

## 1.1 CATERPILLAR PACKAGE GENSET TYPE: C15 ATAAC



### 1.1.1 Engine Technical Data:

Maker:	Caterpillar Inc.
Type of Engine:	Four-Stroke, Diesel Fuel
Application:	Power Generation, Prime Power.
Cylinders Arrangement:	Inline-Type
No. Of Cylinders:	6 Cylinder
No. Of Strokes:	Four Strokes
Bore:	137.2 mm
Stroke:	171.4mm
Displacement:	15.20 L
Aspiration:	Air-to-Air After-cooled
Compression Ratio:	16.1: 1
Genset Output:	455 KVA - 364 eKW
Revolutions Per Minute:	1500 RPM

### 1.1.2 Air Inlet System:

- Air Cleaner; dual element type

### 1.1.3 Exhaust System:

- Stainless steel exhaust flex, gaskets, rain cap & SAE exhaust flange

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Slough SL1 3GA, Berkshire, UK

#### **1.1.4 Fuel System:**

- Standard open set fuel tank / base supplied.
- Base, formed steel with single wall integral 8-hour fuel tank.

#### **1.1.5 Starting System**

- 24v Battery with rack & cables
- Battery Charger

#### **1.1.6 Cooling System:**

- Radiator and cooling fan with guard
- Coolant drain line with valve
- Fan drive, battery charging alternator drive
- Caterpillar Extended Life Coolant

#### **1.1.7 Lubrication System:**

- Lubricating oil
- Oil drain valves

#### **1.1.8 Governing System:**

- Cat Electronic Governor (ADEM 4).

#### **1.1.9 Mounting System:**

- Linear vibration isolators between base and engine generator

### 1.1.10 Generator Technical Data:

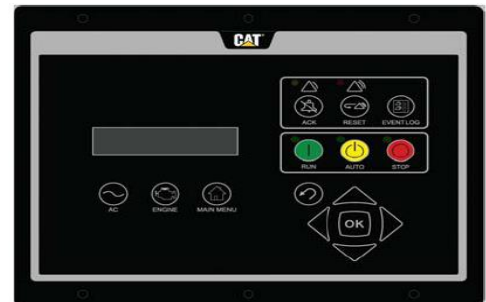
Rating:	450 kVA , 360 eKw @ 0.8 P.F.
Voltage:	400 Volts
Frequency:	50 Hz
Speed:	1500 RPM
Insulation:	Class "H"
No. of Bearing:	Single Bearing
Excitation:	Self-Excited
Over Speed Capability:	150% of Synchronous speed
Wave Form:	Less than 2% deviation
Voltage Regulator:	Integrated voltage regulator
Voltage Regulation:	± 1.0% (steady state) ± 1.0% (w/ 3% speed change)
Circuit breaker:	800 amp, 3 pole

### 1.1.11 Control Panel:

The Cat® EMCP 4.2 offers fully featured power metering, protective relaying and engine and generator control and monitoring. Engine and generator controls, diagnostics, and operating information are accessible via the control panel keypads

#### 1.1.1.1 CONTROLS:

- Run / Auto / Stop control
- Speed and voltage adjust
- Emergency stop
- Remote start/stop
- Cycle crank



#### 1.1.1.2 DIGITAL (LCD) INDICATION:

##### 1.1.1.2.1 Generator Monitoring

- Voltage (L-L, L-N)
- Current (Phase)
- Average Volt, Amp, Frequency
- kW, kVAr, kVA (Average, Phase, %)
- Power Factor (Average, Phase)
- kW-hr, kVAr-hr (total)

#### 1.1.1.2 Engine Monitoring

- Coolant temperature
- Oil pressure
- Engine speed (RPM)
- Battery voltage
- Run hours
- Crank attempt and successful start counter

#### 1.1.1.3 WARNING/SHUTDOWN INDICATION:

##### 1.1.1.3.1 Generator Protection

- Generator phase sequence
- Over/Under voltage (27/59)
- Over/Under frequency (81 O/U)
- Reverse Power (kW) (32)
- Reverse Reactive Power (kVAr) (32RV)
- Overcurrent (50/51)

##### 1.1.1.3.2 Engine Protection

- Control switch not in auto (alarm)
- High coolant temp (alarm and shutdown)
- Low coolant temp (alarm)
- Low coolant level (alarm)
- Low Oil Pressure (alarm and shutdown)
- High engine oil temp (alarm and shutdown)
- Low, high and weak battery voltage
- Over speed shutdown
- Over crank

#### 1.1.1.4 INPUTS & OUTPUTS:

- Two dedicated digital inputs
- Six programmable digital inputs
- Six programmable form A dry contacts
- Two programmable form C dry contacts
- Two digital outputs

#### 1.1.1.5 COMMUNICATION:

- Primary and accessory CAN data links
- RS-485 annunciator data link
- Modbus RTU (RS-485 Half duplex)

### **1.1.12 Sound Attenuated Enclosure:**

**Sound Pressure Level dBA @ Full Load (Prime Power) = 70 ±3dBA@7m**

This sound attenuated, factory installed enclosures incorporate internally mounted super critical level silencers, designed for safety and aesthetic value on integral fuel tank base or optional dual wall integral fuel tank base for total fluid containment. These enclosures are of extremely rugged construction to withstand exposure to the elements and provide weather protection.



### **Features**

#### **ROBUST/HIGHLY CORROSION RESISTANT CONSTRUCTION**

- Factory installed on integral fuel tank base
- Environmentally friendly, polyester powder baked paint
- 1.6mm (0.063in) galvanized steel
- All round overhanging bases to protect enclosure
- High-grade engineering thermoplastic corner posts for protection
- Integral lifting frame
- Compression door latches giving solid door seal
- Zinc plated or black coated stainless steel fasteners
- Internally mounted super critical exhaust silencing system

#### **EXCELLENT ACCESS**

- Large cable entry area for installation ease
- Accommodates rear mounted breaker and control panel
- Double doors on both sides
- Vertically hinged doors with solid bar door stays to hold doors open at 135° rotation
- Lube oil and coolant drains pipes to exterior of enclosure and terminated drain valves
- Radiator fills cover

#### **SECURITY AND SAFETY**

- Lockable access doors which give full access to control panel and breaker
- Cooling fan and battery charging alternator fully guarded
- Fuel fill, oil fill and battery can only be reached via lockable access
- Externally mounted emergency stop button
- Designed for spreader-bar lifting to ensure safety
- Control panel viewing window
- Stub-up area is rodent proof