



## REFRIGERATION AND AIRCONDITIONING RAC LABORATORY EQUIPMENTS

IEICOS manufactures state of the art refrigeration and air conditioning laboratory equipments specially designed for use in engineering and technical educational institutions for study, understanding, experimentation, evaluation and performance studies of refrigeration and air conditioning systems, components and processes. We offer both basic and computerized versions of laboratory equipments with software.

IEICOS offers the following refrigeration and air conditioning laboratory equipments and trainers:

### REFRIGERATION

- |  |              |
|--|--------------|
| 1. IEICOS REFRIGERATION CYCLE TEST RIG / TRAINER         | MODEL REF001 |
| 2. IEICOS COMPUTERISED REFRIGERATION CYCLE TEST RIG      | MODEL REF002 |
| 3. IEICOS CASCADE REFRIGERATION CYCLE TEST RIG           | MODEL REF003 |
| 4. IEICOS VAPOUR ABSORPTION REFRIGERATION CYCLE TEST RIG | MODEL REF004 |
| 5. IEICOS VAPOUR ADSORPTION REFRIGERATION CYCLE TEST RIG | MODEL REF005 |

### AIR CONDITIONING

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|--|-------------|
| 6. IEICOS AIR CONDITIONING CYCLE TEST RIG / TRAINER    | MODEL AC001 |
| 7. IEICOS COMPUTERISED AIR CONDITIONING CYCLE TEST RIG | MODEL AC002 |
| 8. IEICOS WINDOW AIR CONDITIONING CYCLE TEST RIG       | MODEL AC003 |
| 9. IEICOS AUTOMOBILE AIR CONDITIONING CYCLE TEST RIG   | MODEL AC004 |
| 10. IEICOS INDIRECT AIR CONDITIONING CYCLE TEST RIG    | MODEL AC005 |

### ICE PLANT, COOLERS AND CHILLERS

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|--|--------------|
| 11. IEICOS ICE PLANT TRAINER                   | MODEL ICE001 |
| 12. IEICOS MINI COLD STORAGE PLANT             | MODEL ICE002 |
| 13. IEICOS WATER CHILLING PLANT / WATER COOLER | MODEL ICE003 |
| 14. IEICOS EVAPORATIVE COOLER                  | MODEL ICE004 |

<b>15. IEICOS EXPERIMENTAL BOTTLE COOLER</b>	<b>MODEL ICE005</b>
<b>16. IEICOS NATURAL COOLING TOWER</b>	<b>MODEL ICE006</b>
<b>17. IEICOS FORCED DRAUGHT COOLING TOWER</b>	<b>MODEL ICE007</b>
<b>18. IEICOS VORTEX TUBE COOLING APPARATUS</b>	<b>MODEL ICE008</b>

#### **HEAT PUMPS**

<b>19. IEICOS HEAT PIPE DEMONSTRATOR</b>	<b>MODEL HP001</b>
<b>20. IEICOS WATER-WATER HEAT PUMP TEST RIG</b>	<b>MODEL HP002</b>
<b>21. IEICOS AIR-WATER HEAT PUMP TEST RIG</b>	<b>MODEL HP003</b>

#### **ACCESSORIES**

- 22. IEICOS REFRIGERATION & AIR CONDITIONING ACCESSORIES**
- 23. IEICOS DISPLAY & CUT MODELS**
- 24. IEICOS REFRIGERATION GAS CHARGING KIT**
- 25. IEICOS REFRIGERATION & AIR CONDITIONING TOOLS**



# REFRIGERATION CYCLE TEST RIG

## MODEL REF001

**IEICOS REFRIGERATION CYCLE TEST RIG is:**

1. used study the basics of refrigeration systems and components used in refrigeration system.
2. understand the principles of Vapor compression Refrigeration cycle.
3. designed for experimental determination of
  - a. Refrigeration Effect,
  - b. Work Input,
  - c. Actual C.O.P.,
  - d. Carnot C.O.P.,
  - e. Theoretical C.O.P.,
  - f. Relative C.O.P.,
  - g. Ton of Refrigeration,
  - h. Plant Efficiency.



**IEICOS REFRIGERATION CYCLE TEST RIG** is designed with standard industry state-of-the-art components to help the students knowledge about currently available products and components. The system is self contained with a full fledged easy access control panel with various meters, displays, switches and indicators. The system consists of:

<b>Compressor :</b>	Hermetically sealed compressor.
<b>Condenser :</b>	Air Cooled Condenser made out of copper pipe
<b>Condensor Cooling :</b>	Aluminum fins of matching capacity with fan cooling.
<b>Dimmerstat :</b>	to control power supply to heater.
<b>Evaporator :</b>	Copper Coil immersed in water. The evaporator is insulated from outside to prevent heat loss.
<b>Expansion device :</b>	Capillary Tube & Thermostatic expansion valve.
<b>Energy Meter :</b>	One each for power measurement of compressor & evaporator heater.
<b>Filter/drier :</b>	Provided
<b>Heater :</b>	Immersion type electric heater.
<b>Pressure Gauge :</b>	High Pressure and Low Pressure measurement – 2 Nos
<b>Rotameter:</b>	for refrigerant flow measurement.
<b>Service Valve :</b>	Hand Shut Off type
<b>Solenoid valve :</b>	Provided
<b>Thermocouples :</b>	Set of six thermocouples with Digital Temperature Indicator
<b>HP-LP Cutout :</b>	Make Danfoss or Equivalent.
<b>Switches :</b>	For compressor, condenser fan, solenoid valve & evaporator heater.
<b>Voltmeter :</b>	0 - 250 V.
<b>Ammeter :</b>	0 - 15 A.
<b>Thermostat :</b>	Provided of reputed make

**DIMENSIONS (Nominal):** 1.5 m. (L) x 1.0 m. (W). x 0.8 m (D) **WEIGHT : 150 Kg**  
**POWER SUPPLY :** 230V/440 V. A.C., 50 Hz.



# COMPUTERIZED REFRIGERATION CYCLE TEST RIG MODEL REF002

**IEICOS COMPUTERIZED REFRIGERATION CYCLE TEST RIG is:**

1. used study the basics of refrigeration systems and components used in refrigeration system.
2. understand the principles of Vapor compression Refrigeration cycle.
3. designed for experimental determination of
  - a. Refrigeration Effect,
  - b. Work Input,
  - c. Actual C.O.P.,
  - d. Carnot C.O.P.,
  - e. Theoretical C.O.P.,
  - f. Relative C.O.P.,
  - g. Ton of Refrigeration,
  - h. Plant Efficiency.



**IEICOS COMPUTERIZED REFRIGERATION CYCLE TEST RIG** is designed with standard industry state-of-the-art components to help the students knowledge about currently available products and components. The system is self contained with a full fledged easy access control panel with various meters, displays, switches and indicators. The system consists of:

<b>Compressor :</b>	Hermetically sealed compressor.
<b>Condenser :</b>	Air Cooled Condenser made out of copper pipe
<b>Condensor Cooling :</b>	Aluminum fins of matching capacity with fan cooling.
<b>Dimmerstat :</b>	to control power supply to heater.
<b>Evaporator :</b>	Copper Coil immersed in water. The evaporator is insulated from outside to prevent heat loss.
<b>Expansion device :</b>	Capillary Tube & Thermostatic expansion valve.
<b>Energy Meter :</b>	One each for power measurement of compressor & evaporator heater.
<b>Filter/drier :</b>	Provided
<b>Heater :</b>	Immersion type electric heater.
<b>Pressure Gauge :</b>	High Pressure and Low Pressure measurement – 2 Nos
<b>Rotameter:</b>	for refrigerant flow measurement.
<b>Service Valve :</b>	Hand Shut Off type
<b>Solenoid valve :</b>	Provided
<b>RTD Sensors :</b>	Set of six sensors with Digital Temperature Indicator/Transmitter
<b>HP-LP Cutout :</b>	Make Danfoss or Equivalent.
<b>Switches :</b>	For compressor, condenser fan, solenoid valve & evaporator heater.
<b>Voltmeter :</b>	0 - 250 V.
<b>Ammeter :</b>	0 - 15 A.
<b>Thermostat :</b>	Provided of reputed make

## **TRANSMITTERS :**

<b>Power Transmitter :</b>	<b>Power measurement of compressor &amp; evaporator heater. – 2 Nos</b>
<b>Pressure Transmitter :</b>	<b>High Pressure measurement, Low Pressure measurement - 2 Nos.</b>
<b>Flow Transmitter :</b>	<b>Refrigerant flow measurement.</b>

## **COMPUTER AND SOFTWARE:**

### **COMPUTER:**

**Latest available configuration supplied**

**Typical Configuration – Intel Core 2 Duo, 320 GB HDD, 2 GB RAM, CD/DVD-RW, 101 Keyboard, Optical Mouse, 17” Flat Panel Monitor, 2/4 USB ports and 1 serial port or better will be supplied**

### **SCADA SOFTWARE:**

- **Mimic diagram of the experimental setup**
- **Operational Modes – Auto, manual and other control modes of on/off, PID control**
- **Data Acquisition, monitoring and control**
- **Menu driven software with easy user interface screens**
- **Graphical real-time plotting**
- **Data storage, archival, retrieval and graphing facilities**
- **Setpoint controls with alarms**

**DIMENSIONS (Nominal): 1.5 m. (L) x 1.0 m. (W). x 0.8 m (D) plus space for computer**

**WEIGHT : 180 Kg**

**POWER SUPPLY: 230V/440 V. A.C., 50 Hz.**



# CASCADE REFRIGERATION CYCLE TEST RIG MODEL REF003

**IEICOS CASCADE REFRIGERATION CYCLE TEST RIG is:**

1. used study the basics of cascade refrigeration systems
2. understand the principles of cascade Refrigeration cycle.
3. designed for experimental determination of
  - a. Refrigeration Effect,
  - b. Work Input,
  - c. Actual C.O.P.,
  - d. Carnot C.O.P.,
  - e. Theoretical C.O.P.,
  - f. Relative C.O.P.,
  - g. Ton of Refrigeration,
  - h. Plant Efficiency.



**IEICOS CASCADE REFRIGERATION CYCLE TEST RIG** is designed with standard industry state-of-the-art components to help the students knowledge about currently available products and components. The system is self contained with a full fledged easy access control panel with various meters, displays, switches and indicators. The system consists of:

<b>Compressor :</b>	Hermetically sealed compressors.
<b>Condenser :</b>	Air Cooled Condenser made out of copper pipe
<b>Condensor Cooling :</b>	Aluminum fins of matching capacity with fan cooling.
<b>Dimmerstat :</b>	to control power supply to heater.
<b>Evaporator :</b>	Copper Coil immersed in water. The evaporator is insulated from outside to prevent heat loss.
<b>Expansion device :</b>	Thermostatic expansion valve.
<b>Energy Meter :</b>	One each for power measurement of compressor & evaporator heater.
<b>Filter/drier :</b>	Provided
<b>Heater :</b>	Immersion type electric heater.
<b>Pressure Gauge :</b>	High Pressure and Low Pressure measurement – 2 Nos
<b>Rotameter:</b>	for refrigerant flow measurement.
<b>Service Valve :</b>	Needle type
<b>Solenoid valve :</b>	Provided
<b>Thermocouples :</b>	Set of six thermocouples with Digital Temperature Indicator
<b>HP-LP Cutout :</b>	Make Danfoss or Equivalent.
<b>Switches :</b>	For compressor, condenser fan, solenoid valve & evaporator heater.
<b>Voltmeter :</b>	0 - 250 V.
<b>Ammeter :</b>	0 - 15 A.
<b>Thermostat :</b>	Provided of reputed make

**DIMENSIONS (Nominal):** 1.5 m. (L) x 1.0 m. (W). x 0.8 m (D) **WEIGHT : 150 Kg**

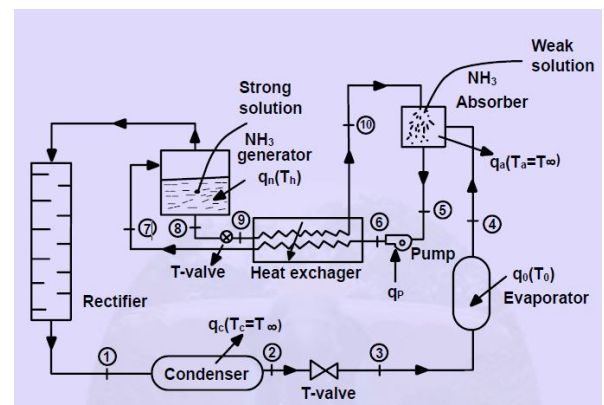
**POWER SUPPLY : 230V/440 V. A.C., 50 Hz.**



# VAPOUR ABSORPTION REFRIGERATION CYCLE TEST RIG MODEL REF004

**IEICOS VAPOR ABSORPTION REFRIGERATION CYCLE TEST RIG is:**

1. used study the basics of vapour absorption refrigeration systems
2. understand the principles of vapour adsorption Refrigeration cycle.
3. designed for experimental determination of
  - a. Refrigeration Effect,
  - b. Heat Input,
  - c. Actual C.O.P.,
  - d. Ton of Refrigeration,
  - e. Plant Efficiency.



**IEICOS VAPOUR ABSORPTION REFRIGERATION CYCLE TEST RIG** is designed with standard industry state-of-the-art components to help the students knowledge about currently available products and components. The system is self contained with a full fledged easy access control panel with various meters, displays, switches and indicators. The system consists of:

<b>Absorber :</b>	<b>With lithium bromide solution to dissolve water</b>
<b>Condenser :</b>	<b>Evaporative Condenser</b>
<b>Condensor Cooling :</b>	<b>Water spray arrangement.</b>
<b>Dimmerstat :</b>	<b>to control power supply to heater.</b>
<b>Evaporator :</b>	<b>Continuous water flow type</b>
<b>Expansion device :</b>	<b>Thermostatic expansion valve.</b>
<b>Energy Meter :</b>	<b>One each for power measurement of compressor &amp; evaporator heater.</b>
<b>Filter/drier :</b>	<b>Provided</b>
<b>Heat Exchanger :</b>	<b>Provided</b>
<b>Pump:</b>	<b>FHP pump to circulate weak dissolved solution</b>
<b>Rectification Column:</b>	<b>Provided</b>
<b>Thermocouples :</b>	<b>Set of six thermocouples with Digital Temperature Indicator</b>
<b>Steam Generator :</b>	<b>To generate steam</b>
<b>Switches :</b>	<b>For heater, evaporator fan &amp; pump</b>

**DIMENSIONS (Nominal):** 2.5 m. (L) x 1.5 m. (W). x 1 m (D)

**WEIGHT :** 200 Kg

**POWER SUPPLY :** 230V/440 V. A.C., 50 Hz.

**WATER SUPPLY:** 3000 LPH at 1 kg/cm<sup>2</sup>





## VAPOUR ADSORPTION REFRIGERATION CYCLE TEST RIG MODEL REF005

**IEICOS VAPOR ADSORPTION REFRIGERATION CYCLE TEST RIG is:**

1. used study the basics of vapour adsorption refrigeration systems
2. understand the principles of thermal compressor
3. designed for experimental determination of
  - a. Refrigeration Effect,
  - b. Heat Input,
  - c. Actual C.O.P.,
  - d. Ton of Refrigeration,

**IEICOS VAPOUR ADSORPTION REFRIGERATION CYCLE TEST RIG** is designed with standard industry state-of-the-art components to help the students knowledge about currently available products and components. The system is self contained with a full fledged easy access control panel with various meters, displays, switches and indicators. The system consists of:

<b>Cooling Tower :</b>	<b>Provided</b>
<b>Condenser :</b>	<b>water cooled condensor using water as refrigerant</b>
<b>Compressor :</b>	<b>Thermal compressor with two phase operation – continuous mode</b>
<b>Evaporator :</b>	<b>Three row type with insulated chamber</b>
<b>Pump:</b>	<b>1 HP, three phase, 50 Hz for condenser water circulation.</b>
<b>Steam Generator :</b>	<b>To generate steam 40 liters capacity at 1 bar pressure</b>
<b>Switches :</b>	<b>For heater, evaporator fan &amp; pump</b>

**DIMENSIONS (Nominal):** 5 m. (L) x 2.5 m. (W). x 1.5 m (D)

**WEIGHT :** 600 Kg

**POWER SUPPLY :** 230V/440 V. A.C., 50 Hz.

**WATER SUPPLY:** 10000 LPH at 2 kg/cm<sup>2</sup>

**POND :** Required for cooling





# AIR CONDITIONING CYCLE TEST RIG

## MODEL AC001

**IEICOS AIRCONDITIONING CYCLE TEST RIG is:**

1. used study the basics of air conditioning systems and components used in airconditioning system.
2. understand the principles of air conditioning cycle.
3. designed for experimental determination of
  - a. Refrigeration Effect,
  - b. Work Input,
  - c. Actual C.O.P.,
  - d. Carnot C.O.P.,
  - e. Theoretical C.O.P.,
  - f. Relative C.O.P.,
  - g. Ton of Refrigeration,
  - h. Plant Efficiency.



**IEICOS AIR CONDITIONING CYCLE TEST RIG** is designed with standard industry state-of-the-art components to help the students knowledge about currently available products and components. The system is self contained with a full fledged easy access control panel with various meters, displays, switches and indicators. The system consists of:

<b>Anemometer :</b>	Vane type provided to measure air flow
<b>Air Duct :</b>	0.25m x 0.25 m
<b>Boiler :</b>	Electrically fired small boiler for maintaining humidity of air with electrical heater
<b>Blower :</b>	1 HP capacity centrifugal blower with air control arrangement.
<b>Compressor :</b>	Hermetically sealed compressor.
<b>Condenser :</b>	Air Cooled Condenser made out of copper pipe
<b>Condensor Cooling :</b>	Aluminum fins of matching capacity with fan cooling.
<b>Evaporator :</b>	Evaporator coils carrying refrigerant fixed in the air duct and the air passing through comes in contact with the coils & gets cooled.
<b>Expansion device :</b>	Thermostatic expansion valve.
<b>Energy Meter :</b>	For power measurement of compressor
<b>Pressure Gauge :</b>	High Pressure and Low Pressure measurement – 2 Nos
<b>Rotameter:</b>	for refrigerant flow measurement.
<b>Thermocouples :</b>	Set of six thermocouples with Digital Temperature Indicator
<b>Switches :</b>	For compressor, condenser fan, dehumidifier heater, boiler and blower
<b>Voltmeter :</b>	0 - 250 V.
<b>Ammeter :</b>	0 - 15 A.

**DIMENSIONS (Nominal):** 3 m. (L) x 1.0 m. (W). x 0.8 m (D)

**WEIGHT :** 150 Kg

**POWER SUPPLY :** 230V/440 V. A.C., 50 Hz.



# COMPUTERIZED AIR CONDITIONING CYCLE TEST RIG MODEL AC002

**IEICOS COMPUTERIZED AIRCONDITIONING CYCLE TEST RIG is:**

1. used study the basics of air conditioning systems and components used in airconditioning system.
2. understand the principles of air conditioning cycle.
3. designed for experimental determination of
  - a. Refrigeration Effect,
  - b. Work Input,
  - c. Actual C.O.P.,
  - d. Carnot C.O.P.,
  - e. Theoretical C.O.P.,
  - f. Relative C.O.P.,
  - g. Ton of Refrigeration,
  - h. Plant Efficiency.



**IEICOS AIR CONDITIONING CYCLE TEST RIG** is designed with standard industry state-of-the-art components to help the students knowledge about currently available products and components. The system is self contained with a full fledged easy access control panel with various meters, displays, switches and indicators. The system consists of:

<b>Anemometer :</b>	Vane type provided to measure air flow
<b>Air Duct :</b>	0.25m x 0.25 m
<b>Boiler :</b>	Electrically fired small boiler for maintaining humidity of air with electrical heater
<b>Blower :</b>	1 HP capacity centrifugal blower with air control arrangement.
<b>Compressor :</b>	Hermetically sealed compressor.
<b>Condenser :</b>	Air Cooled Condenser made out of copper pipe
<b>Condensor Cooling :</b>	Aluminum fins of matching capacity with fan cooling.
<b>Evaporator :</b>	Evaporator coils carrying refrigerant fixed in the air duct and the air passing through comes in contact with the coils & gets cooled.
<b>Expansion device :</b>	Thermostatic expansion valve.
<b>Energy Meter :</b>	For power measurement of compressor
<b>Pressure Gauge :</b>	High Pressure and Low Pressure measurement – 2 Nos
<b>Rotameter:</b>	for refrigerant flow measurement.
<b>Temperature :</b>	Set of six RTD Sensors with Digital Temperature Indicator/Transmitter
<b>Switches :</b>	For compressor, condenser fan, dehumidifier heater, boiler and blower
<b>Voltmeter :</b>	0 - 250 V.
<b>Ammeter :</b>	0 - 15 A.

## **TRANSMITTERS :**

<b>Power Transmitter :</b>	Power measurement of compressor – 1 No
<b>Pressure Transmitter :</b>	High Pressure measurement, Low Pressure measurement - 2 Nos.
<b>Flow Transmitter :</b>	Refrigerant flow measurement.

## **COMPUTER AND SOFTWARE:**

### **COMPUTER:**

**Latest available configuration supplied**

**Typical Configuration – Intel Core 2 Duo, 320 GB HDD, 2 GB RAM, CD/DVD-RW, 101 Keyboard, Optical Mouse, 17” Flat Panel Monitor, 2/4 USB ports and 1 serial port or better will be supplied**

### **SCADA SOFTWARE:**

- **Mimic diagram of the experimental setup**
- **Operational Modes – Auto, manual and other control modes of on/off, PID control**
- **Data Acquisition, monitoring and control**
- **Menu driven software with easy user interface screens**
- **Graphical real-time plotting**
- **Data storage, archival, retrieval and graphing facilities**
- **Setpoint controls with alarms**

**DIMENSIONS (Nominal): 3.0 m. (L) x 1.0 m. (W). x 0.8 m (D) plus space for computer**

**WEIGHT : 180 Kg**

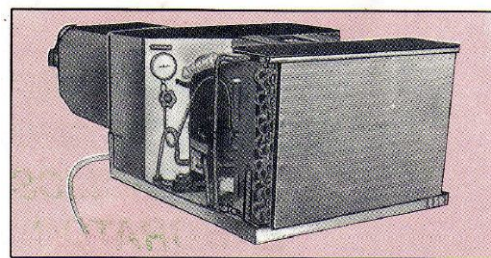
**POWER SUPPLY: 230V/440 V. A.C., 50 Hz.**



# WINDOW AIR CONDITIONING CYCLE TEST RIG MODEL AC003

**IEICOS WINDOW AIRCONDITIONING CYCLE TEST RIG is:**

1. used study the basics of window air conditioning systems and components used in air conditioning system.
2. understand the principles of air conditioning cycle.
3. designed for experimental determination of
  - a. Refrigeration Effect,
  - b. Work Input,
  - c. Actual C.O.P.,
  - d. Carnot C.O.P.,
  - e. Theoretical C.O.P.,
  - f. Relative C.O.P.,
  - g. Ton of Refrigeration,
  - h. Plant Efficiency.



*Air Conditioner Test Rig*

**IEICOS WINDOW AIR CONDITIONING CYCLE TEST RIG** is designed with standard industry state-of-the-art components to help the student's knowledge about currently available products and components. The system is self contained with a full fledged easy access control panel with various meters, displays, switches and indicators. The system consists of:

<b>Anemometer :</b>	<b>Vane type provided to measure air flow</b>
<b>Air Duct :</b>	<b>0.25m x 0.25 m</b>
<b>Blower :</b>	<b>1 HP capacity centrifugal blower with air control arrangement.</b>
<b>Compressor :</b>	<b>Hermetically sealed compressor.</b>
<b>Condenser :</b>	<b>Air Cooled Condenser made out of copper pipe</b>
<b>Condensor Cooling :</b>	<b>Aluminum fins of matching capacity with fan cooling.</b>
<b>Evaporator :</b>	<b>Evaporator coils carrying refrigerant fixed in the air duct and the air passing through comes in contact with the coils &amp; gets cooled.</b>
<b>Expansion device :</b>	<b>Thermostatic expansion valve.</b>
<b>Energy Meter :</b>	<b>For power measurement of compressor</b>
<b>Pressure Gauge :</b>	<b>High Pressure and Low Pressure measurement – 2 Nos</b>
<b>Rotameter:</b>	<b>for refrigerant flow measurement.</b>
<b>Thermocouples :</b>	<b>Set of six thermocouples with Digital Temperature Indicator</b>
<b>Switches :</b>	<b>For compressor, condenser fan, dehumidifier heater, boiler and blower</b>
<b>Voltmeter :</b>	<b>0 - 250 V.</b>
<b>Ammeter :</b>	<b>0 - 15 A.</b>

**DIMENSIONS (Nominal): 3 m. (L) x 1.0 m. (W). x 0.8 m (D)**

**WEIGHT : 150 Kg**

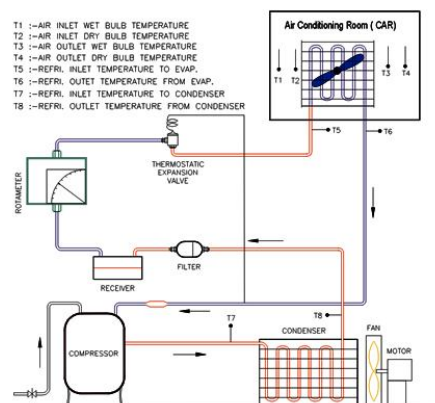
**POWER SUPPLY : 230V/440 V. A.C., 50 Hz.**



# AUTOMOBILE AIR CONDITIONING CYCLE TEST RIG MODEL AC004

**IEICOS AUTOMOBILE AIRCONDITIONING CYCLE TEST RIG is:**

1. used study the basics of automobile air conditioning systems and components used in automobile air conditioning system.
2. understand the principles of air conditioning cycle.
3. designed for experimental determination of
  - a. Refrigeration Effect,
  - b. Work Input,
  - c. Actual C.O.P.,
  - d. Carnot C.O.P.,
  - e. Theoretical C.O.P.,
  - f. Relative C.O.P.,
  - g. Ton of Refrigeration,
  - h. Plant Efficiency.



**IEICOS AUTOMOBILE AIR CONDITIONING CYCLE TEST RIG** is designed with standard industry state-of-the-art components to help the student's knowledge about currently available products and components. The system is self contained with a full fledged easy access control panel with various meters, displays, switches and indicators. The system consists of:

<b>Anemometer :</b>	Vane type provided to measure air flow
<b>Air Duct :</b>	0.25m x 0.25 m
<b>Blower :</b>	1 HP capacity centrifugal blower with air control arrangement.
<b>Compressor :</b>	Hermetically sealed compressor.
<b>Condenser :</b>	Air Cooled Condenser made out of copper pipe
<b>Condensor Cooling :</b>	Aluminum fins of matching capacity with fan cooling.
<b>Evaporator :</b>	Copper Coil evaporator with blower. Air is forced flow over the evaporator with the help of blower cooled before distributor.
<b>Expansion device :</b>	Constant pressure expansion valve.
<b>Energy Meter :</b>	For power measurement of compressor
<b>Pressure Gauge :</b>	High Pressure and Low Pressure measurement – 2 Nos
<b>Rotameter:</b>	for refrigerant flow measurement.
<b>Thermocouples :</b>	Set of six thermocouples with Digital Temperature Indicator
<b>Switches :</b>	For compressor, condenser fan, dehumidifier heater, boiler and blower
<b>Voltmeter :</b>	0 - 250 V.
<b>Ammeter :</b>	0 - 15 A.

**DIMENSIONS (Nominal):** 1.8 m. (L) x 1.0 m. (W). x 0.8 m (D)

**WEIGHT :** 150 Kg

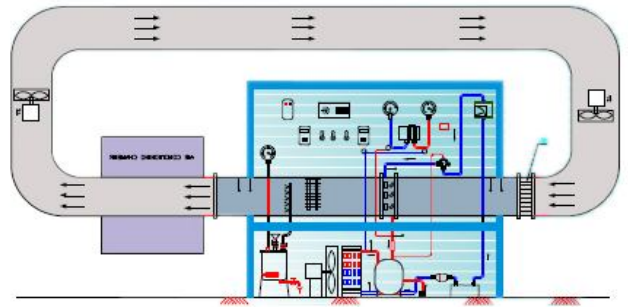
**POWER SUPPLY :** 230V/440 V. A.C., 50 Hz.



# INDIRECT AIR CONDITIONING CYCLE TEST RIG MODEL AC005

**IEICOS INDIRECT AIRCONDITIONING CYCLE TEST RIG is:**

1. used study the basics of indirect air conditioning systems and components used in air conditioning system.
2. understand the principles of air conditioning cycle
3. designed for experimental determination of
  - a. Refrigeration Effect,
  - b. Work Input,
  - c. Actual C.O.P.,
  - d. Carnot C.O.P.,
  - e. Theoretical C.O.P.,
  - f. Relative C.O.P.,
  - g. Ton of Refrigeration,
  - h. Plant Efficiency.



**IEICOS INDIRECT AIR CONDITIONING CYCLE TEST RIG** is designed with standard industry state-of-the-art components to help the student's knowledge about currently available products and components. The system is self contained with a full fledged easy access control panel with various meters, displays, switches and indicators. The system consists of:

<b>Anemometer :</b>	Vane type provided to measure air flow
<b>Air Duct :</b>	0.25m x 0.25 m
<b>Blower :</b>	1 HP capacity centrifugal blower with air control arrangement.
<b>Compressor :</b>	Hermetically sealed compressor.
<b>Condenser :</b>	Air Cooled Condenser made out of copper pipe
<b>Condensor Cooling :</b>	Aluminum fins of matching capacity with fan cooling.
<b>Evaporator :</b>	Air passed evaporator made out of copper pipe & Aluminum fins of matching capacity with fan cooling.
<b>Expansion device :</b>	Thermostatic expansion valve.
<b>Energy Meter :</b>	For power measurement of compressor
<b>Pressure Gauge :</b>	High Pressure and Low Pressure measurement – 2 Nos
<b>Rotameter:</b>	for refrigerant flow measurement.
<b>Thermocouples :</b>	Set of six thermocouples with Digital Temperature Indicator
<b>Switches :</b>	For compressor, condenser fan, dehumidifier heater, boiler and blower
<b>Storage Room :</b>	3 Ft x 3 Ft x 3 Ft with double wall insulated with small door.
<b>Voltmeter :</b>	0 - 250 V.
<b>Ammeter :</b>	0 - 15 A.

**DIMENSIONS (Nominal):** 3 m. (L) x 1.5 m. (W). x 0.8 m (D)

**WEIGHT :** 150 Kg

**POWER SUPPLY :** 230V/440 V. A.C., 50 Hz.





# ICE PLANT TRAINER MODEL ICE001

**IEICOS ICE PLANT TRAINER TEST RIG is:**

1. used study the basics of ice plant and components used in ice plant refrigeration system.
2. understand the principles of refrigeration cycle and vapour compression refrigeration cycle
3. designed for experimental determination of
  - a. Refrigeration Effect,
  - b. Work Input,
  - c. Actual C.O.P.,
  - d. Carnot C.O.P.,
  - e. Theoretical C.O.P.,
  - f. Relative C.O.P.,
  - g. Ton of Refrigeration,
  - h. Plant Efficiency.

**IEICOS ICE PLANT TRAINER**



**IEICOS ICE PLANT TRAINER TEST RIG** is designed with standard industry state-of-the-art components to help the student's knowledge about currently available products and components. The system is self contained with a full fledged easy access control panel with various meters, displays, switches and indicators. The system consists of:

<b>Brine Tank :</b>	<b>Brine Tank made out of stainless steel sheets, insulated from all sides with provision to hold cans, evaporator coil at one side &amp; an arrangement to drain the brine solution with a door provided at the top of this tank.</b>
<b>Compressor :</b>	<b>Hermetically sealed compressor.</b>
<b>Condenser :</b>	<b>Air Cooled Condenser made out of copper pipe</b>
<b>Condensor Cooling :</b>	<b>Aluminum fins of matching capacity with fan cooling.</b>
<b>Evaporator :</b>	<b>Evaporator coils carrying refrigerant fixed in the air duct and the air passing through comes in contact with the coils &amp; gets cooled.</b>
<b>Expansion device :</b>	<b>Thermostatic expansion valve.</b>
<b>Energy Meter :</b>	<b>For power measurement of compressor</b>
<b>ICE Can :</b>	<b>Provided - Quantity about 8 – 9 Nos.</b>
<b>Pressure Gauge :</b>	<b>High Pressure and Low Pressure measurement – 2 Nos</b>
<b>Rotameter:</b>	<b>for refrigerant flow measurement.</b>
<b>Thermocouples :</b>	<b>Set of six thermocouples with Digital Temperature Indicator</b>
<b>Switches :</b>	<b>For compressor, condenser fan, dehumidifier heater, boiler and blower</b>
<b>Voltmeter :</b>	<b>0 - 250 V.</b>
<b>Ammeter :</b>	<b>0 - 15 A.</b>

**DIMENSIONS (Nominal):** 2 m. (L) x 1.5 m. (W). x 1.0 m (D)

**WEIGHT :** 150 Kg

**POWER SUPPLY :** 230V/440 V. A.C., 50 Hz.





# MINI COLD STORAGE PLANT

## MODEL ICE002

**IEICOS MINI COLD STORAGE PLANT TRAINER is:**

1. used study the basics of cold storage systems and components used in cold storage system.
2. understand the principles of refrigeration cycle and vapour compression refrigeration cycle.
3. designed for experimental determination of
  - a. Refrigeration Effect,
  - b. Work Input,
  - c. Actual C.O.P.,
  - d. Carnot C.O.P.,
  - e. Theoretical C.O.P.,
  - f. Relative C.O.P.,
  - g. Ton of Refrigeration,
  - h. Plant Efficiency.



**IEICOS MINI COLD STORAGE TRAINER** is designed with standard industry state-of-the-art components to help the student's knowledge about currently available products and components. The system is self contained with a full fledged easy access control panel with various meters, displays, switches and indicators. The system consists of:

<b>Compressor :</b>	<b>Hermetically sealed compressor.</b>
<b>Condenser :</b>	<b>Air Cooled Condenser made out of copper pipe</b>
<b>Condensor Cooling :</b>	<b>Water Cooled and pressurized water shower of matching capacity with fan cooling.</b>
<b>Evaporator :</b>	<b>Evaporator coils carrying refrigerant fixed in the air duct and the air passing through comes in contact with the coils &amp; gets cooled.</b>
<b>Expansion device :</b>	<b>Thermostatic expansion valve.</b>
<b>Energy Meter :</b>	<b>For power measurement of compressor</b>
<b>Pressure Gauge :</b>	<b>High Pressure and Low Pressure measurement – 2 Nos</b>
<b>Rotameter:</b>	<b>for refrigerant flow measurement.</b>
<b>Thermocouples :</b>	<b>Set of six thermocouples with Digital Temperature Indicator</b>
<b>Storage Room :</b>	<b>3 Ft x 3 Ft x 3 Ft with double wall insulated with small door.</b>
<b>Switches :</b>	<b>For compressor, condenser fan</b>
<b>Voltmeter :</b>	<b>0 - 250 V.</b>
<b>Ammeter :</b>	<b>0 - 15 A.</b>

**DIMENSIONS (Nominal): 3.0 m. (L) x 3.0 m. (W). x 3.0 m (D)**

**WEIGHT : 150 Kg**

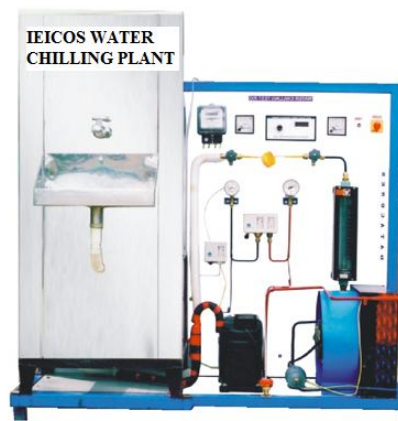
**POWER SUPPLY : 230V/440 V. A.C., 50 Hz.**



# WATER CHILLING PLANT / WATER COOLER TRAINER MODEL ICE003

**IEICOS WATER CHILLING PLANT TRAINER is:**

1. used study the basics of Water Chilling Plant and components used in water chilling system.
2. understand the principles of refrigeration cycle.
3. designed for experimental determination of
  - a. Refrigeration Effect,
  - b. Work Input,
  - c. Actual C.O.P.,
  - d. Carnot C.O.P.,
  - e. Theoretical C.O.P.,
  - f. Relative C.O.P.,
  - g. Ton of Refrigeration,
  - h. Plant Efficiency.



**IEICOS WATER CHILLING TRAINER** is designed with standard industry state-of-the-art components to help the student's knowledge about currently available products and components. The system is self contained with a full fledged easy access control panel with various meters, displays, switches and indicators. The system consists of:

<b>Compressor :</b>	<b>Hermetically sealed compressor.</b>
<b>Condenser :</b>	<b>Air Cooled Condenser made out of copper pipe</b>
<b>Condensor Cooling :</b>	<b>Aluminum fins of matching capacity with fan cooling.</b>
<b>Evaporator :</b>	<b>Copper Coil Limpeted water jacket. The evaporator is insulated from outside to prevent heat loss.</b>
<b>Expansion device :</b>	<b>Capillary Tube</b>
<b>Energy Meter :</b>	<b>For power measurement of compressor</b>
<b>Pressure Gauge :</b>	<b>High Pressure and Low Pressure measurement – 2 Nos</b>
<b>Rotameter:</b>	<b>for refrigerant flow measurement.</b>
<b>Thermocouples :</b>	<b>Set of six thermocouples with Digital Temperature Indicator</b>
<b>Switches :</b>	<b>For compressor, condenser fan, dehumidifier heater, boiler and blower</b>
<b>Voltmeter :</b>	<b>0 - 250 V.</b>
<b>Ammeter :</b>	<b>0 - 15 A.</b>

**DIMENSIONS (Nominal): 1.5 m. (L) x 1.0 m. (W). x 0.8 m (D)**

**WEIGHT : 150 Kg**

**POWER SUPPLY : 230V/440 V. A.C., 50 Hz.**



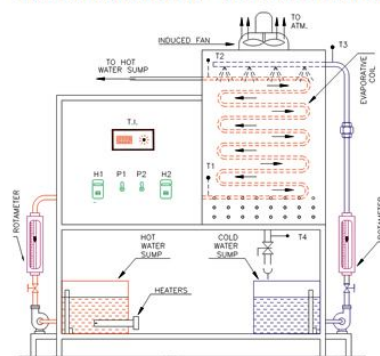
# EVAPORATIVE COOLER

## MODEL ICE004

**IEICOS EVAPORATIVE COOLER TRAINER is:**

1. used study the basics of evaporative cooler systems and components used in evaporative cooler system.
2. understand the principles of refrigeration cycle.
3. designed for experimental determination of
  - a. Refrigeration Effect,
  - b. Work Input,
  - c. Actual C.O.P.,
  - d. Carnot C.O.P.,
  - e. Theoretical C.O.P.,
  - f. Relative C.O.P.,
  - g. Ton of Refrigeration,
  - h. Plant Efficiency.

IEICOS EVAPORATIVE COOLER TRAINER



**IEICOS EVAPORATIVE COOLER TRAINER** is designed with standard industry state-of-the-art components to help the student's knowledge about currently available products and components. The system is self contained with a full fledged easy access control panel with various meters, displays, switches and indicators. The system consists of:

**Cold Water Circulation Pump:** 1/2 HP. 230 V AC cold water circulating pump is used to circulate cold water which spray on the evaporative coil.

**Compressor :** Hermetically sealed compressor.

**Condenser :** Air Cooled Condenser made out of copper pipe

**Condensor Cooling :** Aluminum fins of matching capacity with fan cooling.

**Duct :** 2 Ft x 2ft x 3 ft mm Duct in which evaporative coil is fitted.

**Evaporator :** Evaporator coils carrying refrigerant fixed in the air duct and the air passing through comes in contact with the coils & gets cooled.

**Expansion device :** Thermostatic expansion valve.

**Energy Meter :** For power measurement of compressor

**Hot water circulation pump :** 1/2 HP. 230 V AC hot water circulating pump is used to circulate hot water into the evaporative coil.

**Pressure Gauge :** High Pressure and Low Pressure measurement – 2 Nos

**Rotameter:** for refrigerant flow measurement.

**Thermocouples :** Set of six thermocouples with Digital Temperature Indicator

**Supply Tank :** 1 ft x 1 ft x 1.5 ft Stainless Steel storage tank one each for hot & cold water.

**Switches :** For compressor, condenser fan

**Voltmeter :** 0 - 250 V.

**Ammeter :** 0 - 15 A.

**DIMENSIONS (Nominal):** 1.5 m. (L) x 1.0 m. (W). x 0.8 m (D)

**WEIGHT :** 150 Kg

**POWER SUPPLY :** 230V/440 V. A.C., 50 Hz.



## EXPERIMENTAL BOTTLE COOLER MODEL ICE005

**IEICOS EXPERIMENTAL BOTTLE COOLER TRAINER is:**

1. used study the basics of experimental bottle cooler and components used in experimental bottle cooler system.
2. understand the principles of refrigeration cycle.
3. designed for experimental determination of
  - a. Refrigeration Effect,
  - b. Work Input,
  - c. Actual C.O.P.,
  - d. Carnot C.O.P.,
  - e. Theoretical C.O.P.,
  - f. Relative C.O.P.,
  - g. Ton of Refrigeration,
  - h. Plant Efficiency.

**IEICOS BOTTLE COOLER TRAINER** is designed with standard industry state-of-the-art components to help the student's knowledge about currently available products and components. The system is self contained with a full fledged easy access control panel with various meters, displays, switches and indicators. The system consists of:

<b>Compressor :</b>	<b>Hermetically sealed compressor.</b>
<b>Condenser :</b>	<b>Air Cooled Condenser made out of copper pipe</b>
<b>Condensor Cooling :</b>	<b>Aluminum fins of matching capacity with fan cooling.</b>
<b>Evaporator :</b>	<b>Copper Coil Limpeted bottle storage jacket. The evaporator is insulated from outside to prevent heat loss.</b>
<b>Expansion device :</b>	<b>Thermostatic expansion valve or capillary tube</b>
<b>Energy Meter :</b>	<b>For power measurement of compressor</b>
<b>Pressure Gauge :</b>	<b>High Pressure and Low Pressure measurement – 2 Nos</b>
<b>Rotameter:</b>	<b>for refrigerant flow measurement.</b>
<b>Thermocouples :</b>	<b>Set of six thermocouples with Digital Temperature Indicator</b>
<b>Switches :</b>	<b>For compressor, condenser fan, dehumidifier heater, boiler and blower</b>
<b>Voltmeter :</b>	<b>0 - 250 V.</b>
<b>Ammeter :</b>	<b>0 - 15 A.</b>

**DIMENSIONS (Nominal): 1.5 m. (L) x 1.0 m. (W). x 0.8 m (D)**

**WEIGHT : 150 Kg**

**POWER SUPPLY : 230V/440 V. A.C., 50 Hz.**



## NATURAL COOLING TOWER MODEL ICE006

**IEICOS NATURAL COOLING TOWER TRAINER is:**

1. used study the basics of natural cooling tower systems and components used in natural cooling tower system.
2. understand the principles of refrigeration cycle.
3. designed for experimental determination of
  - a. Cooling efficiency
  - b. Cooling rate

**IEICOS NATURAL COOLING TOWER TRAINER is designed with standard industry state-of-the-art components to help the student's knowledge about currently available products and components. The system is self contained with a full fledged easy access control panel with various meters, displays, switches and indicators. The system consists of:**

<b>Centrifugal Pump :</b>	<b>For water circulation</b>
<b>Cooling Tower :</b>	<b>3ft x 3ft x 6 ft cooling tower</b>
<b>Energy Meter :</b>	<b>For power measurement of compressor</b>
<b>Fan ;</b>	<b>Axial Flow Type 1 HP Motor</b>
<b>Material :</b>	<b>Mild Steel/FRP Frills and Body</b>
<b>Pressure Gauge :</b>	<b>High Pressure and Low Pressure measurement – 2 Nos</b>
<b>Rotameter:</b>	<b>for water flow measurement.</b>
<b>Thermocouples :</b>	<b>Set of six thermocouples with Digital Temperature Indicator</b>
<b>Switches :</b>	<b>For pump</b>
<b>Voltmeter :</b>	<b>0 - 250 V.</b>
<b>Ammeter :</b>	<b>0 - 15 A.</b>
<b>Water Heater :</b>	<b>Two heaters provided – 2 KW capacity</b>

**DIMENSIONS (Nominal): 3 m. (L) x 3.0 m. (W). x 2 m (D)**

**WEIGHT : 200 Kg**

**POWER SUPPLY : 230V/440 V. A.C., 50 Hz.**



**IEICOS FORCED DRAUGHT COOLING TOWER TRAINER is:**

1. used study the basics of forced draught cooling systems and components used in forced draught cooling system.
2. understand the principles of cooling cycle and temperature distribution along the height of the tower.
3. Experiment can be conduct on both Induced & Forced Draught condition.
3. designed for experimental determination of
  - a. Volumetric mass transfer coefficient (  $hD.a$  ) for air, water system in a cooling tower.
  - b. efficiency of the tower from Induced & Forced Draught condition Actual C.O.P.,

**IEICOS FORCED DRAUGHT COOLING TOWER** is designed with standard industry state-of-the-art components to help the student's knowledge about currently available products and components. The system is self contained with a full fledged easy access control panel with various meters, displays, switches and indicators. The system consists of:

<b>Blower :</b>	<b>3 HP capacity centrifugal blower with air control arrangement.</b>
<b>Cooling Tower:</b>	<b>1 ft x 1 ft x 4 ft</b>
<b>Pump :</b>	<b>To circulate water</b>
<b>Rotameter:</b>	<b>for water flow measurement.</b>
<b>Thermocouples :</b>	<b>Set of six thermocouples with Digital Temperature Indicator</b>
<b>Switches :</b>	<b>For compressor, condenser fan, dehumidifier heater, boiler and blower</b>
<b>Voltmeter :</b>	<b>0 - 250 V.</b>
<b>Ammeter :</b>	<b>0 - 15 A.</b>

**DIMENSIONS (Nominal): 3.4 m. (L) x 1.0 m. (W). x 0.8 m (D)**

**WEIGHT : 150 Kg**

**POWER SUPPLY : 230V/440 V. A.C., 50 Hz.**



# VORTEX TUBE COOLING APPARATUS MODEL ICE008

**IEICOS VORTEX TUBE COOLING APPARATUS is:**

1. used study the basics of vortex tube cooling systems and components used in vortex tube cooling system.
2. understand the principles of vortex tube cooling.

**IEICOS VORTEX TUBE COOLING** is designed with standard industry state-of-the-art components to help the student's knowledge about currently available products and components. The system is self contained with a full fledged easy access control panel with various meters, displays, switches and indicators. The system consists of:

- . Vortex tube assembly : Provided
- Chambers : Two pressure chambers provided
- Control Valve : Provided to control pressure
- Thermocouples : Thermocouples with Digital Temperature Indicator

**DIMENSIONS (Nominal):** 0.5 m. (L) x 0.5 m. (W). x 0.5 m (D)

**WEIGHT :** 25 Kg

**POWER SUPPLY :** 230V/440 V. A.C., 50 Hz.

**AIR SUPPLY :** Required





# HEAT PIPE DEMONSTRATOR MODEL HP001

**IEICOS HEAT PIPE DEMONSTRATION TRAINER is:**

1. used study the basics of heat pipe demonstration systems and components used in heat pipe system.
2. understand the principles of thermal conductivity of heat pipe.
3. designed for experimental observation/determination of
  - a. temperature distribution along the length of the heat pipe
  - b. thermo siphon action in heat pipe or heat pipe function.
  - c. effectiveness of heat pipe & other good thermal conductor pipes. Vs thermal conductivity in composite structure.

**IEICOS HEAT PIPE DEMONSTRATION TRAINER** is designed with standard industry state-of-the-art components to help the student's knowledge about currently available products and components. The system is self contained with a full fledged easy access control panel with various meters, displays, switches and indicators. The system consists of:

**Heater :** Band Heater Assembly.

**Heat Pipe :** made of Stainless Steel

**Two Standard Pipes :** Copper and Stainless Steel one each..

**Condenser Tank :** 3 Nos.

**Dimmerstat :** To vary current to heater

**Thermocouples :** Thermocouples with Digital Temperature Indicator

**Switches :** For compressor, condenser fan, dehumidifier heater, boiler and blower

**Voltmeter :** 0 - 250 V.

**Ammeter :** 0 - 15 A.

**DIMENSIONS (Nominal):** 1.5 m. (L) x 1.0 m. (W). x 0.8 m (D)

**WEIGHT :** 70 Kg

**POWER SUPPLY :** 230V/440 V. A.C., 50 Hz.



# WATER-WATER HEAT PUMP TEST RIG

## MODEL HP002

**IEICOS WATER WATER HEAT PUMP TEST RIG is:**

1. used study the basics of water water heat pump systems and components used in heat pump system.
2. understand the principles of heat pump cycle.
3. designed for experimental determination of
  - a. Heat Effect,
  - b. Work Input,
  - c. Actual C.O.P.,
  - d. Carnot C.O.P.,
  - e. Theoretical C.O.P.,
  - f. Relative C.O.P.,
  - g. Ton of Refrigeration,
  - h. Plant Efficiency.



**IEICOS WATER WATER HEAT PUMP TEST RIG** is designed with standard industry state-of-the-art components to help the student's knowledge about currently available products and components. The system is self contained with a full fledged easy access control panel with various meters, displays, switches and indicators. The system consists of:

<b>Compressor :</b>	Hermetically sealed compressor – ½ ton
<b>Condenser :</b>	Coiled Tube Heat Exchanger acts as a condenser.
<b>Condensor Cooling :</b>	Copper coil is merged in water tank to cool down the gas temp. Continuous water flow circulation is required to extract the heat of gases.
<b>Evaporator :</b>	Evaporator coils carrying refrigerant fixed in the air duct and the air passing through comes in contact with the coils & gets cooled.
<b>Expansion device :</b>	Thermostatic expansion valve.
<b>Energy Meter :</b>	For power measurement of compressor
<b>Filter/Drier :</b>	Provided
<b>HP/LP cutout :</b>	Provided
<b>Pressure Gauge :</b>	High Pressure and Low Pressure measurement – 2 Nos
<b>Rotameter:</b>	for refrigerant flow measurement.
<b>Thermocouples :</b>	Set of six thermocouples with Digital Temperature Indicator
<b>Switches :</b>	For compressor, condenser fan, dehumidifier heater, boiler and blower
<b>Voltmeter :</b>	0 - 250 V.
<b>Ammeter :</b>	0 - 15 A.

**DIMENSIONS (Nominal):** 3 m. (L) x 1.0 m. (W). x 0.8 m (D)

**WEIGHT :** 150 Kg

**POWER SUPPLY :** 230V/440 V. A.C., 50 Hz.

**WATER SUPPLY :** 20 LPM



# AIR-WATER HEAT PUMP TEST RIG

## MODEL HP003

**IEICOS AIRWATER HEAT PUMP TEST RIG is:**

1. used study the basics of water water heat pump systems and components used in heat pump system.
2. understand the principles of heat pump cycle.
3. designed for experimental determination of
  - a. Heat Effect,
  - b. Work Input,
  - c. Actual C.O.P.,
  - d. Carnot C.O.P.,
  - e. Theoretical C.O.P.,
  - f. Relative C.O.P.,
  - g. Ton of Refrigeration,
  - h. Plant Efficiency.



IEICOS AIR WATER HEAT PUMP TEST RIG

**IEICOS AIR WATER HEAT PUMP TEST RIG** is designed with standard industry state-of-the-art components to help the student's knowledge about currently available products and components. The system is self contained with a full fledged easy access control panel with various meters, displays, switches and indicators. The system consists of:

<b>Compressor :</b>	Hermetically sealed compressor – ½ ton
<b>Condenser :</b>	Coiled Tube Heat Exchanger acts as a condenser.
<b>Condensor Cooling :</b>	Copper coil is merged in water tank to cool down the gas temp. Continuous water flow circulation is required to extract the heat of gases.
<b>Dimmerstat :</b>	230 V. AC single phase for heating control
<b>Evaporator :</b>	Air Cooled evaporator made out of copper pipe & Aluminum fins of matching capacity with fan.
<b>Expansion device :</b>	Thermostatic expansion valve.
<b>Energy Meter :</b>	For power measurement of compressor
<b>Filter/Drier :</b>	Provided
<b>HP/LP cutout :</b>	Provided
<b>Pressure Gauge :</b>	High Pressure and Low Pressure measurement – 2 Nos
<b>Rotameter:</b>	for refrigerant flow measurement.
<b>Thermocouples :</b>	Set of six thermocouples with Digital Temperature Indicator
<b>Switches :</b>	For compressor, condenser fan, dehumidifier heater, boiler and blower
<b>Voltmeter :</b>	0 - 250 V.
<b>Ammeter :</b>	0 - 15 A.

**DIMENSIONS (Nominal):** 3 m. (L) x 1.0 m. (W). x 0.8 m (D)

**WEIGHT :** 150 Kg

**POWER SUPPLY :** 230V/440 V. A.C., 50 Hz.

**WATER SUPPLY :** 20 LPM

## **10) IEICOS REFRIGERATION AND AIR CONDITIONING TESTING, ENGINEERING & RESEARCH EXPERTISE**

We have necessary expertise and facility to undertake any high end research work in the field of engine testing engineering instrumentation and measurement as required by you or by your organization. If you or your staff are working towards research as part of their interest or towards their post graduate/Ph.D degree, we can provide necessary instrumentation, consultancy, guidance in development of equipment etc.

Please feel free to contact us with your requirements.

*Mechanical Dimensions, location of Components, Controls and Panel Meters may be changed without notice to incorporate latest state of the Art of Technology.*

### **MANUFACTURERS OF:**

ELECTRONIC MICROPROCESSOR BASED DIGITAL INSTRUMENTS, SYSTEMS AND TRANSDUCERS FOR MEASURING, RECORDING, PRINTING, TESTING, PROCESS AND QUALITY CONTROL, ANALYSIS, EVALUATION, SIMULATION OF TORQUE SPEED, POWER, PRESSURE, STRESS, STRAIN LOAD, FLOW LEVEL, DISPLACEMENT, VIBRATION, SOUND TEMPERATURE, HUMIDITY, ELECTRICAL PARAMETERS, DYNAMOMETERS FOR TESTING AND EVALUATION OF MACHINE TOOLS, ROTATING MACHINERY, LOADING FRAME WITH ELECTRONIC DATA LOGGERS FOR STRUCTURAL STUDIES IN THE FIELDS OF : INSTRUMENTATION, MECHANICAL ENGINEERING, PRODUCTION TECHNOLOGY, FLUID MECHANICS/HYDRAULIC LABORATORY, CIVIL/STRUCTURAL ENGINEERING, ELECTRICAL/ELECTRONICS ENGINEERING IN EDUCATION, R & D, INDUSTRY AND DEFENCE INSTITUTIONS.

## **INDUSTRIAL ENGINEERING INSTRUMENTS**

Manufacturers of Techno Electronic Aids Devices, Instruments and Systems,  
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