Cat® C4.4 DIESEL GENERATOR SETS

Image shown may not reflect actual configuration

80 ekW – 100 ekW

60 Hz

Standby	Prime
80 ekW	72 ekW
100 ekW	90 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.

GCCP1.2 CONTROL PANEL

The GCCP 1.2 is an Auto Start Control Module suitable for a wide variety of single, diesel or gas, gen-set applications. Monitoring an extensive number of engine parameters, the module displays warnings, shutdown and engine status information on the back-lit LCD screen, illuminated LEDs and remote PC.

SPECIFICATIONS

ENGINE SPECIFICATIONS

Engine Model	Cat® C4.4 In-line 4, 4-cycle diesel
Bore x Stroke	105mm x 127mm (4.1 in x 5.0 in)
Displacement	4.4 L (269 in^3)
Compression Ratio	18.2:1
Aspiration	Turbocharged
Fuel Injection System	Common Rail
Governor	ADEM™
Emission Certifications	US EPA TIER III Non-Road

GENERATOR SET SPECIFICATIONS

Alternator Design	Brushless Single Bearing, 4 Pole
Stator	2/3 Pitch
No. of Leads	12
Available Voltage Options	600V/480V/240V/208V
Frequency	60Hz
Alternator Voltage	12V
Alternator Insulation & IP	Class H; IP23
Standard Temperature Rise	125/130 Deg C
Available Excitation Options	Self-Excited, AREP
Voltage Regulation, Steady State +/-	≤0.5%

Cat® C4.4 DIESEL GENERATOR SETS

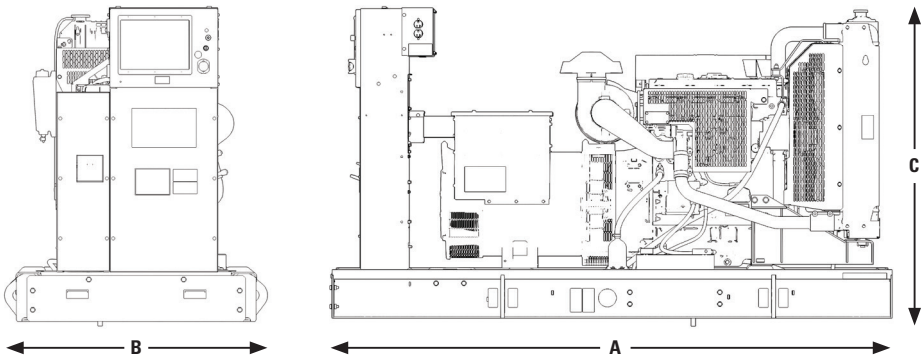
STANDARD EQUIPMENT

Air inlet system	Aftercooler core
Control panels	GCCP1.2 Control panel
Cooling system	Radiator and cooling fan complete with protective guards Standard ambient temperatures up to 50degC (122degF) 50% coolant antifreeze/corrosion inhibitor Coolant Reservoir
Fuel system	Primary & secondary fuel filters Fuel priming pump Flexible fuel lines
Generators and generator attachments	Brushless, self-excited 2/3 pitch, random wound IP23 Protection Insulation Class H and temperature rise Integrated Voltage Regulator
Governing system	Cat Electronic Governor (ADEM A4)
Protection System	Safety Shutoff – Low Oil Pressure Safety Shutoff – Overspeed Coolant Level Sensor
Starting/charging system	12-Volt Electric Starting Motor Batteries with rack & cables
General	Paint – Caterpillar Yellow except rails and radiators gloss black

OPTIONAL EQUIPMENT

Air inlet system	Cartridge type air filter
Exhaust	Silencer System 10, 25, 35 dBA
Control panels	Remote Annunciators NFPA110 bundle Oil temp gauge & sender Earth (Ground) Fault Relay Discrete i/o module
Circuit Breakers	3-Pole 100% Rated – Single & Dual breaker combination
Enclosures	Sound Attenuated (SA) – Level 1 & Level 2 Weather Protective Aluminum SA Enclosure
Cooling system	Radiator Stone guards Radiator transition flange
Fuel System	Sub Tank Bases: 209, 394 Gal
Generators and generator attachments	AREP
Starting/charging system	Standard Battery Set
Certifications	IBC Seismic & Wind Certifications
General	Tool Set

WEIGHTS & DIMENSIONS



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

Standby Ratings (Model)	Dim "A" mm (in)	Dim "B" mm (in)	Dim "C" mm (in)	Generator Set Weight † kg (lb)
C4.4 (D80)	2362 (93)	1110 (44)	1304 (51)	1130 (2491)
C4.4 (D100)	2362 (93)	1110 (44)	1304 (51)	1166 (2570)

† Weight includes: Oversize generator, skid base, circuit breaker, oil, and coolant

Image shown may not reflect actual configuration

INTEGRAL & SUB BASE FUEL TANKS

Features

- UL Listed for United States (UL 142) and Canada (CAN/ULC S601)
- Facilitate compliance with NFPA 30 code, NFPA 37 and 110 standards and CSA C282 code and B139-09 standard
- Welded, heavy steel gauge construction with a containment basin sized as a minimum 110% of the tank
- Gloss black polyester triglycidyl isocyanurate
- (TGIC) powder coating
- Dedicated external customer interface area with access to the 4" (101.6 mm) fuel fill, visual level gauge, normal and emergency vents
- Rear electrical stub-up area with removable access panel
- Removable engine supply and return dip tubes
- Two additional 1" (25.4 mm) ports for customer use
- Tanks are rated to safely support the weight of the generator
- 8 gal (30.3 L) drip pan for oil and coolant (for generator sets up to 60 ekW only)
- Standard NPT tank fittings
- UL listed emergency vents sized as per UL standards 3" (76.2 mm), 4" (101.6 mm), and 5" (127 mm) NPT
- Normal atmospheric vent 1 – 1/4" (31.75 mm)
- Top-mounted fuel level sensor with control panel alarms
- Top-mounted leak detection switch
- Lockable fuel fill cap, 4" (101.6 mm) NPT

Description

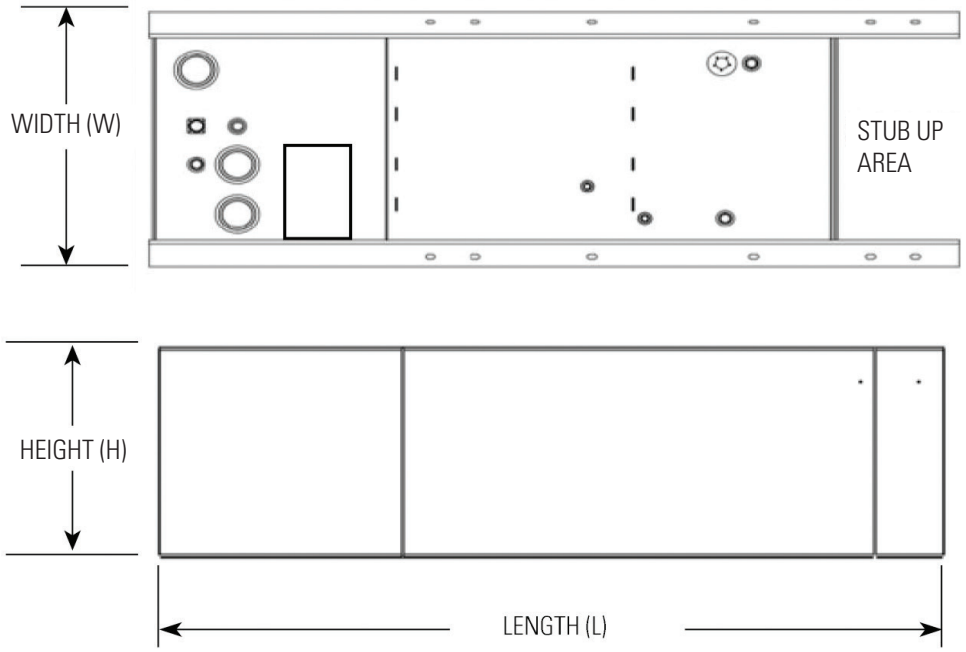
- Dual wall, secondary containment
- Pressure tested to UL requirements
- Fuel tank mounts directly below generator skid base
- Modular tank design is compatible with all factory units open and enclosed

Options

- Emergency vent and normal vent extension kits 12' (3.66 m)
- 5 gal (18.9 L) spill containment
- Overfill prevention valve
- Tank riser to allow for visual secondary containment leak inspection
- Drop tube

Sub-Base Fuel Tank Capacities with Fuel Tank Dimensions

Engine Model	Tank Feature Code	Generator Set Rating ekW	Est. Run Time hrs	Fillable Capacity		Usable Capacity		Vent	Length 'L'		Width 'W'		Height 'H'		Weight (Dry)	
				L	gal	L	gal	in	mm	in	mm	in	mm	in	kg	lb
C4.4	FSBTC24	80	30	793	209	733	194	3	3447	135.7	1000	39.4	485	19.1	526	1160
		100	25													
	FSBTD48	80	58	1492	394	1432	378	4					835	32.9	739	1629
		100	49													



Tanks are UL Listed and constructed in accordance with UL Standard for Safety UL142, Steel Aboveground Tanks for Flammable and Combustible Liquids and Canada CAN/ULC Fabricated Steel above ground Horizontal Tanks for Flammable and Combustible Liquids.

Fuel tanks facilitate compliance with the following United States NFPA Code and Standards:
NFPA 30: Flammable and Combustible Liquids code
NFPA 37: Standard for the Installation and Use of Stationary Combustion Engines and Gas Turbines.
NFPA 110: Standard for Emergency and Standby Power Systems

Fuel tanks facilitate compliance with the following Canadian Standard and Code:
CSA C282 – Emergency Electrical Power Supply for Buildings.
CSA B139-09 – Installation Code for Oil-Burning Equipment.

Image shown may not reflect actual configuration

Weather Protective and Sound Attenuated Enclosures

60 Hz

Features

Robust/Highly Corrosion Resistant Construction

- Stainless steel flush fitting latches and hinges tested and proven to withstand extreme conditions of corrosion
- Zinc plated or stainless steel fastener

Excellent Access

- Single side access for service and controls
- All non-service sides have removable doors and/or panels
- Radiator fill access
- Lube oil and coolant drains piped to the exterior of the enclosure base
- Large cable entry area for installation ease
- Double doors on both sides
- Vertically hinged doors with solid bar door stays to hold doors in place when open

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
- Stub-up area is rodent proof

Transportability

- These enclosures are of extremely rugged construction to withstand outdoor exposure and rough handling common on many construction sites. The sound deadening material is of a self-extinguishing design.
- This range of enclosures are designed on modular principles with many interchangeable components permitting on site repair.

Options

- Weather Protective – constructed with 16 gauge steel; industrial silencer mounted within the main enclosure body
- Sound Attenuated Level 1 – constructed with 16 gauge steel; weather protective with critical silencer – silencer mounted in separate upward discharging radiator hood
- Sound Attenuated Level 2 – constructed with 16 gauge steel; weather protective with critical silencer and 100% lined with sound deadening material – silencer mounted in separate upward discharging radiator hood
- Sound Attenuated Aluminum constructed with 14 gauge Aluminum 5052 grade. Weather protective with critical silencer and 100% lined with sound deadening material – silencer mounted in separate upward discharging radiator hood.
- Caterpillar Yellow* or white paint
- UL Listed sub base tanks
- Externally mounted emergency stop button
- Seismic certification per applicable building codes: IBC 2000, IBC 2003, IBC 2006, IBC 2009, IBC 2012, CBC 2007, CBC 2010
- IBC certification for 180 mph wind loading

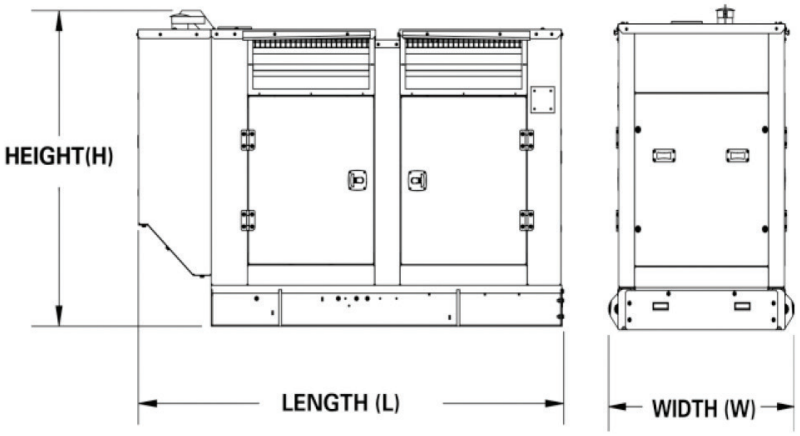
*Not available with Aluminium enclosures

Enclosure Sound Pressure Levels (SPL) at 100%

Weather Protective Enclosure		Cooling Air Flow Rate		SPL @7m (23ft)
Model	**Standby ekW**	**m^3/s**	**cfm**	**dBA**
D80-8	80	3.2	6696	79
D100-8	100	3.6	7564	81
SA Level 1 Enclosure				
Model	**Standby ekW**	**m^3/s**	**cfm**	**dBA**
D80-8	80	3.2	6696	78
D100-8	100	3.2	6696	78
SA Level 2 Enclosure				
Model	**Standby ekW**	**m^3/s**	**cfm**	**dBA**
D80-8	80	3.2	6696	75
D100-8	100	3.2	6696	76
SA Aluminum Enclosure				
Model	**Standby ekW**	**m^3/s**	**cfm**	**dBA**
D80-8	80	3.2	6696	73
D100-8	100	3.2	6696	74

Note: The sound pressure level data shown above is quoted as free field and is for guidance only Actual levels produced may vary according to site conditions

Enclosure Dimensions & Weights



Model	Standby ekW	WP Industrial		SA Level 1		SA Level 2		SA Aluminum	
		kg	lb	kg	lb	kg	lb	kg	lb
D80-8	80	263	580	313	690	321	708	142	312
D100-8	100								

Enclosure Dimensions: Skid Bases

Engine Model	Generator Set Rating ekW	Enclosure	Width 'W'		Length 'L'		Height 'H'	
			mm	in	mm	in	mm	in
C4.4	80	WP	1110	43.7	2523	99.3	1773	69.8
	100							
	80	SA Level 1, SA Level 2 and SA Aluminum	1110	43.7	2891	113.8	1852	72.9
	100							

Enclosure Dimensions: UL Listed Sub Tank Base

Engine Model	Generator Set Rating ekW	Enclosure	209 Gallon Sub Base Tank				394 Gallon Sub Base Tank			
			Length 'L'		Height 'H'		Length 'L'		Height 'H'	
			mm	in	mm	in	mm	in	mm	in
C4.4	80	WP	3447	135.7	2258	88.9	3447	135.7	2608	102.7
	100									
	80	SA Level 1, SA Level 2 and SA Aluminum	3447	135.7	2337	92.0	3447	135.7	2687	105.8
	100									

Note: Weight includes oil and coolant but not fuel
Ref: WPIA, WPIB, WPIC, SATCBA, SATCBB, SAT, CBC, SATFBA, SATFBB, SATFBC, ENCAL02, ENCAL03, ENCAL04

GCCP 1.2 Control Panel

Image shown may not reflect actual configuration

GCCP 1.2 - Control Panel

GCCP 1.2 is an auto Start Control Module suitable for a wide variety of diesel gen-set applications. Monitoring an extensive number of engine parameters, the modules will display warnings, shutdown and engine status information on the back-lit LCD screen, illuminated LEDs and remote PC.

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
- 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 inputs (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
8 V to 35 V Continuous
5 V for upto 1 minute

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

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

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

CHARGE FAIL/EXCITATION RANGE
0 V to 35 V

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

FREQUENCY RANGE
3.5 Hz to 75 Hz

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

FREQUENCY RANGE
10,000 Hz (max)

INPUTS
DIGITAL INPUTS A TO H
Negative switching

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

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

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

AUXILIARY OUTPUTS C, D, E, F, G & H
2 A 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

LET'S DO THE WORK.™

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