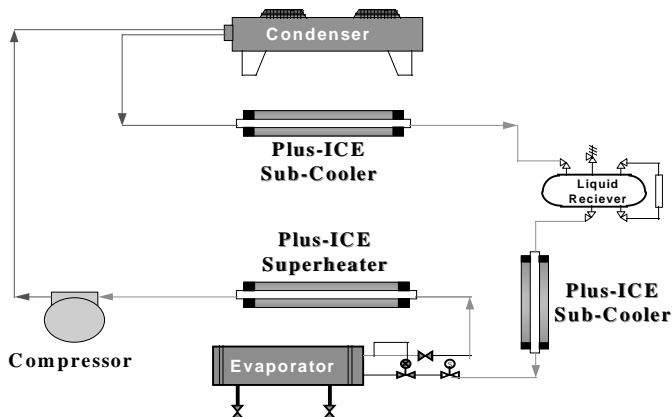




REFRIGERATION APPLICATIONS

Refrigeration Cycle;

The efficiency of a refrigeration cycle can be improved by utilising a different type of refrigerant, compressor, condensing, evaporating and expansion devices but the cardinal rule of energy efficiency states that **“lower condensing pressures, high evaporating temperatures, larger sub-cooling and controlled suction superheat lead to less energy consumption for a given refrigeration duty and, therefore, designers should aim to achieve the above design limits for a given system”**.

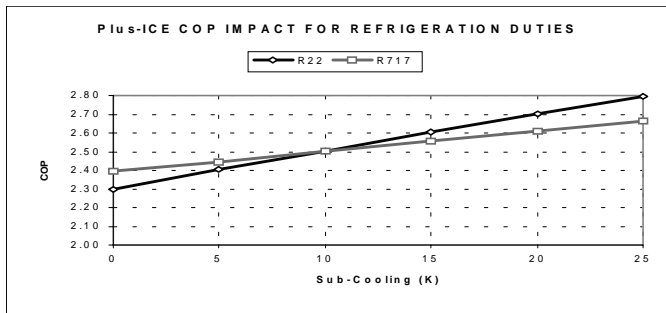
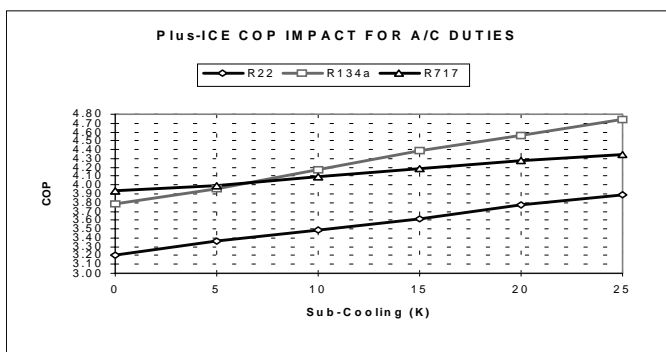


Stable & Efficient Cycle;

The temperature ranges offered by the PlusICE technology enables the designers to apply beams as part of the superheating as well as the sub-cooling section of the circuitry in order to achieve the maximum sub-cooling and acceptable superheating operation for the refrigeration circuit.

At night-time the lower ambient temperature, together with the oversized condenser for the night-time operation, leads to a considerable over-cooling of the liquid refrigerants under the normal low ambient operation.

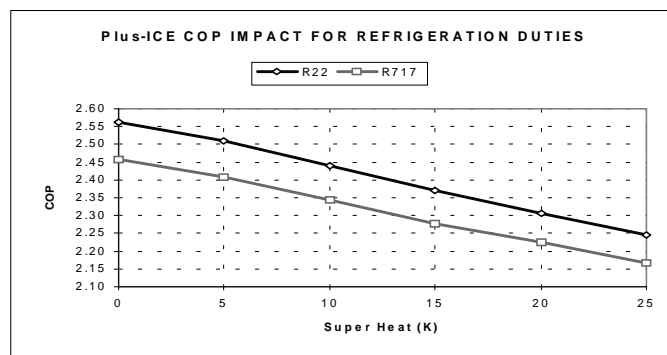
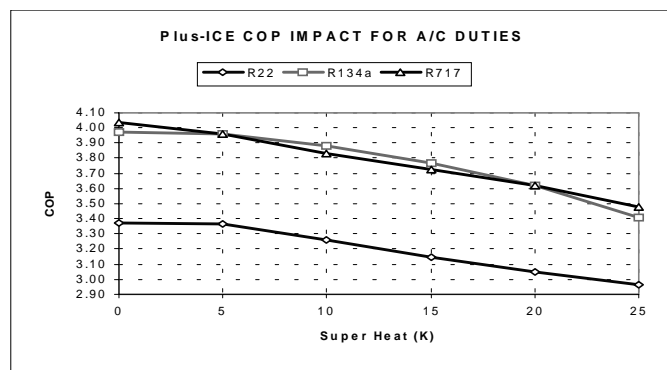
This problem can be overcome by the PlusICE sub-cooling TES beams in order to create artificial load to charge the system which is conventionally protected by a head pressure control system.



Economic Benefits;

The same effect can be repeated as part of the suction lines utilising the excessive capacity to charge the beams in order to control the peak superheat values.

The combination of PlusICE sub-coolers and superheaters enables the designer to maintain a steady refrigeration envelope which results in improved efficiency, less running costs, and improved reliability for the system.



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