

**Aksa Power Generation** has been producing industrial generator sets with an innovative compact design and excellence in quality for over 30 years. Aksa has been providing reliable power through three main production plants and over 15 branch offices worldwide.

Alternator (130 °C Rise)	Voltage	Ph	Pf	Hz	Stand-by Ratings		Prime Ratings	
					kW/kVA	Amp	kW/kVA	Amp
	480/277V	3	0.8	60	65/81	98	59/74	89
	440/254V	3	0.8	60	65/81	107	59/74	97
Marathon MP-70-4 (361CSL1602)	240/139V	3	0.8	60	65/81	195	59/74	177
	240/120V	3	0.8	60	65/81	195	59/74	177
	208/120V	3	0.8	60	65/81	226	59/74	205
	240/120V	1	1	60	60/60	250	54/54	225



## Rating Definition

**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 & Standard Features

**EPA Certified Tier3 – FLEX** engine powered generator set for Mobile / Prime Applications.

The Generator set is designed and manufactured in a facility certified to **ISO9001:2008** standards.

**John Deere heavy duty** four cycle industrial diesel engine delivers low emission, reliable power, fuel efficiency and fast response to load changes.

**Non-proprietary control system** provides total gen-set system integrated control, protections, metering, automatic starting/stopping with options of remote control, remote display or remote annunciation.

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

The generator set, with its components, are **prototype tested** and **production tested**.

**Marathon** industrial generators meet the requirements of BS EN 60034 and the relevant sections of other international standards.

**Heavy duty base frame** with integral pad **vibration isolators** eliminates the need for under unit spring vibration isolators.

# POWER YOUR FUTURE

## Engine Data

Manufacturer	<b>John Deere</b>
Model	<b>4045HF280</b>
Cylinders	4, In-line
Max. power @ rated rpm; kWm (BHP)	74 (99)
Brake mean effective pressure; kPa	1090
Aspiration & Cooling	Intercooled
Total displacement; L (in <sup>3</sup> )	4.5 (275)
Bore; in. (mm)	4.19 (106)
Stroke; in. (mm)	5.0 (127)
Compression ratio	19:1
Governor type	Mechanical
Engine crankcase vent system	Open

## Engine Electrical System

Charging alternator	12V, Negative Ground
Starter rolling current @32 °F; (amp)	780
Min. voltage at ECU during cranking; (dc)	6
Max. allowable start circuit resistance; (Ohm)	0.0012
Starter motor rated voltage; (dc)	12
Battery quantity x rating & CCA	1 x 60Ah, 640

## Fuel System

Combustion system	Unit injection
Fuel injection pump	Stanadyne DB4
Governor Type	Mechanical
Total fuel flow; lb/hr	212
Max fuel inlet temp; °C	80
Max fuel inlet restriction; in.H <sub>2</sub> O (kPA)	80 (20)
Max. fuel return pressure; in.H <sub>2</sub> O (kPA)	80 (20)

## Fuel Consumption (gal/hr)

110% Load	5.11
100% Load	4.67
75% Load	3.60
50% Load	2.55

## Exhaust System

Exhaust gas flow; (m <sup>3</sup> /min)	14.4
Max. exhaust restriction; (kPa)	7.5
Max. exhaust gas temp; (°C)	545
Max. bending moment on turbo outlet; (lb-ft)	5.2

## Cooling System

Radiator ambient temp; °C (°F)	50 (122)
Engine coolant capacity; L	8.5
Min. coolant fill rate; L/min (gal/min)	11(3)
Thermostat operation range; °C	82-94
Max top tank temp; °C	105
Min. air to boil temp; °C	47
Cooling fan type	Pusher
Min. pressure cap; (psi)	10
Combustion air flow; m <sup>3</sup> /min	5.4
Intake manifold pressure; (psi)	10
Engine coolant flow; L/min (gal/min)	144 (38)
Engine heat rejection; BTU/min	1979
Air cleaner efficiency	99.9%

## Lubrication System

Oil pressure @rated speed; psi	50
Oil pressure at low idle; psi	15
Max. oil carryover in blow by; lb/hr	0.002
Max. air flow in blow by; gal/min	26
Max. crankcase pressure; in. H <sub>2</sub> O (kPa)	2 (0.5)

## Alternator Data

Manufacturer	<b>Marathon</b>
Model	<b>MP-70-4 (361CSL1602)</b>
Design	4 Pole, drip proof rotating field
Exciter type	Brushless, self excited P.M.G. option is available
Stator	2/3 winding pitch
Rotor	Single bearing, flexible disc
Leads	12
Voltage regulator	Solid state, Volts/Hz
Insulation	Class H
Temp. rise @ 40°C ambient	130°C Prime
Alternator Cooling	Direct drive centrifugal blower
Max. over-speed; rev/min	2250
Voltage regulator	SE350

## kW Rating at 1800rpm/60Hz

480/277V - 3ph - 0.8pf	90
208/120V - 3ph - 0.8pf	80
240/120V - 1ph - 1pf	65

## Base-frame & Enclosure

The complete gen-set is mounted entirely on a heavy duty base frame with an integral semi double wall 180gal fuel tank.

Anti vibration isolators are installed between engine/alternator supports and the base frame.

All enclosure parts are designed with module principles without welding.

Enclosure has four doors on each side for easy serviceability and back door for control system.

Exhaust silencer is protected against environmental influences and is internally mounted within enclosure. Exhaust pipe thermally insulated on engine compartment.

All metal enclosure parts are painted by electrostatic polyester powder paint.

Enclosure has lockable fuel filling cap from outside.

Emergency stop switch externally mounted on enclosure.

## Control System

**DSE7320** is an advanced control system, suitable for a wide variety of single, diesel or gas, gen-set applications. Monitoring and an extensive number of engine parameters, the module displays warnings, shutdowns and engine status information on the back lit LCD screen, illuminated LEDs, remote PC and via SMS text alerts (with external modem).

- UL recognized, NFPA110 Level 1 compatible
- LCD text display, key menu navigation and front panel editing
- Off/Manual/Auto model switch
- Two wire starting/stopping in Auto mode
- Engine exerciser
- IP65 front panel rating with supplied sealing gasket
- Configurable 9 inputs, 8 outputs with expansion capability
- Real time clock provides accurate event logging
- Fully configurable via DSE Configuration Suite PC software
- Remote SCADA monitoring and BMS integration features
- License free PC software

## Protections

- Gen. Voltage - under/over
- Gen. Frequency - 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 fail
- Over current & load(kW/kVAr)
- Unbalanced load
- Independent Earth Fault
- Reverse Power
- Fuel level - low/high (optional)
- Loss of speed signal

## Instruments

- Gen. Voltage (L-L/L-N)
- Gen Frequency
- Engine Speed
- Oil Pressure
- Water Temperature
- Battery Voltage
- Run time
- Engine maintenance due
- Phase sequence
- Pwr. monitoring (kWh / kVAh / kVArh)
- Power (kW/kVA/kVAr)
- Power factor
- Gen. Current (L1-L2-L3)
- Earth current

## Convenience Panel Accessories

- (2) Two 20A, 120V GFCI receptacles and breakers
- (3) Three 50A, 240V twist lock receptacles and breakers
- 5-15A, 125V inlet receptacles for battery charger and water heater
- Two wire remote start station
- Generator set voltage adjust rheostat
- (5) 400A rated, stud type quick connect cam-locks

## Voltage Selector Switch

- Three positions at 480/277V, 208/120V - 3ph & 240/120 - 1ph
- Product of Salzer or Kraus&Naimer

## Standard Features & Accessories

- Trailer w/spare tire and tool box
- Sound Attenuated Steel Enclosure
- Heavy Duty Steel Base-frame
- Residential Grade Silencer Inside Enclosure
- Flex Fuel Lines
- Oil Drain Valve & Extension
- Convenience Panel
- Voltage Selector Switch – 3 position
- Emergency Stop Switch
- Battery, Battery Rack & Cables
- Battery Charger
- Main Line CB
- Jacket Water Heater
- Operations Manual
- 1 Years / 2000hours Limited Warranty

## Dimensions & Weight & Sound Level

### Gen-set Without Fuel Tank

Type	Generator Set Only	Generator Set On Trailer
L (in.)	122	175
W (in.)	42	66
H (in.)	75	89
Weight (lb)	3650	5650
Sound Level (dBA@23ft)		75

## Trailer

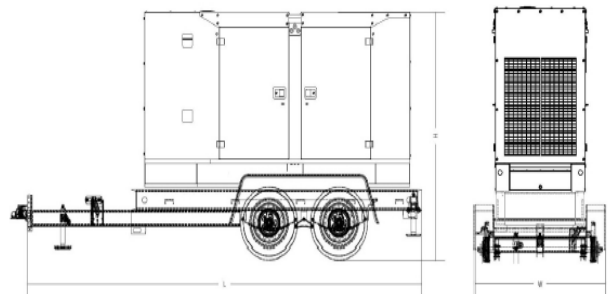
- DOT approved 7000lbs heavy duty dual axle trailer
- Spring axles w/electric brakes
- Breakaway kit with charger
- 5000lbs front jack and rear stabilizer jacks
- 7 pin trailer plug
- Tool box and spare tire

## Circuit Breaker

- 250Amp capacity main line circuit breaker
- Shunt trip controller by generator set control

## Optional Accessories

- Upsized Alternator
- PMG Excitation
- Alternator Anti-condensation Heater
- 4 Position VSS
- Fuel Level Monitoring on Controller & High Fuel Alarm
- Fuel Line Check Valve
- Oil Temperature Gauge
- Oil Heater
- Battery Charger 10Amp
- Battery Heater Blanket
- Main Line CB (100% rated)
- Remote Monitoring and Control
- Remote Annunciator



**AKSA POWER GENERATION USA LLC**  
371 Exchange Street, West Monroe, LA 71292

Tel: 318.855.8377

Fax: 318.855.8381

E-mail: sales@aksausa.com

Aksa Power Generation USA is a member of



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