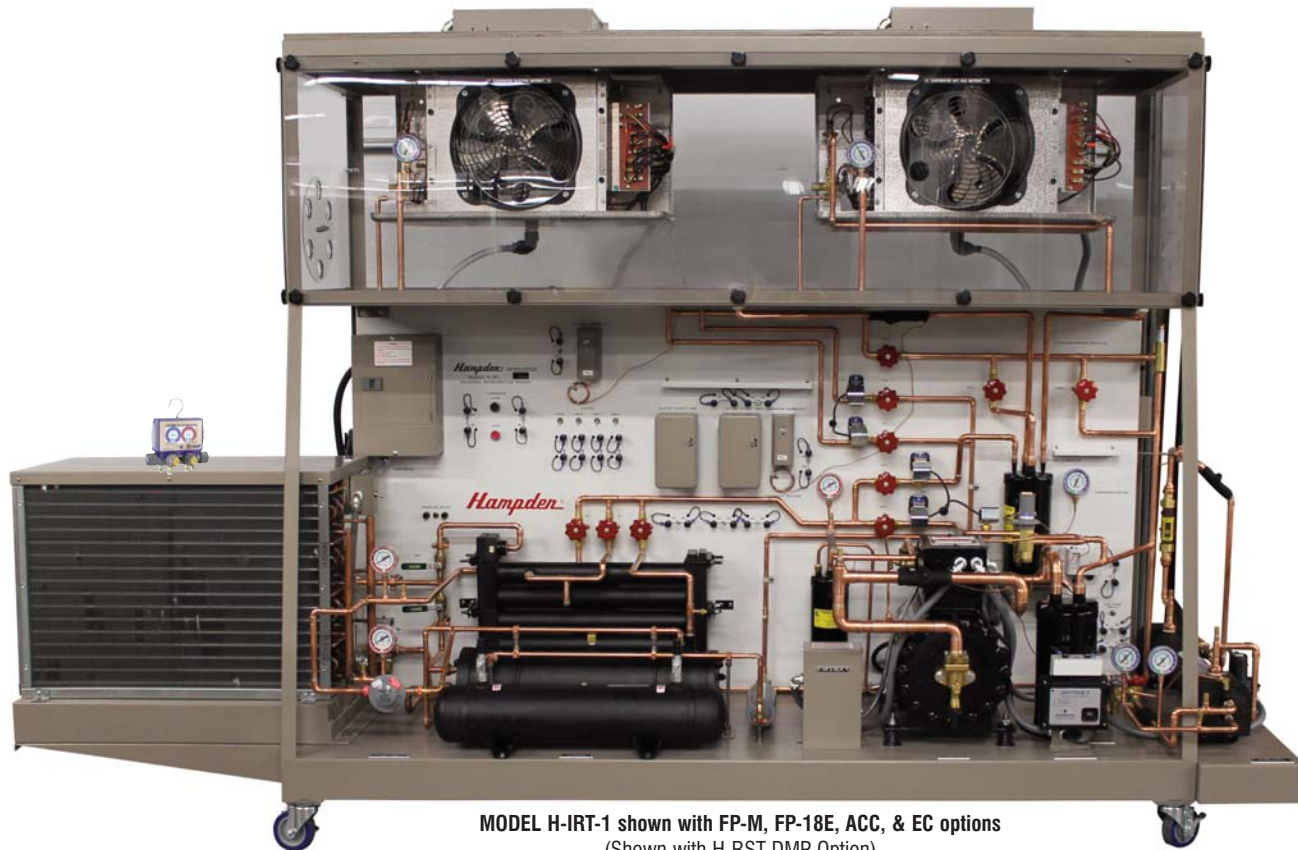


# Industrial Refrigeration Trainer

Educational Training Equipment for the 21st Century

Bulletin 231K

## H-IRT-1 Industrial Refrigeration Trainer



**MODEL H-IRT-1 shown with FP-M, FP-18E, ACC, & EC options**

(Shown with H-RST-DMP Option)

Dimensions: 76"H x 88"W x 31"D

Shipping Weight (without options): 1500 lbs

Four clear plastic panels enclose the upper portion containing the evaporators.

The Hampden **Model H-IRT-1** Industrial Refrigeration Trainer consists of industrial refrigeration components completely factory assembled and wired. It is designed to provide training with larger commercial and industrial refrigeration systems which require water-cooled condensers (tube-in-tube and shell-in-tube), electric and hot gas defrost systems, cooling towers, hot bypass capacity control systems, crankcase pressure regulators, crankcase heaters and pressure pumps.

### Options

**H-IRT-FP-M** Mechanical Fault Package

**H-IRT-FP-18E** Electrical Fault Package

**H-IRT-ACC** Third Condenser to expand training capabilities (Air Cooled)

**H-IRT-EC** Evaporator Chiller, shell and tube type water chiller

**H-IRT-1-CDL** Industrial Refrigeration Trainer with Computer Data Logging package

**H-ACTK-CT** Water Cooling Tower

**H-RST-DMB** Digital Manifold with Bluetooth

*Options must be specified at time of original order.*

All Hampden units are available for operation at any voltage or frequency



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**Hampden**  
ENGINEERING CORPORATION

# Industrial Refrigeration Trainer

Educational Training Equipment for the 21st Century

Bulletin 231-1J

## H-IRT-1 Industrial Refrigeration Trainer

### Description

The Hampden **Model H-IRT-1** Industrial Refrigeration Trainer consists of the following:

- 3 HP semi-hermetic compressor
- Refrigerant R-134A (other refrigerants available)
- Crankcase heater with automatic control system
- Oil circulating pump
- Two evaporators (forced-air type) with solenoids, timers, etc.
- Two water-cooled condensers (tube-in-tube and shell-in-tube)
- Gas bypass systems
- Crankcase pressure regulator with gauges
- Operating instructions, student experiment manual and teacher manual
- Text: *Modern Refrigeration and Air Conditioning* with study guide and lab manual

### Lessons

The following lessons are included in the Hampden **Model H-IRT-1** Teacher's Manual:

- Properties of Matter
- Temperature and Heat Energy
- Refrigerants

The Hampden **H-ACTK-CT** Cooling Tower provides a hands-on introduction to the principal components of cooling towers. The unit provides the student with the ability to assemble and troubleshoot the systems.

Enclosure:	Steel with an Epoxy finish-mobile
Fan:	1/4 HP
Pump and Motor:	1/2 HP with thermal protection
Controls:	Thermostat Hi-Pressure switch Disconnect switch Float valve
Hardware:	Galvanized pipe and fittings Wire Conduit or liquid type cable Connectors Fill connector Hoses
Courseware:	Correlated operations manual
Input:	208/220V AC, single phase

- The Refrigeration Cycle
- Pressure-Enthalpy Charts
- Heat Transfer
- Refrigerant Oils
- Leak Detection
- Removing Refrigerant From a System
- Charging a Refrigeration System
- Liquid Control Devices-Thermostatic Expansion Valve
- Pressure Controls

### Services Required

- 240/120V AC 1Ø 60Hz 35A with ground
- A source of flowing water
- A drain to sewer
- A means of connecting the optional cooling tower to a source of 220V AC 1Ø 60Hz electric power

### Experiments

- Evaporator No. 1 with Tube-in-Tube Condenser No.1
- Evaporator No. 1 with Shell-in-Tube Condenser No.2
- Evaporator No. 2 with Tube-in-Tube Condenser No.1
- Evaporator No. 2 with Shell-in-Tube Condenser No.2
- Electric Defrost
- Hot Gas Defrost



Front view



Side angle view



Back view

**MODEL H-ACTK-CT Water Cooling Tower**  
Dimensions: 60.5"H x 29.25"W x 48.125"D  
Shipping Weight 610 lbs

All Hampden units are available for operation at any voltage or frequency

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