## APD89C

**Standby:** Continuous running at variable load for duration of an emergency. No overload is permitted on these ratings. In accordance with ISO 3046.

**Prime:** Continuous running at variable load for unlimited periods with 10% overload available for 1 hour in any 12 hour period. In accordance with ISO 8528, ISO 3046.

- High quality, reliable and complete power unit
- Compact design
- Easy start and maintenance possibility
- Every generating set is subject to a comprehensive test program which includes full load testing, checking and provision of all control and safety shut down functions testing
- Fully engineered with a wide range of options and accessories: Canopy, sound proof canopy and on-road trailer

### Diesel Generating Set 400/230 V - 50 Hz - 3 Phase

<table>
<thead>
<tr>
<th>MODEL</th>
<th>APD89C</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Standby</strong></td>
<td><strong>Prime</strong></td>
</tr>
<tr>
<td>kVA</td>
<td>kW</td>
</tr>
<tr>
<td>89</td>
<td>71.2</td>
</tr>
</tbody>
</table>

Manufacturer reserves the right to make changes in model, technical specifications, color, equipment and accessories without prior notice.
## ENGINE

### CUMMINS

<table>
<thead>
<tr>
<th>Model</th>
<th>4BTA3.9G11</th>
</tr>
</thead>
<tbody>
<tr>
<td>Engine Power Output</td>
<td>kWm 80</td>
</tr>
<tr>
<td>at rated rpm</td>
<td>HP 107</td>
</tr>
<tr>
<td>Aspiration and Cooling</td>
<td>Turbocharged &amp; Aftercooled</td>
</tr>
<tr>
<td>Total Displacement</td>
<td>Litre 3.9</td>
</tr>
<tr>
<td>No. of Cylinders and Build</td>
<td>4 - Inline</td>
</tr>
<tr>
<td>Engine Speed</td>
<td>rpm 1500</td>
</tr>
<tr>
<td>Bore and Stroke</td>
<td>mmxmm 10x120</td>
</tr>
<tr>
<td>Compression Ratio</td>
<td>17.3:1</td>
</tr>
<tr>
<td>Governor</td>
<td>Electronic</td>
</tr>
<tr>
<td>Fuel Consumption at full load</td>
<td>L/hr 17.6</td>
</tr>
<tr>
<td>Fuel Tank Capacity</td>
<td>Litre 180</td>
</tr>
<tr>
<td>Oil Capacity</td>
<td>Litre 10.9</td>
</tr>
<tr>
<td>Coolant Capacity</td>
<td>Litre 19.9</td>
</tr>
<tr>
<td>Radiator Cooling Air</td>
<td>m³/min 120</td>
</tr>
<tr>
<td>Air Intake – Engine</td>
<td>m³/min 4.2</td>
</tr>
<tr>
<td>Exhaust Gas Flow</td>
<td>m³/min 8.04</td>
</tr>
</tbody>
</table>

- Heavy duty Cummins diesel engine
- Four stroke, water cooled, turbocharged & aftercooled
- Direct injection fuel system
- Electronic Governor system
- 12/24 V D.C. starter and charge alternator
- Replaceable fuel filter, oil filter and dry element air filter
- Cooling radiator and fan
- Starter battery (with lead acid) including Rack and Cables
- Flexible fuel connection hoses and manual oil sump drain valve
- Industrial capacity exhaust silencer and steel bellows
- Jacket water heater (at automatic models)
- Operation manuals and circuit diagram documents

## ALTERNATOR

<table>
<thead>
<tr>
<th>Design</th>
<th>Brushless single bearing, revolving field</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stator</td>
<td>2/3 pitch</td>
</tr>
<tr>
<td>Rotor</td>
<td>Single bearing, flexible disc</td>
</tr>
<tr>
<td>Insulation System</td>
<td>Class H</td>
</tr>
<tr>
<td>Standard Temperature Rise</td>
<td>125 - 163°C Continuous</td>
</tr>
<tr>
<td>Exciter Type</td>
<td>Self Excited</td>
</tr>
<tr>
<td>Phase Rotation</td>
<td>A (U), B (V), C (W)</td>
</tr>
<tr>
<td>Alternator Cooling</td>
<td>Direct drive centrifugal blower fan</td>
</tr>
<tr>
<td>AC Waveform Total Harmonic Distortion</td>
<td>No load &lt; 1.5%, Non distorting balanced linear load &lt; 5%</td>
</tr>
<tr>
<td>Telephone Influence Factor (TIF)</td>
<td>&lt;50 per NEMA MG1-22.43</td>
</tr>
<tr>
<td>Telephone Harmonic Factor (THF)</td>
<td>&lt;2%</td>
</tr>
</tbody>
</table>

- Brushless, single bearing system, flexible disc, 4 poles
- Insulation class H
- Standard degree of protection IP21 ("IP22/IP23 is available.)
- Self-exiting and self-regulating
- Impregnation with tropicalised epoxy varnish
- Solid state Automatic Voltage Regulator
- Stator winding with 2/3 pitch for improved harmonics
CONTROL SYSTEM

Control supervision and protection panel is mounted on the genset base frame. The control panel is equipped as follows:

1. Auto Mains Failure Control Panel
   Panel equipments:
   - Control with AMF module
   - Static battery charger
   - Emergency stop push button

   a) Generating set control module DSE6120 features:
   - The module is used to monitor main supply and starts and stops of a standby generating set
   - Micro-processor based design
   - Automatic control of main and generator contactors
   - Monitors engine performance and AC power output LED alarm indication
   - Front panel configuration of timers and alarm trip points
   - 4 configurable analogue/digital inputs, 8 configurable digital inputs
   - 6 configurable DC outputs
   - Easy push button control
     STOP/RESET - MANUAL - AUTO - TEST – START

   b) Metering via LCD display:
   - Generator Volts (L-L / L-N)       Generator kVA
   - Engine oil pressure (PSI-Bar)   Generator kW
   - Generator Ampere (L1,L2,L3)    Generator Cos (σ)
   - Engine temperature (°C & °F)
   - Generator Frequency (Hz)
   - Plant battery volts
   - Engine hours run
   - Mains Volts (Ph-Ph/Ph-N)

   c) Alarms:
   - Over and Under Speed
   - Low and High Battery Volt.
   - Start and Stop Failure
   - Charge fail
   - Over Current
   - Under / Over Generator Voltage
   - Low Oil Pressure
   - Emergency stop
   - High engine temperature

d) LED indications:
   - Mains available
   - Generator available
   - Mains on load
   - Generator on load

2. Power Outlet Terminal Board Mounted on the Gen-set Base Frame

OPTIONAL EQUIPMENTS

Diesel Engine
- Oil heater
- Alternator
  - 3/4 Pole Output Circuit Breaker
  - Anti-condensation Heater

Panel
- Charge ammeter
- Transfer Switch 3 Pole
- Transfer Switch 4 Pole
- Earth Fault , single set

Accessories
- Bulk fuel tank
- Automatic filling system
- Fuel-water separator filter
- Low fuel level alarm
- Residential silencer
- Enclosure or sound proof canopy
- Trailer
- Manual oil drain pump
- Tool kit for maintenance
The complete gen-set is mounted as whole on a heavy-duty fabricated, steel base frame.
- Anti-vibration pads are fixed between the engine/alternator feet and the base frame.
- Base frame design incorporates an integral fuel tank (Up to 1000 kVA).
- The generating set can be lifted or carefully pushed/pulled by the base frame.
- Dial type fuel gauge and drain plug on the fuel tank.
- Forklift pockets within base frame (up to 500kVA).

**DIMENSIONS**

<table>
<thead>
<tr>
<th>CHASSIS</th>
<th>OPEN TYPE</th>
<th></th>
<th>SOUND ATTENUATED TYPE</th>
</tr>
</thead>
<tbody>
<tr>
<td>DIMENSIONS (LxWxH)</td>
<td>mm</td>
<td>2070x892x1411</td>
<td>2282x1008x1532</td>
</tr>
<tr>
<td>DRY WEIGHT</td>
<td>kg</td>
<td>1012</td>
<td>1212</td>
</tr>
</tbody>
</table>

**CANOPY**

- All canopy parts are designed with modular principles.
- Without welding assembly.
- Doors on each side.
- All metal canopy parts are painted by electrostatic polyester powder paint.
- Exhaust silencer is protected against environment influences.
- Thermally insulated engine exhaust system.
- Emergency stop push button is installed outside of the canopy.
- Easy lifting and moving.
- Easy maintenance and operation.