

Refrigeration Systems Demonstrators

Educational Training Equipment for the 21st Century

Bulletin 682-2E

Purpose

The Hampden **Model H-6822** Refrigeration Cycle Demonstrator provides the student with an introduction to the Second Law of Thermodynamics, which states that heat will not pass from a cold region to a hot region without an "external agency."

The student will be able to observe the evaporator where heat is taken in as the liquid evaporates at low pressure and the condenser where the high pressure vapor condenses and rejects heat. The compressor uses a work input to increase the pressure vapor and the expansion valve controls the flow of liquid from the condenser back to the evaporator.

Specifications

Base and Control Panel:

Steel, finished in instrument tan texture, panel is white enamel

Feet:

Levelers

Compressor:

1/6 Hp R-123

Evaporator:

Pyrex 3" Dia. x 12" High with evaporator coil
– Flooded type

Condenser:

Pyrex 3" Dia. x 12" High with condenser coil

Electrical Control Accessories:

Main circuit breaker
Hi-Pressure cut-out switch

Water Inlet and Drain Considerations:

Hose barbs

Nomenclature:

Silkscreened, black KEM enamel

Courseware:

Correlated operations manual



H-6822 Refrigeration Cycle Demonstrator

Dimensions: 32"L x 25"W x 23"H w/o tank
Weight: 200 lbs

System Accessories:

- Drier (1)
- Sight Glass (1)
- Isolation Valve (1)
- Charging Valve (1)
- Flowmeter with control valve, water (2)
- Temperature wells for evaporator and condenser (2)
- Temperature wells in water line (4)
- Thermometers, stem (6)
- Gauges, compound-metric (2)
- R-123 enthalpy chart

Metering Devices:

- PR300 Power Energy Meter
- Temperature Meter w/ selector switch
- Thermocouples (6)

Services Required

Electrical:

Single-phase 120V AC, 50/60Hz, 20A

Water:

Cold water supply and Drain

Options

Computer Data Logging Option

Computer Data Logging can be added, which incorporates; six type-T thermocouples, two pressure transducers, two flow transducers, and one Watt transducer.

The analog outputs are factory wired to National Instruments I/O modules where the signals are converted and terminate to an USB receptacle. Computer is included. Software and templates for LabVIEW® control software are included. Specify **MODEL H-6822-CDL**



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

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