C18 ACERT MARINE CLASSIFICATION SOCIETY (MCS) APPROVABLE GENERATOR SET

340 ekW
425 ekW
500 ekW
550 ekW

60 Hz, 1800 rpm

Image may not reflect actual engine

SPECIFICATIONS

I-6, 4-Stroke-Cycle-Diesel

Emissions	IMO/EPA Tier 2/ 340 & 425 ekW CCNR
Displacement	18.1 L (1106 cu. in.)
Rated Engine Speed	1800 rpm
Bore	145 mm (5.7 in.)
Stroke	183 mm (7.2 in.)
Aspiration	Turbocharged-Aftercooled
Governor	Electronic
Cooling System	Heat Exchanger & Keel Cooled
Weight, Net Dry (approx)	3799-4520 kg (8375-9965 lbs)
Refill Capacities (engine only)	
Cooling System	45.8 L (12.1 gal)
Lube Oil System	71.9 L (19 gal)
Oil Change Interval	500 hr
Rotation (from flywheel end)	Counterclockwise
Flywheel and flywheel housing	SAE No. 0
Flywheel Teeth	136
Max. Exhaust Backpressure	10 kPa (40 in. water)

STANDARD EQUIPMENT

Air Inlet System
Corrosion-resistant sea water aftercooler core; air cleaner/ fumes disposal, jacket water cooled turbocharger, turbocharger inlet OD straight connection

Control System
Note: If an EMCP panel or MCS control panel is not chosen as optional equipment, then start/stop controls must be provided by the customer.

Electronic governing (A4 ECU), programmable low idle, electronic diagnostics and fault logging, fuel/air ratio control

Cooling System
Gear-driven jacket water pump; gear driven, bronze impeller, sea water pump;separate circuit keel cooling or titanium plate heat exchanger (with expansion tank and coolant recovery system).
*Note: Keel cooling not available on 500 & 550 ekW

Exhaust System
Watercooled exhaust manifold and turbocharger; ID round flanged outlet

Flywheels & Flywheel Housings
SAE No. 0 flywheel (136 teeth); SAE No. 0 flywheel housing; SAE standard rotation

Fuel System
Fuel filter (RH or LH service); fuel priming pump; fuel transfer pump; flexible fuel lines

Generator
12-lead reconnectable; three-phase brushless; voltage regulation ± 0.5%; Class H insulation (generator meets Marine Society temperature rise requirements for Class F insulation) permanent magnet (PMG) excitation; surface-mounted platinum stator and bearing RTDs, space heaters; Cat Digital Voltage Regulator (Cat DVR)

Lube System
Crankcase breather; oil cooler; spin-on oil filters (RH or LH service); deep sump oil pan; oil filler; dipstick (RH or LH service); gear-driven oil pump

Mounting System
254 mm (10 in.) height rails; eight shipped-loose linear vibration isolators for installation below base

Power Take-Offs
Hydraulic pump drive; SAE A; 11 tooth spline; crankshaft pulley (alternator drive)

Protection System
Electronic shutdown (24 volt)

General
Torsional finned vibration damper; lifting eyes; RH or LH service options; literature; variable engine wiring; upper rear-facing customer wiring connector and service tool connection

Factory-designed systems built at Caterpillar ISO 9001:2000 certified facilities.

OPTIONAL EQUIPMENT

Emissions Certifications
CCNR and IMO (ABS or GL), EPA Tier II certifications

Air Inlet System
Heavy duty air cleaner, closed crank case ventilation system-

Charging System
Battery charger - 10A; alternator: 12V (51A or 105A), 24V (35A or 60A)

Control System
EMCP 3 control panel; CMPD

Cooling System
Flange kit

Exhaust System
Dry elbows; water-cooled elbows; flexible fittings; mufflers; flanges; rain caps

Fuel System
Duplex fuel filters; water separators; fuel cooler

Generators & Generator Attachments
Manual voltage control; low voltage connections; loadshare module

Lube System
Sump pumps; oil pan accessories; duplex oil filters

MCS Alarm & Protection System
Includes remote-mountable MCS control panel with 5.7" TFT color screen, all MCS-required alarm & shutdown sensors, full-length drip trays, single-point ship communications (RS-485 modbus RTU), CANOpen, J1939, Ethernet modbus TCP

MCS Alarm & Protection System Options
Remote display (connectable to GPS/GPM) controls up to 8 gensets; 3-phase power monitoring; manual speed control; remote E-stop; programmable I/O and relay modules

Starting System
Air starter; air pressure regulator; air silencer; electric starter (12 or 24V); jacket water heater; battery sets

General
Guards; filter cover kits; tool set; literature; decals; storage preservation; export packing

Generator Data – Selected Model

Engine:	C18 ACERT
Fuel:	Diesel
Frequency:	60 Hz
Duty:	PRIME
Generator Frame:	592, 594, 595
Generator Arrang:	342-0544, 342-0548, 342-0550
Excitation Type:	Permanent Magnet
Connection:	SERIES STAR
Genset Rating (kW):	340, 425, 500, 550
Genset Rating (kVA):	425, 531, 625, 687
Pwr. Factor:	0.8
Application:	MAR
Line-Neutral Voltage:	127/254-277
Line-Line Voltage:	220/440-480
Rated Current:	708-2500
Status:	Available for order
S/N prefix:	GBM (pkg)
Engineering Model:	GS388 (pkg)

Voltage Regulation

Voltage level adjustment: +/-	5.0%
Voltage regulation, steady state: +/-	0.5%
Voltage regulation w/ 3% speed change: +/-	0.5%
Waveform deviation line- line, no load: less than	3.0%
Telephone influence factor: less than	50

Generator – Center of Gravity

Dimension X	342-0544	-662.4 mm (-26.1 in)
	342-0548	-758.6 mm (-29.7 in)
	342-0550	-744.0 mm (-29.3 in)
Dimension Y		0.0 mm (0.0 in)
Dimension Z		0.0 mm (0.0 in)

- "X" is measured from driven end of generator and parallel to rotor. Towards engine fan is positive.
- "Y" is measured vertically from rotor centerline. Up is positive.
- "Z" is measured to left and right of rotor Center line. To the right is positive.

Generator – Weights

342-0544	
Generator Wt	1549 kg (3415 lbs)
Rotor Weight	458 kg (1010 lbs)
Stator Weight	1091kg (2405 lbs)
342-0548	
Generator Wt	1772 kg (3907 lbs)
Rotor Weight	566 kg (1248 lbs)
Stator Weight	1206 kg (2659 lbs)
342-0550	
Generator Wt	1860 kg (4100 lbs)
Rotor Weight	670 kg (1476 lbs)
Stator Weight	1190 kg (2624 lbs)

*Note: Rotor Balance = 0.0508 mm deflection PTP
Overspeed capacity = 150% of synchronous speed

Generator Specifications

Frame:	592, 594, 595
Type:	SR4B
No. Of Bearings:	1
Winding Type	RND Wound
Flywheel:	18
Housing:	SAE No. 0
Phases:	3
No. Of Leads:	12
Poles:	4
Wires per Lead:	2
Sync Speed:	1800
Generator Pitch:	0.6667 (592, 594) 0.7333 (595)
Insulation:	Class H
IP Rating:	Drip Proof IP 23*
Alignment:	Pilot Shaft
Overspeed Capability:	150%
Paralleling/ Droop:	Standard

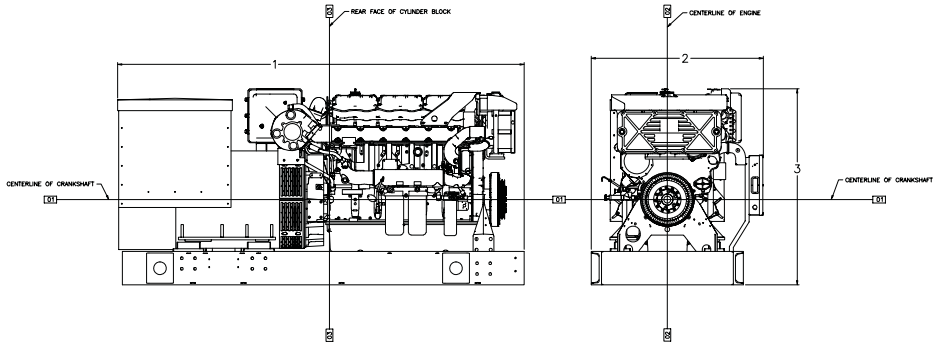
* Package is compatible with Fixed Water Based Local Application Fire Fighting System (FWBLAFFS)

Generator Excitation

	No Load	Full Ld Series	Full Ld Parallel
Excitation current in amps:			
342-0544	1.73	6.64	6.63
342-0548	1.72	6.61	6.6
342-0550	1.67	6.32	6.28

C18 ACERT MARINE GENERATOR SET

550/500/425/340 EKW



DIMENSIONS

Package Dimensions (Heat Exchanger Cooled)		
(1) Length*	3075.5 mm	121.08 in
(2) Width	1300.8 mm	51.21 in
(3) Height	1484.5 mm	58.44 in
Weight, Net Dry - Pkg (approx)	3586-4391 kg	7890-9660 lb

Note: Do not use for installation design.
*** Length (550 ekW) 3172.0 mm**

GENERATOR DATA

60 Hz, 220/440/480V

Power	Generator Arrangement	Leads	Pitch	Excite
340 ekW	342-0544	12	0.6667	Permanent Magnet
425 ekW	342-0544	12	0.6667	Permanent Magnet
500 ekW	342-0548	12	0.6667	Permanent Magnet
550 ekW	342-0550	12	0.7333	Permanent Magnet

PERFORMANCE DATA

60 Hz @ 1800 rpm			
% load	ekW	Lph	gph
DM9667			
100	340	96.2	25.4
75	255	76.5	20.2
50	170	50.6	13.4
DM9668			
100	425	119.3	31.5
75	319	92.8	24.5
50	213	61.9	16.3
DM9669			
100	500	133.6	35.3
75	375	102.6	27.1
50	250	71.3	18.8
DM9670			
100	550	146.0	38.6
75	413	112.4	29.7
50	275	77.0	20.3

RATING CONDITIONS

Power at declared engine speed is in accordance with ISO3046-1:2002E. Caterpillar maintains ISO9001:1994/QS-9000 approved engine test facilities to assure accurate calibration of test equipment. Electronically controlled engines are set at the factory at the advertised power corrected to standard ambient conditions. The published fuel consumption rates are in accordance with ISO3046-1:2002E.

Fuel rates are based on fuel oil of 35° API [16°C (60°F)] gravity having an LHV of 42 780 kJ/kg (18,390 Btu/lb) when used at 29°C (85°F) and weighing 838.9 g/L (7.001 lb/U.S. gal). Additional ratings may be available for specific customer requirements. Consult your Caterpillar representative for additional information.

Performance data is calculated in accordance with tolerances and conditions stated in this specification sheet and is only intended for purposes of comparison with other manufacturers' engines. Actual engine performance may vary according to the particular application of the engine and operating conditions beyond Caterpillar's control.

Power produced at the flywheel will be within standard tolerances up to 49°C (120°F) combustion air temperature measured at the air cleaner inlet, and fuel temperature up to 52°C (125°F) measured at the fuel filter base. Power rated in accordance with NMMA procedure as crankshaft power. Reduce crankshaft power by 3% for propeller shaft power.

U.S. Sourced
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