

Making Technology Visible

GREEN TECH

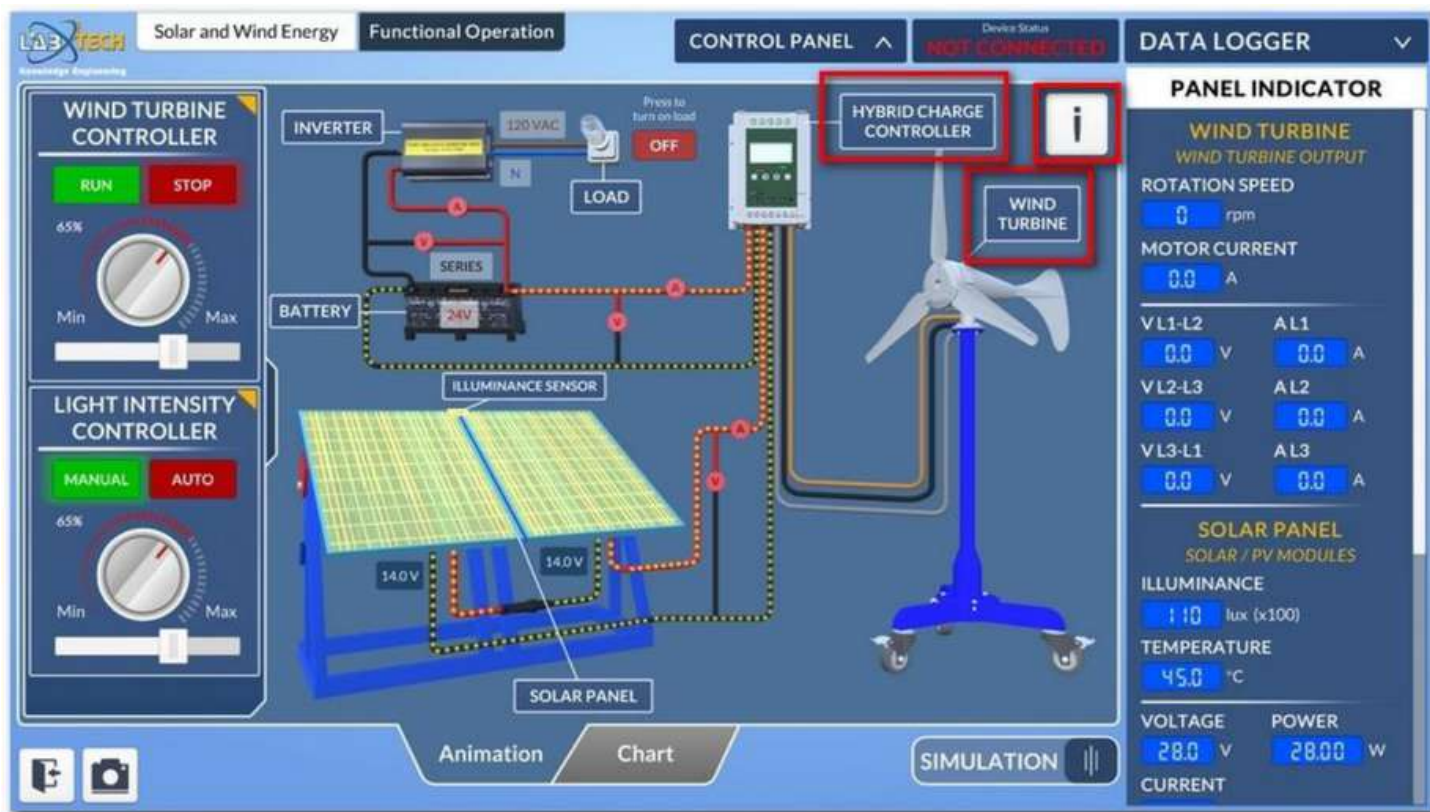
RENEWABLE TECHNOLOGY



Knowledge Engineering
ISO 9001



LLC-SWD-1x complete with Control & Data Acquisition software



LABTECH – the International Technical Educational Company

LABTECH was formed over 30 years ago and is one of the largest Technical and Vocational educational systems designers and manufacturers in the world. Labtech's prime focus is to provide comprehensive 21st century skills infused technical and engineering learning solutions for Vocational Technical Schools, Polytechnics, Universities and Training Institutions. The development of LABTECH has been guided by professional educators from North America, Europe and Asia that have many years of experience in the field of international education.

Our Systems Approach design philosophy of "Making Technology Visible" is based on modular learning platforms and exposing key functional systems so as to clearly demonstrate the underlying technologies. We allow students to get close to technology by adopting a "hands-on" approach to training that combines theory as well as practical experiments. The result of this is that students have a clearer understanding of how technology works and its applications to industry and the work place. Many of our trainers have Fault Insertion systems that simulate common real-world faults with troubleshooting solutions facilitating real hands-on skills. Our Modular educational approach enables us to create systematic integrated solutions for varying syllabus levels, ranging from occupational skills standards and upwards to university degrees in engineering.

LABTECH has developed over 1.000 major training products which form a systematic educational program and we have exported these to over 90 countries worldwide. The technical training systems that LABTECH manufactures are made to International standards of quality and we are ISO 9001 certified in eight areas including educational research and development. LABTECH has a comprehensive R&D department and a sophisticated range of manufacturing equipment. LABTECH can assist training institution or projects by offering a complete service for equipping technology workshops or laboratories in our key technology areas including provision of training systems, educational aids, models, support tools and testing equipment.

Our training manuals are comprehensive teaching and learning guides which are student-centric and oriented for self-studies. The manuals include information on applied theory; related engineering information; set-up & operation; skills focused experiments; schematics & diagrams; along with troubleshooting solutions. We have active cooperative programs with leading educational and industrial institutions within our region who work together with us in our product research and development. Our trainers incorporate the latest technology so that education may keep pace with the changing economy.

Our manufacturing base is strategically located in a Free Trade Zone location on Batam Island nearby Singapore which allows us to easily ship all over the world. We also have marketing and distribution offices in Singapore, Malaysia, Jakarta, Australia, UK, and Jordan in order to facilitate communications, service support and financial transactions with our customer's world wide. We also have representatives in dozens of countries who act as our local partners on project implementation. Our unique international corporate structure allows us to globally market high quality products and services at reasonable costs.

Industry & Technology Partnerships and Memberships

Labtech has a network of industry and technology partners that enables us to widen our product offerings and better align our objectives with the end result of producing employable skills. Partnering with some of the most innovative technology companies in the world, including Microsoft and Intel. We are also members of ISTE (International Society of Technology in Education), CompTIA (Computing Technology Industry Association), IVETA (International Vocational Education & Training Association), Worlddidac. We also produce training systems for Toyota and for Schneider Electric This global network makes us uniquely aligned to meet the needs of educational institutions around the globe.



Labtech Renewable Technology

GreenTech-Renewable Technology is increasingly becoming a more important aspect of many technical studies. These technologies are helping us to conserve and preserve energy and to be more efficient in our daily lives both at work and at home. Labtech supports the concept of including GreenTech systems and technology into traditional subjects to update the students' skills and work practices. We have been making various GreenTech training systems that include Wind, Solar Thermal, Solar Photovoltaic, Green HVAC, Micro Hydro, Regenerative Systems, Hybrid and Electric Vehicles, Fuel Cells, Bio Fuels, Energy Management and Integration, Energy Conservation and Storage. We are able to embed these programs into our Automotive, Electrical, Electronics, HVAC and Building Management training programs or offer it as complete labs that include a full range of Green Technology for study.

Labtech produces a comprehensive range of Renewable Technology systems that feature dozens of trainers and modules which can be arranged in many formats to meet any curriculum either for vocational school, Polytechnics, Technical Institutes or Universities. This catalog highlights some of our most popular GreenTech training systems which are organized into the categories below.

World Class Technical Training Systems designed for education with quality built-in

Labtech is one of the few companies in the world that has achieved ISO certification for designing, developing and producing educational training systems. This means that our training systems are designed for teaching and learning and feature the latest technology. They match a variety of International settings and always link theoretical background with practical exercises so as to achieve developing employable skills. They also can be configured or customized for specific customer requirements. The functions of the trainers are designed with the teacher and the student in mind for achieving the desired educational objectives. Our training manuals guide the student through the theory and applied experiments which are formulated to match the learning objectives. We use both project based learning and problem based learning techniques in our experiments in order to deepen the knowledge acquired.

- Comprehensive manuals feature graphic and visual learning materials to aid in student comprehension which contain both theory and practical exercises. Assessments are also included.
- Graphic circuit block diagrams which aid the student understanding and diagnostic activities.
- Special Electronic fault insertion system with test points embedded into the circuit diagram for troubleshooting and fault finding.
- Modular design enables trainers to be expanded or inter-connected to other units to form larger complex systems for enhanced training.
- Labtech products use only high quality industrial components and materials from top international brands.
- Ergonomic and attractive design for easy learning and operation.
- Built to last long in tropical and arid environments.
- All major metal parts are powder coated for corrosion protection and durability.
- High quality fiberglass circuit boards with socketed ICs for easy replacement.
- For maintenance purposes, a circuit diagram of the trainer is provided and internal system cables feature number tags.
- 2mm or 4mm safety sockets for student protection and quick assembly of experiments.

Digital TVET Content for Virtual Learning:

- Many items also have optional digital learning resources for computer aided instruction.
- Optional Data Acquisition Systems can facilitate higher level learning.
- 21st Century Learning Platform for blended learning.

CONTENTS

WIND GENERATION	1	ENERGY RECOVERY & CONVERSION	15
<u>Wind Turbine Training System</u>	1	<u>Steam Jet Refrigeration System Trainer</u>	15
<u>Wind Turbine Trainer (Off Grid and On Grid Tie Connected)</u>	1	<u>Vortex Tube Refrigeration Trainer</u>	15
<u>Solar and Wind Energy Trainer (LLC-SWD-1)</u>	1	ENERGY CONSERVATION & CONTROLS	16
<u>Solar and Wind Energy Trainer (LLC-SWD-1x)</u>	2	<u>Batteries & Charging Trainer</u>	16
<u>Wind Turbine Nacelle Trainer</u>	2	<u>Renewable Energy Electrical and Power Electronics</u>	16
<u>Wind Turbine Panel Installation Kit</u>	2	<u>Home Renewable Energy Simulator</u>	16
SOLAR THERMAL	3	POWER & ENERGY MANAGEMENT	17
<u>Solar Energy Demonstrator</u>	3	<u>Training System For Direct Digital Control (Building Management System)</u>	17
<u>Multiple Solar Panel Demonstrator</u>	3	<u>Building Energy Management (BEMS) and Control Lab Training System (Modular Concept)</u>	17
<u>Indoor High Intensity Lamp For Solar PV Panel Trainer</u> ..	3	<u>BAS and Control Laboratory Training System</u>	18
<u>Solar Power Street Light Trainer</u>	4	<u>Video Phone, IP Phone and CCTV Training System</u>	18
<u>Solar Tracking Control Trainer</u>	4	<u>Addressable Fire Alarm System Trainer</u>	18
<u>Solar Energy Panel Installation Kit</u>	4	<u>Residence Lighting and Security</u>	19
<u>Solar Panel System Installation Kits</u>	5	MICRO HYDRO	20
<u>Sectioned Flat Plate Solar Collector Trainer</u>	5	<u>Hydro Generation</u>	20
<u>Solar Energy Trainer</u>	5	<u>Pelton Turbine Trainer</u>	20
<u>Solar Thermal Energy Trainer, Boiler Collector Type (LLC-STE-1)</u>	6	LABTECH DIGITAL CONTENT FOR TVET	21
<u>Solar Thermal Energy Trainer, Boiler Collector Type (LLC-STE-2)</u>	6		
<u>Parabolic Solar Concentrator Trainer</u>	6		
<u>Residential & Commercial Solar Thermal Energy Trainer</u>	7		
<u>Solar Energy Trainer, Boiler Type</u>	7		
GREEN HVAC	8		
<u>Absorption Refrigeration Trainer</u>	8		
<u>Geothermal Heat Pump Trainer</u>	8		
<u>Industrial Cooling Plant With Ice Store Trainer</u>	8		
BIOMASS & BIOFUEL	9		
<u>Biofuel Engine Dynamometer</u>	9		
GREEN AUTOMOTIVE – HYBRID VEHICLE PROGRAM	10		
<u>Automotive Hybrid Engine System Simulator</u>	10		
<u>Can Bus Automotive Electrical System</u>	10		
<u>Hybrid Power Split Device Trainer</u>	10		
<u>Automotive Air Conditioning Trainer With Original Dashboard With Cooling and Heating System Climate Control For Electric Vehicle</u>	11		
<u>Training Automotive Chassis, Hybrid Vehicle (Japanese Vehicle)</u>	11		
<u>Sectioned Hybrid Engine Toyota Prius 1.5 Hybrid Engine System (HY-EPS-1)</u>	11		
<u>Running Hybrid Engine Toyota Prius 1.5 Hybrid Engine System (HY-EPS-2)</u>	12		
<u>Sectioned Automotive Vehicle Chassis, Hybrid Vehicle (Japanese Vehicle, Toyota Prius)</u>	12		
GREEN AUTOMOTIVE – ELECTRIC VEHICLE PROGRAM	13		
<u>Electric Vehicle System Simulator</u>	13		
<u>Electric Vehicle Motor Trainer</u>	13		
<u>Power Electronic Module of Electric Vehicle</u>	13		
<u>Nissan Leaf Electric Vehicle Motor Trainer</u>	14		
<u>Sectioned Automotive Vehicle Chassis, Electric Vehicle (Nissan Leaf)</u>	14		
<u>Training Automotive Chassis Electric Vehicle (Nissan Leaf)</u>	14		

WIND GENERATION



WIND TURBINE TRAINING SYSTEM

Model Number: LLC-WTT-1

Educational Objectives:

- Installing and testing a wind Turbine.
- Adjusting the output of the wind Turbine.
- Correlate wind power-to-turbine speed-to-power generation.
- Configuring and testing off-grid wind installations.
- Connecting the wind turbine to protective control devices.
- Connecting the wind turbine to monitoring devices.
- Connect the wind turbine circuitry to storage devices.
- Driving a DC or AC load with the wind turbine system.
- Connect the wind turbine circuitry to an AC inverter.
- Excess capacity management.
- Driving Auxiliary loads.
- Blade design.
- Gear ratios and torque.
- Electric Generators.
- Motor, generators, alternators, inverters.
- Wind Turbine site strategies.
- Over-speed protection designs.
- How to Design a wind turbine installation.
- DC motor/generator/alternator selection.
- Wind Turbine Body Design.



WIND TURBINE TRAINER (OFF GRID AND ON GRID TIE CONNECTED)

Model Number: LLC-WED-2

Educational Objectives:

- Facilities the study of the operational elements of a wind turbine and how they are constructed.
- Equipped with a programmable wind power system that will simulate different weather
- Wind speed scenarios so as to observe the operation of the wind generator under various conditions.
- Can be connected to other Labtech GreenTech training systems to for a renewable energy production network which can be integrated with the power generation grid.
- Conversion of kinetic wind energy into electrical energy.
- Function and design of a stand-alone network with a wind turbine.
- Determining the power coefficient as a function of the tip speed ratio.
- Energy balance in wind turbine.
- Axial fan in simulating variable speed of wind velocity.
- Measurement of voltage, current and power electricity parameter.
- Studying and familiarization of generator operation in converting the kinetic to electrical energy.
- Flow straightener to get consistent wind flow direction and flow concentrate area.



SOLAR AND WIND ENERGY TRAINER

Model Number: LLC-SWD-1

Educational Objectives:

- Wind turbine working principle
- Solar photovoltaic working principle
- Charging controller working principle
- Understanding the battery
- DC to Dc converter working principle
- DC to AC inverter working principle
- The wind as renewable energy source
- The solar-cell as renewable energy source
- Hybrid solar-cell and wind energy as renewable energy source



SOLAR AND WIND ENERGY TRAINER

Model Number: LLC-SWD-1x

Educational Objectives:

- Wind turbine working principle
- Solar photovoltaic working principle
- Charging controller working principle
- Understanding the battery
- DC to Dc converter working principle
- DC to AC inverter working principle
- The wind as renewable energy source
- The solar-cell as renewable energy source
- Hybrid solar-cell and wind energy as renewable energy source
- Data Acquisition and Control Software



WIND TURBINE NACELLE TRAINER

Model Number: LLC-WNT-1X

Educational Objectives:

- The Wind Turbine Nacelle Trainer system is a complete scaled down version of a commercial wiring wind turbine nacelle.
- Comprehensive demonstrator is an excellent substitute for expensive real equipment.
- Learning system designed to teach operation, startup, shutdown, troubleshooting, and maintenance of utility scale wind turbine nacelle systems.
- Nacelle familiarization, safety and control system
- Efficiency training solution.
- System consist of turbine control unit, nacelle tower module, hydraulic brake system, hydraulic oil, gearbox lubrication system, turbine monitoring software.
- User interface and wind simulation
- Hub and low speed shaft
- Electrical circuit panel
- Safe Training.



ASSEMBLY AND INSTALLATION KIT

These Assembly and Installation kits are designed for use by the student in order to gain experience in typical installation practices for renewable energy systems such as Wind and Solar PV systems. This includes the relevant industrial switching and control systems, power distribution and main feeds, electrical safety system and installation protection. We offer a comprehensive series of kits as shown below that comes complete with job worksheets. Custom kits are available upon request.

WIND TURBINE PANEL INSTALLATION KIT

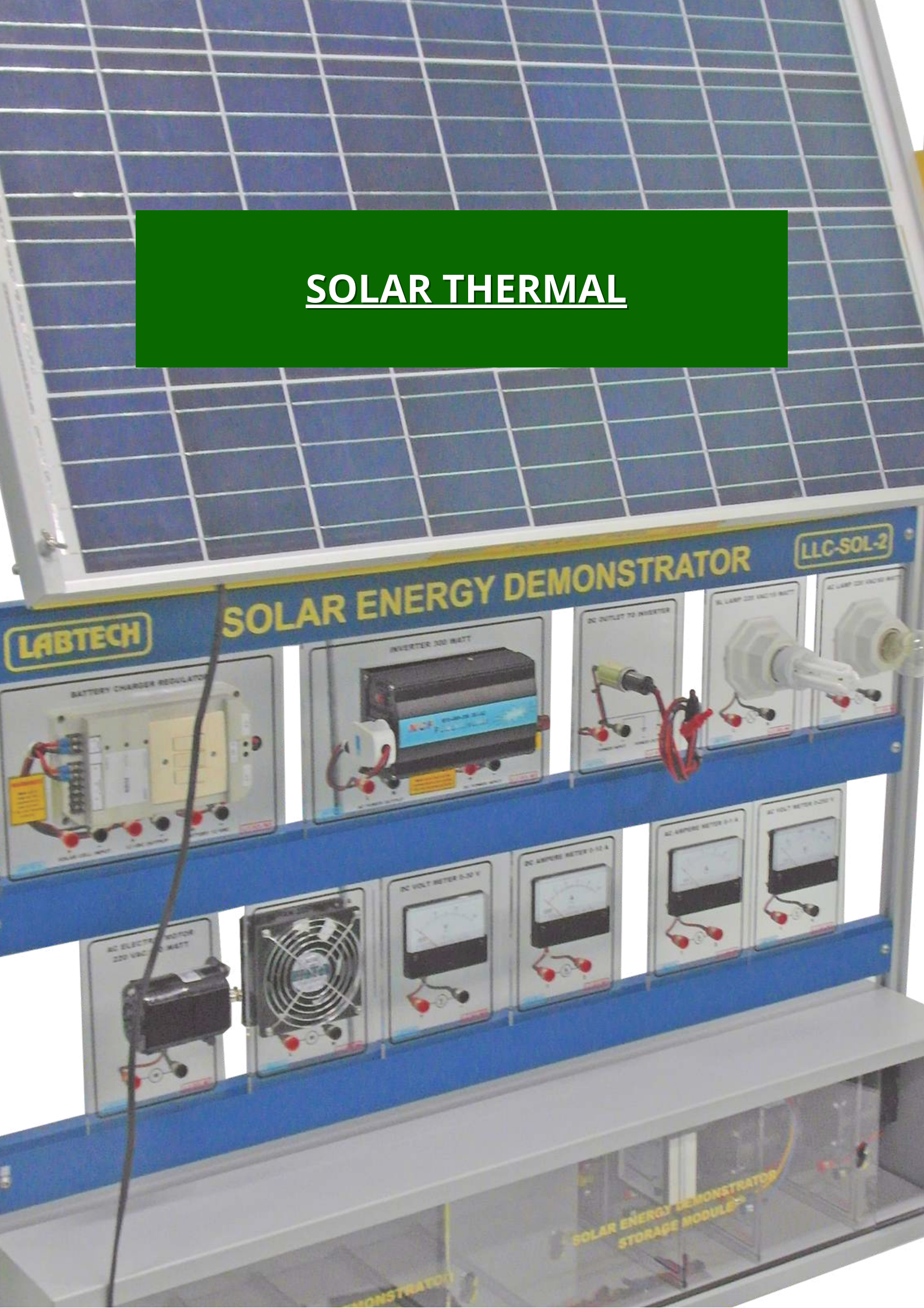
Model Number: LEW-EIK-WTT1

Educational Objectives:

- This practical kit exercise guides the students to configure, assembly, install and test Wind Turbine Systems.
- They will also learn how to design installations for wind turbines; how to connect the wind turbine to AC inverter and storage devices; how to connect the wind turbine to protective controls and monitoring devices; how to use and connect to a Grid-Tie inverter.
- Students are provided with everything they need for the assembly wind turbine system by connecting the electrical components with proper wiring and connection.



SOLAR THERMAL





SOLAR ENERGY DEMONSTRATOR

Model Number: LLC-SOL-2

Educational Objectives:

- Solar Cell Module Direction Towards The Sun Light and Its effect to Solar Cell Output
- Covered and Uncovered Solar Cells and its effect To the total Output Voltage
- Effect of Sun Light Blocking on Solar Cell To The total Output Current.
- Understanding the Calculation of Actual Solar Cell Efficiency
- Configuration of Solar-cell from DC output to 220VAC
- Effect of Light Intensity to Solar Cell Power Output
- Applying Solar-cell System as Voltage Source for Lighting (Lamp) with Different Type
- Applying Solar-cell System as Voltage Source to Inductive Load

MULTIPLE SOLAR PANEL DEMONSTRATOR

Model Number: LLC-SOL-3

Educational Objectives:

- Multiple Solar Cell Module Direction Towards The Sun Light and Its effect to Solar Cell Output
- Covered and Uncovered Multiple Solar Cells and its effect To the total Output Voltage
- Effect of Sun Light Blocking on Multiple Solar Cell To The total Output Current.
- Understanding the Calculation of Actual Solar Cell Efficiency
- Regulating Solar-cell Output
- Configuration of Solar-cell from DC output to 220VAC
- Effect of Light Intensity to Solar Cell Power Output
- Applying Solar-cell System as Voltage Source for Lighting (Lamp) with Different Wattage
- Applying Solar-cell System as Voltage Source to Inductive Load



INDOOR HIGH INTENSITY LAMP FOR SOLAR PV PANEL TRAINER

Model Number: LLC-HIL-1

Educational Objectives:

- The Indoor High intensity Lamp is used to provide lighting to the photovoltaic solar module that used in Solar Trainer.
- The training systems to be used indoor as this light source will replace the sun for generating PV power.
- The system consists of a high intensity lamps (4 lamps) mounted on a moveable stand that can be placed over a photovoltaic panel to provide a sunlight illumination source powerful enough to generate sufficient electrical current indoors.
- This unit adds convenience to the classroom workshop as experiments can be done indoors, even on cloudy days.
- The intensity of the light can be adjusted either manually or automatically.
- Manual adjustment uses a potentiometer and automatic adjustment is controlled through a 0-10 V input.
- The experiments with different light intensities will simulate the light conditions from dawn to twilight.

SOLAR POWER STREET LIGHT TRAINER

Model Number: LLC-SST-1

Educational Objectives:

- Pre-Operating Solar Power Street Light Trainer
- Photovoltaic Panel Measurement
- Solar Home System
- Solar Charge Controller
- Battery Charging and discharging
- Optimum Power Solar Street
- Compact Fluorescent Street light lamp



SOLAR TRACKING CONTROL TRAINER

Model Number: LLC-STC-1

Educational Objectives:

- This Solar Tracking Control Trainer is a simulation of light lamp.
- This trainer consist of lamps that simulate how the trainer searching on location of the sun. This trainer can rotating in vertical an and horizontal to chasing location of sun and will computed solar energy generation according to solar altitude.
- The control is based on Electronic control, 2-axis control method allows free direction conversion in up/down/left/right.
- This dual axis controller can control dual axis linear actuator to make the solar panel to follow the Sunlight, keep the solar panel always face the sunlight.
- The angles control depending on solar incidence angle with light sensor, and various program practices are available with connection of microcontroller and software programming.

SOLAR ENERGY PANEL INSTALLATION KIT

Model Number: LEW-EIK-SOL1

Educational Objectives:

- Familiarization of Solar Cell Installation procedure and Safety
- Technical drawing of Electrical Diagram and Circuit
- Operation and Installation of Series and Parallel PV Cell
- Operation and Installation of Charger Controller
- Operation and Installation of Off Grid Inverter
- Operation and Installation of On Grid Inverter
- Operation and Installation of Battery
- Commissioning and Testing for a complete Solar Cell System
- Troubleshooting and Measurements of Solar Cell Performance



SOLAR PANEL SYSTEM INSTALLATION KITS

Model Number: LEW-EIK-SL

Educational Objectives:

- Familiarization of Solar Cell Installation procedure and Safety
- Technical drawing of Electrical Diagram and Circuit
- Operation and Installation of PV Cell
- Operation and Installation of Charger Controller
- Operation and Installation of Inverter
- Operation and Installation of Battery
- Commissioning and Testing for a complete Solar Cell System
- Troubleshooting and Measurements of Solar Cell Performance



SECTIONED FLAT PLATE SOLAR COLLECTOR TRAINER

Model Number: LLC-STP-3

Educational Objectives:

- This item is an original flat plate solar collector which has been carefully sectioned to expose all key operational parts.
- It is ideal for demonstrating to students the function and operation of flat plate solar collector.
- The sectioned areas on the flat plate solar collector fully show the internal workings of a flat plate solar collector, such as the tempered glass, plate glass, absorber, heat preservation layer, main copper pipe, galvanized and aluminum alloy frame.
- The unit is mounted on a stand.



SOLAR ENERGY TRAINER

Model Number: LLC-SET-1

Educational Objectives:

- Small and compact in design for easy use in the class room and remote sites.
- Introduction to solar thermal (hot water) and solar photovoltaic systems.
- Introduction the Kcal (BTU) measurements and calculate the heat absorbing capacity of solar panels.
- Familiarization with flow meters and electronic thermometers which are provided on the control panel.
- Comparison output and efficiency of different configurations by assembling the collectors using the interchangeable parts.
- Comparisons include black versus white back collectors, metal versus non conductive collector plate, double glazing versus single glazing versus no glazing, back panel insulator versus no insulation.
- For advanced students, the units have flexible, detachable water piping for space heating, domestic hot water heat, heat storage and many more.
- Solar photovoltaic panels to generate electricity which can power the fan and other devices on the trainer.

SOLAR THERMAL ENERGY TRAINER, BOILER COLLECTOR TYPE

Model Number: LLC-STE-1

Educational Objectives:

- It features a high efficiency solar collector with a integral hot water storage tank that also has a supplementary electric heater.
- The supplementary electric heat system is a back up unit to ensure that the water is always a constant temperature no matter what the solar conditions and also compensates for heavy demand usage.
- The system also includes control panel unit that features four temperature sensors, water flow meter, water pressure gauge. The trainer also has a silk-screened diagram of the solar collection and control circuit, which aids in the explanation of the operation of the system.



SOLAR THERMAL ENERGY TRAINER, FLAT COLLECTOR TYPE

Model Number: LLC-STE-2

Educational Objectives:

- It features a high efficiency solar collector with a integral hot water storage tank that also has a supplementary electric heater.
- The supplementary electric heat system is a back up unit to ensure that the water is always a constant temperature no matter what the solar conditions and also compensates for heavy demand usage.
- The system also includes control panel unit that features four temperature sensors, water flow meter, water pressure gauge. The trainer also has a silk-screened diagram of the solar collection and control circuit, which aids in the explanation of the operation of the system.

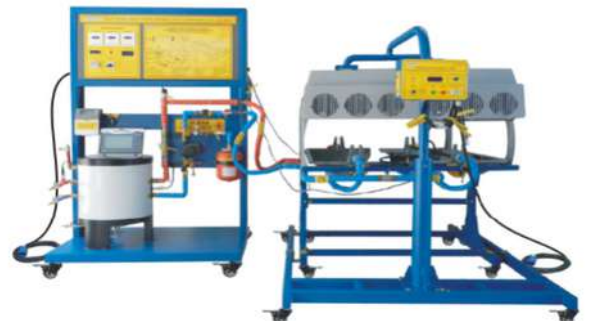


PARABOLIC SOLAR CONCENTRATOR TRAINER

Model Number: LLC-PTC-A

Educational Objectives:

- This system enables experimental investigation on the conversion of sunlight into thermal energy by means of a parabolic trough solar collector.
- This training system is manufactured using real industrial components for optimal performance and student familiarization.
- The system and components have been mounted onto a special frame and are clearly laid out and identified for student examination.
- Control panel features instrumentation including volt meter, ampere meter, pump controls and temperature display panel meter are provided as a standard to control the trainer and to facilitate measurements.
- The system features Two Parabolic units which can be operated individually or in series or parallel operation.
- This allows for some very interesting experiments in performance of the collectors.
- The unit comes with experiment manual containing theory, standard operation procedure, experiment procedures and references.



RESIDENTIAL & COMMERCIAL SOLAR THERMAL ENERGY TRAINER

Model Number: LBM-SHW Series

Educational Objectives:

- Understanding about the operation and construction of a typical solar hot water heating system as used in residential and commercial applications.
- Learning about energy efficient solar collectors and their construction and function. The unit features with a separate boiler (hot water storage tank) with a supplementary electric heater.
- Understanding about an electric heat system which can be used as a backup unit to ensure water remains at a constant temperature and compensates for heavy demand usage.
- Comes complete with a centralized electronic controller that operates the unit, electronic temperature meter with six temperature sensors, two water flow meters, expansion tank, electrical circulating pump, water pressure gauge, pressure relief valve, hot water storage tank and the solar collector.



SOLAR ENERGY TRAINER, BOILER TYPE

Model Number:

LLC-SHW-1 Direct Flow With Heat Pipes

Educational Objectives:

- This Trainer represents a state-of-the-art high tech solar hot water heating system as is now being introduced for use in residential and commercial applications.
- It features a high efficiency solar collector with a separate boiler (hot water storage tank) that also has a supplementary electric heater.
- The supplementary electric heat system is a back up unit to ensure that the water is always a constant temperature no matter what the solar conditions and also compensates for heavy demand usage.
- It comes complete with a centralized electronic controller that operates the unit, electronic temperature meter with six temperature sensors, two water flow meters, expansion tank, electrical circulating pump, water pressure gauge, pressure relief valve, hot water storage tank and the solar collector.
- The trainer also has a silk-screened diagram of the solar collection and control circuit, which aids in the explanation of the operation of the system.
- The solar collector plate features the latest technology Thermomax system which has vacuum evacuated heat collector tubes that provide maximum efficiency.



GREEN HVAC



ABSORPTION REFRIGERATION TRAINER

Model Number: RBA-ART-A

Educational Objectives:

- Familiarization & operational functions of absorption type refrigeration systems which are energy efficient and have low power requirements.
- This unit features a dual power sources: from Solar PV and from LPG. Typically, these units can be used in remote areas to provide cooling for essential items like medications at clinics.
- Understanding principles of absorption refrigeration systems, in this case ammonia based.
- Learn about the applications of absorption type refrigeration systems.
- Comparison of dual power sources: LPG & electricity / solar power system.
- Understanding absorption refrigeration system flow & circuit diagram.
- Observation of the system and monitoring temperature cooling effect.



GEOHERMAL HEAT PUMP TRAINER

Model Number: RHS-GTT-A

Educational Objectives:

- The trainer is built around a special work bench that incorporates a functioning Geo-Thermal Heat pump System which can be used to study the added efficiency of heat pump systems the utilize geothermal principles to enhance their functions.
- A Geothermal circuit is embedded into the heat pump system and the unit can be operated in various configurations.
- The refrigeration circuit is displayed on a colorful printed diagram. Refrigeration lines are color coded to indicate the state of the refrigerant.
- Control panel with instrumentation including Line Voltage, Ampere (Total Current) and temperature meter with digital display are provided as a standard to control the trainer and to facilitate measurements.
- Geothermal heat pump capacity: 4.5 kW (15000 BTU/h) approximately.
- The unit comes with experiment manual containing theory, standard operating procedures, experiment procedures and references.

INDUSTRIAL COOLING PLANT WITH ICE STORE TRAINER

Model Number: RCO-ICP-A

Educational Objectives:

- This training system explores the concept of energy storage by creating ice which can be produced during lower cost tariff costs (usually at night) and storing this to be used to supplement the cooling system during operation in the time.
- System Performance Analysis Including Determination of Refrigerating Capacity and Coefficient of Performance.
- Familiarization and operational functions of Industrial Cooling Plant with Ice Store components.
- Observe the performance of charging & discharging Process.
- Perform analysis on heat transfer & thermodynamic Cycle.
- Perform cooling cycle without ice store (By-Pass Process).
- Perform ice store charging & discharge process.
- Energy saving ICE storage mode.





BIOMASS & BIOFUEL

BIOFUEL ENGINE DYNAMOMETER

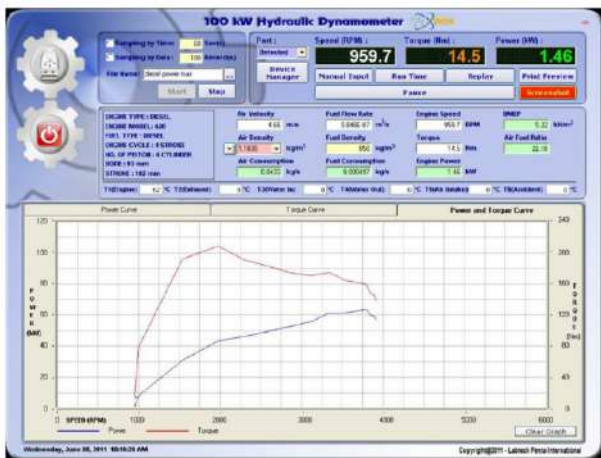
Model Number: ET-DHB Series

Educational Objectives:

- Study of engine performance using LPG, CNG and BioDiesel
- Engine performance analysis (power curve) at wide open throttle.
- Engine performance analysis (power curve) at constant RPM and varying throttle.
- Plot BMEP Brake Mean Effective Pressure measurement against engine RPM
- Morse Test Experiment. (Requires ET-DHB-M).

*Note : When Indirect Injection type diesel engine (ED-IDI) is used then (ED-IDI-4 Morse test fuel line modification) must be ordered as optional items for the engine test bed.

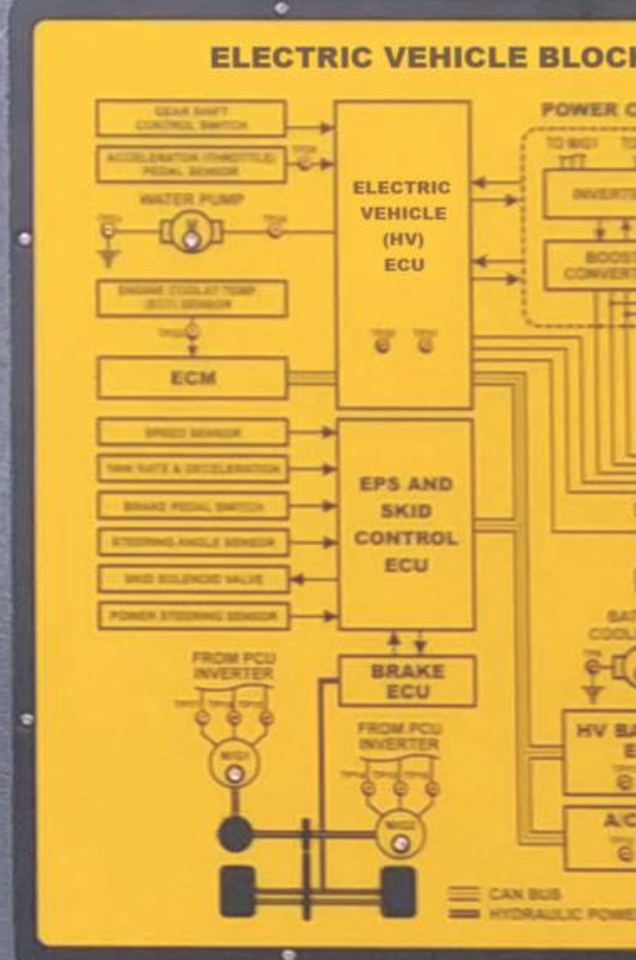
- Air Consumption Measurement and plotting air mass rate against Brake power. (Requires ET-DHB-A).
- Volumetric Efficiency and study characteristic of Vol. Eff. Against Engine speed. (Requires ET-DHB-A).
- Fuel Consumption and plot fuel mass rate against Brake power. (Requires ET-DHB-F).
- Study of Thermal Efficiency and Specific Fuel Consumption. (Requires ET-DHB-F).
- Air Fuel Ratio and study characteristic of A/F against varying load. (Requires ET-DHB-A and ET-DHB-F).
- Energy (Heat) Balance and plotting Heat Balance against Brake power. (Requires ET-DHB-A and ET-DHB-F).
- Study effect of restricted Fuel to engine power. (Requires ET-DHB-F).
- Study effect of restricted Air Flow and Dirty Air Filter to engine power. (Requires ET-DHB-A).
- Effect of different category of Heat Range Spark Plugs. (Requires set of Spark Plugs ET-DHB-S).
- Effect of Ignition Timing to engine power. (Requires distributor type petrol engine).



Optional:

Data Acquisition and Analysis Software

Labtech Data Acquisition System is the software tool that turns the PC into a powerful data acquisition system. It allows the PC to collect data and perform real-time analysis and display of the incoming information. The system comes set up for the dynamometer application, but can allow the user to modify the system or set up custom applications to meet the schools particular requirements. The Data Analysis software is a special series of applications that are set up to allow the student output data and plot engine performance graphs and charts. The Program also lets the student to set up his own analysis charts for custom experiments and applications.



FAULT T

- 1. HV BATTERY ECU
- 2. HV BATTERY
- 3. BATTERY COOLING FAN MOTOR CIRCUIT
- 4. MOTOR / GENERATOR (MG1)
- 5. AIR CONDITIONING CIRCUIT
- 6. IMMOBILIZER

CAUTION!

Do Not Make Short Circuit on Any Test Points to Avoid Electronic Parts Damage



GREEN AUTOMOTIVE - HYBRID VEHICLE PROGRAM

AUTOMOTIVE HYBRID ENGINE SYSTEM SIMULATOR

Model Number: ATS -HES-1

Educational Objectives:

- The Simulator recreates the operation and components of hybrid systems in a typical hybrid vehicle.
- Series, parallel system and series-parallel power modes can be explored
- Identify the operation and components of electric vehicle including function of a hybrid transaxle and brake system.
- Identify the operation and construction of synchronous generator and electric motor used in hybrid system vehicle.
- Recognize different storage devices and technologies.
- Identify the function of speed sensor used in a hybrid system vehicle.
- Identify the function of the Inverter and converter assembly used in a hybrid system vehicle.
- Identify the function of HV ECU used in hybrid system vehicle.
- Routine maintenance and repairs. Troubleshoot faults in the electrical system of a hybrid vehicle.



CAN BUS AUTOMOTIVE ELECTRICAL SYSTEM

Model Number: ATS-CAN-1

Educational Objectives:

- Realistic Simulation of CAN Bus Automotive Electrical System with Real Time Results and Modular Panel Layout
- Graphic System Presentation of CAN Bus Automotive Electrical System components with components location and identification like in the real vehicle.
- Realistic Troubleshooting Exercises with Error Answer Feedback featuring electrical test points and electronic interactive fault simulator system.
- CAN Bus Automotive Electrical System schematic panel that shows clearly the complete electrical wiring with test points available for measurement by Test lamps and Multimeter.

HYBRID POWER SPLIT DEVICE TRAINER

Model Number: EV-PSD

Educational Objectives:

- Observation Of The Trainer
- Demonstration and Observation of The Hybrid Power Split Device on The Start Position
- Demonstration and Observation of The Hybrid Power Split Device on The Start and Low to Mid Range Speed
- Demonstration and Observation of The Hybrid Power Split Device on The Low Speed Cruising
- Demonstration and Observation of The Hybrid Power Split Device on The High Speed Cruising
- Demonstration and Observation of The Hybrid Power Split Device on The Maximum Speed
- Demonstration and Observation of The Hybrid Power Split Device on The Regenerative Braking
- Demonstration and Observation of The Hybrid Power Split Device in The Reverse Position



AUTOMOTIVE AIR CONDITIONING TRAINER WITH ORIGINAL DASHBOARD WITH COOLING AND HEATING SYSTEM CLIMATE CONTROL FOR ELECTRIC VEHICLE

Model Number: HC-AC4-TE

Educational Objectives:

- Familiarization and operational functions of automotive A/C system.
- Measurement of refrigerant pressures and evaporating temperatures.
- Climate control operation in automotive A/C system.
- Cabin air distribution.
- Observation of thermostatic expansion valve performance.
- Understanding and plotting thermodynamic cycle in pressure-enthalpy diagram
- Calculate the refrigeration capacity from the p-h diagram
- Calculate the coefficient of performance
- Calculate the efficiency of the compressor
- Leak testing an air conditioning system.
- Evacuating and charging automotive A/C system.
- Diagnose A/C system conditions that cause faults/problems and determine necessary action.
- Troubleshoot A/C system components (condenser fan motor, blower fan motor, electronic circuit, sensors etc) that cause faults/problems and determine necessary action. Note : This objectives is available when optional item HC-AC5-A3 is ordered.



TRAINING AUTOMOTIVE CHASSIS, HYBRID VEHICLE (JAPANESE VEHICLE)

Model Number: VH-OCH-01

Educational Objectives:

- This vehicle is Series & Parallel Hybrid Technology, 4 cylinder, 4 stroke engine 1500 - 1800 cc, EFI Gasoline.
- This vehicle is ideal for training and performing practical exercises.
- The trainers feature an optional special electrical fault system with up to 20 faults that can be inserted for troubleshooting exercises.
- The vehicle is fully operational and includes all of the major systems and components including: chassis, brake system, suspension system, fused electrical system, lights (front and rear), steering system, air conditioning system, engine, transmission/transaxles, drive train, exhaust system, Dashboard (instrument panel), steering wheel, rims and tires.
- The entire unit has been thoroughly cleaned and painted with special heavy-duty epoxy paint that is resistant to chemicals, brake fluid, fuel and abrasion. Also the original wheels and rims are provided and can be put on to make the chassis drivable.
- The body has been specially modified to expose key parts such as engine, door mechanism, window mechanism and other areas of the chassis in order to provide easy access and observation for the student.
- The trainer comes with an operation manual showing the operation of the systems.
- Parts of wiring diagram required for demonstration is included in manual.



SECTIONED HYBRID ENGINE TOYOTA PRIUS 1.5 HYBRID ENGINE SYSTEM

Model Number: HY-EPS-1

Educational Objectives:

- The Toyota Prius Hybrid engine training system of the low fuel consumption automotive technology is an excellent training device that clearly shows students the inter-relationships between all components.
- The Toyota Prius Series-Parallel type hybrid system working in conjunction with the components of two electric motor generators (MG1 & MG2) with the Power Split Device, and includes the Inverter System.
- Understand A color coded panel depicts the system modes of Electric only, Hybrid Electrical Assist, Regenerative Braking in deceleration and Battery charging.
- The complete engine and drive train are cutaway sectioned and color code painted. The unit use original components, engine capacity approx. 1500 - 1800cc, 4 cylinder, DOHC, 16 valve.
- The engine revolves at low speed by means electric motor, single phase, 220V-50Hz..



RUNNING HYBRID ENGINE TOYOTA PRIUS

1.5 HYBRID ENGINE SYSTEM

Model Number: HY-EPS-2

Educational Objectives:

- The Toyota Prius Hybrid engine training system of the low fuel consumption automotive technology is an excellent training device that clearly shows students the inter-relationships between all components.
- The Toyota Prius Series-Parallel type hybrid system working in conjunction with the components of two electric motor generators (MG1 & MG2) with the Power Split Device, and includes the Inverter System.
- Understand A color coded panel depicts the system modes of Electric only, Hybrid Electrical Assist, Regenerative Braking in deceleration and Battery charging.
- The engine system is mounted on a stand and is complete ready to run. These are complete with a fuel tank, fuel filter, oil filter, alternator, starter, fuel injection pump, battery, exhaust system with silencer, and with a complete Instrumentation Panel with a key switch.
- The engine capacity approx. 1500 - 1800cc, 4 cylinder, DOHC, 16 valve.



SECTIONED AUTOMOTIVE VEHICLE CHASSIS, HYBRID VEHICLE (JAPANESE VEHICLE, TOYOTA PRIUS)

Model Number: VH-SCH-01

Educational Objectives:

- The Sectioned Hybrid Prius Car features the entire hybrid drive train system of the petrol (gasoline) engine working in conjunction with the electric motor/generator systems and onwards to the Power Split Device and including the Control Electronics & Inverter System, and Battery Pack.
- The entire drive train is rotated at slow speed by a single-phase electric motor (worldwide voltages are available). All moving parts, ranging from the engine on through to the final drive at wheel hubs, are easily observed and demonstrated.
- Understand all sectioned components are color code painted for easy identification.
- The chassis is mounted on a moveable floor stand that can be moved around for instruction purposes and for storage purposes.
- Study of the functional brake system, and electrical system for vehicle lighting and signaling systems, windscreen wiper(s), etc.
- The trainer is complete with a comprehensive training and workshop manual for detailing automotive vehicle technologies, trainer operation, electrical wiring circuitry, and engine to drive train diagrams, and is complete with aspects for the repair of vehicles.
- Understand features colored LEDs that illuminate sections of the engine plus an animated LED system that shows the power use and transfer from the battery to the motor.



DASHBOARD AND INSTRUMENT PANEL

Below the dashboard are several control knobs and buttons, including a red emergency stop button and a green start button.

ELECTRIC VEHICLE MECHANICAL & ELECTRICAL

The diagram illustrates the mechanical and electrical components of an electric vehicle, including the battery pack, motor, and a charging station.

VOLT METER

The voltmeter section includes a physical needle gauge and a digital display, used for monitoring the system's voltage.



ELECTRIC MOTOR AND DRIVETRAIN SIMULATOR

The photograph shows the physical hardware of the electric motor and drivetrain simulator, including the motor, gears, and shafts.

GREEN AUTOMOTIVE -
ELECTRIC VEHICLE PROGRAM

CONTROL PANEL

The control panel features several indicator lights and buttons, used for operating and monitoring the simulator.

ELECTRIC VEHICLE SYSTEM SIMULATOR

Model Number: ATS-EVS-1

Educational Objectives:

- Familiarization of Electric Vehicle System Simulator
- Understand how to operate the immobilizer key and start stop
- Observe the battery level and EV battery temperature
- Observe the parking brake and gear shift control
- Observe the road gradient and gear shift control
- Observe A/C ON-OFF, ambient air temperature selector, and A/C temperature set point
- Observe the accelerator and brake pedal
- Observe the mechanical, electrical power flow panel
- Observe the battery level on charging mode
- Troubleshooting and Electrical measurement
- Identify the function of Inverter and converter assembly used in Electric Vehicle System Simulator
- Identify the function of high voltage (HV) ECU used in Electric Vehicle System Simulator
- Observe the vehicle speed of Electric Vehicle System Simulator
- Observe the electric motor of Electric Vehicle System Simulator
- Observe the drive train simulator panel of Electric Vehicle System Simulator
- Identify the operation and construction of synchronous generator and electric motor used Electric Vehicle System Simulator
- Safety system on high voltage



ELECTRIC VEHICLE MOTOR TRAINER

Model Number: AVE-REM-1

Educational Objectives:

- Understand an electric vehicle may be powered through a collector system by electricity from off-vehicle sources, or may be self contained with a battery, solar panels or an electric generator to convert fuel to electricity.
- This Electric Motor Kit will give a student how to make an electric vehicle system.
- The kit consist of motor, controller ,battery, real axle and other accessories.

POWER ELECTRONIC MODULE OF ELECTRIC VEHICLE

Model Number: AVE-PEV-1

Educational Objectives:

- Trainer Familiarization
- Familiarization with the inverter
- Familiarization with the A/C inverter
- Familiarization with the DC-DC Converter
- Familiarization with the Boost Converter
- Familiarization with the motor



NISSAN LEAF ELECTRIC VEHICLE MOTOR TRAINER

Model Number:

1. Sectioned EV Motor System

2. Opearable Electric Motor System

Educational Objectives:

- The Nissan Leaf electric vehicle machine (motor)training system is an excellent training device that clearly shows students the inter-relationships between all components.
- The Nissan Leaf electric vehicle machine (motor)system working in conjunction with the components of Electric Motor with the Battery and the Inverter System.
- Understand Color graphics are included to further enhance easy understanding the principle functions within the electric vehicle motor systems.



SECTIONED AUTOMOTIVE VEHICLE CHASSIS, ELECTRIC VEHICLE (NISSAN LEAF)

Model Number: AVH-SCE-1

Educational Objectives:

- The Sectioned Automotive Vehicle Chassis, Electric Vehicle enables the students to learn and become more familiar about electric vehicle (EV) main component and how to operate of electric vehicle.
- Understand the body has been specially modified to expose key parts such as door mechanism, window mechanism and other areas of the chassis in order to provide easy access and observation for the student.



Watch the video



TRAINING AUTOMOTIVE CHASSIS ELECTRIC VEHICLE (NISSAN LEAF)

Model Number: AVH-OCE-1

Educational Objectives:

- Understand the trainer is fully reconditioned electric vehicles that have been specially modified so that all parts, components and wiring are easily accessible for student work.
- The trainers feature an optional electrical fault system with up to 20 faults that can be inserted for troubleshooting exercises.

ENERGY RECOVERY & CONVERSION





STEAM JET REFRIGERATION SYSTEM TRAINER

Model Number: RAD-STJ Series

Educational Objectives:

- Understanding the basic principles and components of a steam jet refrigeration system.
- Understanding the performance of Steam Jet Eductor system with Variable Primary motive Pressure.
- Understanding performance of the refrigeration circuit while under load effect. (coefficient of performance)
- Understanding Effect of Varying Condenser Water Flowrate to The Evaporator Temperature.
- Study of the Energy balance and thermodynamic cycle in steam jet refrigeration systems.
- Perform Evacuating and Charging Procedure for the system.

VORTEX TUBE REFRIGERATION TRAINER

Model Number: RAD-VTR-1

Educational Objectives:

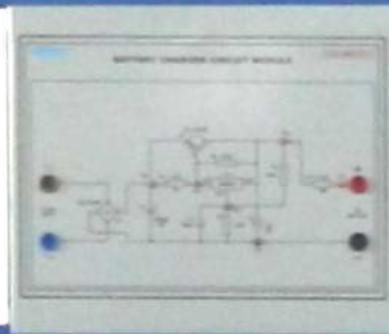
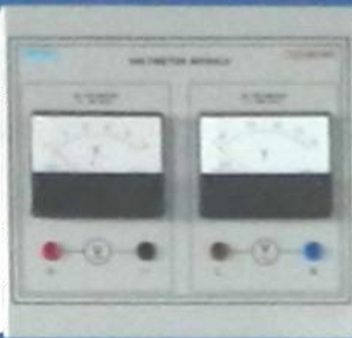
- Demonstration of the principle to produce hot & cold air from a device with no moving parts.
- Calculation of performance curves for a vortex tube with:
 - a. Variation of inlet pressure.
 - b. Variation of hot and cold gas ratios.
 - c. Variation of gas (if available).
- Determination of refrigerating effect & comparison of this with the estimated power needed to drive the compressor.



LABTECH

BATTERIES AND CHARGING TRAINER

LLC-BEC-B



ENERGY CONSERVATION & CONTROLS

BATTERIES & CHARGING TRAINER

This trainer enables the students to explore how electrical conversions are made for renewable energy systems. It gives a good fundamental background to solar and wind systems as well as fuel cells for conversion applications. Power generated through renewable energy sources often has to be converted before it can be used or stored. In some systems multiple conversions occur. Students will learn what types of conversions are typically done for green technology areas and how they function. Exercises in conversion will be done and experiments with loads and use of the final power will be performed.

Model Number: LLC-BEC-B

Educational Objectives:

- The training system includes several modules for electrical conversion:
 1. DC to DC Conversion
 2. AC to AC conversion
 3. DC to AC conversion
 4. DC to DC Conversion
- Instrumentation: Amp meter, voltmeter and watt meter are provided.
- Charging controller circuit: to experiment with the charging current control in common battery charger circuits.
- Variable AC/DC power supply: with electrical load.
- Battery charger circuit: for experimentation and measurement of charging current and charging voltage.
- Includes two type of batteries (flooded and sealed).
- Experimental Bench top frame: Three levels, to fit A3, A4 and A5 modules.
- Set of Connection Cables: Flexible 4 mm electrical connection cables are included.
- The Experiment modules contains real industrial electrical components that are mounted onto clear plexiglass panels with electrical connections and component symbols silkscreened onto them.
- The system can be integrated with a small scale solar PV, wind or fuel cell power systems of approximately 100w capacity.



RENEWABLE ENERGY ELECTRICAL AND POWER ELECTRONICS

Model Number: EFT-RPE-1

Educational Objectives:

- Trainer Familiarization
- Simple trigger circuit
- Single junction transistor trigger circuit
- Synchronous sine wave synchronous phase shifting trigger circuit
- Saw tooth wave synchronous phase shifting trigger circuit
- Single phase integrated saw tooth wave trigger circuit
- Three phase integrated saw tooth wave trigger circuit
- Single phase controlled rectifying circuit
- Single phase full wave phase controlled circuit
- Single phase semi controlled bridge rectifier
- Single phase fully controlled bridge rectifier
- Three phase fully controlled bridge rectifier
- Resistor load double pulse bridge circuit
- Resistor induction double pulse bridge circuit
- Resistor motor double pulse bridge circuit
- Resistor motor in single phase fully controlled bridge rectifier
- Inverter technical parameter setting and frequency adjustment
- Inverter speed adjustment control circuit
- Inverter and pc communication experiment
- Pc software setting inverter parameter
- Inverter drive ac motor experiment load
- Inverter output speed measurement feedback control experiment

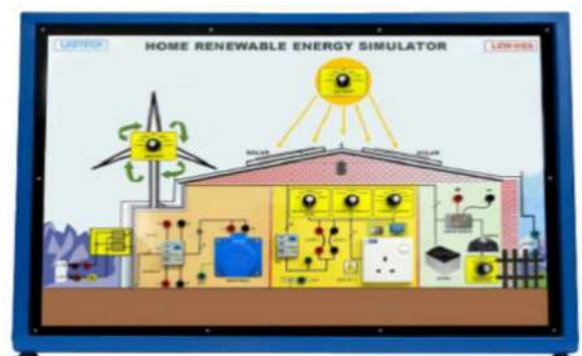


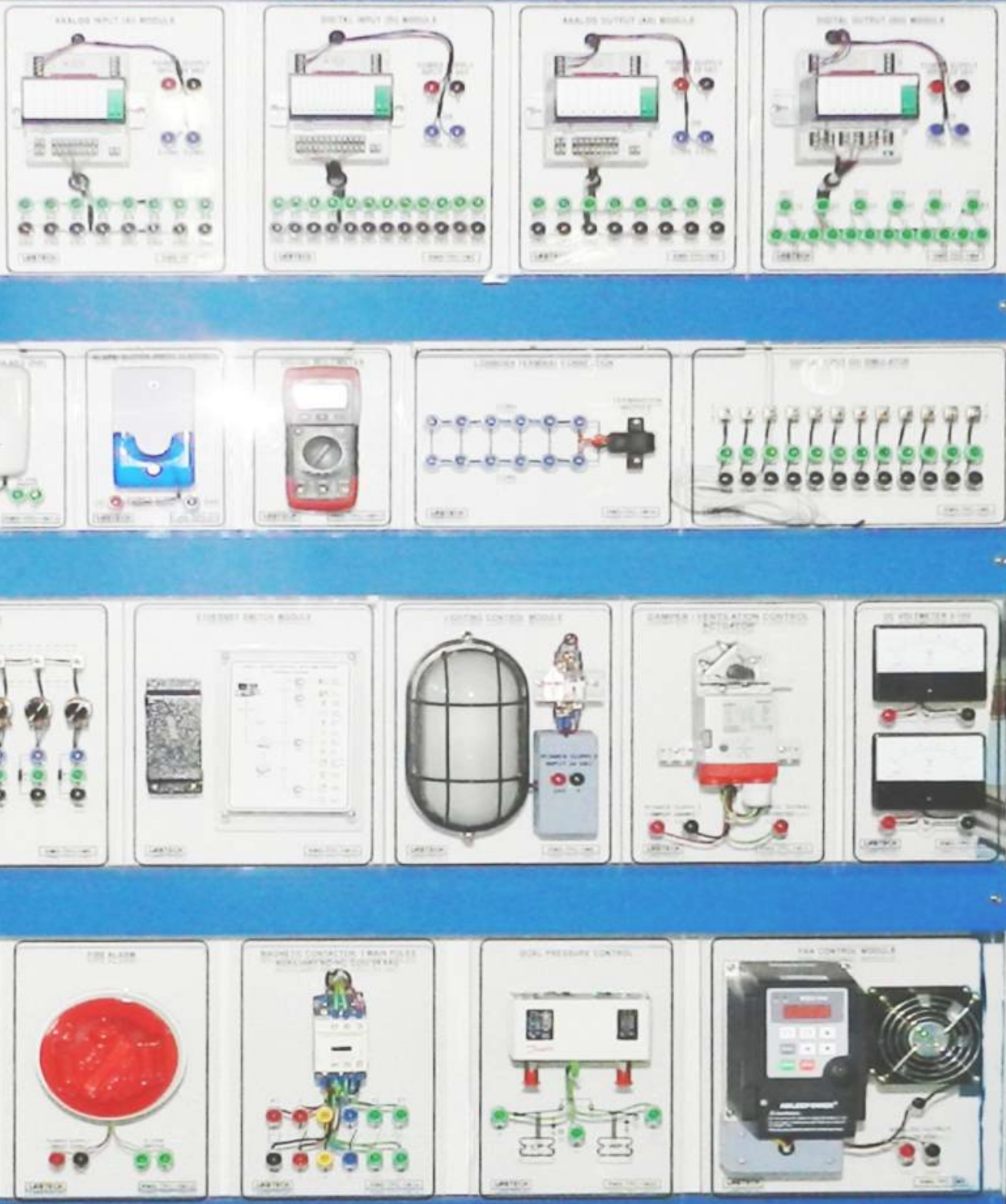
HOME RENEWABLE ENERGY SIMULATOR

Model Number: LEW-EIS-4

Educational Objectives:

- Solar Cell Installation and Connection of AC Single phase System
- Wind Turbine Installation and Connection of AC Single phase System
- Measurement and Instrumentation:
 - Using Digital Clamp Meter.
 - AC Voltage (Single Phase)
 - DC Voltage
- Inverter Installation and Connection
- Solar Charge Controller Installation and Connection
- Battery Installation and Connection
- Fault Simulation





POWER & ENERGY
MANAGEMENT

TRAINING SYSTEM FOR DIRECT DIGITAL CONTROL (BUILDING MANAGEMENT SYSTEM)

Model Number: RMS-TPC-1

Educational Objectives:

- DDC Controller Familiarization: Familiarization with DDC controller, ability to commissioning and connect the DDC Controller
- Analog Input: Familiarization with Analog Input, ability to map the Analog Input and to commission and connect the Analog Input
- Digital Input: Familiarization with Digital Input, ability to map the Digital Input and to commission and connect the Digital Input.
- Create Application Program for Chiller: Ability to create the programs for chiller applications, to describe the input and output both with digital and analog and troubleshooting the program.
- Operating BMS Program: Ability to operate the BMS program, and to troubleshoot the program.



BUILDING ENERGY MANAGEMENT (BEMS) AND CONTROL LAB TRAINING SYSTEM (MODULAR CONCEPT)

Model Number: RMS-BAS

Educational Objectives:

- Featuring multiple modules that can stand alone or integrated into one BMS system to simulate total building control.
- Understanding of BEMS software system (Theory and BEMS Supervisor Software).
- Creating a controlled Plant with BEMS Software (Theory and Dashboard Monitoring Software Designing).
- Integration of BEMS system and DDC Controller connected to controlled plants (Data Points Integration to Dashboard Monitoring Software).
- Familiarization of Commercial Building BMS System.
- Familiarization of Addressable Fire Alarm System.
- Familiarization of Video Phone, IP Phone and CCTV Systems.
- Familiarization of Water, Gas, Electricity and HVAC System control and monitoring.
- Familiarization of Residence Lighting and Security System control and monitoring
- Working with Simulation of Energy Metering System
- Creating graphics on energy usage and report.
- Working with graphics and animations on GUI of a Dashboard monitoring screen.
- Understanding the logic programming for various points, data manipulations and control (creating readings for dashboard monitoring).



BAS AND CONTROL LABORATORY TRAINING SYSTEM

Model Number: BMS-CBC-1

Educational Objectives:

- Featuring multiple modules that can be stand alone or integrated into one BMS system to simulate total building control.
- Understanding of BEMS software system (Theory and BEMS Supervisor Software).
- Creating a controlled Plant with BEMS Software (Theory and Dashboard Monitoring Software Designing).
- Integration of BEMS system and DDC Controller connected to controlled plants (Data Points Integration to Dashboard Monitoring Software).
- Familiarization of Commercial Building BMS System.
- Familiarization of Addressable Fire Alarm System.
- Familiarization of Video Phone, IP Phone and CCTV Systems.
- Familiarization of Water, Gas, Electricity and HVAC System control and monitoring.
- Familiarization of Residence Lighting and Security System control and monitoring
- Working with Simulation of Energy Metering System
- Creating graphics on energy usage and report.
- Working with graphics and animations on GUI of a Dashboard monitoring screen.
- Understanding the logic programming for various points, data manipulations and control (creating readings for dashboard monitoring).



VIDEO PHONE, IP PHONE AND CCTV TRAINING SYSTEM

Model Number: LLC-CCT-1

Educational Objectives:

- Featuring multiple modules that can be stand alone or integrated into one BMS system to simulate total building control.
- Understanding of BEMS software system (Theory and BEMS Supervisor Software).
- Creating a controlled Plant with BEMS Software (Theory and Dashboard Monitoring Software Designing).
- Integration of BEMS system and DDC Controller connected to controlled plants (Data Points Integration to Dashboard Monitoring Software).
- Familiarization of Commercial Building BMS System.
- Familiarization of Addressable Fire Alarm System.
- Familiarization of Video Phone, IP Phone and CCTV Systems.
- Familiarization of Water, Gas, Electricity and HVAC System control and monitoring.
- Familiarization of Residence Lighting and Security System control and monitoring
- Working with Simulation of Energy Metering System
- Creating graphics on energy usage and report.
- Working with graphics and animations on GUI of a Dashboard monitoring screen.
- Understanding the logic programming for various points, data manipulations and control (creating readings for dashboard monitoring).



ADDRESSABLE FIRE ALARM SYSTEM TRAINER

Model Number: LLC-FAT-2B

Educational Objectives:

- Familiarization with Addressable Fire Alarm system
- Operation and Installation of Addressable Fire Detectors
- Operation and Installation of Addressable Call Point
- Operation and Installation of Addressable Sounder
- Configuration of Fire Alarm Control Panel
- Operation and Testing of Addressable Fire Alarm System
- Maintenance and Troubleshooting of Addressable Fire Alarm System
- Interfacing an Addressable Fire Alarm System



RESIDENCE LIGHTING AND SECURITY**Model Number: LEW-EIT-RW/LLC-SAT-1****Educational Objectives:**

Watch the video 

- Featuring multiple modules that can be stand alone or integrated into one BMS system to simulate total building control.
- Understanding of BEMS software system (Theory and BEMS Supervisor Software).
- Creating a controlled Plant with BEMS Software (Theory and Dashboard Monitoring Software Designing).
- Integration of BEMS system and DDC Controller connected to controlled plants (Data Points Integration to Dashboard Monitoring Software).
- Familiarization of Commercial Building BMS System.
- Familiarization of Addressable Fire Alarm System.
- Familiarization of Video Phone, IP Phone and CCTV Systems.
- Familiarization of Water, Gas, Electricity and HVAC System control and monitoring.
- Familiarization of Residence Lighting and Security System control and monitoring
- Working with Simulation of Energy Metering System
- Creating graphics on energy usage and report.
- Working with graphics and animations on GUI of a Dashboard monitoring screen.
- Understanding the logic programming for various points, data manipulations and control (creating readings for dashboard monitoring).

LABTECH

MICRO HYDRO TRAINER

LLC-MHY

POWER GENERATION AND STORAGE SYSTEM

POWER STORAGE AND POWER CONVERTER

BATTERY CHARGER BATTERY DC TO AC INVERTER

AC LOADS

MICRO HYDRO

MICRO HYDRO TURBINE LAB

LLC-MHY-1

WATER PUMP CONTROL

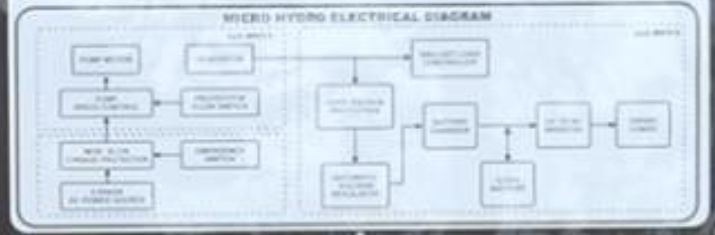
PUMP SPEED START STOP

AUTOMATIC VOLTAGE REGULATOR

TURBINE GENERATOR AND LOAD CONTROLLER

MAIN POWER SYSTEM

EMERGENCY STOP 3 PHASE INDICATOR BREAKERS



HYDRO GENERATION

Model Number: LLC-MHY

Educational Objectives:

- Learning about micro hydro systems as a form of alternative energy power generation.
- Learning operate, set one up, controlled, storage and distribution of power and basic electrical power generation and protection systems.
- Study of hydroelectric power and micro-generation concepts.
- Power as function of water flow rate and difference in height of the hydraulic pipe.
- Head losses.
- Hydraulic efficiency.
- Turbine volume true efficiency.
- Turbine-generator mechanical efficiency.
- Generator electrical efficiency.
- Power management.
- Energy conversion.
- Typical applications: illumination, power supply of remote telecommunication equipment, Residential needs, charging batteries and more.
- Software for data acquisition.



PELTON TURBINE TRAINER

Model Number: LLC-PTT-1

Educational Objectives:

- To study the performance of a Pelton turbine
- To determine the characteristic curves of a Pelton turbine operating at a different fluid flow rates with high head
- Torque vs. speed at various heads and flow rates.
- Power output vs speed for various heads and flow rates.
- Efficiency vs speed for a given head and flow rate.
- Data acquisition hardware and software revision.

Blending Virtual Learning with the Practical World

Labtech has two main Digital learning Systems which are available for use in the classroom and workshop. Both are designed to enhance the students learning experience and keep track of their progress and assessments. They can be used to extend the learning space into virtual learning for either the Labtech training systems or even generic subject content.

1. Computer Aided Instructional Modules (CAI) Labtech Training Systems - CAI modules are available for all major Automotive training systems. They present all the elements of the student manuals into a media rich e-learning format which incorporates many color photos, illustrations, videos and simulations. The student is led through the courseware on the training system, is given assessments of the theory then proceeds onto the experiments which detail the steps often including videos showing key procedures being performed. It also facilitates the student to enter in his results for review by the teacher. The CAI offers a comprehensive step-by-step program to guide the student through the use of the training system.

2. Flexible Micro Learning Modules to match all curriculums - Labtech's digital micro learning modules are designed as generic topical learning elements which are modular so as to integrate with most school or national curriculums. Each module deals with a distinct single learning topic which is common to most curriculums and provides enhanced learning materials for the student to explore and learn about these topics. They are provided in such a way that they can be used as supplemental learning materials to enhance the learning process or they can be incorporated into the main classroom activities. The content is organized in a systematic way and is easily accessed by the teacher and the students. Each module can be utilized according to the presentation schedule of the teacher so the materials are available when and where they need them.

Contents of the Modules: The modules contain realistic graphic animations and simulations of the topic selected for study. They also have information about the associated theory and science of about the topic, construction of the component, identification exercise for constituent components, illustrations of the operational processes, examples of real industry parts and videos of real systems. An assessment quiz is included which challenges the student about what he has learned. The assessment can guide the student to reflect further on parts of the topic which he may not have mastered. Students can work at their own pace and complete each module in about 20 to 45 minutes.

Subjects Listing:

Packages are available for Basic Automotive, Advanced Automotive, Basic Electronics, Basic Electrical, Electrical Motors, Basic Refrigeration and Air Conditioning, Computer Technology, Network Technology, Basic Mechanical Mechanisms, Renewable Energy (Green Tech) and Biomedical.

Classroom Deployment:

Networked PC Multimedia Lab: It is deployed on a classroom or school server and can be accessed by any PC. The modules are able to be accessed with the Labtech LMS system. The Labtech LMS is designed especially for Vocational and Technical Schools. The LMS content is displayed in a browser and the students and the teachers can log in. Licenses are provided for the whole school for access for the learning materials. The system also works best when the Classroom 21 CMS system is used which helps the teacher to monitor the students and to interact with them during learning.

Tablet Cart Deployment: The system is able to be deployed in a classroom cart configuration. This is a mobile tablet cart equipped with either 20 or 40 Android or Windows tablets, a server, a teacher laptop, the LMS, the CMS and with the software preloaded onto the system. This can solution can turn any classroom into a e-learning or blended learning environment.

Classroom Deployment:

Networked PC Multimedia Lab: It is deployed on a classroom or school server and can be accessed by any PC. The modules are able to be accessed with the Labtech LMS system. The Labtech LMS is designed especially for Vocational and Technical Schools. The LMS content is displayed in a browser and the students and the teachers can log in. Licenses are provided for the whole school for access for the learning materials. The system also works best when the Classroom 21 CMS system is used which helps the teacher to monitor the students and to interact with them during learning.

Tablet Cart Deployment: The system is able to be deployed in a classroom cart configuration. This is a mobile tablet cart equipped with either 20 or 40 Android or Windows tablets, a server, a teacher laptop, the LMS, the CMS and with the software preloaded onto the system. This can solution can turn any classroom into a e-learning or blended learning environment.





Labtech Training Systems are used in over 75 countries world wide and indicated in blue on this map.
We also have 6 regional operational locations marked with a flag .

Labtech Product Areas :

- Air Conditioning and Refrigeration Technology
- Automotive and Transportation Technology
- Biomedical Technology
- Computer & Networks Technology
- Digital TVET Content for Virtual Learning
- Electrical Technology
- Electronics Technology
- Learning Management Systems / Classroom21 CMS
- Renewable Energy and Green Tech
- TVET Learning Management System

Labtech has obtained major Quality Certifications from TÜV Rheinland, Germany:
ISO 9001:2015 Quality Management System



Management System
ISO 9001:2015
www.tuv.com
ID 9105033389



9001 Certification Categories: Research, Assessment, Design and Development of Educational Training Systems, Programs and Products. Manufacturing of Educational Training Systems and Products to International Standards which includes the processes of: Production, Manufacturing Resource Planning (MRP), Quality Control and Assurance (QC/QA), International Sales & Marketing, Project Implementation and Consulting Services, Training Programs and Customer Services.

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