**MODEL AD510-6**

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

<table>
<thead>
<tr>
<th>MODEL</th>
<th>kVA</th>
<th>kW</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Standby</strong></td>
<td>510</td>
<td>408</td>
</tr>
<tr>
<td><strong>Prime</strong></td>
<td>445</td>
<td>356</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>P158LE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Engine Power Output at rated rpm</td>
<td>kWm 458</td>
</tr>
<tr>
<td>HP</td>
<td>614</td>
</tr>
<tr>
<td>Aspiration and Cooling</td>
<td>Turbocharged intercooled</td>
</tr>
<tr>
<td>Total Displacement</td>
<td>Litre 14.618</td>
</tr>
<tr>
<td>No. of Cylinders and Build</td>
<td>8-Cylinder, V-type</td>
</tr>
<tr>
<td>Engine Speed</td>
<td>rpm 1800</td>
</tr>
<tr>
<td>Bore and Stroke</td>
<td>mmxmm 128x142</td>
</tr>
<tr>
<td>Compression Ratio</td>
<td>15:1</td>
</tr>
<tr>
<td>Governor</td>
<td>Electronic control</td>
</tr>
<tr>
<td>Fuel Consumption at full load</td>
<td>L/hr 102.5</td>
</tr>
<tr>
<td>Fuel Tank Capacity</td>
<td>Litre 700</td>
</tr>
<tr>
<td>Oil Capacity</td>
<td>Litre 21</td>
</tr>
<tr>
<td>Coolant Capacity</td>
<td>Litre 80</td>
</tr>
<tr>
<td>Radiator Cooling Air</td>
<td>m³/min 618</td>
</tr>
<tr>
<td>Air Intake – Engine</td>
<td>m³/min 36.9</td>
</tr>
<tr>
<td>Exhaust Gas Flow</td>
<td>m³/min 91.3</td>
</tr>
</tbody>
</table>

- Heavy duty DOOSAN diesel engine
- Four stroke, water cooled, Natural
- 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>Single bearing, flexible disc</td>
</tr>
<tr>
<td>Rotor</td>
<td>2/3 pitch</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
- Impregnation with tropicalised epoxy varnish
- Insulation class H
- Standard degree of protection IP21 (*IP22/IP23 is available.)
- Solid state Automatic Voltage Regulator
- Self-exciting and self-regulating
- 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 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 Genset Base Frame

OPTIONAL EQUIPMENTS

Diesel Engine
✓ Oil heater

Alternator
✓ 3/4 Pole Output Circuit Breaker
✓ Anti-condensation Heater

Panel
✓ Charge ammeter
✓ Transfer Switch 3Pole
✓ 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>OPEN TYPE</th>
<th>SOUND ATTENUATED TYPE</th>
</tr>
</thead>
<tbody>
<tr>
<td>DIMENSIONS (LxWxH)</td>
<td>mm</td>
</tr>
<tr>
<td>DRY WEIGHT</td>
<td>kg</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