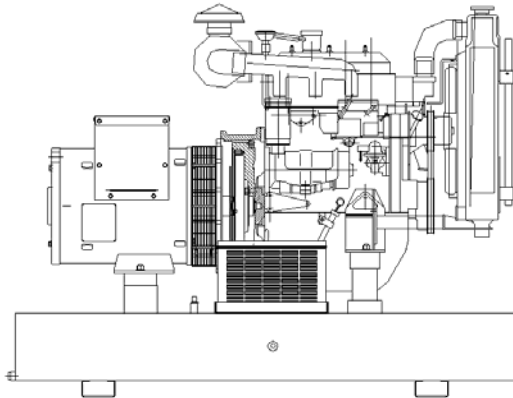




# MAQUINARIA IGSA POWER GENERATION SYSTEMS



**MODEL: GSIV00030M**  
**DIESEL ENGINE: IVECO**  
**MODEL: 803li06**  
**CAPACITY: 30 kW; 1800 RPM**

## RATINGS RANGE

**PRIME hp (kW)**  
**44 (33)**

**STANDBY hp (kW)**  
**48 (36)**

Ratings in accordance with ISO 8528-standard reference conditions:

Air inlet temperature 25°C (77°F)  
Pressure 1000 mbar (14.5psi)  
Relative humidity 30%  
Power factor 0.8

## 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 3 cylinders in line 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 **IVECO, 803li06**

**5** Marathon Alternator.

**6** Control MEC 310 (panel USC300).

**7** Radiator

**8** Base of structural steel.

## General Features

- IGSA GENSET of, **30 kW to 480V, 440V, 380V, 220V, 208V, 190VAC**, 3 Phase, 4 Wire, 60 Hertz, is composed by an internal engine four strokes coupling 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.

## ENGINE SPECIFICATION DATA MODEL 803li06 Weight 370 Kg (816 Lb)

General Data	
Model	803li06
Diesel 4 Stroke-Injection type	direct
Number of Cylinders	3 in line
Total Displacement-- gl (L)	0(2.9)
Bore x Stroke--in.(mm)	(104 x 115) 4.1x4.5 in
Compression Ratio	17:01
Aspiration	natural
Cooling system	liquid (water + 50% Parafllu I I) ACEA E3-API CF4/MILL2104E/F
Lube oil specifications	CF4/MILL2104E/F
Lube oil consumption	< 0.3% of fuel consumption
Fuel specification	EN 590
Speed governor	mechanical (G2 class)
Engine rotating mass	
moment of inertia-- kg.m <sup>2</sup>	0.942 (22.4 lbf <sup>2</sup> )
Flywheel housing / Flywheel	SAE/11" ½
Physical Data	
Length--in.(mm)	39.3 (998)
Width--in.(mm)	26.8 (680)
Height--in.(mm)	35.6 (905)
Weight, dry--lb (kg)	816 (370)
Fuel Consumption at 1800 RPM -- gl/hr (l/hr)	
BMEP	755
100 % Power	2.4 (9.0)
75 % Power	1.7 (6.6)
50 % Power	1.3 (4.9)
Air Induction System	
Intake air Flow m <sup>3</sup> /h	145 (5121 ft <sup>3</sup> /h)
Maximum suggested intake restrictions:	
with clean air filter kPa	2.45 (0.355 psi)
with dirty air filter kPa	4.9 (0.711 psi)
Injection	
Injection System	mechanical
Max speed drop steady conditions.	4%
Max fuel feed pump suction head--m	0.8 (2.62 ft)

Exhaust System	
Exhaust gas flow-- kg/h	(175) 385.8 lb/h
Max exhaust temperature at full load (at 25°C - after turbine)-- °C	530 (986°F)
Max allowable exhaust backpressure-- kPa	14.7 (2.132psi)
Cooling System	
Cooling System:	
engine only-- gl (L)	1.3 (5)
engine + Radiator-- gl (L)	3.2 (12)
Cooling water flow rate--(l/min)	(110) 29 gal/min
Max allowable pressure drop on external water circuit.--Pa	9.8
Max head of cooling radiator-- m	(3) 9.84ft
Pusher fan air flow-- m <sup>3</sup> /s	1 (35.3ft <sup>3</sup> /s)
Pusher fan head (static)-- Pa	294 (0.043psi)
Pusher fan absorbed power-- kW	0.55 (0.138 hp)
Max engine outlet water temp. (Alarm)-- °C	100 (212°F)
ATB (without canopy)- nominal rating-- °C	50 (122°F)
Lubrication System	
Lube oil total system incl. Sump, filters etc.-- kg(l)	8 (8.8)
Oil capacity of standard sump:	
at min. Level-- kg(l)	5 (5.5)
at max. -- kg(l)	7 (7.7)
Maximum oil temperature-- °C	125 (257°F)
Oil pressure (min/max)-- kPa	196 (28.42 psi)
Heat Rejection (at full load conditions)	
Engine to coolant (Water + oil)-- kcal/kWh	615
Engine to exhaust-- kcal/kWh	635
Radiated to ambient-- kcal/kWh	160
Electrical Starting System	
Cranking motor rating-- kW	3 (4 hp)
Auxiliary voltage-- Vcc	12
Battery-charge alternator-- A	45
Starting batteries:	
Recommended capacity-- Ah	100
Discharge current-- A	650



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# MARATHON ELECTRIC ALTERNATOR MODEL 283CSL1507

## Weight 158.7 Kg (350 Lb)

Kilowatt ratings		1800 RPM			60 Hertz		12 Leads		
kW (kVA)		3 Phase			0.8 Power Factor		Dripproof or Open Enclosure		
Voltage	Class B	Class F					Class H		
	80° C, 176°F (1)	90° C, 194°F (1)	95° C, 203°F (1)	105° C 221°F British †	105° C, 221°F (1)	130° C, 266°F (1)	125° C 257°F British †	125° C, 257°F (1)	150° C, 302°F (1)
	Continuous	Lloyds	ABS	Standard	Continuous	Standby	Standard	Continuous	Standby
240/480	27.0 (33.8)	28.0 (35.0)	28.0 (35.0)	31.0 (38.8)	31.0 (38.8)	33.0 (41.3)	33.0 (41.3)	33.0 (41.3)	35.0 (43.8)
230/460	26.0 (32.5)	27.0 (33.8)	27.0 (33.8)	30.0 (37.5)	30.0 (37.5)	32.0 (40.0)	32.0 (40.0)	32.0 (40.0)	34.0 (42.5)
220/440	25.0 (31.3)	26.0 (32.5)	26.0 (32.5)	28.0 (35.0)	28.0 (35.0)	31.0 (38.8)	31.0 (38.8)	31.0 (38.8)	33.0 (41.3)
208/416	24.0 (30.0)	25.0 (31.2)	25.0 (31.2)	27.0 (33.8)	27.0 (33.8)	30.0 (37.5)	30.0 (37.5)	30.0 (37.5)	32.0 (40.0)
190/380	22.0 (27.5)	23.0 (28.8)	23.0 (28.8)	25.0 (31.3)	25.0 (31.3)	27.0 (33.8)	27.0 (33.8)	27.0 (33.8)	29.0 (36.3)

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

† Rating per BS 5000.

### Submittal Data: 480 Volts, 25.0 kVA, 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	601.4a	L-L Harmonic Maximum - Total (Distortion Factor)	3.0%
	Main Rotor	1500 Volts	601.4a	L-L Harmonic Maximum - Single	2.5%
	Exciter Stator	1500 Volts	601.1c	Deviation Factor	6.0%
	Exciter Rotor	1500 Volts	--	TIF (1960 Weightings)	<50
401.1a	Stator Resistance, Line to Line		<b>Additional Prototype Mil-Std Methods are Available on Request.</b>		
	High Wye Connection	0.438 Ohms	--	Generator Frame	280
	Rotor Resistance	1.183 Ohms	--	Type Ext. Voltage Regulated, Brushless	
	Exciter Stator	18.83 Ohms	--	Insulation	Class H
	Exciter Rotor	0.127 Ohms	--	Coupling - Single Bearing	Flexible
410.1a	No Load Exciter Field Amps at 480 Volts Line to Line	0.49 A DC	--	Amortisseur Windings	Full
420.1a	Short Circuit Ratio	0.78	--	Cooling Air Volume	250 CFM
421.1a	Xd Synchronous Reactance	1.91 pu	--	Exciter	Rotating
422.1a	X2 Negative Sequence Reactance	0.215 pu	--	Voltage Regulator	SE350
423.1a	X0 Zero Sequence Reactance	0.04 pu	--	Voltage Regulation	1%
425.1a	X'd Transient Reactance	0.0689 pu			
426.1a	X''d Subtransient Reactance	0.0645 pu			
427.1a	T'd Transient Short Circuit Time Constant	0.025 sec.			
428.1a	T''d Subtransient Short Circuit Time Constant	0.008 sec.			
430.1a	T'do Transient Open Circuit Time Constant	0.8 sec.			
432.1a	Ta Short Circuit Time Constant of Armature Winding	0.0167 sec.			

\* 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 1.3% per 100 m (328 ft.) elevation above 2000 m (6560 ft.). Temperature: Derate 1.0% per 10°C (18°F) temperature above 40°C (104°F).



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## 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)

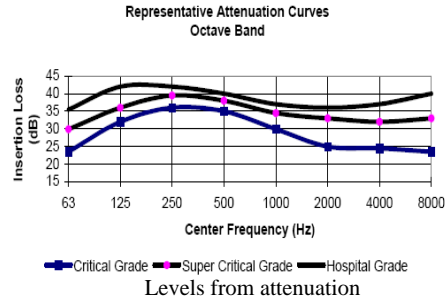
## FEATURES

- 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 \_\_\_\_\_

#### Fuel system

- Fuel Water Separator
- Day tank
- Auxiliary fuel pump
- Sub Base mounted Fuel Tank
  - Single Wall
  - Double Wall
  - UL listed
  - 150 L (39.6 gal)
  - 250 L (66 gal)

#### Diesel Fuel Tank

- 500 L (132 gal)
- 1000 L (264.1 gal)
- 5000 L (1320.8 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

### 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

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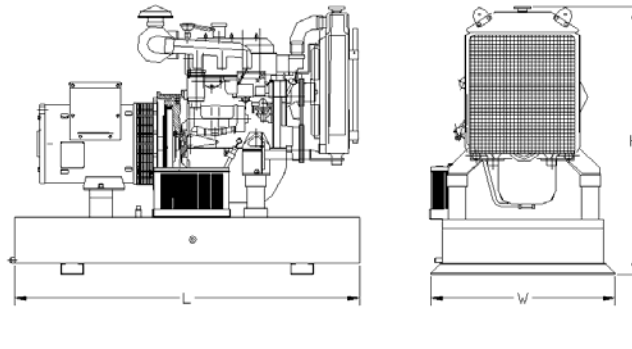
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## DIMENSIONS



LENGTH	WIDTH	HEIGHT
mm (in)	mm (in)	mm (in)
1500 (59)	800 (31)	1300 (51)

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

