



GeneratorJoe



Made in the USA!



Shown with optional equipment

Centurion “Defender 2” Series Model: 250 DF2-3

Ratings

Single and/or Three Phase Available

		60 Hz	50 Hz
Standby:	kW	265.0	220.8
	kVA	331.0	275.8
Prime:	kW	238.5	198.7
	kVA	298.1	248.4

Features

- Single source responsibility for the generator set and accessories.
- Prototype and production tested to insure one step load acceptance per NFPA 110.
- Two year limited warranty on generator sets and accessories.
- Unit conforms to CSA, NEMA, EGSA, ANSI and other standards.
- Heavy duty 4 cycle industrial engine for reliability and fuel efficiency.
- Brushless rotating field generator with class H insulation.
- Heavy duty steel base with integral vibration isolators.
- EPA Certified Engine.

Alternator	Voltage L-N / L-L	Phase	Hertz	Natural Gas 130° Rise Standby Rating		LP Gas 130° Rise Standby Rating	
				kW / kVA	Amps	kW / kVA	Amps
432CSL6210	277/480	3	60	260/325	391	170/213	256
	139/240	3	60	260/325	782	170/213	511
	127/220	3	60	260/325	853	170/213	558
	240/416	3	60	260/325	451	170/213	295
	120/208	3	60	260/325	902	170/213	590
	120/240	3	60	260/325	782	170/213	511
	220/380	3	60	260/325	494	170/213	323
	120/240	1	60	200/200	833	170/170	708

RATINGS: All three-phase units are rated at 0.8 power factor. All single-phase units are rated at 1.0 power factor.

STANDBY RATINGS: Standby ratings apply to installations served by a reliable utility source. The standby rating is applicable to varying loads for the duration of a power outage. There is no overload capability for this rating. Ratings are in accordance with ISO-3046/1, BS 5514, AS 2789, and DIN 6271.

PRIME POWER RATINGS: Prime power ratings apply to installations where utility power is unavailable or unreliable. At varying load the number of generator set operating hours is unlimited. A 10% overload capacity is available for one hour in twelve. Ratings are in accordance with ISO-8528/1, overload power in accordance with ISO-3046/1, BS5514, AS2789, and DIN 6271. For limited running time and base load ratings consult the factory. The generator set manufacturer reserves the right to change the design or specifications without notice and without any obligation or liability whatsoever.

GENERAL GUIDELINES FOR DERATION: Altitude: Derate 0.5% per 100 m (328 ft.) elevation above 1000 m (3279 ft.) Temperature: Derate 1.0%

Application and Engineering Data

Basic Technical Data		Lubrication System	
Manufacturer	Doosan	Type	Full Pressure
Model	D146L	Oil pan capacity	42.3 qt (40 L)
Number of cylinders	8	Oil pan capacity with filter	49.7 qt (47.1 L)
Cylinder arrangement	Vertical in-line	Oil filter: qty and type	2, Cartridge
Cycle	4	Electrical System	
Induction system	Turbocharged, Aftercooled	Ignition system	N/A
Compression ratio	10.5:1	Battery charging alternator:	
Bore	5.04 in (128 mm)	Ground	negative
Stroke	5.59 in (142 mm)	Volts	24
Cubic capacity	892 cu in (14.6 L)	Ampere rating	45
Piston speed	1677 ft/min (511 m/min)	Starter motor rated voltage	24
Main bearings: qty and type	10, Precision Half-Shell	Battery, recommended cold cranking amps (CCA):	
Governor type	Electronic	Qty rating for -18 °C (0 °F)	Two, 1000
Rated rpm	1800	Battery voltage	12
Max power at rated rpm	402 hp (300 kW)	Operation Requirements	
Engine power at Standby rating	N/A	Radiator-cooled cooling air, m ³ /min (scfm) ‡	22500 scfm (638 m ³ /min)
Frequency regulation, no load to full-load	Isochronous	Combustion air	532 cfm (1064 m ³ /min)
Frequency regulation, steady state	± 0.5%	Heat rejected to ambient air:	
Frequency	Fixed	Engine	3765 Btu/min (66 kW)
Air cleaner type	Dry	Alternator	1309 Btu/min (23 kW)
Exhaust System		Fuel System	
Exhaust manifold type	Wet	Fuel Type	LP Gas, Natural Gas or Dual Fuel
Exhaust flow at rated kW	1611 cfm (1131 kg/hr)	Fuel Consumption	
Exhaust temperature at rated kW	1112 °F (600 °C)	<u>Natural Gas</u>	
Maximum allowable back pressure	3.0 in (10.2 kPa)	100% Load	2782 cfm (78.8 m ³ /hr)
Exhaust outlet size at engine hookup	N/A	75% Load	2168 cfm (61.4 m ³ /hr)
		50% Load	1521 cfm (43.1 m ³ /hr)
		25% Load	928 cfm (26.3 m ³ /hr)
		<u>LP Gas</u>	
		100% Load	926 cfm (26.2 m ³ /hr)
		75% Load	789 cfm (22.4 m ³ /hr)
		50% Load	532 cfm (15.1 m ³ /hr)
		25% Load	335 cfm (9.5 m ³ /hr)
Cooling System			
Ambient temperature	122 °F (50 °C)		
Engine jacket water capacity	9.5 gal (43.2 L)		
Radiator system capacity, including engine	50 gal (227.3 L)		
Engine jacket water flow	180 gpm (680 Lpm)		
Heat rejected to cooling water at rated	3765 Btu/min (66 kW)		
Max restriction of cooling air, intake and discharge side of radiator	0.5 H ₂ O (0.125 kPa)		



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Generator Controller Options



Digital Control Panel

The DGC-2020 digital GenSet controller provides integrated engine-GenSet control, protection, and metering. Microprocessor based technology allows for exact measurement, set point adjustment, and timing functions. Front panel 3 position controls and indicators enable quick and simple operation. The panel is also equipped with a emergency stop push button and an Alarm Horn with silence button. A wide temperature-range liquid crystal display (LCD) with backlighting can be viewed under a wide range of ambient light and temperature conditions down to 40° C.

Features SAE J1939 Engine ECU communications, Multilingual capability, Remote RS-485 communications for Optional RDP-110 Remote Annunciator, Extremely rugged, fully encapsulated design with 4 programmable contact inputs and 10 contact outputs (2 ADC rated). It also features Modbus Communications with RS-485, Battery Backup for Real Time Clock, UL recognized, CSA certified, CE approved, HALT (Highly Accelerated Life Tests) tested, IP 54 Front Panel rating with integrated gasket, and NFPA 110 Level 1 Compatible.



Analog Top Mount Controller

This Generator control panel has analog instruments to monitor AC voltage, AC frequency, percent of load and, run time/hour meter. Safety shutdowns provide red LED indication for overspeed, overcrank, low oil pressure, and high coolant temperature. Provide green LED indication of engine running. Control switch is provided for local and remote starting with 3 position run/off/remote switch.

There is also an engine mounted emergency by-pass key switch with mechanical oil pressure and coolant temperature gauge.

AC Alternator Specifications

STANDARDS

Stamford industrial generators meet the requirements of BS EN 60034 and the relevant section of other international standards such as B55000, VDE 0530, NEMA MG1-32, 1EC34, CSA C22.2-100, A51359.

Other standards and certifications can be considered on request.

VOLTAGE REGULATORS

MX341AVR

With this self excited control system the main stator supplies power via the Automatic Voltage Regulator (AVR) to the exciter stator. The high efficiency semiconductors of the AVR ensure positive build-up from initial low levels of residual voltage.

The exciter rotor output is fed to the main rotor through a three phase full wave bridge rectifier. This rectifier is protected by a surge suppressor against surges caused, for example, by short circuit.

(Optional) AS440 AVR

With this self-excited system the main stator provides power via the AVR to the exciter stator. The high efficiency semi-conductors of the AVR ensure positive build-up from initial low levels of residual voltage.

The exciter rotor output is fed to the main rotor through a three-phase full-wave bridge rectifier. The rectifier is protected by a surge suppressor against surges caused, for example, by short circuit or out-of-phase paralleling.

The AS440 will support a range of electronic accessories, including a droop Current Transformer (CT) to permit parallel operation with other AC generators.

WINDINGS & ELECTRICAL PERFORMANCE

All generator stators are wound to 2/3 pitch. This eliminates triplen (3rd, 9th, 15th ...) harmonics on the voltage waveform and is found to be the optimum design for trouble-free supply of non-linear loads. The 2/3 pitch design avoids excessive neutral currents sometimes seen with higher winding pitches, when in parallel with the mains. A frilly connected damper winding reduces oscillations during paralleling. This winding, with the 2/3 pitch and carefully selected pole and tooth designs, ensures very low waveform distortion.

SHAFT

The generator rotor is dynamically balanced to better than B56861:Part 1 Grade 2.5 for minimum vibration in operation.

INSULATION/IMPREGNATION

The insulation system is class H.

All wound components are impregnated with materials and processes designed specifically to provide the high build required for static windings and the high mechanical strength required for rotating components.

QUALITY ASSURANCE

Generators are manufactured using production procedures having a quality assurance level to BS EN ISO 9001.



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Standard Features and Optional Accessories

Standard Features

- **Heavy duty steel base**
- **Vibration isolators**
- **Oil drain valve with extension**
- **Battery rack**
- **Battery cables**
- **Water jacket heater**
- **Owners manual**
- **Electronic Isochronous Governor**

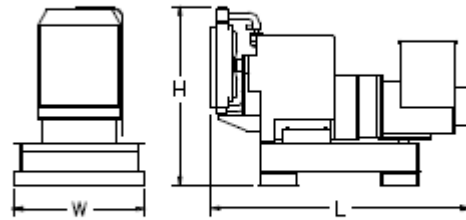
Optional Accessories

- ☐ Critical Exhaust Silencer
- ☐ Flex Exhaust Connector
- ☐ Top Mount Analog Control Panel
- ☐ End Mount Analog Control Panel
- ☐ DGC2020 Digital Control Panel
- ☐ DynaGen Digital Control Panel
- ☐ Modem for DGC2020
- ☐ Enhanced Gen Protection for DGC2020
- ☐ Surface Mount Remote Annunciator Panel for DGC2020
- ☐ Flush Mount Remote Annunciator Panel for DGC2020
- ☐ Remote Mount Break Glass E-Stop Switch
- ☐ Line Circuit Breaker
- ☐ 3 phase sensing
- ☐ Radiator duct flange for open unit
- ☐ Weather Enclosure with internal muffler
- ☐ Sound Attenuated weather enclosure
- ☐ Oil Pan Heater
- ☐ Battery
- ☐ Battery Charger
- ☐ Battery Heaters
- ☐ Flexible Fuel Lines

Weights and Dimensions

OVERALL SIZE, L x W x H, in.: 120 in x 75 in x 75 in
WEIGHT: 10380 lbs.

Note: Dim and weights reflect standard open unit with no options



Note: This drawing is provided for reference only and should not be used for planning installation. Contact your local distributor for more detailed information.



GeneratorJoe

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A small business owned by service a connected disabled veteran.

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