

# Biogas Generator Set Data Sheet (01-01-2017)

Rated 160kWel, Biogas



Picture for Reference Only

<b>Gas Generator Set Model:</b>	TCM200BG	<b>Gas Engine Model:</b>	CG6L-14BG	<b>Alternator Model:</b>	Leroy Somer LSA46.3S3
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<b>50Hz</b> 1500 r.p.m	<b>3 Phase</b> 4 Wires	<b>Power Factor:</b> Cos $\phi$ = 0.8	<b>Emissions Standard</b>	N/A
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RATINGS	Prime Power (PRP)		Standby Power (LTP)		Rated Current (A)	Remarks
	kW	kVA	kW	kVA	Amps	
Voltage (V)						
380/220	160	200	N/A	N/A	303.9	
<b>400/230</b>	<b>160</b>	<b>200</b>	<b>N/A</b>	<b>N/A</b>	288.7	
415/240	160	200	N/A	N/A	278.2	
440/254	160	200	N/A	N/A	262.4	

### Conditions and Defintions:

1) Engine output data under ISO8528/1, ISO3046/1, BS5541/1, DIN6271 conditions.

### Genset General Specifications

Gas genset model	TCM200BG	Frequency (Hz)	50
Gas engine model	CG6L-14BG	Speed (rpm)	1500
Electrical output (kW)	160	Speed regulating rate	0-5% Adjustable
Electrical output (kVA)	200	Open type dimension (L×W×H) (mm)	3000×1200×1550
Fuel	Biogas	Net weight (kg)	2200

## Engine Specifications

Manufacturer	Tide Power Technology	Direction of rotation	Counter clockwise from flywheel
Model	CG6L-14BG	Induction system	Turbocharged & Intercooled
Mechanical power	200kWm	Combustion type	Spark ignition
Speed	1500 rpm	Cooling method	Water cooled
Configuration	In line	Ignition & Speed governor	EXON, electronic
Number of cylinders	6	Oil Consumption	≤0.6g/kW.h
Cycle	4 stroke	Coolant capacity (engine Only)	20.8 L
Cylinder type	Wet	Oil capacity	38.6 L
Bore / Stroke	140/152 mm	Heat consumption 100% load	11-12MJ/kW.H
Displacement	14 L	Oil grade	15W40-CF4 or above grade
Compression ratio	11:01	Starting method	24V DC motor

## Alternator Specifications

**50HZ/1500R.P.M**

Manufacture / Brand	Leroy-Somer	Prime output power	160kW/200kVA
Model	LSA46.3S3	Insulation class	H
AVR model	R250	Voltage regulation	± 0,5 %
Coupling / Bearing	Direct /Single bearing	Totale harmonic distortion THDno load <2.5% - on load <2.5%	
Phase	3 Phase	Wave form : NEMA = TIF - (*)	< 50
Power factor	Cos φ = 0.8	Number of wires	12
Winding pitch - code	2/3 - (wdg6)	Altitude	≤ 1000 m
Drip proof	IP 23	Overspeed	2250 min <sup>-1</sup>
Excitation	Shunt	Air flow	0.48 m <sup>3</sup> /s

## Control Panel



- Deepsea 7320 controller
- Digital control panel
- Volts, current, frequency, rpm (instruments)
- Genset running hours
- Battery voltage and charging
- Over speed pre-alarm & shutdown
- High water temp. pre-alarm & shutdown
- Low oil pressure pre-alarm & shutdown
- Low voltage pre-alarm & shutdown
- Overcurrent pre-alarm & shutdown

## Standard Features

- High efficient water cooled gas engine with radiator
- Brushless alternators (Class H, with AVR.)
- Heavy duty rubber anti-vibration mountings
- Starter batteries and connecting cables
- Separate engine-drive battery charging alternator
- Industrial silencer for open type generator sets
- Circuit breaker - 3 pole (MCCB)
- Low coolant level sensor
- Oil filter - Air filter
- Fully welded steel baseframe
- Ignition system
- Gas train: mainly Italy Madas gas pressure regulator & gas filter, pressure gauge, electromagnetic valve and fire arrestor and other connection components
- Wiring with IEC standard
- Factory test certificate
- Operation & Maintenance manual & Diagrams
- Worldwide product / Technical support

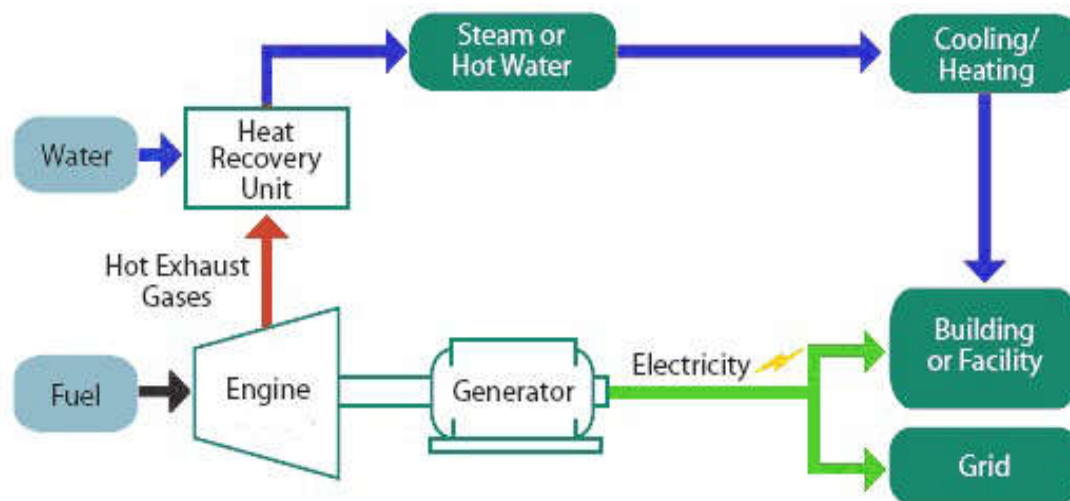
## Optional

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- Automatic Transfer Switch (ATS)
- Canopy/Enclosure
- Water heater for severe cold weather
- Lub-oil heater for severe cold weather
- Silent containerised
- Residential silencer
- Panel for auto synchronization with Mains
- Extra air filters for time-maintenance
- Automatic oil supply system
- Extra oil filters for time-maintenance
- Parallel cabinet
- Full range of attachments and options available for alternator
- Flame arrestor in gas train
- Desulfurization system
- Gas pretreatment system
- Dehydration system
- Genset Commissioning / Testing on site

## Combined Heat and Power Systems ( Optional )

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We offer Combined Cooling Heating and Power (CHP and CCHP ) packages for our gas generator sets. It can recover 75%-90% combined electrical and thermal efficiency, resulting in major reductions in your overall energy costs. In the past years we have supplied CHP systems to Germany, Russia,Indonesia etc. We have the experience and capabilities to meet your total energy requirements.

## Warranty

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The goods of Tide Power Technology are under warranty against defects in materials and workmanship for period 1 year or 1000 hours operation time whichever come first from the date of delivery to the end user (except the damageable spare parts of genset caused by incorrect man-made operation), and that the aforementioned warranty for the same token is back up by the engine & alternator manufactures and their global distributors.