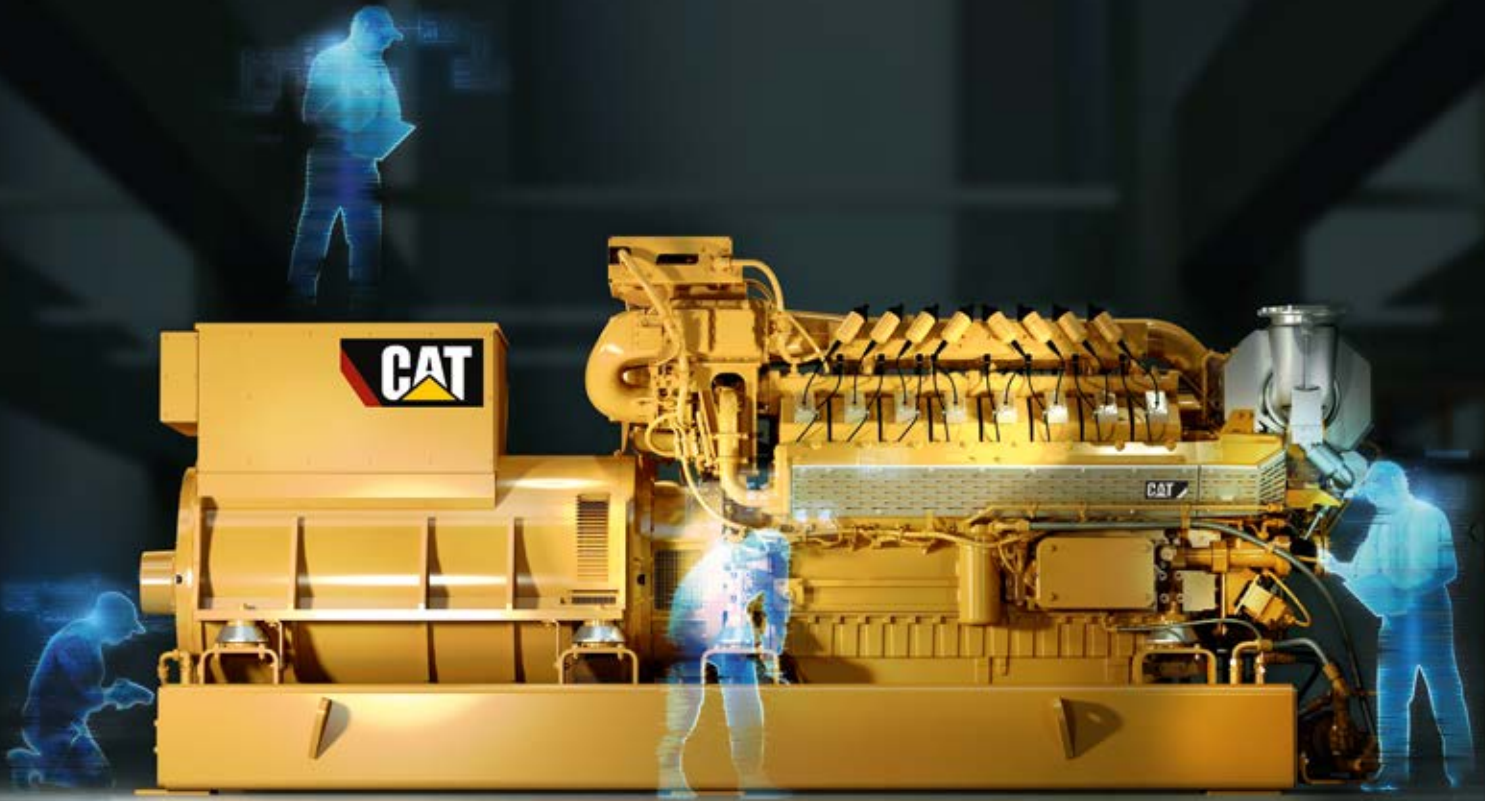


# NEW: CG132B

TAKE ADVANTAGE OF DIGITAL ASSISTANCE



**BUILT FOR IT.™**

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**CAT® GAS POWER**

# SMARTER ENERGY SOLUTIONS

## **COMMERCIAL AND INDUSTRIAL FACILITIES**

Facilities such as manufacturing plants, resorts, shopping centers, office or residential buildings, universities, data centers and hospitals reduce operating costs and carbon footprint simultaneously. They benefit from a state-of-the-art technology that provides various forms of process energy such as electricity, heat, steam and cooling with e.g. absorption chiller.

## **ELECTRIC UTILITIES**

Caterpillar has led innovation to deliver stationary and containerized gas power plants to electric utilities and district energy facilities around the world for both continuous grid support and peak electricity demand.

## **MINES**

Mining operators increase mine safety and reduce carbon emissions with coal gas, while many other mining operations are realizing the benefits of onsite gas power generation to support greenfield site development.

## **AGRICULTURE AND FOOD / BEVERAGE PROCESSING**

Biogas, a useful byproduct of the anaerobic digestion of organic waste, is created by food processors, ethanol and biodiesel manufacturers, and farms around the world as a renewable fuel resource for Cat® powered electricity generation.

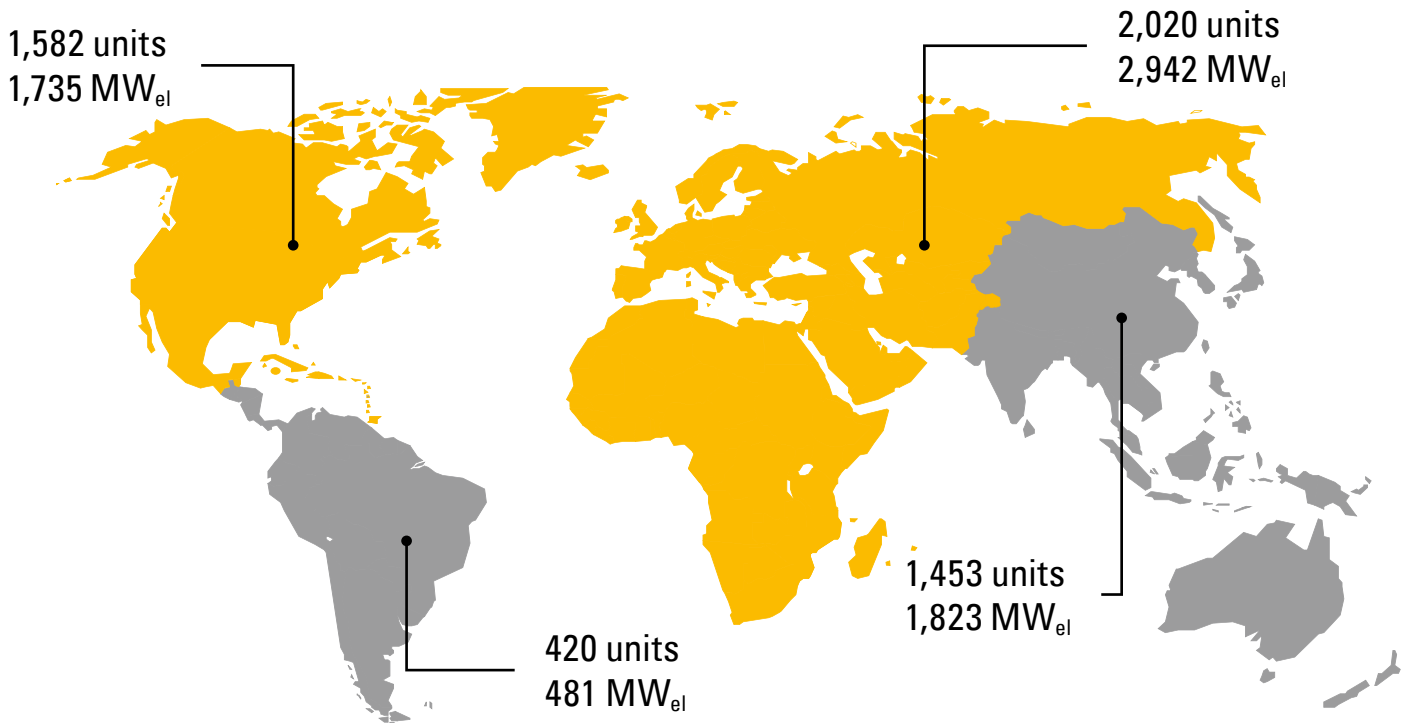
## **LANDFILLS AND WASTEWATER TREATMENT PLANTS**

Landfill and sewage gases are generated by communities around the world as part of sanitary process infrastructure. Instead of destroying or flaring the methane gas produced, communities make beneficial use of this fuel as part of a sustainable energy program.

## **GREENHOUSES**

In greenhouses, Cat gas generator sets simultaneously deliver electricity for lighting or sale to the local grid, hot water for facility heating and carbon dioxide as an organic fertilizer for increased crop production.

## Installed capacity of 6,981 MW<sub>el</sub> worldwide\*



\*Installed gas gensets within the last 10 years

### MEETING YOUR NEEDS HAS SHAPED OUR HISTORY

At Caterpillar, we understand what it takes to deliver a successful gas power generation system, and it starts with a core machine that is designed for efficiency and reliability. Since the 1920s, Caterpillar has been designing and building engines for power production. Although the technology has changed over the years, the philosophy hasn't: to deliver the most reliable power generation at the lowest possible cost of ownership and operation. Today, Caterpillar not only manufactures power generation equipment, but we also provide customized project financing via Cat Financial.

### THE COMPLETE SOLUTION

Caterpillar is your complete gas solutions partner. From mechanical systems such as gas fuel train and heat recovery systems, to exhaust aftertreatment that complies with the world's most stringent emission requirements, Caterpillar Gas Solutions engineering works with your local Cat dealer to deliver a complete scope of supply. Caterpillar also provides electrical systems such as master controls and paralleling switchgear, electrical distribution switchgear and uninterruptible power supply (UPS) that can meet either UL or IEC requirements.

### PRODUCT SUPPORT WORLDWIDE

Your gas power system is supported by our factory trained global network of Cat dealers. Therefore, you can rest assured that your equipment will be ordered, delivered, installed and commissioned in consultation with a local expert. You'll also have the confidence that Caterpillar will be there to keep you up and running. Cat dealers have over 1,600 dealer branch stores operating in 200 countries to provide the most extensive post-sales support including oil and fuel monitoring services, preventive maintenance and comprehensive Customer Support Agreements.

### LOWER LIFE CYCLE COST

With longer maintenance intervals, higher fuel efficiency and competitive repair options, Caterpillar delivers the lowest total owning and operating costs. When you design your facility within Caterpillar's Application and Installation Guidelines, you can expect highest generator set availability. It all adds up to a strong return on your investment, year after year.

# CG132B

## NEW ON THE BLOCK.

### ROBUST. EFFICIENT. DIGITAL.

The CG132B is the first of a new generation: State-of-the-art components and the TPEM (Total Plant & Energy Management) control system ensure maximum reliability and availability. The improved oil management and optimized cylinder and turbochargers set new standards in terms of durability and reliability.

### MAXIMUM EFFICIENCY

Best total cost of ownership in its power range through unique combination of a long operating period until the major overhaul (80,000 oh for natural gas) and outstanding efficiency (electrical efficiency of up to 43.5 percent).



### LOWER GAS CONSUMPTION

through improved efficiency and fuel flexibility



### LOWER LUBE OIL CONSUMPTION

leads to lower operating costs



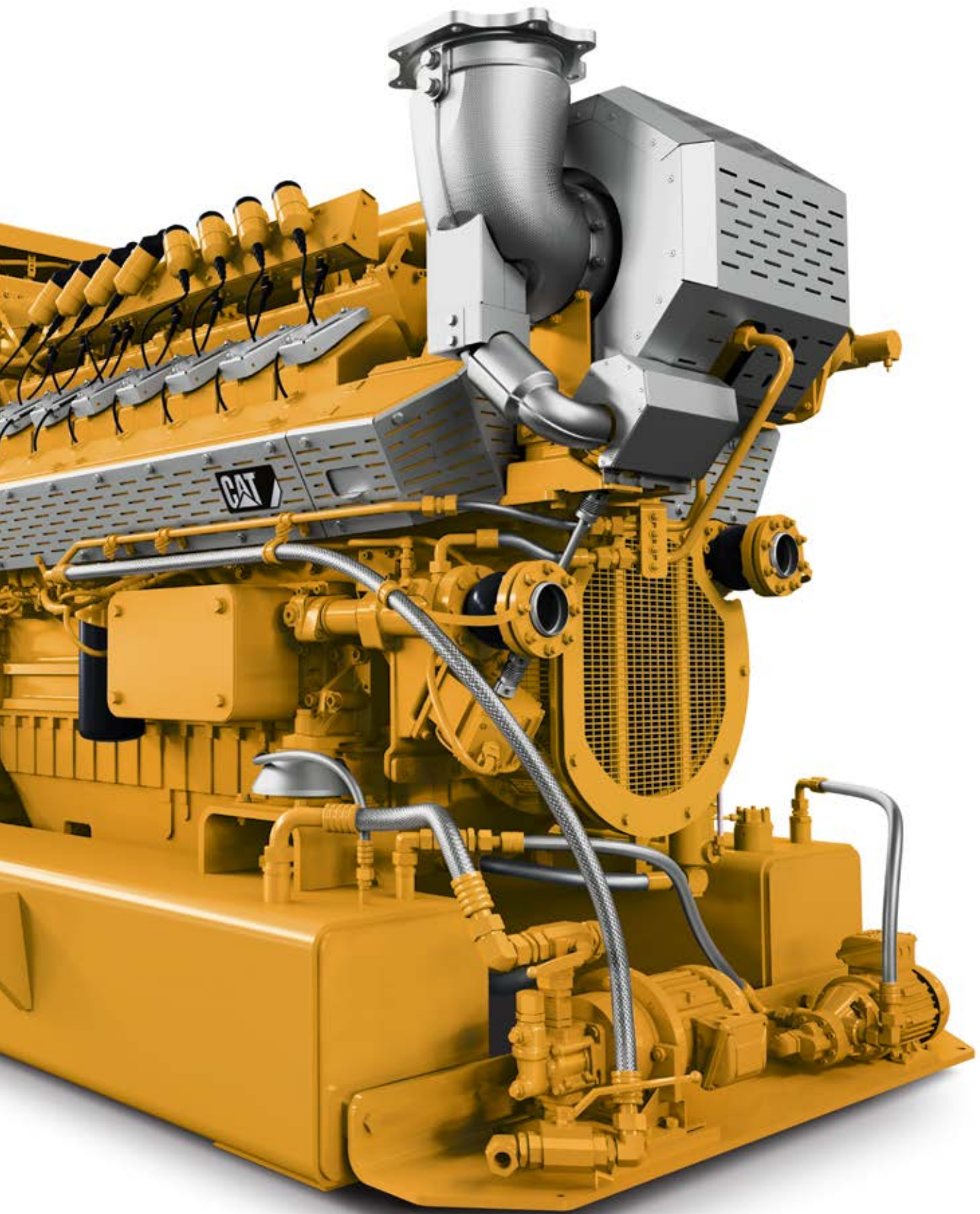
### REDUCED MAINTENANCE COSTS

through longer service intervals and longer operating hours until the major overhaul

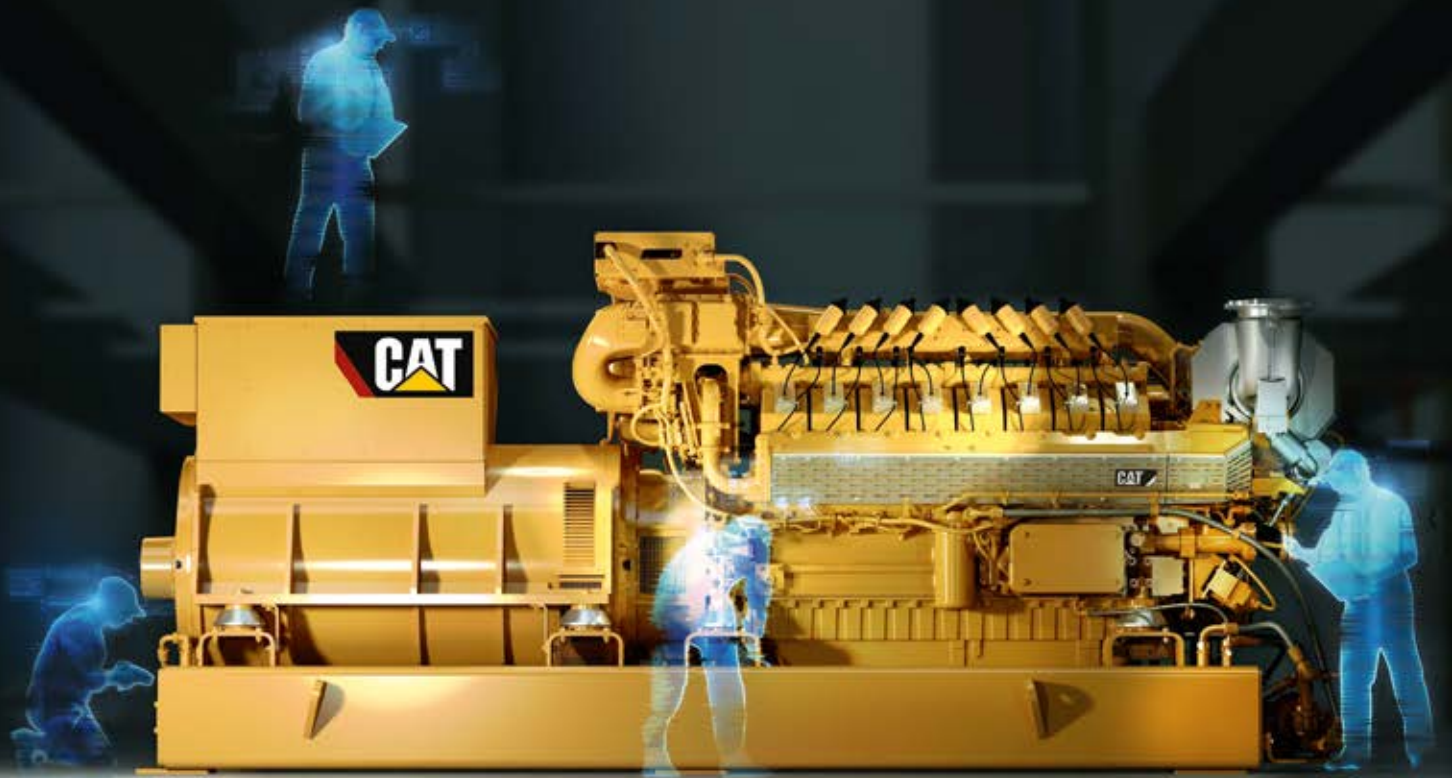


### IMPROVED DURABILITY

ensures higher reliability and availability



# BENEFITS



# THE NEXT LEVEL OF EFFICIENCY

## ■ HIGHEST EFFICIENCY IN ITS POWER RANGE

- > Electrical efficiency of up to 43.5 percent
- > Low Total cost of Ownership through rock-bottom operating costs
- > More efficiency through numerically optimized, low-loss flow design

## ■ OPTIMIZED LUBE OIL MANAGEMENT

- > Lowest-in-class lube oil consumption : 0.1 g/kWh<sub>el</sub>
- > Longer oil change intervals
- > Oil tank and integrated daily refill tank

## ■ FLANGED GENSET CONCEPT

- > Vibration-decoupled base frame for lower installation costs and reliable operation
- > Greater integrated lube oil volume
- > Integrated oil management

## ■ IMPROVED TURBO CHARGER FOR A WIDE FIELD OF DEPLOYMENT

- > Longer maintenance intervals
- > Wider suction air temperature window

## ■ HIGHER AVAILABILITY AND LONGER USEFUL LIFE

- > Optimized combustion through evenly charged cylinders
- > Optimized combustion with lower peak pressure
- > Smoothly running, low-vibrating genset

## ■ MAXIMUM RELIABILITY

- > Improved island mode capability through optimized TPEM genset control
- > Fulfills G1, G2 & G3 classes according to ISO 8528 with less than 10 steps in most applications

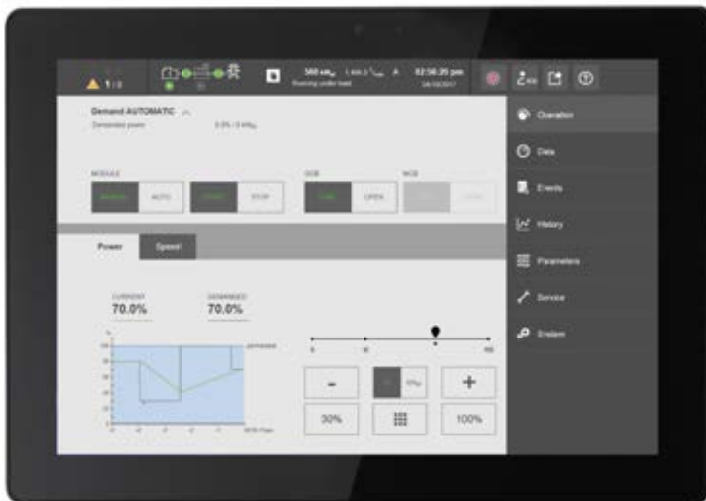
## ■ TPEM – THE NEW CONTROL SYSTEM

- > Easy human-machine interface
- > Fully integrated remote access
- > Expanded scope, e.g. synchronization, power switch, and plant control

# TPEM.

## PROFITABLE, EFFICIENT AND COMPLETE.

With its comprehensive digital power plant control system TPEM (Total Plant & Energy Management), Caterpillar redefines the control standard for energy solutions. TPEM eliminates for many application the need for additional control systems, as all power plant data for the genset and plant control are combined in one system. The optimum power plant control enables high economic efficiency, provided from a single source.



- **ONE USER INTERFACE**
  - > Complete power plant control and setup
- **REMOTE ACCESS**
  - > Remote power plant control on site and via VPN connection with the free visualization "TPEM Remote Client"
- **SECURITY-ORIENTED TECHNOLOGY**
  - > Meets latest ISO 27001 standards
  - > Safety chain for cogeneration plant monitoring (TÜV-certified)
- **DIGITAL ASSISTANCE**
  - > Ready for Cat connect services





### SET UP

- > Custom-tailored technical solutions
- > One integrated, flexible control system for all electric power applications
- > Multiple functionalities for individual solutions
- > One user interface for complete power plant control and setup

### OPTIMIZE

- > Data management and analysis delivers information for optimizing the power plant
- > Life cycle history enables the logging of and access to data throughout the life cycle of the genset and the peripherals

### OPERATE

- > High efficiency through optimal power plant control
- > Enables remote power plant management and monitoring
- > Use the full genset potential with maximum reliability
- > Expanded scope – fully integrated remote access, synchronization, power switch and plant control

# TECHNICAL DATA 50 Hz

ENGINE TYPE	CG132B		V08		V12		V16	
<b>Bore / Stroke</b>	mm	in	132/160	5.2 / 6.3	132/160	5.2 / 6.3	132/160	5.2 / 6.4
<b>Displacement</b>	dm <sup>3</sup>	cu in	17.5	1,067.9	26.3	1,604.9	35.0	2,135.8
<b>Speed</b>	min <sup>-1</sup>		1,500		1,500		1,500	
<b>Mean piston speed</b>	m/s	ft/s	8.0	26.2	8.0	26.2	8.0	26.2
<b>Length <sup>1)</sup></b>	mm	in	3,100	122	3,830	151	4,200	165
<b>Width <sup>1)</sup></b>	mm	in	1,780	70	1,780	70	1,780	70
<b>Height <sup>1)</sup></b>	mm	in	2,150	85	2,150	85	2,150	85
<b>Dry weight genset</b>	kg	lb	5,720	12,610	7,000	15,432	8,070	17,791

## NATURAL GAS APPLICATIONS

NO<sub>x</sub> ≤ 500 mg/Nm<sup>3 2)</sup> / NO<sub>x</sub> ≤ 500 mg/Nm<sup>3</sup>; 1g/bhp-h <sup>2)</sup>

ENGINE TYPE	CG132B		V08		V12		V16	
<b>Electrical power <sup>3)</sup></b>	kW	kW	400	400	600	600	800	800
<b>Mean effective pressure</b>	bar	psi	18.9	274.1	18.9	274.1	18.8	272.7
<b>Thermal output <sup>4)</sup></b>	kW	MBTU/hr	404	1,379	618	2,110	821	2,803
<b>Electrical efficiency <sup>3)</sup></b>	%	%	43.1	43.1	43.3	43.3	43.5	43.5
<b>Thermal efficiency <sup>3)</sup></b>	%	%	43.6	43.6	44.6	44.6	44.6	44.6
<b>Total efficiency <sup>3)</sup></b>	%	%	86.7	86.7	87.9	87.9	88.1	88.1

## BIOGAS APPLICATIONS

NO<sub>x</sub> ≤ 500 mg/Nm<sup>3 2)</sup> / NO<sub>x</sub> ≤ 500 mg/Nm<sup>3</sup>; 1g/bhp-h <sup>2)</sup>

Sewage gas (65 % CH<sub>4</sub> / 35 % CO<sub>2</sub>)

Biogas (60 % CH<sub>4</sub> / 32 % CO<sub>2</sub>, Rest N<sub>2</sub>)

Landfill gas (50 % CH<sub>4</sub> / 27 % CO<sub>2</sub>, Rest N<sub>2</sub>)

Minimum heating value Hu = 5,0 kWh/Nm<sup>3</sup>

Minimum heating value Hu = 18 MJ/Nm<sup>3</sup> or 457 Btu/scf.

ENGINE TYPE	CG132B		V08		V12		V16	
<b>Electrical power <sup>3)</sup></b>	kW	kW	400	400	600	600	800	800
<b>Mean effective pressure</b>	bar	psi	18.9	274.1	18.9	274.1	18.8	272.7
<b>Thermal output <sup>4)</sup></b>	kW	MBTU/hr	394	1,345	599	2,045	791	2,701
<b>Electrical efficiency <sup>3)</sup></b>	%	%	42.8	42.8	42.9	42.9	43.1	43.1
<b>Thermal efficiency <sup>3)</sup></b>	%	%	42.2	42.2	42.8	42.8	42.6	42.6
<b>Total efficiency <sup>3)</sup></b>	%	%	85.0	85.0	85.7	85.7	85.7	85.7

1) Transport dimensions for gensets, components set up separately must be taken into consideration.

2) NO<sub>x</sub> ≤ 500 mg/Nm<sup>3</sup>; 1g/bhp-h; exhaust gas dry at 5 % O<sub>2</sub>.

3) According to ISO 3046-1 at U = 0,4 kV, cosphi = 1,0 for 50 Hz, a minimum methane number of MN 70 for natural gas and methane number 134 (sewage gas) for biogas applications.

4) Exhaust gas cooled to 120 °C (248 °F) for natural gas and 150 °C (302 °F) for biogas.

Data for special gases and dual gas operation on request.

The values given on these datasheets are for information purposes only and not binding. The information given in the offer is decisive.

# TECHNICAL DATA 60 Hz

ENGINE TYPE	CG132B		V08		V12		V16	
<b>Bore / Stroke</b>	mm	in	132/160	5.2 / 6.3	132/160	5.2 / 6.3	132/160	5.2 / 6.4
<b>Displacement</b>	dm <sup>3</sup>	cu in	17.5	1,067.9	26.3	1,604.9	35.0	2,135.8
<b>Speed</b>	min <sup>-1</sup>		1,800		1,800		1,800	
<b>Mean piston speed</b>	m/s	ft/s	9.6	31.5	9.6	31.5	9.6	31.5
<b>Length <sup>1)</sup></b>	mm	in	3,100	122	3,830	151	4,200	165
<b>Width <sup>1)</sup></b>	mm	in	1,780	70	1,780	70	1,780	70
<b>Height <sup>1)</sup></b>	mm	in	2,150	85	2,150	85	2,150	85
<b>Dry weight genset</b>	kg	lb	5,720	12,610	7,000	15,432	8,070	16,975

## NATURAL GAS APPLICATIONS

NO<sub>x</sub> ≤ 500 mg/Nm<sup>3 2)</sup> / NO<sub>x</sub> ≤ 500 mg/Nm<sup>3</sup>; 1g/bhp-h <sup>2)</sup>

ENGINE TYPE	CG132B		V08		V12		V16	
<b>Electrical power <sup>3)</sup></b>	kW	kW	400	400	600	600	800	800
<b>Mean effective pressure</b>	bar	psi	15.8	229.2	15.7	227.7	15.7	227.7
<b>Thermal output <sup>4)</sup></b>	kW	MBTU/hr	427	1,458	648	2,213	856	2,923
<b>Electrical efficiency <sup>3)</sup></b>	%	%	42.1	42.1	42.4	42.4	42.6	42.6
<b>Thermal efficiency <sup>3)</sup></b>	%	%	45.0	45	45.7	45.7	45.5	45.5
<b>Total efficiency <sup>3)</sup></b>	%	%	87.1	87.1	88.1	88.1	88.1	88.1

## BIOGAS APPLICATIONS

NO<sub>x</sub> ≤ 500 mg/Nm<sup>3 2)</sup> / NO<sub>x</sub> ≤ 500 mg/Nm<sup>3</sup>; 1g/bhp-h <sup>2)</sup>

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ENGINE TYPE	CG132B		V08		V12		V16	
<b>Electrical power <sup>3)</sup></b>	kW	kW	400	400	600	600	800	800
<b>Mean effective pressure</b>	bar	psi	15.8	229.2	15.7	227.7	15.7	227.7
<b>Thermal output <sup>4)</sup></b>	kW	MBTU/hr	414	1,414	627	2,141	827	2,824
<b>Electrical efficiency <sup>3)</sup></b>	%	%	41.7	41.7	41.7	41.7	41.9	41.9
<b>Thermal efficiency <sup>3)</sup></b>	%	%	43.3	43.3	43.6	43.6	43.3	43.3
<b>Total efficiency <sup>3)</sup></b>	%	%	85.0	85.0	85.3	85.3	85.2	85.2

1) Transport dimensions for gensets, components set up separately must be taken into consideration.

2) NO<sub>x</sub> ≤ 500 mg/Nm<sup>3</sup>; 1g/bhp-h; exhaust gas dry at 5 % O<sub>2</sub>.

3) According to ISO 3046-1 at U = 0,48 kV, cosphi = 1,0 for 50 Hz, a minimum methane number of MN 70 for natural gas and methane number 134 (sewage gas) for biogas applications.

4) Exhaust gas cooled to 120 °C (248 °F) for natural gas and 150 °C (302 °F) for biogas.

Data for special gases and dual gas operation on request.

The values given on these datasheets are for information purposes only and not binding. The information given in the offer is decisive.

# **BUILT FOR IT.™**

**For more information and to contact your local Cat dealer,  
visit [www.cat.com/catcg132b](http://www.cat.com/catcg132b)**

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