DIESEL GENERATING SET  400/230 V - 50 Hz - 3 Phase

<table>
<thead>
<tr>
<th>MODEL</th>
<th>APD200C-RP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Power</td>
<td></td>
</tr>
<tr>
<td>Pf. 0.8</td>
<td></td>
</tr>
<tr>
<td>Standby</td>
<td>200 kVA</td>
</tr>
<tr>
<td></td>
<td>160 kW</td>
</tr>
<tr>
<td>Prime</td>
<td>180 kVA</td>
</tr>
<tr>
<td></td>
<td>144 kW</td>
</tr>
</tbody>
</table>

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

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

<table>
<thead>
<tr>
<th>Model</th>
<th>CUMMINS 6CTA8.3G2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Engine Power Output</td>
<td>kWm: 180</td>
</tr>
<tr>
<td>at rated rpm</td>
<td>HP: 241</td>
</tr>
<tr>
<td>Aspiration and Cooling</td>
<td>Turbocharged &amp; Aftercooled</td>
</tr>
<tr>
<td>Total Displacement</td>
<td>Litre: 8.3</td>
</tr>
<tr>
<td>No. of Cylinders and Build</td>
<td>6- Inline</td>
</tr>
<tr>
<td>Engine Speed</td>
<td>rpm: 1500</td>
</tr>
<tr>
<td>Bore and Stroke</td>
<td>mmxmm: 114x135</td>
</tr>
<tr>
<td>Compression Ratio</td>
<td></td>
</tr>
<tr>
<td>Governor</td>
<td>Electronic</td>
</tr>
<tr>
<td>Fuel Consumption at full load</td>
<td>L/hr: 42</td>
</tr>
<tr>
<td>Fuel Tank Capacity</td>
<td>Litre: Canopy: 1100</td>
</tr>
<tr>
<td>Oil Capacity</td>
<td>Litre: 27.6</td>
</tr>
<tr>
<td>Coolant Capacity</td>
<td>Litre: 41.3</td>
</tr>
<tr>
<td>Radiator Cooling Air</td>
<td>m³/min: 186</td>
</tr>
<tr>
<td>Air Intake – Engine</td>
<td>m³/min: 12.36</td>
</tr>
<tr>
<td>Exhaust Gas Flow</td>
<td>m³/min: 34.68</td>
</tr>
<tr>
<td>Sound Level(1M)</td>
<td>dBA: 80</td>
</tr>
<tr>
<td>Sound Level(7M)</td>
<td>dBA: 66</td>
</tr>
</tbody>
</table>

- Heavy duty Cummins diesel engine
- Four stroke, water cooled, turbocharged
- 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 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)
      ✓ Engine oil pressure (PSI-Bar)
      ✓ Generator Ampere (L1,L2,L3)
      ✓ 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
CHASSIS

- 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 750 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 TYPE</th>
<th>DIMENSIONS (LxWxH)</th>
<th>mm</th>
<th>DRY WEIGHT</th>
<th>kg</th>
</tr>
</thead>
<tbody>
<tr>
<td>OPEN TYPE</td>
<td>N/A</td>
<td></td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>SOUND ATTENUATED TYPE</td>
<td>3600x1363x2103</td>
<td></td>
<td>3000</td>
<td></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