

Complete Power Generating System Solutions



Ettes Power is one of the leading generator-set assemblers and suppliers in China. Ettes gas genset can be driven by world top engines of Cummins, Perkins, MAN, CAT-MWM, Deutz, CNPC 190 and Low Speed 300 series, coupled with Stamford, Leroy Somer or Siemens alternators, ranging from 20kW upto 4500kW. The applicable fuel can be methane base gases such as natural gas, biogas, marsh gas, coalbed gas, coal mine gas, shale gas, landfill gas and low BTU gas such as biomass/syngas, coking oven gas etc. By assimilating advanced gas engine control technology from Europe, Ettes gas genset can work at reliable performance, easy for maintenance and longer life-span. Furthermore, special requirements for CHP System, ATS, Soundproof Container, Parallel & Synchronization are available. Ettes Power gas generators enjoy hot ready markets in more than 70 countries all over the world including regions of Latin America, Europe, Middle East, Africa and Southeast Asia etc.

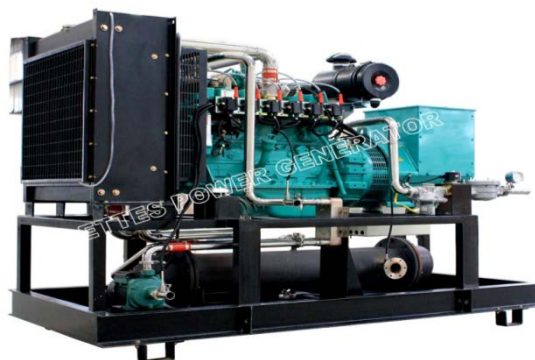


Main Technical Data of Cummins & Deutz Biogas Generators (20kW~80kW)

Genset	Genset Model	EC-20NA-B	EC-30T-B	EC-30NA-B	EC-50NA-B	EC-60T-B	EC-80T-B	EC-80NA-B
	Rated Power (kW/kVA)	20/25	30/38	30/38	50/63	60/75	80/100	80/100
	Rated Current (A)	36	54	54	80	108	144	144
	Manufacturer	ETTES POWER						
Gas Engine	Main Engine-Body Make	CUMMINS						
	Gas Engine Model	E-4B3.9G	E-4BT3.9G	E-6B5.9G	E-6C8.3G	E-6BT5.9G	E-6CT8.3G	E-N855G
	Cylinder numbers and Type	4 in Line	4 in Line	6 in Line	6 in Line	6 in Line	6 in Line	6 in Line
	Displacement (L)	3.9	3.9	5.9	8.3	5.9	8.3	14
	Bore× Stock (mm)	102*120	102*120	102*120	114*135	102*120	114*135	140*152
	Type	Four Stroke, Water Cooling, Spare Ignition, 24V DC Starting						
	Air Intake Way	Naturally Aspirated	Turbocharged	Naturally Aspirated	Naturally Aspirated	Turbocharged	Turbocharged	Naturally Aspirated
	Rated Speed (r/min)	1500 (50Hz)/1800(60Hz)						
	Compression Ratio	11:1						
	Gas Train	Ball Valve, Solenoid Valve, Pressure Regulator Valve, Gas Filter and Flame Arrestor etc.						
	Fuel	Low BTU Gas including Biogas, Landfill Gas, Sewage Gas, and Digester Gas etc.						
	Intake Gas Pressure (kPa)	2~10						
	Gas Consumption (m ³ /kW.h)	≤0.5						
	Oil Consumption (g/kW.h)	≤0.6						
Alternator	Frequency (Hz)	50/60						
	Rated Voltage (V)	400/230(50Hz), 480/240(60Hz)						
	Excitation Method	Self-excited, Brushless, AVR						
	Phase/Connection	3 Phase 4 Wire, Y-connection, 0.8 Power Factor (Cosφ)						
	Protection Level/ Insulation Class	IP23/H						
Control System	The standard control panel is with functions including manual keys, alarms, protections, auto start and shut down, showing running parameters in LCD Display by Deepsea or Smartgen Controller. Auto parallel control(optional), Auto Synchronization system (optional), Remote PC Monitor (optional)							
Options	Soundproof Container, ATS, Parallel & Synchronization Control, CHP (Heat Recovery System), Biogas Pre-treatment Machinery							
Dimension (for Open Genset,mm)	1850*900* 1150	1850*900* 1150	2250*1050* 1300	2400*1150* 1400	2250*1050* 1300	2400*1150* 1400	3000*1100* 1750	
Weight (KG)	800	900	1100	1600	1200	1800	2000	

Remarks:

- ◆ Both 50Hz and 60Hz are available,
- ◆ Special voltages are available.
- ◆ Genset Model with "NA" means air intake way of naturally aspirated, which is suitable for low quality biogas.
- ◆ Genset Model with "T" means Turbocharged and Intercooled.
- ◆ Special requirements for Soundproof Container, ATS, Parallel & Synchronization Control, CHP and Biogas Pre-treatment Machinery are optional
- ◆ The data herein can vary depending on individual production requirements or due to improved technology.

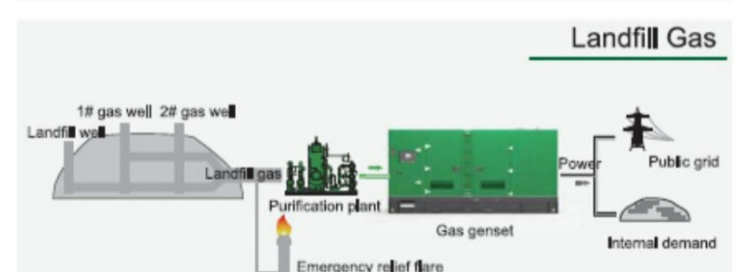
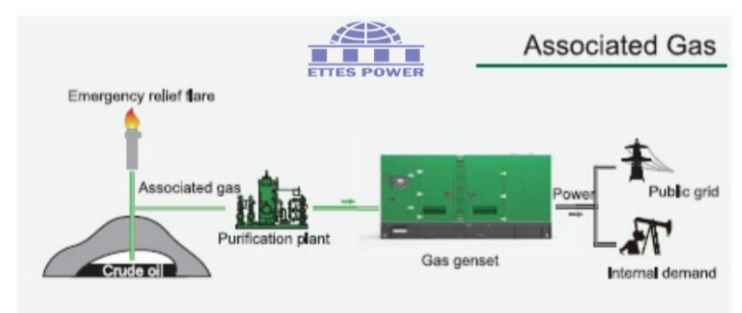
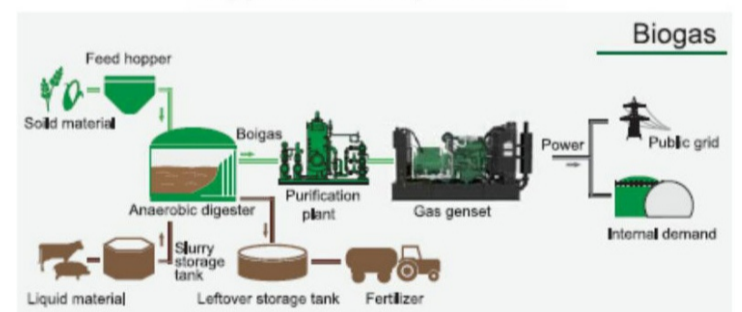


Main Technical Data of Cummins & Deutz Biogas Generators (80kW~250kW)

Genset	Genset Model	EC-150T-B	EC-200T-B	ED-120NA-B	ED-150T-B	ED-180T-B	ED-200T-B	ED-250T-B
	Rated Power (kW/kVA)	150/188	200/250	120/150	150/188	180/225	200/250	250/313
	Rated Current (A)	270	360	216	270	323	360	450
	Manufacturer	ETTES POWER						
Gas Engine	Main Engine-Body Make	CUMMINS			DEUTZ			
	Gas Engine Model	E-NT855G	E-KT19G	BF6M1015/HC6V132G	BF6M1015/HC6V132G	BF8M1015/HC8V132G	BF8M1015/HC8V132G	BF8M1015/HC8V132G
	Cylinder numbers and Type	6 in Line	6 in Line	6 in Vee	6 in Vee	8 in Vee	8 in Vee	8 in Vee
	Displacement (L)	14	19	11.9	11.9	15.9	15.9	15.9
	Borex Stock (mm)	140*152	159*159	132*145	132*145	132*145	132*145	132*145
	Type	Four Stroke, Water Cooling, Spare Ignition, 24V DC Starting						
	Air Intake Way	Turbocharged	Turbocharged	Naturally Aspirated	Turbocharged	Turbocharged	Turbocharged	Turbocharged
	Rated Speed (r/min)	1500 (50Hz)/1800(60Hz)						
	Compression Ratio	11:1						
	Gas Train	Ball Valve, Solenoid Valve, Pressure Regulator Valve, Gas Filter and Flame Arrestor etc.						
	Fuel	Low BTU Gas including Biogas, Landfill Gas, Sewage Gas, and Digester Gas etc.						
	Intake Gas Pressure (kPa)	2~10			3~50			
	Gas Consumption (m ³ /kW.h)	≤0.5						
	Oil Consumption (g/kW.h)	≤0.6						
Alternator	Frequency (HZ)	50/60						
	Rated Voltage (V)	400/230(50Hz), 480/240(60Hz)						
	Excitation Method	Self-excited, Brushless, AVR						
	Phase/Connection	3 Phase 4 Wire, Y-connection, 0.8 Power Factor (Cosφ)						
	Protection Level	IP23						
	Insulation Class	H						
Control System	The standard control panel is with functions including manual keys, alarms, protections, auto start and shut down, showing running parameters in LCD Display by Deepsea or Smartgen Controller. Auto parallel control(optional), Auto Synchronization system (optional), Remote PC Monitor (optional)							
Options	Soundproof Container, ATS, Parallel & Synchronization Control, CHP (Heat Recovery System), Biogas Pre-treatment Machinery							
Dimension (for Open Genset,mm)		3000*1100*1750	3500*1550*1900	2650*1460*1880	2650*1460*1880	3000*1550*1950	3000*1550*1950	3000*1550*1950
Weight (KG)		2150	2800	2000	2250	2500	2500	2650
Remarks:								
<ul style="list-style-type: none"> ◆ Both 50Hz and 60Hz are available, ◆ Special voltages are available. ◆ Genset Model with "NA" means air intake way of naturally aspirated, which is suitable for low quality biogas. ◆ Genset Model with "T" means Turbocharged and Intercooled. ◆ Special requirements for Soundproof Container, ATS, Parallel & Synchronization Control, CHP and Biogas Pre-treatment Machinery are optional ◆ The data herein can vary depending on individual production requirements or due to improved technology. 								

General Requirements for Biogas Quality			
Composition	Abbreviate	Limits	Remarks
Methane number	MN	>80	For Lower value please consult ETTES POWER
Calorific value	Hμ, N	>5 kWh / Nm ³	
Chlorine	Cl	<80 mg / Nm ³ CH ₄	
Fluoride	F	<40 mg / Nm ³ CH ₄	
Total-chlorine fluoride	Σ(Cl,F)	<80 mg / Nm ³ CH ₄	
Dust<5μm		<10 mg / Nm ³ CH ₄	
Oil vapor		<400 mg / Nm ³ CH ₄	No condensation may occur in the mixture
Silicon element	Si	<2 mg / Nm ³ CH ₄	For higher value please consult ETTES POWER
Sulphur	S	<200 mg / Nm ³	
Hydrogen sulphide	H ₂ S	<100 ppm	For higher value please consult ETTES POWER
Ammonia	NH ₃	<40 ppm or <30 mg / Nm ³	
Max. gas temperature		40°C	
Relative humidity		60%	

Application of Special Gas



ETTES POWER MACHINERY CO LTD

The Key Supplier for Complete Power Generating Systems

Tel: +86-22-23796980

E-mail: info@ettespower.com

Fax: +86-22-23796811

Internet: www.ettespower.com

