tilt angle adjustment. It is equipped with a modular control interface containing digital metering, an MPPT charge controller, and a Pure Sine Wave inverter for comprehensive system monitoring.
- **Application:** Training in solar panel orientation optimization, energy storage management, and DC-to-AC power conversion efficiency.

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DLWD-POTE Electrical Power Generation Trainer

Primary Function: Complete simulation of a power plant generation cycle.

Specifications:

Excitation System: Precision control for generator output voltage regulation.

Prime Mover Control: Variable speed control to simulate turbine operations.

Synchronization Module: Phase angle, frequency (Hz), and voltage matching indicators.

Integrated Load Bank: Built-in bulb load bank to demonstrate the impact of demand on generation stability.

DLXNY-WETS Wind Energy Training System

Primary Function: Simulation of wind power generation and grid synchronization.

Specifications:

Wind Source Simulator: High-power axial fan with adjustable wind speeds.

Generation Unit: 3-Blade wind turbine coupled with a permanent magnet generator.

Grid-Tie Inverter: Advanced control cabinet for DC-to-AC conversion and synchronization with the main utility grid.

Monitoring: Digital display for battery charging status and turbine RPM.

DLWD-RPH Electrical Power Protection Trainer

Primary Function: Industrial relay logic and power system safety protocols.

Specifications:

Protection Relays: Features Over-current, Under-voltage, and Differential protection modules.

Fault Simulation: Safe environment to simulate short circuits and system failures.

Synchronization: Manual and automatic synchronization units for parallel generator operation.

Safety: Standardized safety terminals for high-voltage protection training.