APD220C-6

220 kVA / 176 kW
POWERED by CUMMINS

DIESEL GENERATING SET 480/277V, 440/254V, 380/220V, 220/127V- 60 Hz-3 Phase

<table>
<thead>
<tr>
<th>MODEL</th>
<th>APD220C-6</th>
</tr>
</thead>
<tbody>
<tr>
<td>kVA</td>
<td>220</td>
</tr>
<tr>
<td>kW</td>
<td>176</td>
</tr>
<tr>
<td>kVA</td>
<td>200</td>
</tr>
<tr>
<td>kW</td>
<td>160</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>CUMMINS</th>
<th>6CTA8.3G2</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Model</strong></td>
<td>6CTA8.3G2</td>
</tr>
<tr>
<td><strong>Engine Power Output</strong></td>
<td>kWm 187</td>
</tr>
<tr>
<td><strong>at rated rpm</strong></td>
<td>HP 251</td>
</tr>
<tr>
<td><strong>Aspiration and Cooling</strong></td>
<td>Turbocharged &amp; Aftercooled</td>
</tr>
<tr>
<td><strong>Total Displacement</strong></td>
<td>Litre 8.3</td>
</tr>
<tr>
<td><strong>No. of Cylinders and Build</strong></td>
<td>6 - Inline</td>
</tr>
<tr>
<td><strong>Engine Speed</strong></td>
<td>rpm 1800</td>
</tr>
<tr>
<td><strong>Bore and Stroke</strong></td>
<td>mmxmm 114x135</td>
</tr>
<tr>
<td><strong>Compression Ratio</strong></td>
<td>17.3:1</td>
</tr>
<tr>
<td><strong>Governor</strong></td>
<td>Electronic</td>
</tr>
<tr>
<td><strong>Fuel Consumption at full load</strong></td>
<td>L/hr 44</td>
</tr>
<tr>
<td><strong>Fuel Tank Capacity</strong></td>
<td>Litre Open: 350/Canopy: 350</td>
</tr>
<tr>
<td><strong>Oil Capacity</strong></td>
<td>Litre 27.6</td>
</tr>
<tr>
<td><strong>Coolant Capacity</strong></td>
<td>Litre 48</td>
</tr>
<tr>
<td><strong>Radiator Cooling Air</strong></td>
<td>m³/min 300</td>
</tr>
<tr>
<td><strong>Air Intake – Engine</strong></td>
<td>m³/min 14.22</td>
</tr>
<tr>
<td><strong>Exhaust Gas Flow</strong></td>
<td>m³/min 39.24</td>
</tr>
</tbody>
</table>

- Heavy duty Cummins diesel engine
- Four stroke, water cooled, turbocharged & intercooled
- 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**

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

- Brushless, single bearing system, flexible disc, 4 poles
- Insulation class H
- Standard degree of protection IP21 (*IP22/IP23 is available.)
- Self-exciting 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 DSE 6020 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
   ✓ CAN and magnetic pick-up versions (specify on ordering)
   ✓ 4 digital inputs/3 analogue inputs
   ✓ 6 outputs (4 configurable on Magnetic Pick-up, 6 configurable on CANbus version)
   ✓ Easy push button control
   STOP/RESET - MANUAL - AUTO - TEST – START

   b) Metering via LED 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
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 500 kVA)

DIMENSIONS

**OPEN TYPE**

<table>
<thead>
<tr>
<th>DIMENSIONS (LxWxH)</th>
<th>mm</th>
<th>2336<em>1100</em>1652</th>
</tr>
</thead>
<tbody>
<tr>
<td>DRY WEIGHT</td>
<td>kg</td>
<td>1780</td>
</tr>
</tbody>
</table>

**SOUND ATTENUATED TYPE**

<table>
<thead>
<tr>
<th>DIMENSIONS (LxWxH)</th>
<th>mm</th>
<th>3265<em>1163</em>1858</th>
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<tbody>
<tr>
<td>DRY WEIGHT</td>
<td>kg</td>
<td>2280</td>
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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

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