

## Commercial Air-Cooled Condensing Units

**Size Range** : 1 to 20 Tons, Nominal

Starcore Refrigeration Ltd. Model Series Air Cooled and Water Cooled, Medium and Low Temperature



### System Description :

Outdoor-mounted, air-cooled condensing unit suitable for on-the-ground or rooftop installation. Unit consists of a hermetic / semi hermetic reciprocating / scroll refrigeration compressor assembly, an air-cooled coil, propeller-type condenser fans with external, and an electrical control console.



### Quality Assurance :

- Unit shall be rated in accordance with ARI Standard 360-2000.
  - Unit construction shall comply with ANSI/ASHRAE 15 safety code latest revision and comply with NEC.
  - Unit shall be constructed in accordance with UL 1995 standard and shall carry the UL and UL, Canada label.
  - Unit cabinet shall be capable of withstanding 500-hour salt spray exposure per ASTM B117 (scribed specimen).
  - Air-cooled condenser coils for hermetic compressor units shall be leak tested at 150 psig, and pressure tested at 350 psig.
-

# Equipment

## General :

Factory-assembled, single piece, air-cooled condensing unit with factory wiring, piping, controls, compressor, holding charge, and special features required prior to field start-up.

---

## Unit Cabinet :

- Unit cabinet constructed of galvanized steel, bonderized and coated with a epoxy non corrosive powder coat paint of 50 to 100 micron thickness pre painted baked enamel finish.
  - A heavy-gauge roll-formed perimeter base rail with forklift slots and lifting holes shall be provided to facilitate rigging.
- 

## Fans :

- External Rotor Condenser fans direct driven, propeller-type, discharging air vertically upward.
  - Fan blades dynamically balanced.
  - Condenser fan discharge openings with PVC-coated steel wire safety guards.
  - Condenser fan motor IP55 degree protection.
- 

## Compressor :

- Compressor hermetic / semi hermetically sealed reciprocating or scroll type.
  - Compressor mounted on anti vibration mounts.
  - Compressors with overload protection.
  - Compressors equipped with a crankcase heater.
  - Compressor with safety control like internal high discharge temperature protection.
- 

## Condenser Coil / Shell and Tube Condenser :

- Condenser coil shall be air-cooled and circuited for integral sub cooler.
- Standard condenser coils are with internally enhanced copper tubes and aluminum fins. Coils are furnace brazed design. Condenser coils are leak tested to 150 psig; pressure tested to 350 psig, and qualified to UL 199 burst test at 1980 psig.

- All tubes used are internally enhanced and in case of water cooled condensers are externally finned to increase the heat transfer area.
  - All shell and tube condensers come with IS 1239 shell tube and flanges as per DIN standards
- 

### **Refrigeration Components :**

Refrigeration circuit components include liquid line service valve, suction line service valve, oil separators, accumulators, liquid line solenoid valves, catchall driers, a full charge of compressor oil, and shipped with Nitrogen inside to ensure no leaks during shipment.

---

### **Controls and Safeties :**

#### **1. Minimum control functions include**

- Control wire terminal blocks.
- Compressor lockout on auto-reset safety until reset from microprocessor controlled thermostat.

#### **2. Minimum safety devices which are equipped with automatic reset include**

- High discharge pressure cutout.
  - Low pressure cutout.
  - Oil safety switches in case of semi hermetic compressors.
- 

### **Electrical Requirements :**

- Nominal unit electrical characteristics are 400v 3-ph, 50 Hz. The unit is capable of satisfactory operation within voltage limits of 380v to 420v.
  - Unit electrical power is a single-point connection.
  - Unit control circuit is 220 Volts.
- 

### **Special Features (OPTIONAL) :**

- Low-Ambient Temperature Control : A low-ambient temperature control can be available as a factory-installed option or as a field-installed accessory. This low-ambient control will regulate speed of the condenser-fan motors in response to the saturated condensing temperature of the unit. The control will maintain correct condensing pressure at outdoor temperatures down to -20 DegC.

- Optional Condenser Coil Materials : Condenser Coil Protective Coating Blue fin coils and Marine water Condensers available on special request.
  - Unit-Mounted, Non-Fused Disconnect Switch in case of emergency:
  - Switch is factory-installed and externally mounted.
  - **Thermostat Controls** : Programmable multi-stage controller with features that can be user defined, integrated to a compatible PC system with software to view and control operating parameters and remotely monitored, a Optional supply accessory.
- 

## **Nomenclature**

1. **Cu** : **Condensing Unit**
2. **AC/WC** : **Air Cooled/ Water Cooled**
3. **P/N** : **Positive/Negative**
4. : **Room Temperature**
5. : **Capacity in Tonnes of Refrigeration**



## **Starcore Refrigeration Ltd.**

101C-3, Kripa House, Ashram Chowk, New Delhi - 110014  
Ph. No.: 011-26340258/59/60 E-mail : [gmsales@starcore.com](mailto:gmsales@starcore.com)