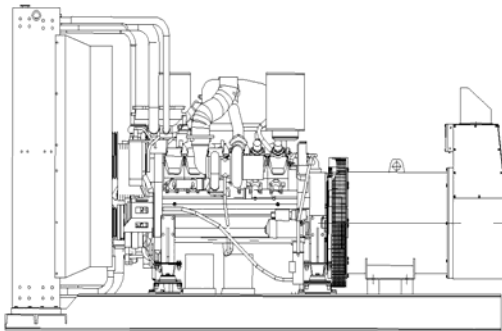




MAQUINARIA IGSA POWER GENERATION SYSTEMS



MODEL: GSDD10750M
DIESEL ENGINE: DETROIT DIESEL
MODEL: 12V2000G83, TIER1
CAPACITY: 750kW; 1800 RPM

RATINGS RANGE	
PRIME hp (kW)	STANDBY hp (kW)
1020 (761)	1119 (835)

Reference Conditions ISO 3046: Standard Power available up to
 Intake air temperature 25°C (77°F) 40°C (104°F)
 Side altitude above sea level 100 m (328.08ft) 400m (1312.3ft)
 Charge air coolant temperature 55°C (131°F) 55°C (131°F)

STANDARD FEATURES

Complete system designed and built at ISO9001 certified facility

- Factory tested to design specifications at full load conditions.
- Fully engineered with a range of options and accessories.

1 IGSA Genset's are composed of 12 cylinders in V, and four strokes diesel engine for industrial stationary applications. Those equipments are fully factory tested using a resistive load. (1) Hour ramp 100% load test.

2 The controls and accessories are selected to work together to achieve the maximum operational performance and security.

3 Exhaust gases silencer, and a section of flexible tube for connection purposes.

4 Engine **DETROIT DIESEL, 12V2000G83 TIER 1**

5 Marathon Alternator

6 Radiator

7 Control MEC 310 (panel USC300)

8 Base of structural steel

GENERAL FEATURES

- IGSA GENSET of, **750 kW to 480V, 440V, 416V, 380, 220V, 208 VAC**, 3 Phase, 4 Wire, 60 Hertz, is composed by an internal engine four strokes coupling with the alternator, controls and accessories totally assembled and tested in factory.
- The controls and accessories of the Genset are selected to provide the maximum in efficiency and Security
- The generator set its components are tested factory-built, and production-tested.
- The genset engine is certified by the Environmental Protection Agency (EPA) to conform to Tier 1 nonroad emissions regulations.
- Electronic engine controls manage the engine (isochronous)
- Integrated complete system control and monitoring (MDEC)



WE ARE THE BEST IN MANUFACTURING THE POWER GENERATION SYSTEMS AND ADDITION CONSTANTLY INNOVATION.

www.igsa.com.mx
 All rights reserved.
 Printed in MEXICO

ENGINE SPECIFICATION DATA MODEL 12V2000G83

Weight 2570 Kg (5668 Lb)

General Data	
Model	12V2000G83
Combustion System	Direct Injection
Chargin method	Exhaust turbo charger and Water charge air cooling external
Bore x Stroke	130/150 mm
Displacement, total	23.88 Liter
Number of cylindres	12
Cylinder configuration	V - 90°
Compression Ratio	14:1
Direction of rotation	Left
Flywheel housing flange	SAE 0
Flywheel interface	18"
Starter ring-gear teeth no.	160
Injection system	Electronically controlled high-pressure injection With single injection pumps
Control/Monitoring	Electronic engine management system MDEC
Number of turbo chargers	2
Number of intercooler	1
Power (ISO 3046)-- kW	835
Mean Piston speed--In/s (m/s)	354.3 (9.0)
Mean effective pressure	23.3
Physical Data	
Weight, dry--Lb (kg)	5668 (2570)
Weight, wet-- Lb (kg)	6084.7 (2760)
Length--in.(mm)	69.9 (1755)
Height--in.(mm)	5668 (1580)
width--in.(mm)	6087 (1775)
Fuel Consumption (Standby)	
100 % Power-- g/kWh	197
75 % Power-- g/kWh	210
50 % Power-- g/kWh	216
Lube oil consumption (after run in)	0.5
Capacity	
Engine oil Cap, ininitial Filling (standard oil system)--Gl (Lt)	1.9 (77)
Oil pan capacity, dipdtick mark min.-- Gl (Lt)	13.2 (50)
Oil pan capacity, dipdtick mark max.-- Gl (Lt)	17.7 (67)
Engine coolant capacity (without equipment)-- Gl (Lt)	29.1 (110)
Intercooler coolant capacity-- Gl (Lt)	5.3 (20)
Heat dissipation	
Engine coolant dissipation 100% load-- kW	365
charge-air heat dissipation 100% load-- kW	225
Radiation and convection heat, engine-- kW	45
Noise emission	
(Free-field sound pressure level, im distance)	
Engine surface noise-- dB(A)	101
Exhaust noise, unsilenced-- dB(A)	116

Starter System	
Electrical Starter (make Delco)	
Starter, rated voltage-- V	24
Starter, rated power-- kW	-
Starter, power requirement max-- A	1750
Starter, power requirement at firing speed-- A	800
Recommended battery capacity Lead-acid-- Ah/20h	-
NiCd--Ah/5h	-
Firing speed--1/min	100-120
Coolant pre-heating100-120	
Preheating temperature (min.)-- °C (°f)	32 (89.6)
Heater performance-- kW	3
Coolant system, Engine coolant circuit	
Coolant temperature (at engine outlet to cooling equipment)-- °C (°f)	95 (203)
Coolant temperature after engine, alarm-- °C (°f)	97 (206.6)
Coolant temperature after engine, shutdown-- °C (°f)	102 (215.6)
Coolant antifreeze content, max. Permissible-- %	50
Cooling equipment: coolant flow rate-- m³/h	58
Coolant pump: inlet pressure, min.-- bar	0.4
Coolant pump: inlet pressure, max.-- bar	1.52
Pressure loss in off-engine cooling system, max. Permissible-- bar	0.7
Cooling equipment: height above engine max. Permissible-- m	15.2
Cooling equipment: design pressure max. Permissible-- bar	2.2
Coolant system, Charge-air coolant circuit	
Coolant temperature before intercooler (engine inlet)-- °C (°f)	55 (131)
Coolant antifreeze content, max. Permissible-- %	50
Cooling equipment: coolant flow rate-- m³/h	17
Pressure loss in off-engine cooling system max. Permissible-- bar	0.7
Cooling equipment: Height above engine max. Permissible-- m	15.2
Cooling equipment: design pressure max. Permissible	2.2
Combustion Air m³/s	
Combustion air volume flow new filter-- mbar	30
Intake air depression limit value-- mbar	50
Fuel System	
Fuel supply flow, max.-- l/min	7.5
Fuel temperature max. °C (°f)	55 (131)
Fuel pressure at supply connection on engine, min. Admissible-- bar	+0.5
Fuel pressure at supply connection on engine, max. Admissible-- bar	-0.3
Exhaust system	
Exhaust volume flow-- m³/s	2.8
Exhaust temperature after turbocharger-- °C (°f)	600 (1112)
Exhaust backpressure limit value-- mbar	100
General operating data	
Recomended minimum continuous load-- %	20
Engine mass moment of inertia, with standard flywheel-- kgm²	3.920



WE ARE THE BEST IN MANUFACTURING THE POWER GENERATION SYSTEMS AND ADDITION CONSTANTLY INNOVATION.

www.iqsa.com.mx
All rights reserved.
Printed in MEXICO

MARATHON. ELECTRIC ALTERNATOR MODEL 573RSL4032 weight 1541 kg (3400Lb)

Kilowatt ratings at		1800 RPM			60 Hertz			12 Leads standard 3 phase		
kW (kVA)		3 Phase			0.8 Power Factor			Dripproof or Open Enclosure		
Voltage	Class B		Class F				Class H			
	80° C, 176° F (1) Continuous	90° C, 194° F (1) Lloyds	95° C, 203° F (1) ABS	105° C (221° f) † British Standard	105° C, 221° F (1) Continuous	130° C, 266° F (1) Standby	125° C (257° f) † British Standard	125° C, 257° F (1) Continuous	150° C, 302° F (1) Standby	
480/240	570 (713)	625 (781)	645 (806)	680 (850)	680 (850)	700 (875)	695 (869)	700 (875)	765 (956)	
460/230	595 (744)	645 (806)	655 (819)	700 (875)	700 (875)	730 (913)	715 (894)	730 (913)	785 (981)	
440/220	595 (744)	635 (794)	640 (800)	680 (850)	680 (850)	730 913()	715 (894)	725 (905)	765 (956)	
416/208	570 (713)	600 (750)	610 (763)	645 (806)	645 (806)	700 (875)	685 (856)	685 (856)	725 (906)	
380/190	525 (656)	555 (694)	560 (700)	595 (744)	595 (744)	595 (744)	595 (744)	595 (744)	595 (744)	

(1) Rise by resistance method, Mil-Std-705, Method 680.1b.

† Rating per BS 5000.

Submittal Data: 480 Volts, 824.8 kw, 1031 kVA, 0.8 P.F., 1800 RPM, 60 Hz, 3 Phase					
Mil-Std-705C			Mil-Std-705C		
Method	Description	Value	Method	Description	Value
301.1b	Insulation Resistance	> 1.5 Meg	505.3b	Overspeed	2250 RPM
302.1a	High Potential Test		507.1c	Phase Sequence CCW-ODE	ABC
	Main Stator	2000 Volts	508.1c	Voltage Balance L-L OR L-N	0.20%
	Main Rotor	1500 Volts	601.4a	L-L Harmonic Maximum - Total (Distortion Factor)	5.0 %
	Exciter Stator	1500 Volts	601.4a	L-L Harmonic Maximum - Single	3.0%
	Exciter Rotor	1500 Volts	601.1c	Deviation Factor	5.0%
	PMG Stator	1500 Volts	--	TIF (1960 Weightings)	<50
401.1a	Stator Resistance, Line to Line		--	THF (IEC, BS & NEMA Weightings)	<2%
	High Wye Connection	0.0074 Ohms	652.1a	Shaft Current	<0.3 m
	Rotor Resistance	0.472 Ohms	--	Main Stator Capacitance to ground	0.03 mfd
	Exciter Stator	23 Ohms	Additional Prototype Mil-Std Methods are Available on Request.		
	Exciter Rotor	0.045 Ohms	--	Generator Frame	573
	PMG Stator	2.1 Ohms	--	Type	MAGNAMAXDVR
410.1a	No Load Exciter Field Amps at 240/480 Volts Line to Line	0.65 A DC	--	Insulation	Class H
420.1a	Short Circuit Ratio	0.489	--	Coupling - Single Bearing	Flexible
421.1a	Xd Synchronous Reactance	3.09 pu	--	Amortisseur Windings	Full
422.1a	X2 Negative Sequence	0.217 pu	--	Excitation	Ext. Voltage Regulated, Brushless
423.1a	X0 Zero Sequence Reactance	0.058 pu	--	Voltage Regulator	DVR2000
425.1a	X'd Transient Reactance	0.153 pu	--	Voltage Regulation	0.25%
426.1a	X''d Subtransient Reactance	0.132 pu	--	Cooling Air Volume	1400 CFM
--	Xq Quadrature Synch.React.	1.25 pu	--	Heat rejection rate	2379 Btu's/min
427.1a	T'd Transient Short Circuit		--	Full load current	1052 amps
	Time Constant	0.127 sec.	--	Minimum Input hp required	994.4
428.1a	T''d Subtransient Short Circuit		--	Efficiency at rated load:	94.4 %
	Time Constant	0.009 sec.	--	Full Load torque	2900 Lb-ft
430.1a	T'do Transient Open Circuit				
	Time Constant	1.67 sec.			
432.1a	Ta Short Circuit Time				
	Constant of Armature Winding	0.015			

* (3) Excitation support system or PMG required to sustain short circuit currents.

* Voltage refers to wye (star) connection, unless otherwise specified.

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, BS5514, AS2789, 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 a 12 hour period. Ratings are in accordance with ISO-8528/1, overload power in accordance with ISO-3046/1, BS 5514, AS 2789, 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 1.0% per 100 m (328 ft.) elevation above 400 m (1312 ft.). Temperature: Derate 3.0% per 5.0°C (9°F) temperature above 40°C (104°F).



WE ARE THE BEST IN MANUFACTURING THE POWER GENERATION SYSTEMS AND ADDITION CONSTANTLY INNOVATION.

www.igs.com.mx
All rights reserved.
Printed in MEXICO

CONTROLLER FOR GENSET: CONTROL MEC 310 PANEL USC300

The Generator Controller MEC 310 is a microprocessor-based control unit containing all necessary functions for protection and control of a power generator. Besides the control and protection of the diesel engine it contains a full 3-phase AC voltage and current measuring circuit. The unit is equipped with an LCD display presenting all values and alarms.



- USC 300C Unit Mount Control Panel, Black Nema 1 enclosure c/w rubber mounts
- MEC 310 Microprocessor Based Engine Generator Controller
- Graphic Display 128 X 64 pixels (STN) Super Twisted Nematic
- Digital AC Metering:
 - 3-Phase Volts (Phase to Phase and Phase to Neutral),
 - 3-Phase Amps
 - Frequency
 - kW, kVAR, KVA, pF, kWhr
- AC Protective Relaying:
 - 27/59 Under/Over Voltage
 - 32 Reverse Power
 - 51 Time Overcurrent
 - 81 O/U Under/Over Frequency
- Digital gauge display:
 - Oil Pressure (sender required by others)
 - Coolant Temperature (sender required by others)
 - Fuel Level (sender required by others)
 - Hourmeter
 - Tachometer
- 5 digital inputs for alarms / shutdowns
- Dedicated Output Contacts - Engine Crank; Run (30 VDC / 6 Amps)
- Three Programmable Output Contacts (30 VDC / 1 Amps)
- Event Logging (30 events)
- Pushbuttons:
 - Emergency Stop
 - Manual Start and Stop
 - Manual/Auto/Test
 - Lamp Test
 - Horn Silence
- Indicating Lights:
 - Common Alarm
 - Generator Ready (Voltage and Frequency Normal)

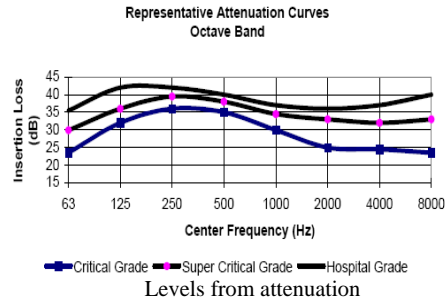
FEATURES

- Electrical Rating:**
- Single or three phase, 600VAC maximum, 50/60HZ, 4 wire
 - 12 or 24Vdc (nominal) supply, negative ground.
 - Dedicated Output Contacts - Engine Crank; Run (30 VDC / 6 Amps)
 - Three Programmable Output Contacts (30 VDC / 1 Amps)
- Enclosure:**
- Black Nema 1 enclosure c/w rubber mounts
- Engine Senders:**
- Oil pressure (1/8" NPT), Temperature (1/4"NPT) (Supplied loose for engine mounting).
- Requirements:**
- Exceeds requirements of CSA 282 and NFPA 110 Level

OPTIONAL SILENCER ACCORDING TO THE APPLICATION

Silencer with different levels from attenuation

- Critical Grade
- Super Critical Grade
- Hospital Grade



DOCUMENTATION AND OTHERS

- Manual of operation and maintenance
- Spare parts
- Maintenance
- Consulting

MISCELLANEOUS EQUIPMENT

- Batteries of 12 VDC with cables for battery connection with the Engine.

GENSET OPTIONS

Control Panel

USC 300C Control Panel is standard on all units see page 4 of spec sheet for standard features.

Another Type _____

Cooling System

Radiator

- Vertical Direct
- Vertical Remote
- Horizontal Remote
- Radiator Duct Flange
- Antifreeze drain Extension

Fuel system

- Fuel Water Separator
- Day tank
- Auxiliary fuel pump

Diesel Fuel Tank

- 1000 L (264.1 gal)
- 5000 L (1320.8 gal)
- 15000 L (3962.5 gal)

Exhaust System

- Critical Grade
- Super Critical Grade
- Hospital Grade

Engine Electrical system

- Battery
 - Lead-Acid
 - NiCad
- Battery Rack
- Battery Charger Automatic

Generator

- Breaker in the alternator
- PMG excitation & DVR 2000 Regulator

OPTIONAL ACCESSORIES AVAILABLE FOR THE EQUIPMENT

Vibration isolation

- Rigid Spring Mounting
- Resilient Mounting

Filters

- Air Filter for Medium Dust Environments
- Air Filter of Heavy Dust Environments

Drain

- Oil drain Extension

Enclosures

- Sound Attenuated
- Weather Proof
- Stainless steel cover
- Trailer Mounting
- Interior lights Ac or DC

Heaters

- Jacket Water Heater
- Crankcase Oil Heater

Insulation Blankets

- Features:
(Temperature to 1260°C (2300°F), Non-Combustible, Highly Resistant to Vibration, Oil, Fuel, Grease, and Moisture Resistant Exterior, Personal Protection

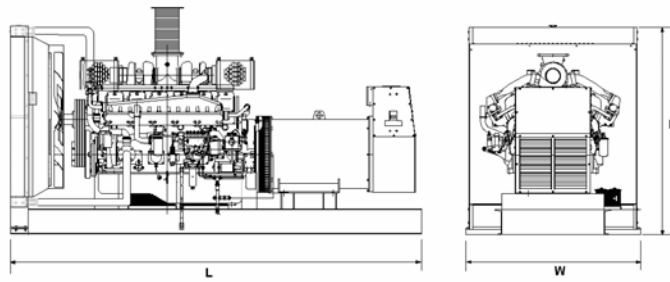
Notes



WE ARE THE BEST IN MANUFACTURING THE POWER GENERATION SYSTEMS AND ADDITION CONSTANTLY INNOVATION.

All rights reserved.
Printed in MEXICO

DIMENSIONS



LENGTH	WIDTH	HEIGHT
mm (in)	mm (in)	mm (in)
4100(161.42)	1954 (76.92)	2236 (88.01)

NOTE: General configuration not to be used for installation. See general dimension drawing for detail.

SERVICES

- Development of the project.
- Development of engineering.
- Equipment's Installation
- Engineering for special applications.
- Synchronies with utility network or more Gensets.
- Attention and technical support

INSTALLATION OPTIONS OF THE GENSET

- On-Site
- Acoustic Enclosure
- ISO Container
- Trailer

