Cat® C15
DIESEL GENERATOR SETS

Image shown may not reflect actual configuration.

500 kVA – 550 kVA
450 ekW – 500 ekW
50/60 Hz

	Standby	Prime
DE500E0	500 kVA	450 kVA
DE550E0	550 kVA	500 kVA
DE550E3	550 kVA	500 kVA
DE450SE0	450 ekW	410 ekW
DE500SE0	500 ekW	455 ekW

BENEFITS & FEATURES

CAT® GENERATOR SET PACKAGE

Cat® generator set packages have been fully prototype tested and certified torsional vibration analysis reports are available. The packages are designed to meet the NFPA 110 requirement for loading, conform to the ISO 8528-5 steady state and fill transient response requirements.

CAT DIESEL ENGINES

The four-cycle Cat diesel engine combines consistent performance with excellent fuel economy and transient response that meets or exceeds ISO 8528-5. The engines feature a reliable, rugged, and durable design that has been field proven in thousands of applications worldwide in emergency standby installations.

COOLING SYSTEM

The cooling system has been designed and tested to ensure proper generator set cooling, and includes the radiator, fan, belts, and all guarding installed as standard. Contact your Cat dealer for specific ambient and altitude capabilities.

GENERATORS

The generators used on Cat packages have been designed and tested to work with the Cat engine. The generators are built with robust Class H insulation and provide industry-leading motor starting capability and altitude capabilities.

GCCP CONTROL PANELS

The GCCP controller features the reliability and durability you have to come to expect from your Cat equipment. Monitoring an extensive number of engine parameters, the controller will display warnings, shutdown and engine status information on the back-lit LCD screen, illuminated LEDs and remote PC. The controllers offer extensive number of flexible inputs, outputs and extensive engine protections so the system can be easily adapted to meet the most demanding industry requirements.

SPECIFICATIONS

ENGINE SPECIFICATIONS

Engine Model	Cat® C15 In-line 6, 4-cycle diesel
Bore x Stroke	137 mm x 171 mm (5.4 in x 6.8 in)
Displacement	15.2 L (928 in^3)
Compression Ratio	16.1:1
Aspiration	Turbocharged Air-to-Air Aftercooled
Fuel Injection System	MEUI
Governor	Electronic ADEM™ A4
Emission Certifications	EU Stage IIIA, Low Fuel Consumption, China Non-road III

GENERATOR SET SPECIFICATIONS

Alternator Design	Brushless Single Bearing, 4 Pole
Stator	2/3 Pitch
No. of Leads	12
Available Voltage Options	220V/240V/380V/440V/480V
Frequency	50Hz or 60 Hz
Alternator Voltage	24V
Alternator Insulation & IP	Class H; IP21; IP23 (Optional)
Standard Temperature Rise	125/130 Deg C
Available Excitation Options	Self-Excited, PMG
Voltage Regulation, Steady State+/-	≤1%

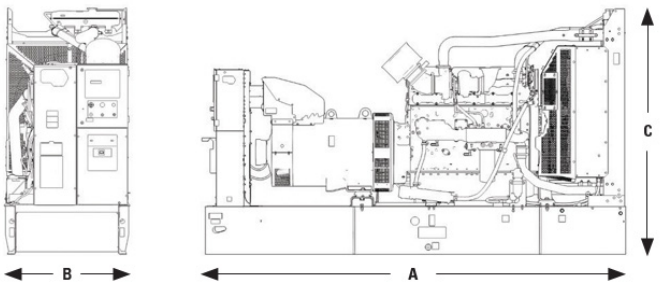
STANDARD EQUIPMENT

Air inlet system	Air cleaner– Non-canister disposable paper filter
Control panels	GCCP1.3 control panel
Telematics	PL444 4G LTE
Cooling system	Radiator and cooling fan with guard Coolant drain line with valve Fan drive, battery charging alternator drive- Caterpillar Extended Life Coolant
Fuel Storage	Standard open set fuel tank/base supplied Base, formed steel with single wall integral 8-hour fuel tank
Fuel system	Primary fuel filter w/integral water separator & secondary filter-Fuel cooler Fuel priming pump Flexible fuel lines Engine fuel transfer pump
Generators and generator attachments	12/6 leads A frame generator – IP21 Protection Optional LC frame generator – IP23 Protection Integrated voltage regulator Power centre-IP22 Segregated low voltage (AC/DC) wiring panel Mandatory Option circuit breaker, IEC, 3- pole, mounted in power centre
Governing system	Cat electronic governor (ADEM A4)
Lube system	Oil cooler Oil drain valves
Mounting system	Captive linear vibration isolators between base and engine-generator Includes lifting provisions and termination points for coolant and lube oil drain lines
Starting/charging system	24V battery with rack and cables
General	Engine and alternator pre-paint, Caterpillar Yellow

OPTIONAL EQUIPMENT

Air inlet system	Single element air cleaner Dual element air cleaner
Control panels	GCCP1.4 control panel Local & remote annunciator
Telematics	PLG601, PLG641
Circuit breakers	3 & 4 Pole circuit breakers: 800, 1250, 1600, 2000 Amps 3 & 4 Pole motorised circuit breakers: 800, 1250, 1600, 2000 Amps
Enclosures	Sound attenuated (SA) High ambient SA enclosure
Cooling system	Radiator duct flange Stone guards
Exhaust system	10, 25, 35 dBA attenuation mufflers
Fuel storage	Integral dual wall
Fuel system	Manual fuel transfer pump Fuel transfer system with controls
Generators and generator attachments	Permanent magnet alternators (PMG) Ingress protection cover plates Coastal ingress protection generator Space heater controls
Lube system	Manual sump pump
Jacket Water Heater	240V AC Heater
Mounting system	Narrow skid base
Starting/charging system	5 Amp, 220-240V AC, Control panel mounted battery charger

WEIGHTS & DIMENSIONS



Genset Package	Length "A" mm (in)	Width "B" mm (in)	Height "C" mm (in)	Generator Set Weight kg (lb)
Open	3830 (151)	1130 (45)	2215 (87)	3700 (8157)

Note: General configuration not to be used for installation.
See general dimension drawings for detail.

Image shown may not reflect actual configuration.

INTEGRAL FUEL TANK BASE

FEATURES

- Tank design provides capacity for thermal expansion of fuel
- Integral diesel fuel tank is incorporated into the generator set base frame
- Direct reading fuel level gauge | Fuel supply dip tubes positioned so as not to pick up fuel sediment
- Fuel return and supply dip tubes are separated by an internal baffle to prevent recirculation of heated return fuel
- Fuel fill – 76.2 mm (3 in), lockable flip top cap | Tanks are leak tested at 31 kPa (4.5 psi) minimum
- Heavy gauge steel gussets suitable for lifting package
- Polyester powder coating – Gloss black textured finish
- Primary tanks are equipped with customer connections for remote fuel transfer, return and vent
- Sloped top tank plate to front to contain accidental coolant, oil and fuel spillages
- Sloped bottom tank plate to middle for fuel drainage
- Rear stub-up access

SINGLE WALL TANKS

- Single wall design | Heavy construction 6 mm (0.24 in) steel plate side channels and 4 mm (0.16 in) sheet steel tank design
- Standard offering for open and enclosed (High Ambient and Sound Attenuated) generator sets

DUAL WALL TANKS

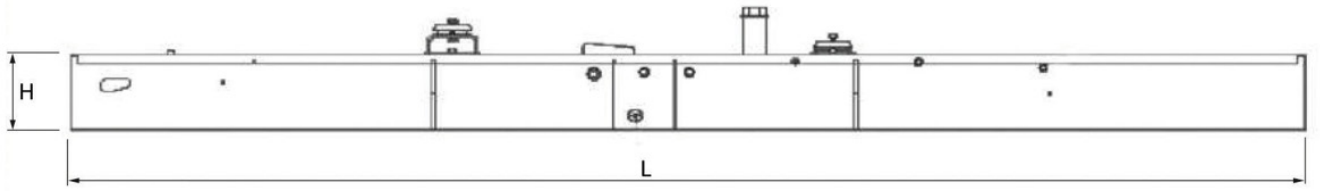
- Secondary containment – Open top design | Welded steel basin designed to contain a minimum of 110% of primary tank capacity (total fluid containment) | Heavy construction 6 mm (0.24 in) steel plate side channels and 4 mm (0.16 in) sheet steel tank design
- Option for enclosed (High Ambient and Sound Attenuated) generator sets

CAPACITIES & DIMENSIONS

Configuration	Single/Dual Wall	Fillable Capacity		Usable Capacity		Weight (Dry)	
		Litres	Gallons	Litres	Gallons	kg	lb
Open	Single	888	235	839	222	524	1155
Enclosed*	Single	887	234	842	222	810	1786
Enclosed*	Dual	873	231	827	218	1021	2251

Configuration	Single/Dual Wall	Width "W"		Length "L"		Height "H"		Package Height	
		mm	in	mm	in	mm	in	mm	in
Open	Single	1110	43.7	3800	149.6	430	16.9	2156	84.9
Enclosed*	Single	1620	63.8	4930	194.1	340	13.4	2317	91.2
Enclosed*	Dual	1620	63.8	4930	194.1	390	15.4	2367	93.2

*Available for both Sound Attenuated and High Ambient Enclosed Generator Sets.



The heights listed above do not include lumber used during manufacturing and shipping. Weight is for tank only. Does not include additions or removals required by price list.
All fuel tanks are shipped "installed."

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SOUND ATTENUATED & HIGH AMBIENT ENCLOSURES

50 Hz/60 Hz

These Sound Attenuated & High Ambient, factory installed enclosures incorporate internally mounted super critical level silencers and residential level silencers respectively, designed for safety and aesthetic value on integral fuel tank base or optional dual wall integral fuel tank base for total fluid containment. These enclosures are of extremely rugged construction to withstand exposure to the elements and provide weather protection.

FEATURES

Robust/Highly Corrosion Resistant Construction

- Factory installed on integral fuel tank base
- Environmentally friendly, polyester powder baked paint
- 1.6 mm (0.063 in) galvanized steel
- All round overhanging base to protect enclosure
- High-grade engineering thermoplastic corner posts for protection
- Integral lifting frame
- Compression door latches giving solid door seal
- Zinc plated or black coated stainless steel fasteners
- Internally mounted super critical exhaust silencing system

Excellent Access

- Large cable entry area for installation ease
- Accommodates rear mounted breaker and control panel
- Double doors on both sides
- Vertically hinged doors with solid bar door stays to hold doors open at 135° rotation
- Lube oil and coolant drains pipes to exterior of enclosure and terminated drain valves
- Radiator fill cover

Security and Safety

- Lockable access doors which give full access to control panel and breaker
- Cooling fan and battery charging alternator fully guarded
- Fuel fill, oil fill and battery can only be reached via lockable access
- Externally mounted emergency stop button
- Designed for spreader-bar lifting to ensure safety
- Control panel viewing window
- Stub-up area is rodent proof

Options

- Caterpillar yellow or white paint
- Integral dual wall fuel tank base for total fluid containment (fuel, oil and coolant)

ENCLOSURE PACKAGE OPERATING CHARACTERISTICS

kVA	ekW	SB/PP	Sound Pressure Levels dBA						Air Flow Rate		Ambient Capability @ 100% Load*	
			1m (3.3 ft)		1.5m (4.9 ft)		7m (23 ft)					
			75% Load	100% Load	75% Load	100% Load	75% Load	100% Load	m^3/s	cfm	°C	°F
50 Hz Sound Attenuated												
410	328	PP	76	77	76	77	69	70	5.7	12078	49	120
450	360	SB	76	77	76	77	69	70	5.7	12078	50	122
455	364	PP	76	77	76	77	69	70	5.7	12078	44	111
500	400	SB	77	78	77	78	69	70	5.7	12078	45	113
500	400	PP	77	78	77	78	69	70	5.7	12078	48	118
550	440	SB	77	78	77	78	70	71	5.7	12078	49	120
50 Hz High Ambient												
455	364	PP	86	86	–	–	77	78	7.0	14762	52	126
500	400	SB	86	86	–	–	77	78	7.0	14762	54	129
500	400	PP	86	86	–	–	77	78	7.0	14762	49	120
550	440	SB	86	86	–	–	77	78	7.0	14762	50	122

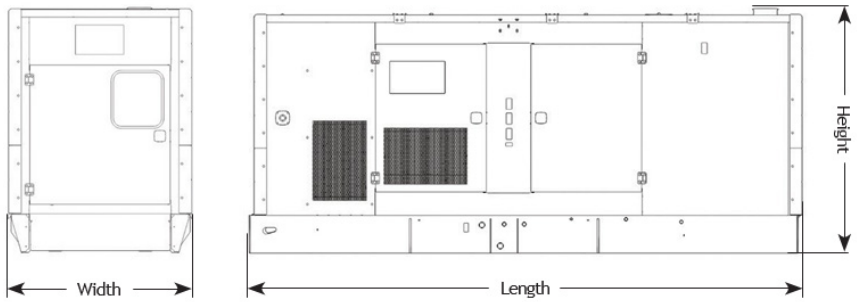
kVA	ekW	SB/PP	Sound Pressure Levels dBA						Air Flow Rate		Ambient Capability @ 100% Load*	
			1m (3.3 ft)		1.5m (4.9 ft)		7m (23 ft)					
			75% Load	100% Load	75% Load	100% Load	75% Load	100% Load	m^3/s	cfm	°C	°F
60 Hz Sound Attenuated												
456	365	PP	81	82	79	80	71	72	6.3	13349	52	126
500	400	SB	81	82	79	80	71	72	6.3	13349	54	129
513	410	PP	81	82	79	80	71	72	6.3	13349	48	118
563	450	SB	82	83	79	81	71	73	6.3	13349	49	120
569	455	PP	82	83	79	81	71	73	6.3	13349	43	109
625	500	SB	82	83	80	81	72	73	6.3	13349	45	113
60 Hz High Ambient												
513	410	PP	81	82	–	–	71	72	9.0	18999	47	117
563	450	SB	82	83	–	–	71	73	9.0	18999	49	120
569	455	PP	82	83	–	–	71	73	9.0	18999	43	109
625	500	SB	82	83	–	–	72	73	9.0	18999	45	113

*Ambient capability measured with the Cat extended life coolant at sea level.

WEIGHTS & DIMENSIONS

Approximate weight of enclosure package: 5071 kg (11,1380 lb).
Exact weight is dependent on options.

Enclosure weight includes: high ambient enclosure, exhaust system, base and generator set.



Cat® C15
CONTROL PANEL

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GCCP 1.3 – Control Panel

GCCP 1.3 Control Module is suitable for a wide variety of generator set applications. It controls operation of the generator, monitors an extensive number of engine parameters, and displays warnings, shutdown, and engine status information on the back-lit LCD screen, illuminated LEDs and remote PC, if desired

KEY FEATURES

- 4-line back-lit LCD text display
- Multiple display languages
- Five-key menu navigation
- LCD alarm indication
- Customisable power-up text and images
- Data logging facility
- Internal PLC editor
- Protections disable feature
- Fully configurable via PC using USB & RS485 communication
- Front panel configuration with PIN protection
- Power save mode
- 3-phase generator sensing and protection
- 3-phase mains (utility) sensing and protection (Optional)
- Automatic load transfer control (optional)
- Auto Mains (Utility) Failure capable (optional)
- Mains (utility) current and power monitoring (kW, kvar, kVA, pf) (Optional)
- Generator current and power monitoring (kW, kvar, kVA, pf)
- kW and kvar overload and reverse power alarms
- Over current protection
- Unbalanced load protection
- Breaker control via fascia buttons
- Fuel and start outputs configurable when using CAN
- Support for 0 V to 10 V & 4 mA to 20 mA sensors
- 8 configurable digital inputs (3 available for Customer use)
- 8 configurable digital outputs (5 available for Customer use)
- 4 configurable analogue outputs (3 available for Customer Use)
- CAN, MPU and alternator frequency speed sensing in one variant
- Real time clock
- Engine pre-heat and post-heat functions
- Engine run-time scheduler
- Engine idle control for starting & stopping
- Fuel usage monitor and low fuel level alarms
- 3 configurable maintenance alarms

BENEFITS

- Hours counter provides accurate information for monitoring and maintenance periods
- User-friendly set-up and button layout for ease of use
- Multiple parameters are monitored & displayed simultaneously for full visibility
- The module can be configured to suit a wide range of applications for user flexibility
- PLC editor allows user configurable functions to meet user specific application requirements.
- RS485 Communication port can be used for the Remote Monitoring Communication (Compatible with Cat PLG)

SPECIFICATION

DC SUPPLY
CONTINUOUS VOLTAGE RATING
8V to 35V Continuous
5V for upto 1 minute

CRANKING CROPOUTS
Able to survive 0V for 100mS, providing supply was at least 10V before dropout and supply recovers to 5V. This is achieved without the need for internal batteries.
LEDs and backlight will not be maintained during cranking.

MAXIMUM OPERATING CURRENT
260 mA at 12V, 150 mA at 24V

MAXIMUM STANDBY CURRENT
145 mA at 12V, 85 mA at 24V

CHARGE FAIL/EXCITATION RANGE
0V to 35V

GENERATOR & MAINS (UTILITY) VOLTAGE RANGE
15V to 415V AC (Ph to N)
26V to 719V AC (Ph to Ph)

FREQUENCY RANGE
3.5 Hz to 75 Hz

MAGNETIC PICKUP VOLTAGE RANGE
+/-0.5V TO 70V

FREQUENCY RANGE
10,000 Hz (max)

INPUTS

DIGITAL INPUTS A TO H
Negative switching

ANALOGUE INPUTS A & D
Configurable as:
Negative switching digital input 0V to 10V sensor
4 mA 20 mA sensor resistive sensor

ANALOGUE INPUTS B & C
Configurable as:
Negative switching digital input resistive sensor

OUTPUTS

OUTPUT A 7B (FUEL & START)
15A DC at supply voltage

AUXILIARY OUTPUTS C, D, E, F, G & H
2A DC at supply voltage

DIMENSIONS OVERALL
216 mm x 158 mm x 43 mm
8.5" x 6.2" x 1.5"

PANEL CUT-OUT
184 mm x 137 mm
7.2" x 5.3"

MAXIMUM PANEL THICKNESS
8 mm
0.3"

STORAGE TEMPERATURE RANGE
-40°C TO +85°C
-40°F TO 185°F

OPERATING TEMPERATURE RANGE
-30°C to +70°C
-22°F to +158°F

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