Climatic Comfort Products
Dealer Support Terminology

Definitions:

ABSOLUTE HUMIDITY: The weight of water vapor in a given amount of air. Measured in grains per cubic foot.
ABSOLUTE ZERO: The temperature at which molecular activity theoretically ceases (-459.69°F or -273.16°C)
AFUE%: AFUE stands for "Annual Fuel Utilization Efficiency". This rating is based on average usage, including on and off cycling, as set out in the standardized Department of Energy test procedures.
AIR CONDITIONING: The process of controlling the temperature, humidity, cleanliness and distribution of the air.
AIR: Atmospheric air is composed of approximately of 78% Nitrogen, 21% Oxygen and 1% other gases, e.g. CO2, Ozone, Helium. Over the sea, traces of salt are present, and over the land, traces of sulfates. Dust and micro-organisms are also present.
ARI STANDARD CONDITIONS: The conditions at which BTU ratings for summer air conditioning equipment is rated. 95°F dry bulb, 75°F wet bulb at the condenser inlet and 80°F dry bulb, 67°F wet bulb at the evaporator inlet.
ATMOSPHERIC PRESSURE: The weight of 1 square inch column of the earth's atmosphere. At sea level this pressure is 14.696 pounds per square inch.
BIMETAL: Two metals with different rates of expansion fastened together. When heated or cooled they will warp and can be made to open or close a switch or valve.
BOILING POINT: The temperature at which the addition of any heat will begin a change of state from a liquid to a vapor.
BRITISH THERMAL UNIT (BTU): The amount of heat necessary to raise the temperature of 1 pound of pure water (about 1 pint) by 1°F
CAPILLARY TUBE: A refrigerant control consisting of a small diameter tube which controls flow by restriction. They are carefully sized by inside diameter and length for each particular application.
CENTIGRADE: A temperature scale with the freezing point of water at 0° and the boiling point at 100° at atmospheric pressure.
COEFFICIENT OF PERFORMANCE (COP): A ratio calculated by dividing the total heating capacity provided by the refrigeration system, including the circulating fan heat but excluding supplementary resistance (BTUs per hour), by the total electric input (watts) x 3.412.
COMPRESSION: The reduction of volume of a vapor or gas by mechanical means.
COMPRESSOR: A mechanical device used to compress gases. Four main types are: Reciprocating; Centrifugal, Rotary and Scroll.
CONDENSATION POINT: The temperature at which removal of any heat will begin a change of state from a vapor to a liquid.
CONDENSER: A device in which the superheat and latent heat of condensation are removed to effect a change of state from a vapor to a liquid. Some sub- cooling is also usually accomplished.
CONDENSING MEDIUM: The substance, usually air or water, to which the heat in a condenser is transferred.
CONDENSING UNIT: The portion of a refrigeration system where the compression and condensation of refrigerant is accomplished. Sometimes referred to as the "high side".
CONDUCTION: The transfer of heat from molecule to molecule within a substance.
CONTACTOR: An electro-magnetic actuated relay. Usually used to refer to the relay which closes the circuit to a compressor.
CONVECTION: The transfer of heat by a moving fluid.
COOLING ANTICIPATOR: A resistance heater (usually not adjustable) in parallel with the cooling circuit. It is "on" when the circuit is "off' adding heat ing to shorten the off cycle.
CYCLE: The complete course of operation of a refrigerant back to a selected starting point in a system. Also used to describe alternating current through 360 space degrees.

DENSITY: Mass or weight per unit of volume, i.e.: Standard air .075 pounds per cubic foot.
DISCHARGE LINE: A tube used to convey the compressed refrigerant vapor from the compressor to the condenser inlet.
DISCHARGE PRESSURE: The pressure read at the compressor outlet. Also called head pressure or high pressure.
DOE: Department of Energy.
DRY BULB TEMPERATURE: Temperature read with an ordinary thermometer.
ENERGY EFFICIENT RATIO (EER): A ratio calculated by dividing the cooling capacity in BTUs per hour (BTUH) by the power input in watts or any given set of rating conditions, expressed in BTUH per watt (BTUH/watt).
EVAPORATIVE COOLING: The cooling effect of vaporization of a liquid in a moving air system.
EVAPORATOR SUPERHEAT: The actual temperature of the refrigerant gas as it exits the evaporator as compared to the saturated gas temperature indicated by the suction pressure.:
EVAPORATOR: A device in which a liquid refrigerant is evaporated. Some superheating usually takes place.
FAHRENHEIT: A temperature scale with the freezing point of water at 32° and the boiling point at 212° at atmospheric pressure.
FREEZING POINT: The temperature at which the removal of any heat will begin a change of state from liquid to a solid.
GAUGE PRESSURE: Pressure measured with atmospheric pressure as a base.
HEAT EXCHANGER: A device for the transfer of heat energy from the source to the conveying medium.
HEAT FLOW: Heat flows from a warmer to a cooler substance. The rate depends upon the temperature difference, the area exposed and the type of material.
HEAT OF COMPRESSION: The heat added to a gas by the work done on it during compression. HEAT TRANSFER: The three methods of heat transfer are conduction, convection and radiation. HEAT: A form of energy causing the agitation of molecules within a substance.
HEATING SEASONAL PERFORMANCE FACTOR (HSPF): The total heating output of a heat pump during its normal annual usage period for heating divided by the total electric power input in watt-hours during the same period
INCHES OF MERCURY: Atmospheric pressure is equal to 29.92 inches of mercury.
LATENT HEAT OF CONDENSATION: The amount of heat energy, in BTUs, that must be removed to change the state of 1 pound of a vapor to 1 pound of liquid at the same temperature.
LATENT HEAT OF FUSION: The amount of heat energy, in BTUs, required to change the state of 1 pound of a liquid to 1 pound of solid at the same temperature.
LATENT HEAT OF MELTING: The amount of heat energy, in BTUs, that must be removed to change the state of 1 pound of a solid to 1 pound of liquid at the same temperature.
LATENT HEAT OF VAPORIZATION: The amount of heat energy, in BTUs, required to change the state of 1 pound of liquid to 1 pound of vapor at the same temperature.
LATENT HEAT: Heat that produces a change of state without a change in temperature. i.e.: Ice to water at 32°F; Water to steam at 212°.
LIQUID LINE: A tube used to convey the liquid refrigerant from the condenser outlet to the refrigerant control device of the evaporator.
MANOMETER: A tube filled with liquid used to measure pressure.
MELTING POINT: The temperature at which the addition of any heat will begin a change of state from a solid to a liquid.
MERCURY MANOMETER: Used to measure vacuum in inches of mercury.
MICRON: A unit of measurement equal to 1/25,400 of an inch.
ORIFICE: A flow control device for refrigerant, natural gas or propane using restriction. They are carefully sized by inside diameter for each particular application.
PARTIAL PRESSURE: The pressure exerted by an individual gas in a mixture.
PRESSURE - TEMPERATURE RELATIONSHIP: The change effected in temperature when pressure is changed or vice versa. Only used at saturated conditions. An increase in pressure results in a temperature increase. A decrease in temperature results in a pressure decrease.
PRESSURE DROP: The decrease in pressure due to friction of a fluid or vapor as it passes through a tube or duct.

PSYCHROMETER: A device having both a dry and a wet bulb thermometer. It is used to determine the relative humidity in a conditioned space. Most have an indexed scale to allow direct conversion from the temperature readings to the percentage of relative humidity.
PSYCHROMETRIC CHART: A chart on which can be found the properties of air under varying conditions of temperature, water vapor content, volume, etc.
RADIATION: The transfer of heat without an intervening medium. It is absorbed on contact with a solid surface.
REFRIGERANT CONTROL: A device used to meter the amount of refrigerant to an evaporator. It also serves as a dividing point between the high and low pressure sides of the system.
REFRIGERANT: A substance which produces a refrigerating effect while expanding or vaporizing.
REFRIGERATION: The transfer of heat from a place where it is not wanted to a place where its presence is not undesirable.
RELATIVE HUMIDITY: The percentage of water vapor present in a given quantity of air compared to the amount it can hold at its temperature.
RELAY: A device used to open and close an electrical circuit.
SATURATED GAS: Gas in contact with a liquid.
SATURATION: A condition of stable equilibrium of a vapor and a liquid.
SEASONAL ENERGY EFFICIENCY RATIO (SEER): The total cooling of a central unitary air conditioner or unitary heat pump in BTUs during its normal annual period for cooling divided by the total electric energy input in watt-hours during the same period.
SENSIBLE HEAT: Heat that can be measured or felt. Sensible heat always causes a temperature rise.
SOUND RATING (SR): A tone corrected A-weighted sound power level expressed in bels. The Sound Rating is based on tests performed at Standard Rating Conditions (cooling).
SPECIFIC HEAT: The amount of heat necessary to change the temperature of 1 pound of substance 1°F.
SPECIFIC VOLUME: The volume of a substance per unit of mass. i.e.: standard air 13.33 cubic feet per pound. The reciprocal of density.
STANDARD AIR DENSITY: .0.075 pounds per cubic foot. Equivalent to dry air at 70°F and at sea level pressure.
STATE CONDITION: Substances can exist in three states - Solid, Liquid or Gas.
SUB-COOLING: Cooling of a liquid, at a constant pressure, below the point at which it was condensed.
SUCTION LINE: A tube used to convey the refrigerant gas from the evaporator outlet to the suction inlet of a compressor. SUCTION PRESSURE: The pressure read at the inlet side of a compressor. Also called back pressure or low side pressure SUPERHEAT: Heat added to a vapor after all liquid has been vaporized