

## General Characteristics

Model Name	APD-NG400
Engine Make	PSI (Doosan)
Engine Model	21.9L
Alternator Make	Stamford
Control Panel Make & Model	DSE 7320
Frequency & Speed	60Hz, 1800rpm
Enclosure Make & Model	AKSA AUL 71A/72A



## Genset Rating

Engine	Alternator	Voltage	PF	NG Standby Power	NG Standby Current	LP Gas Standby Power	LP Gas Standby Current
21.9L	HCI444F (Wnd-311)	480/277V	0.8	400kW	602A	300kW	451A
	HCI444F (Wnd-311)	240/120V	0.8	400kW	1202A	300kW	903A
	HCI444F (Wnd-311)	208/120V	0.8	400kW	1389A	300kW	1042A
	HCI444F (Wnd-17)	600/347V	0.8	400kW	481A	300kW	361A

### \*EPA – Certified for Emergency Stationary Applications

Stand-by Power (Maximum): Power available at variable load in the event of main power network failure. No over load is permitted.

Prime Power: Power available at variable load in lieu of a main power network. Overload of 10% is permitted for 1 hour in every 12 hours of operation.

The above ratings represent the engine performance capabilities to conditions specified in accordance with ISO 8528/5 & ISO3046.

**Derating may be required for conditions outside of the test conditions.**

## Codes & Standards

The Generator set is designed and manufactured in a facility certified to **ISO9001** standards.

The Generator set is designed and manufactured in a facility certified to **ISO14001:2015** standards.

**AKSA Power Generation** provides **single source responsibility** for the generator set & accessories.

The generator set, with its components, are **prototype tested** and **production tested** according to the UL test program.

The generator set meets **NFPA70, 99, 110, 37** Level 1 when equipped with the necessary accessories and installed per NFPA standards.



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

### Engine Data

Manufacturer	PSI
Model	NGE 21.9L
Displacement & Cylinders	21.9 L / 12 Cylinders
Engine Type	V-type, 4 Cycle
Engine Speed	1800rpm
Engine Standby Power NG	456kW
Engine Standby Power LP	351kW
Aspiration	Turbo Charge Air Cooled
Compression Ratio	10.5 : 1
Bore / Stroke	128 mm / 142 mm
Governor type	Electronic

### Fuel System

Fuel Type	NG, LP Gas/Dual Fuel
NG Supply pipe size	2.0" NPTF
Maximum EPR Rated Pressure	6.9 kPa / 1.0 psi
Recommended Max Pressure	2.7 kPa / 11.0 inH2O
Recommended Min Pressure	1.7 kPa / 7.0 inH2O
Max LPG vapor Pressure to EPR	2.7 kPa / 11.0 inH2O

### Fuel Consumption

	Natural Gas	LP Gas
Standby Power (100%)	4230 cfh 119.9 m <sup>3</sup> /hr	1408 cfh 39.9 m <sup>3</sup> /hr
Standby Power (75%)	3250 cfh 92.0 m <sup>3</sup> /hr	1150 cfh 32.5 m <sup>3</sup> /hr
Standby Power (50%)	2300 cfh 65.1 m <sup>3</sup> /hr	780 cfh 22.0 m <sup>3</sup> /hr

### Electric System

System Voltage (dc)	24V
Battery Qty, Rating	2 x 120Ah

### Cooling System

Radiator Cooling System Type	Closed Circuit
Coolant Capacity	50.1 gal
Cranking Temperature	160 °F
Full Open Temperature	185 °F

### Exhaust System

Type	Water cooled manifold
Max. allowable back pressure	10.2 kPa
Max Turbine Inlet Temperature	1382 °F
Exhaust Gas Flow at Rated Power @ 1350 °F	2995 cfm

### Air Intake System

Combustion Air Required	968 cfm
Max Intake Air Restriction (Clean Element)	1.24 kPa / 5 inH2O
Air Filter Type	Dry Paper Element

### Lubrication System

Oil Specifications	SAE 15W-40 Low Ash Gas Engine oil, API CD/CF or higher
Oil Capacity, Min-Max	34.75 – 42.25 Qts
Oil filter; qt, type	2, Cartridge
Min – Max Oil Pressure at Rated Speed	43.5 psi – 94.5 psi 3 bar – 6.5 bar

### Alternator Data

Manufacturer	Stamford
Standards	BS EN 60034
Control System	PMG
A.V.R.	MX341
Voltage Regulation	± 1 %
Insulation System	Class H
Protection	IP23
Rated Power Factor	0.8
Stator Winding	Double Layer Concentric
Winding Pitch	Two Thirds
Winding Leads	12
Telephone Interference	THF < 2 %
Waveform Distortion	No Load < 1.5 %
Maximum Over speed	2250 rev/min

### Battery Charger & Electrical System Data

Manufacturer	ComAp
Model	InteliCharger
Input Voltage	85V ~ 264V AC
Output Voltage / Current	13.8V Float / 4A pk

### Jacket Water Heater Data

Manufacturer	Hotstart
Model	CTM25110-N00
Input Voltage	120V
Power	2500W

### Controller Data

Manufacturer	DSE
Model	7320 MK II

### Controller Features & Benefits

- Microprocessor controlled, UL & NFPA110 Compatible
- License free PC Software (Non-proprietary Software)
- IP65 rating offers increased resistance to water ingress
- Modules can be integrated to building management systems
- Real time clock provides accurate event log
- Four line back-lit LCD text display
- Five key menu navigation, two wire start/stop at Auto mode
- Front panel editing with PIN protection
- Support up to three remote display modules
- Configurable timers and alarms
- Multiple date and timer scheduler
- Integral PLC editor
- 'Protections disabled' feature
- Load switching (load shedding and dummy load outputs)
- Fully configurable via DSE Configuration Suite PC Software
- SCADA monitoring via DSE Configuration Suite PC Software

### Protection

- ✓ Gen. Voltage – under / over
- ✓ Gen. Freq. – under / over
- ✓ Engine Speed – under / over
- ✓ Engine Oil Pressure – low
- ✓ Engine Temp – low / high
- ✓ Battery Voltage – low / high
- ✓ Weak Battery
- ✓ Fail to Start / Stop
- ✓ Charge Alternator Fail
- ✓ Over Current & Load (kW/kVAR)
- ✓ Unbalanced Load
- ✓ Independent Earth Fault
- ✓ Reverse Power
- ✓ Loss of Speed Signal

### Instruments

- ✓ Gen. Voltage (L-L/L-N)
- ✓ Gen. Frequency
- ✓ Engine speed
- ✓ Oil Pressure
- ✓ Water Temperature
- ✓ Battery Voltage
- ✓ Run Time
- ✓ Phase Sequence
- ✓ Power monitoring (kWh/kVAh/kVArh)
- ✓ Power (kWh/kVAh/kVArh)
- ✓ Power Factor
- ✓ Generator Current
- ✓ Generator Load (%)
- ✓ Earth Current

## Enclosure Features

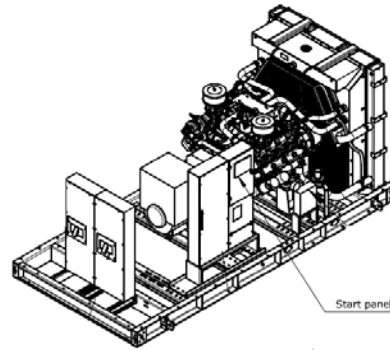
- ✓ Heavy Duty Steel / Aluminum Structure
- ✓ E-Stop on Enclosure
- ✓ Control Panel Eliminated from Engine Vibrations
- ✓ Standard Sound Attenuation Foam
- ✓ Plastic Covered Corrosion Resistant Locks & Hinges

## Enclosure Features

- ✓ Internally Mounted Exhaust System with Rain Cap
- ✓ Coolant Fill Cap
- ✓ Removable Base Frame Lifting Hooks
- ✓ Oil & Coolant Drain Ports
- ✓ Easy Access for Maintenance

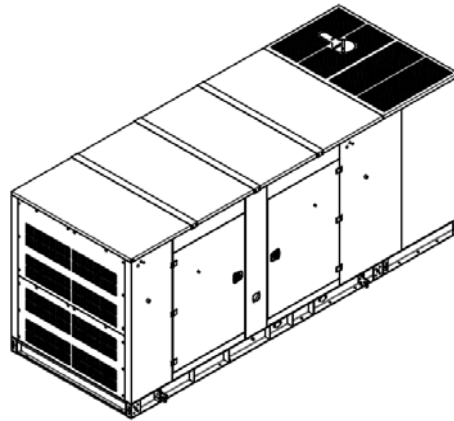
## Open Skid Gen-Set Dimensions

Length	158 in
Width w/o lift hooks	83 in
Height	87 in
Dry Weight	11000 lb



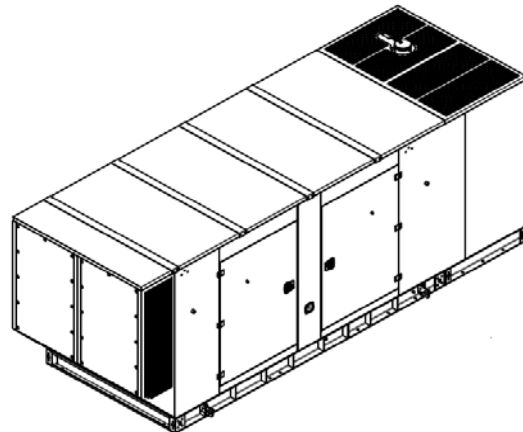
## Enclosed Gen-Set Dimensions – Level 1

Length	206 in
Width w/o lift hooks	86 in
Height	101 in
Dry Weight	14500 lb
Sound Pressure @ 7 meters	80 dBA



## Enclosed Gen-Set Dimensions – Level 2

Length	224.6 in
Width w/o lift hooks	86 in
Height	101 in
Dry Weight	15000 lb
Sound Pressure @ 7 meters	77 dBA



**Standard Features & Accessories**

- ✓ UL2200 Certification
- ✓ Heavy Duty Steel Base Frame
- ✓ PMG
- ✓ Engine Jacket Water Heater
- ✓ Battery and Battery Rack
- ✓ Battery Charger
- ✓ Anti Vibration Pads between Engine/Alternator & Base Frame
- ✓ Critical Grade Silencer Inside Enclosure
- ✓ Residential Grade Silencer Set for Open Skid Sets
- ✓ Exhaust outlet rain cap and radiator fill cap
- ✓ Sound Absorb Foam Material for Enclosure
- ✓ Emergency Stop Button
- ✓ Oil Drain Valve
- ✓ Coolant Drain Valve
- ✓ Jacket Water Heater Isolation Valves
- ✓ Flex Fuel Lines
- ✓ Secondary Lock-off Valve on Baseframe
- ✓ Engine Manifold Cover
- ✓ Turbocharger Cover
- ✓ Protection Covers for Rotating Parts
- ✓ Exhaust Insulation Cover
- ✓ Enclosure DC Light
- ✓ Operations Manual
- ✓ 24 Months / 2000 hours Limited Standby Warranty

**Optional Accessories**

- Main Line CB (3 / 4 Poles – 80% / 100% rated)
- Upsize Alternator
- Anti-condensation Heater
- Voltage Regulation  $\pm 0.5\%$  w/MX321 AVR
- Gas Regulator
- NG / LP Auto Changeover Control System
- Low Gas Pressure Alarm
- Low Coolant Level Alarm
- Oil Pan Heater
- Oil Temperature Display on Controller
- Manual Speed Adjust Rheostat
- Manual Voltage Adjust Rheostat
- Remote Annunciator Panel
- Remote Control & Monitoring Panel
- Advanced SMS Messaging
- Control Panel Heater
- Battery Disconnect Switch
- Battery Heater
- Battery Charger 10/20 Amp
- Shunt Trip / Aux Contacts
- Spring Anti-vibration Isolators
- Automatic Transfer Panel (ATS)
- 5 Years / 2000 hours Limited Comprehensive Warranty