Energy Efficient Water-Cooled Condenser Type Air Conditioner

Technology in Brief

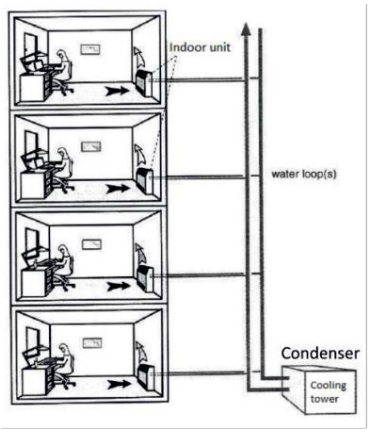
A water-cooled AC is developed as an alternative to window/split AC in the range of 1 to 2.5 TR. The novel liquid to refrigerant heat exchanger design resulted in improvement of COP by 30%. The system is also applicable for multi-tenant/multi flat high-rise buildings with the multi-unit configuration with single condenser.

Salient Features/Advantages

- No de-rating in higher ambient summer temperatures resulting in power savings.
- Prevents heat island effect (does not reject heat into neighbor's surroundings).
- Less maintenance as minimal Refrigerant line/No Chilled Water for domestic applications (potentially replacing geysers).
- Geo Thermal Cooling (Significant COP rise due to low rejection temperature).
- Can use recycled water also for heat exchange.
- COP achieved is 3.5 to 4.5 for 1.5 TR systems.
- Less electrical energy consumption with COP improvement by 30%.
- Maintain constant indoor comfort temperature even for outside temperature in range 40˚ to 50˚C.
- Can be configured for utilizing Geo-thermal energy further improving efficiency.

1.5TonWaterCooledACSystem

Water Condenser



Multiunit Configuration

Properties & Standards	Typical COP range of Window/split AC is 2 to 3
End Product(s)	1 to 2.5 TR Water Cooled AC
License/Commercialization	M/S Salleria Enngineers, Gautam Buddha Nagar, Uttar Pradesh
Environmental Impact	Energy efficient and environment friendly
Setup – Equipment required	Assembling work and sheet metal work Fabrication shop for heat exchangers