



Continuous Power Module
Cat® CPM250

Reliable Power Protection for Critical Applications

The Cat® CONTINUOUS POWER MODULE (Cat CPM) provides constant power protection against surges, sags, and power interruptions that can disrupt operations or cause loss of valuable data or system capacity. Caterpillar engineers have designed the CPM for best reliability and space utilization, and optimized all critical components such as the Generator Set, a high efficient Uninterruptible Power Supply (UPS) and an Automatic Transfer Switch (ATS) as a complete Cat product.

In the event of a utility power failure, the Flywheel will maintain the UPS output until the generator has started and the ATS has transferred to the generator supply.

CPM250 Specifications		
Continuous Power Output	250 kVA (225 kW @ PF 0.9)	
Voltage	380/400/415 VAC 3-Phase, 4 wire plus ground	
Frequency	50 Hz +/- 10% max (programmable)	
Operating Temperature	0 to 40°C	32 to 104°F
Storage Temperature	-25 to 70°C	-13 to 158°F
Dimensions (ISO 20 ft high Cube)	6058 x 2,438 x 2,896 mm	239 x 96 x 114 in
Weight	14000 kg	31000 lbs
Operating Altitude	Up to 1000 meters	Up to 3,281 feet
Noise level (Utility online)	60 dBA @ 1m	
Generator Output	400kVA	
Additional Non-critical Power Output available from Generator Set*	100 kVA*	
Noise level (Generator online)	85 dBA@1m	
Fuel tank size (approx. 12 hours autonomy)	1071 liters	235 gallons /282 US gallons

*Based on a minimum Flywheel recharge rate, a minimum of 50kVA is required to recharge UPS Flywheel.

Features

- Constant Power Protection system – UPS / Generator / GenStart Module
- Increased reliability – GenStart module provides battery redundancy when starting the generator set
- High system efficiency – Optimized systems integration and flywheel energy storage technology
- Easy transport and quick deployment to site – Standard ISO container designs (Typically one day crane hire)
- Easy installation on site – Simple load cable connections points
- Reduced commissioning times - Factory tested
- Scalable Investment – Expandable systems as needed
- Maximize usable space in building – CPM is an outside weatherproof solution
- Remote Monitoring available – Via Modbus
- One safe source of supply / responsibility – Engineered and factory tested by Caterpillar and fully supported by the Worldwide Cat Dealer Network.
- Cat CPM fulfills the functionalities of a Diesel Rotary UPS system.

UPS Specifications	
Flywheel Type	300 Series Single Module System (SMS)
AC Input	
Maximum kVA / (kW)	250 (225)
Input Voltage	380/400/415 VAC 3-Phase, 4 wire plus ground
Input Voltage Range	+10% / -15% (programmable), +/-10% at 380 VAC
Frequency	50 Hz +/- 10% max (programmable)
Input Power Factor	0.99 at rated load and nominal voltage
Input Current VAC (amps)	380 (355), 400 (337), 415 (325)
Maximum Continuous Input Current (amps)	400
Maximum Non-Continuous Input Current (amps)	420
Walk-in	1 to 15 seconds (programmable)
Harmonic Current Distortion	
Linear load	<3% at 100% load
Non-linear load	<8% with 100% load
AC Output	
Output Voltage	380/400/415 VAC 3-Phase, 4 wire plus ground
Output Current VAC (amps)	380 (380), 400 (361), 415 (348)
Voltage Regulation (Steady-state)	+/- 1% of nominal for +/- 10% input
Voltage Regulation (Transient)	+/- 1% within 50 milliseconds for 100% load step
Frequency	50 Hz (mains synchronized) normal operation
Voltage Distortion (THD)	<3% linear loads and <5% 100% non-linear loads
Flywheel Mode	+/- 1% steady state
Slew Rate	Adjustable from 0.2 Hz/second to 3.0 Hz/second
Overall Efficiency	
Efficiency	98%
Standards and Approvals	
Certifications	EN64040-1-1, EN59001-3, CE Mark
Surge Withstand	Meets IEEE 578 / ANSI C62.41

Generator set Specifications	
Model	Cat C13
Electrical Power Output	400 kVA Standby Power Rated ¹
Engine	
Engine Model	C13 ATAAC, I-6 4-stroke water-cooled diesel
Displacement	12.5 L 762.8 in³
Governor Type	ADEM TM A4
Fuel System	MEUI TM
Generator	
Frame Size	LC6114B
Excitation	Self-Excitation
Pitch	0.6667
Insulation	Class H
Overspeed Capability (%)	150
Wave form deviation (%)	2
Voltage regulator	Single phase sensing (Optional 3 Phase sensing)
Voltage Regulation	+/- 0.5% (steady state)

UPS Generator Set Integration

By cancelling harmonic distortion, the UPS operates seamlessly with the generator set to provide a higher total electrical load capacity without oversizing the generator set. Cat UPS effectively insulates the generator set from block loads and transient, and can improve its fault clearing capabilities. The CPM is factory tested and all programmable integration parameters adjusted at factory that assures greater system reliability and improves the total system operation.

UPS Lower Operating Cost

Caterpillar's high operating efficiency (>97%) means yearly savings versus traditional battery UPS products.

In addition, lower Cat UPS heat rejection reduces up front HVAC costs and electrical consumption over the life of the product.

UPS Superior Design

Superior system design and the use of robust digital components throughout the system yield the most reliable and trouble-free UPS system on the market. Protection is delivered in the industry's smallest package with the highest efficiency and superior performance.

Automatic Transfer Switch

A 4-pole, Open Transition Automatic Transfer Switch will switch the load between the utility source and the generator. It is fully rated to the generator output and incorporates convenient customer connections for Continuous and Non-critical load. Connection points are also available for load bank testing or a rental generator set.

Standard Factory Installed & Tested Equipment

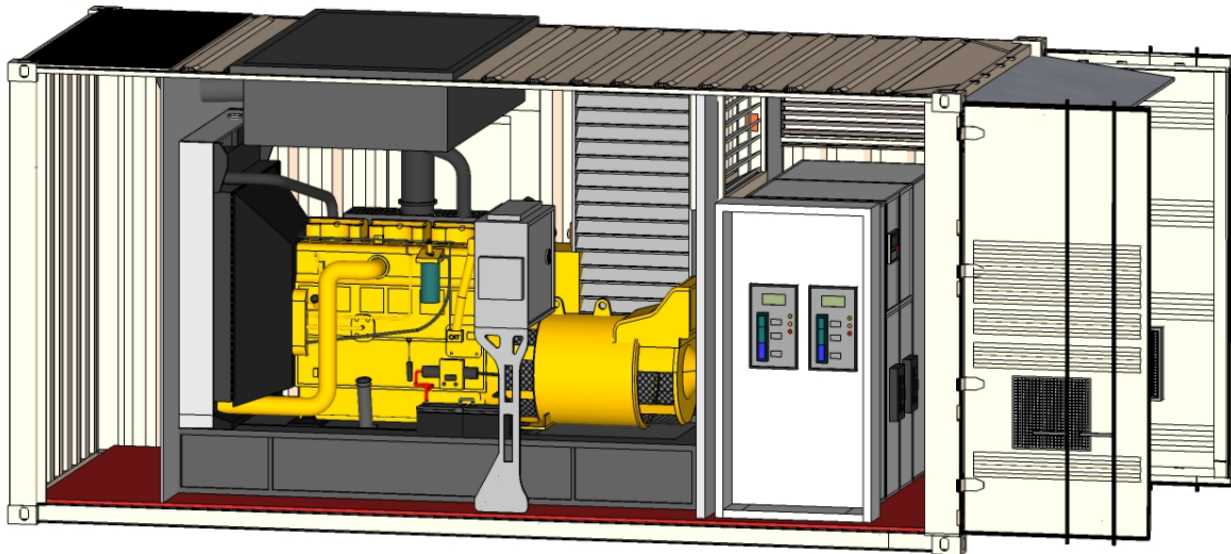
Features	Description
Flywheel Energy Storage	Compact, battery free, low cost maintenance / operation Generator friendly Harmonic Cancellation, Voltage regulation and power factor improvement
Starting System	GenStart module provides up to 1725 cold cranking amps @ 24 VDC and is redundant to the generator set starting batteries for highest system reliability. Battery charger integrated.
Control system	LCD monitor/control HMI panel installed on UPS/ATS/Generator set. Monitoring and alarms for critical components with self-diagnostics. Two (2) warning tower lights installed on exterior of container.
Communication with Integrated System	Integral modem for remote communication. MODBUS (RTU or TCP/IP). Remote notification and monitoring via Ethernet and e-mail. RS232 or RS485 serial connection. Real-time monitoring software available (UPS View / EMCP Monitoring Software).
Cooling System	Louvers installed on input and output of the container. Redundant cooling fans on UPS with speed regulation by temperature control unit.
Engine Coolant System	Jacket water heater. Coolant level sight gauge.
Heat Recovery System	UPS heat discharged to engine compartment to enhance generator starting capability.
Switchgear Integration	Automatic Transfer Switch (ATS) – controlled by microprocessor-based unit. Integrated maintenance bypass. Convenient customer connection for continuous load and non-critical load output.
Fuel System	Integrated fuel system with fuel tank, primary fuel filter with integral water separator, secondary fuel filters and fuel priming pump.
Lube oil	Fumes disposal. Gear lube oil pump.
Service	Coolant drain line with valve terminated at edge of base. Oil drain line. Weather hood at rear doors for UPS maintenance. Container doors location designed for easy access. Connection points for load bank testing or rental generator connection.
Container Packaging	Entire system is packaged in industrial type ISO container prepared for quick handling, transport and installation on site.
Emergency Power Off (EPO)	Local Emergency Power Off button installed on UPS and generator control panel. Two (2) installed on the exterior of the container at each access door.
Certifications and Standards	<ul style="list-style-type: none"> • EU Certificate of Conformance • 2006/42/EC Machinery Directive (MD) • 2006/95/EC Low Voltage Directive (LV) • 89/336/EEC EMC Directive • EN 12601 Reciprocating internal combustion engine driven generating sets • EN 61439 Low voltage switchgear and control gear assemblies • EN 62040-1 Uninterruptible Power Systems (UPS) – General and safety requirements for UPS • EN 60204 Safety of machinery – Electrical equipment of machines • 2000/14/EC Noise emission by outdoor equipment • CSC plated via Lloyd's register of shipping

Optional Equipment & Service

- Non-critical load power output breakers
- Switchgear for customized projects
- Integrated Load Bank circuit breaker for generator load testing
- Fire-fighting system
- Automatic fuel transfer pumps
- Lower noise level
- Arctic (-30°C) and tropical ($+50^{\circ}\text{C}$) ambient temperature conditions
- Factory witness test

World Wide Product Support

- Cat Dealers provide extensive post sale support including maintenance and repair agreements.
- One single service contract for the complete Cat CPM
- Cat dealers have over 1,800 dealer branch stores operating in 200 countries.
- The Cat S•O•SSM program cost effectively detects internal engine component condition, even the presence of unwanted fluids and combustion by-products.

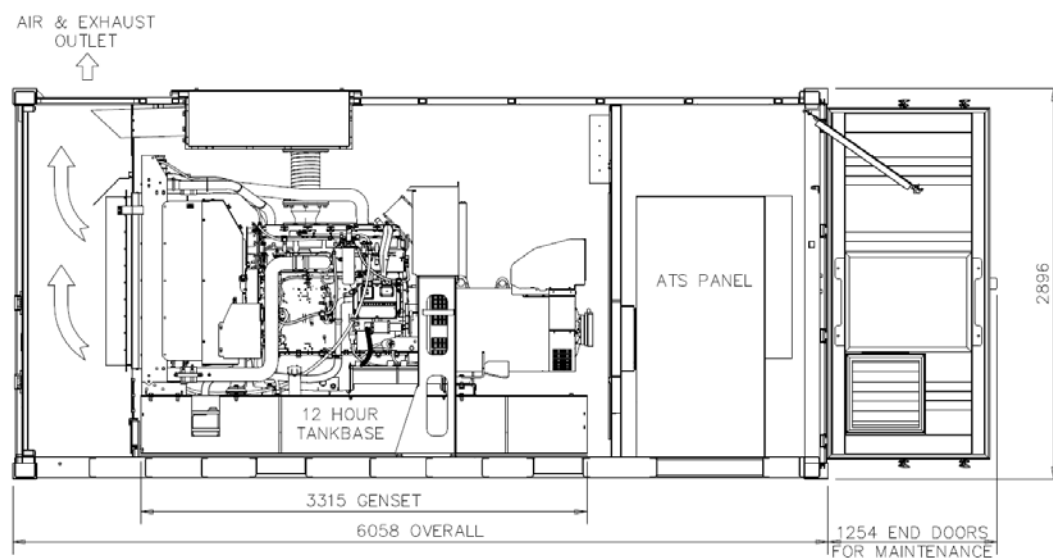
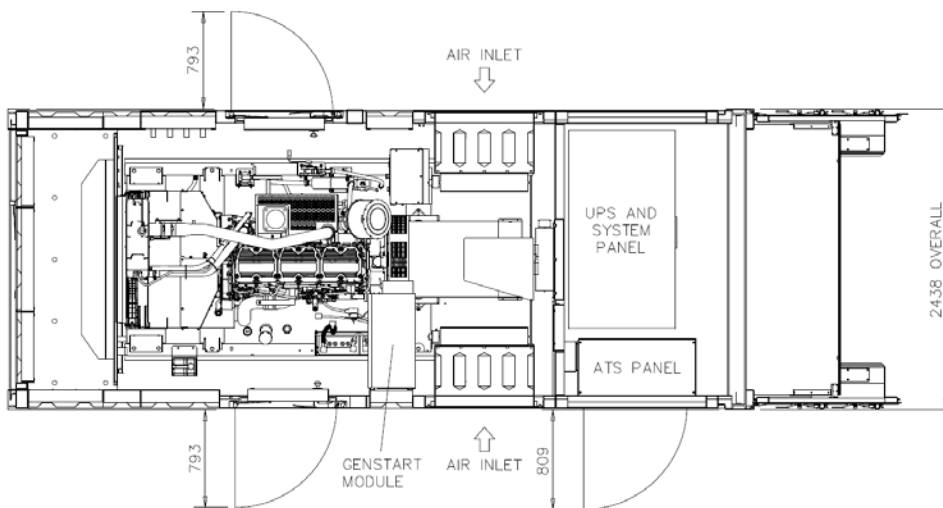
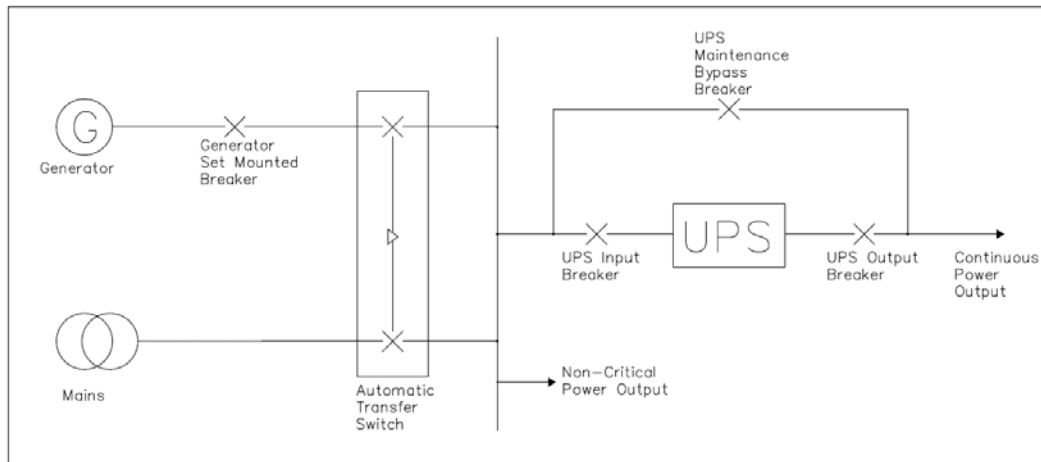


¹ Standby Generator Set Rating definition

Output available with varying load for the duration of the interruption of the normal source power. Average power output is 70% of the standby power rating. Typical operation is 200 hours per year, with maximum expected usage of 500 hours per year

Electric Power – Marketing Spec Sheet
Continuous Power Module

CPM250



Materials and specifications are subject to change without notice. The International System of Units (SI) is used in this publication. CAT, CATERPILLAR, their respective logos, ADEM, S•O•S, “Caterpillar Yellow” and the “Power Edge” trade dress, as well as corporate and product identity used herein, are trademarks of Caterpillar and may not be used without permission.