DIESEL GENERATING SET 480/277 V, 208/120V - 60 Hz

### MODEL  APD-EPAP20

<table>
<thead>
<tr>
<th>Power Pf. 0.8</th>
<th>Standby</th>
<th>Prime</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>kVA</td>
<td>kW</td>
</tr>
<tr>
<td></td>
<td>25</td>
<td>20</td>
</tr>
<tr>
<td></td>
<td>kW</td>
<td>22.5</td>
</tr>
<tr>
<td></td>
<td>18</td>
<td></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 and checking and providing of all control and safety shut down functions testing
- Full engineered with a wide range of options and accessories: Canopy, sound proof canopy and on road trailer

### ENGINE

- Heavy duty Perkins diesel engine
- Four stroke, water cooled, turbocharged
- Direct injection fuel system
- Mechanical governor system
- 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

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

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

www.aksapowergen.com
## ENGINE

### PERKINS

<table>
<thead>
<tr>
<th>Model</th>
<th>404D-22G</th>
</tr>
</thead>
<tbody>
<tr>
<td>EPA Certification</td>
<td>INTERIM TIER 4</td>
</tr>
<tr>
<td>Engine Power Output at rated rpm</td>
<td>BHP kWm</td>
</tr>
<tr>
<td></td>
<td>HP</td>
</tr>
<tr>
<td>Aspiration and Cooling</td>
<td>Natural</td>
</tr>
<tr>
<td>Total Displacement</td>
<td>Cu.in. Litre</td>
</tr>
<tr>
<td>No. of Cylinders and Build</td>
<td>4-Inline</td>
</tr>
<tr>
<td>Engine Speed</td>
<td>rpm</td>
</tr>
<tr>
<td>Bore and Stroke inches mmxmm</td>
<td>3.307x3.937 84x100</td>
</tr>
<tr>
<td>Compression Ratio</td>
<td>23.3:1</td>
</tr>
<tr>
<td>Governor</td>
<td>Mechanical</td>
</tr>
<tr>
<td>Starter Motor Voltage</td>
<td>12 V</td>
</tr>
<tr>
<td>Fuel Consumption @ 100 % load</td>
<td>gal/hr</td>
</tr>
<tr>
<td>Fuel Consumption @ 75% load</td>
<td>gal/hr</td>
</tr>
<tr>
<td>Fuel Consumption @ 50% load</td>
<td>gal/hr</td>
</tr>
<tr>
<td>Fuel Consumption @ 25% load</td>
<td>gal/hr</td>
</tr>
<tr>
<td>Fuel Tank Capacity</td>
<td>gal. Litre</td>
</tr>
<tr>
<td>Oil Capacity</td>
<td>gal. Litre</td>
</tr>
<tr>
<td>Coolant Capacity</td>
<td>gal. Litre</td>
</tr>
<tr>
<td>Radiator Cooling Air</td>
<td>cfm m³/min</td>
</tr>
<tr>
<td>Air Intake – Engine</td>
<td>cfm m³/min</td>
</tr>
<tr>
<td>Exhaust Gas Flow</td>
<td>cfm m³/min</td>
</tr>
<tr>
<td>Standard operating temp degree of radiator</td>
<td>° C</td>
</tr>
<tr>
<td>Sound Level @1 meter / @ 7 meter</td>
<td>dB</td>
</tr>
</tbody>
</table>

### ALTERNATOR

<table>
<thead>
<tr>
<th>Model</th>
<th>Marathon-GM-8.6-4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Size(mm)</td>
<td>365x292x375</td>
</tr>
<tr>
<td>Design</td>
<td>Brushless single bearing, revolving field</td>
</tr>
<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 °C Prime / 150 °C Stand by</td>
</tr>
<tr>
<td>Exciter Type</td>
<td>Self Excited(PMG excitation is optional)</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>
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 7320 features:
   - The module is used to monitor a mains supply and starts and stops a standby generating set
   - Micro-processor based design
   - Automatic control of mains and generator contactors
   - Monitors engine performance and AC power output
   - LED alarm indication
   - Front panel configuration of timers and alarm trip points
   - Easy push button control
     STOP/RESET - MANUAL – TEST- AUTO – MUTE ALARM – START

   b) Metering via LED 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)
   - Generator kVA, kWh
   - Generator kW as % of rated kW setting
   - Generator Cos (σ)

   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
   - kW overload
   - Unbalanced load
   - Independent earth fault trip

   d) LED Indications
   Four configurable LED’s like:
   - 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
- Low fuel level alarm
- Residential silencer
- Enclosure or sound proof canopy
- Trailer
- Manual oil drain pump
- Tool kit for maintenance
- Fuel-water separator
✓ 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) NON-UL
✓ 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

**OPEN TYPE**

<table>
<thead>
<tr>
<th>DIMENSIONS (LxWxH)</th>
<th>inches</th>
<th>mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>LxWxH</td>
<td>59.1x35.4x46.14</td>
<td>1500x900x1172</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>DRY WEIGHT</th>
<th>Lb.</th>
<th>Kg</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1444</td>
<td>655</td>
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</table>

**SOUND ATTENUATED TYPE**

<table>
<thead>
<tr>
<th>DIMENSIONS (LxWxH)</th>
<th>inches</th>
<th>mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>LxWxH</td>
<td>76.3x37.9x47.8</td>
<td>1938x963x1215</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>DRY WEIGHT</th>
<th>Lb.</th>
<th>Kg</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1951</td>
<td>885</td>
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</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