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SEP 12 2011

DEPT OF AIR REGULATION

September 9, 2011

Jeffrey F. Koerner, Program Administrator
Florida Department of Environmental Protection
Division of Air Resource Management
Office of Air Permitting and Compliance
2600 Blair Stone Road, M.S. 5505
Tallahassee, Florida 32399-2400

Via FedEx
Airbill No. 7974 9889 5048

Re: Tampa Electric Company
Big Bend Power Station
Title V Permit Number 0570039-045-AV
Diesel Generator Exemption Request
Facility No. 0570039

Dear Mr. Koerner:

This correspondence serves as a courtesy notification to replace the existing Onan 1 and Onan 2 diesel generators with two (2) new Caterpillar emergency diesel generators. Onan 1 provides emergency backup power to Unit No. 1 or Unit No. 2. This generator set will be replaced in-kind to match the 125 ekW service requirements. Onan 2 provides emergency backup power to Unit No. 3. This generator set will be generator will be upgraded from 125 to 750 ekW to provide additional emergency power to the administration building. Table 1 shows a summary of the make/model and power ratings of existing and the proposed generators. The specifications of the proposed Unit No.1 and No. 2 generators are enclosed.

Table 1 – Specifications of the Existing and Proposed Diesel Generators.

Table with 4 columns: Engine, Make/Model No., Service Date, Rating (bHPm). Rows include Existing and Proposed Diesel Generators for Onan 1 and Onan 2.

Florida Department of Environment Protection (FDEP) recently revised their permitting rules to allow exemptions for stationary reciprocating combustion engines (RICE) from air construction permits pursuant to exemption No. 35 of Rule 62-210.300(3)(a) F.A.C. - Categorical and Conditional Exemptions. This exemption requires the engines must not be subject to the Acid

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Rain Program (ARP) or CAIR; all claimed engines cannot collectively exceed 64,000 gallons per year of diesel fuel; and comply with NSPS Subpart IIII and NESHAPS Subpart ZZZZ. The proposed diesel generators meet the requirements of Rule 62-210.300(3)(a)35 F.A.C. and are exempt from obtaining an air construction permit

Table 2 shows a description and estimated fuel usage of each diesel engine. Other than emergencies, the proposed generators will operate approximately 2 hours per week or 100 hours per year for routine testing and maintenance. The diesel fire pump, Unit 4 diesel generator, and coal yard generator were previously permitted and will be excluded from this exemption and annual fuel reporting requirements. The Aeros generator previously claimed this exemption in permit 0570039-040-AC. Under the claimed exemption, Aeros generator and the 2 proposed generators are subject to the annual fuel reporting and collectively cannot exceed 64,000 gallons per year of diesel fuel. These units are also subject to NSPS Subpart IIII and NESHAPS Subpart ZZZZ requirements.

TEC requests the proposed diesel generators be exempt from air permitting pursuant to Rule 62-210.300(3)(a)35 F.A.C. and a permit revision to incorporate the modifications in Table 3. It is our understanding the department is waiving the requirements to revise the permit within 180 days of startup and allowing new emission units to be incorporated into the Title V permit at the next available opportunity.

Table 2 – Emergency Diesel Engines Ratings and Fuel Exemption Requirements.

Engine	Use	Exemption Claimed	Service Date	Rating (bHP _m)	Fuel Rate (gal/hr)	Usage (hr/yr)	Total Fuel (gal)
Emergency Diesel Generator	Backup Aeros (SCCTs)	Yes 0570039-040-AC	9/2009	1,495	71.3	100	7,130
New Emergency Diesel Generator (Onan 1)	Unit 1 or Unit 2	yes	11/2011	217	10.7	100	1,070
New Emergency Diesel Generator (Onan 2)	Unit 3	yes	11/2011	1,141	53.6	100	5,360
Total gallons under exemption							13,560

Table 3 – Emergency Diesel Engines Specifications.

Qty.	Engine	Service Date	Rating (bHP)	Rule Applicability
1	Emergency Diesel Generator (Unit 4)	7/1984	550	NESHAPS Subpart ZZZZ
1	Diesel Fire Pump Engine	1/2000	596	NESHAPS Subpart ZZZZ
1	Coal Field Diesel Generator	10/2009	349	NESHAPS Subpart ZZZZ
1	Emergency Diesel Generator	9/2009	1,495	NSPS Subparts A, IIII NESHAP Subpart A, ZZZZ
1	Emergency Diesel Generator (Unit 1 or Unit 2)	11/2011	217	NSPS Subparts A, IIII NESHAP Subpart A, ZZZZ
1	New Emergency Diesel Generator (Unit 3)	11/2011	1,141	NSPS Subparts A, IIII NESHAP Subpart A, ZZZZ

Mr. Jeffrey F. Koerner

September 9, 2011

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Please contact me at (813) 228-4232 or Byron Burrows at (813) 228-1282, if you have any questions regarding this request.

Sincerely,

A handwritten signature in black ink, appearing to read "Robert Velasco". The signature is fluid and cursive, with the first name "Robert" being more prominent than the last name "Velasco".

Robert A. Velasco, P.E., BCEE, QEP

Air Programs

Environmental, Health & Safety

EHS/rik/RAV113

Enclosure

c/enc: Cindy Zhang-Torres, DEP SW District
Diana Lee, EPCHC

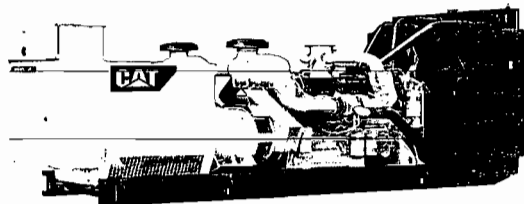


Image shown may not reflect actual package.

STANDBY 750 ekW 938 kVA 60 Hz 1800 rpm 480 Volts

Caterpillar is leading the power generation marketplace with Power Solutions engineered to deliver unmatched flexibility, expandability, reliability, and cost-effectiveness.

FEATURES

FUEL/EMISSIONS STRATEGY

- EPA Certified for Stationary Emergency Application (EPA Tier 2 emissions levels)

DESIGN CRITERIA

- The generator set accepts 100% rated load in one step per NFPA 110 and meets ISO 8528-5 transient response.

UL 2200 / CSA - Optional

- UL 2200 listed packages
 - CSA Certified
- Certain restrictions may apply.
Consult with your Cat® Dealer.

FULL RANGE OF ATTACHMENTS

- Wide range of bolt-on system expansion attachments, factory designed and tested
- Flexible packaging options for easy and cost effective installation

SINGLE-SOURCE SUPPLIER

- Fully prototype tested with certified torsional vibration analysis available

WORLDWIDE PRODUCT SUPPORT

- Cat dealers provide extensive post sale support including maintenance and repair agreements
- 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

CAT® C27 ATAAC DIESEL ENGINE

- Utilizes ACERT™ Technology
- Reliable, rugged, durable design
- Four-cycle diesel engine combines consistent performance and excellent fuel economy with minimum weight
- Electronic engine control

CAT GENERATOR

- Designed to match the performance and output characteristics of Cat diesel engines
- Single point access to accessory connections
- UL 1446 recognized Class H insulation

CAT EMCP 4 CONTROL PANELS

- Simple user friendly interface and navigation
- Scalable system to meet a wide range of customer needs
- Integrated Control System and Communications Gateway

SEISMIC CERTIFICATION

- Seismic Certification available
- Anchoring details are site specific, and are dependent on many factors such as generator set size, weight, and concrete strength. IBC Certification requires that the anchoring system used is reviewed and approved by a Professional Engineer
- Seismic Certification per Applicable Building Codes: IBC 2000, IBC 2003, IBC 2006, IBC 2009, CBC 2007
- Pre-approved by OSHP and carries an OPA#(OSP-0084-01) for use in healthcare projects in California

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FACTORY INSTALLED STANDARD & OPTIONAL EQUIPMENT

System	Standard	Optional
Air Inlet	<ul style="list-style-type: none"> • Single element canister type air cleaner • Service indicator 	<ul style="list-style-type: none"> <input type="checkbox"/> Dual element air cleaners <input type="checkbox"/> Air inlet adapters
Cooling	<ul style="list-style-type: none"> • Radiator with guard • Coolant drain line with valve • Fan and belt guards • Cat® Extended Life Coolant • Coolant level sensors • Duct flange 	<ul style="list-style-type: none"> <input type="checkbox"/> Jacket water heater
Exhaust	<ul style="list-style-type: none"> • Dry exhaust manifold • Flanged faced outlets 	<ul style="list-style-type: none"> <input type="checkbox"/> Stainless steel exhaust flex fittings <input type="checkbox"/> Elbows, flanges, expanders & Y adapters
Fuel	<ul style="list-style-type: none"> • Primary fuel filter with water separator • Secondary fuel filter • Fuel priming pump • Flexible fuel lines (terminated on base) • Fuel pressure gauge 	
Generator	<ul style="list-style-type: none"> • Class H insulation • Power terminal strip • Cat Digital Voltage Regulator (CDVR) with kVAR/PF control, 3-phase sensing 	<ul style="list-style-type: none"> <input type="checkbox"/> Oversize & premium generators <input type="checkbox"/> Winding temperature detectors (select models) <input type="checkbox"/> Anti-condensation heaters
Power Termination	<ul style="list-style-type: none"> • Bus bar (NEMA hole connections) • Bottom cable entry • AC & DC customer wiring area 	<ul style="list-style-type: none"> <input type="checkbox"/> Circuit breakers, UL listed, 3 pole with shunt trip, 80% and 100% rated
Governor	<ul style="list-style-type: none"> • ADEM™ A4 	<ul style="list-style-type: none"> <input type="checkbox"/> Load share module
Control Panel	<ul style="list-style-type: none"> • EMCP 4.2 generator set controller • User interface panel (UIP)- rear mount • AC & DC customer wiring area (right side) • Emergency Stop Push button 	<ul style="list-style-type: none"> <input type="checkbox"/> Local & remote annunciator modules <input type="checkbox"/> Digital I/O Module <input type="checkbox"/> Generator temperature monitoring & protection
Lube	<ul style="list-style-type: none"> • Lubricating oil and filter • Oil drain line with valves • Fumes disposal • Gear type lube oil pump 	<ul style="list-style-type: none"> <input type="checkbox"/> Manual sump pump
Mounting	<ul style="list-style-type: none"> • Structural steel tube • Anti-vibration mounts 	
Starting/Charging	<ul style="list-style-type: none"> • 24 volt starting motor(s) • Batteries with rack and cables • Battery disconnect 	<ul style="list-style-type: none"> <input type="checkbox"/> Battery chargers (5 or 10 amp) <input type="checkbox"/> 45 amp charging alternator <input type="checkbox"/> Oversize batteries <input type="checkbox"/> Ether starting aid
General	<ul style="list-style-type: none"> • Right-hand service • Paint - Caterpillar Yellow (except rails and radiators gloss black) • SAE standard rotation • Flywheel and Flywheel housing - SAE No. 0 	<ul style="list-style-type: none"> <input type="checkbox"/> CSA certification <input type="checkbox"/> Seismic Certification per Applicable Building Codes: IBC 2000, IBC 2003, IBC 2006, IBC 2009, CBC 2007

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SPECIFICATIONS

CAT GENERATOR

Frame size.....	596
Excitation.....	Self Excitation
Pitch.....	0.8667
Number of poles.....	4
Number of bearings.....	Single bearing
Number of Leads.....	012
Insulation.....	UL 1446 Recognized Class H with tropicalization and antiabrasion - Consult your Caterpillar dealer for available voltages
IP Rating.....	Drip Proof IP22
Alignment.....	Pilot Shaft
Overspeed capability.....	150
Wave form Deviation (Line to Line).....	Less than 5% deviation
Voltage regulator.....	3 Phase sensing with selectable volts/Hz
Voltage regulation.....	Less than +/- 1/2% (steady state) Less than +/- 1% (no load to full load)
Telephone influence factor.....	Less than 50
Harmonic Distortion.....	Less than 5%

CAT DIESEL ENGINE

C27 TA, V-12, 4-Stroke Water-cooled Diesel	
Bore.....	137.20 mm (5.4 in)
Stroke.....	152.40 mm (6.0 in)
Displacement.....	27.03 L (1649.47 in ³)
Compression Ratio.....	16.5:1
Aspiration.....	TA
Fuel System.....	MEUI
Governor Type.....	ADEM™ A4

CAT EMCP 4 SERIES CONTROLS

EMCP 4 controls including:

- Run / Auto / Stop Control
- Speed and Voltage Adjust
- Engine Cycle Crank
- 24-volt DC operation
- Environmental sealed front face
- Text alarm/event descriptions

Digital indication for:

- RPM
- DC volts
- Operating hours
- Oil pressure (psi, kPa or bar)
- Coolant temperature
- Volts (L-L & L-N), frequency (Hz)
- Amps (per phase & average)
- ekW, kVA, kVAR, kW-hr, %kW, PF

Warning/shutdown with common LED indication of:

- Low oil pressure
- High coolant temperature
- Overspeed
- Emergency stop
- Failure to start (overcrank)
- Low coolant temperature
- Low coolant level

Programmable protective relaying functions:

- Generator phase sequence
- Over/Under voltage (27/59)
- Over/Under Frequency (81 o/u)
- Reverse Power (kW) (32)
- Reverse reactive power (kVAR) (32RV)
- Overcurrent (50/51)

Communications:

- Six digital inputs (4.2 only)
- Four relay outputs (Form A)
- Two relay outputs (Form C)
- Two digital outputs
- Customer data link (Modbus RTU)
- Accessory module data link
- Serial annunciator module data link
- Emergency stop pushbutton

Compatible with the following:

- Digital I/O module
- Local Annunciator
- Remote CAN annunciator
- Remote serial annunciator

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TECHNICAL DATA

Open Generator Set - - 1800 rpm/60 Hz/480 Volts	DM9071	
EPA Certified for Stationary Emergency Application (EPA Tier 2 emissions levels)		
Generator Set Package Performance Genset Power rating @ 0.8 pf Genset Power rating with fan	937.5 kVA 750 ekW	
Coolant to aftercooler temp max Coolant to aftercooler temp max	49 ° C	120 ° F
Fuel Consumption 100% load with fan 75% load with fan 50% load with fan	202.9 L/hr 162.4 L/hr 116.2 L/hr	53.6 Gal/hr 42.9 Gal/hr 30.7 Gal/hr
Cooling System¹ Air flow restriction (system) Air flow (max @ rated speed for radiator arrangement) Engine Coolant capacity with radiator/exp. tank Engine coolant capacity Radiator coolant capacity	0.12 kPa 1136 m ³ /min 160.0 L 55.0 L 105.0 L	0.48 in. water 40117 cfm 42.3 gal 14.5 gal 27.7 gal
Inlet Air Combustion air inlet flow rate	58.7 m ³ /min	2073.0 cfm
Exhaust System Exhaust stack gas temperature Exhaust gas flow rate Exhaust flange size (internal diameter) Exhaust system backpressure (maximum allowable)	509.3 ° C 158.9 m ³ /min 203 mm 10.0 kPa	948.7 ° F 5611.5 cfm 8 in 40.2 in. water
Heat Rejection Heat rejection to coolant (total) Heat rejection to exhaust (total) Heat rejection to aftercooler Heat rejection to atmosphere from engine Heat rejection to atmosphere from generator	324 kW 742 kW 138 kW 100 kW 34.5 kW	18426 Btu/min 42197 Btu/min 7848 Btu/min 5687 Btu/min 1962.0 Btu/min
Alternator² Motor starting capability @ 30% voltage dip Frame Temperature Rise	2034 skVA 596 130 ° C	234 ° F
Lube System Sump refill with filter	68.0 L	18.0 gal
Emissions (Nominal)³ NOx g/hp-hr CO g/hp-hr HC g/hp-hr PM g/hp-hr	5.25 g/hp-hr .25 g/hp-hr .03 g/hp-hr .021 g/hp-hr	

¹ For ambient and altitude capabilities consult your Cat dealer. Air flow restriction (system) is added to existing restriction from factory.

² Generator temperature rise is based on a 40°C ambient per NEMA MG1-32. UL 2200 Listed packages may have oversized generators with a different temperature rise and motor starting characteristics.

³ Emissions data measurement procedures are consistent with those described in EPA CFR 40 Part 89, Subpart D & E and ISO8178-1 for measuring HC, CO, PM, NOx. Data shown is based on steady state operating conditions of 77°F, 28.42 in HG and number 2 diesel fuel with 35° API and LHV of 18,390 btu/lb. The nominal emissions data shown is subject to instrumentation, measurement, facility and engine to engine variations. Emissions data is based on 100% load and thus cannot be used to compare to EPA regulations which use values based on a weighted cycle.

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60 Hz 1800 rpm 480 Volts



RATING DEFINITIONS AND CONDITIONS

Meets or Exceeds International Specifications: AS1359, CSA, IEC60034-1, ISO3046, ISO8528, NEMA MG 1-22, NEMA MG 1-33, UL508A, 72/23/EEC, 98/37/EC, 2004/108/EC

Standby - 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. Standby power in accordance with ISO8528. Fuel stop power in accordance with ISO3046. Standby ambients shown indicate ambient temperature at 100% load which results in a coolant top tank temperature just below the shutdown temperature.

Ratings are based on SAE J1349 standard conditions. These ratings also apply at ISO3046 standard conditions. **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 838.9g/liter (7.001 lbs/U.S. gal.). Additional ratings may be available for specific customer requirements, contact your Cat representative for details. For information regarding Low Sulfur fuel and Biodiesel capability, please consult your Cat dealer.

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60 Hz 1800 rpm 480 Volts



DIMENSIONS

Package Dimensions		
Length	4668.7 mm	183.81 in
Width	1904.6 mm	74.98 in
Height	2080.5 mm	81.91 in
Weight	6175 kg	13,614 lb

NOTE: For reference only - do not use for installation design. Please contact your local dealer for exact weight and dimensions. (General Dimension Drawing #3071564).

Performance No.: DM9071

Feature Code: C27DE32

Gen. Arr. Number: 1366597

Source: U.S. Sourced

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Materials and specifications are subject to change without notice.
The International System of Units (SI) is used in this publication.

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Performance Number: DM9071

Change Level: 01

SALES MODEL:	C27	COMBUSTION:	DI
ENGINE POWER (BHP):	1,141	ENGINE SPEED (RPM):	1,800
GEN POWER WITH FAN (EKW):	750.0	HERTZ:	60
COMPRESSION RATIO:	16.5	FAN POWER (HP):	37.5
APPLICATION:	PACKAGED GENSET	ADDITIONAL PARASITICS (HP):	52.7
RATING LEVEL:	STANDBY	ASPIRATION:	TA
PUMP QUANTITY:	1	AFTERCOOLER TYPE:	ATAAC
FUEL TYPE:	DIESEL	AFTERCOOLER CIRCUIT TYPE:	JW+OC, ATAAC
MANIFOLD TYPE:	DRY	INLET MANIFOLD AIR TEMP (F):	120
GOVERNOR TYPE:	ADEM4	JACKET WATER TEMP (F):	210.2
ELECTRONICS TYPE:	ADEM4	TURBO CONFIGURATION:	PARALLEL
IGNITION TYPE:	CI	TURBO QUANTITY:	2
INJECTOR TYPE:	EUI	TURBOCHARGER MODEL:	GTA5008BS-56T-1.60
REF EXH STACK DIAMETER (IN):	10	CERTIFICATION YEAR:	2006
MAX OPERATING ALTITUDE (FT):	10,000	PISTON SPD @ RATED ENG SPD (FT/MIN):	1,800.0

General Performance Data

GENSET POWER WITH FAN	PERCENT LOAD	ENGINE POWER	BRAKE MEAN EFF PRES (BMEP)	BRAKE SPEC FUEL CONSUMPTN (BSFC)	VOL FUEL CONSUMPTN (VFC)	INLET MFLD PRES	INLET MFLD TEMP	EXH MFLD TEMP	EXH MFLD PRES	ENGINE OUTLET TEMP
EKW	%	BHP	PSI	LB/BHP-HR	GAL/HR	IN-HG	DEG F	DEG F	IN-HG	DEG F
750.0	100	1,141	305	0.329	53.6	52.6	120.7	1,210.7	36.7	948.7
675.0	90	1,036	276	0.333	49.3	48.2	117.3	1,184.5	33.3	935.9
600.0	80	931	248	0.339	45.0	43.6	114.3	1,157.5	30.1	920.5
562.5	75	878	234	0.342	42.9	41.2	112.8	1,143.4	28.5	911.5
525.0	70	826	220	0.344	40.6	38.3	110.7	1,127.0	26.5	902.0
450.0	60	722	193	0.346	35.7	31.9	105.8	1,084.0	22.3	877.6
375.0	50	618	165	0.348	30.7	25.3	100.8	1,028.5	18.0	845.1
300.0	40	516	138	0.350	25.8	19.1	97.6	957.6	14.1	798.9
225.0	30	413	110	0.356	21.0	13.6	95.6	866.3	10.9	731.9
187.5	25	361	96	0.361	18.7	11.0	94.8	813.1	9.5	691.2
150.0	20	309	82	0.368	16.3	8.6	94.0	754.4	8.2	645.3
75.0	10	201	54	0.403	11.6	4.9	92.4	617.0	6.1	532.3

GENSET POWER WITH FAN	PERCENT LOAD	ENGINE POWER	COMPRESSOR OUTLET PRES	COMPRESSOR OUTLET TEMP	WET INLET AIR VOL FLOW RATE	ENGINE OUTLET WET EXH GAS VOL FLOW RATE	WET INLET AIR MASS FLOW RATE	WET EXH GAS MASS FLOW RATE	WET EXH VOL FLOW RATE (32 DEG F AND 29.98 IN HG)	DRY EXH VOL FLOW RATE (32 DEG F AND 29.98 IN HG)
EKW	%	BHP	IN-HG	DEG F	CFM	CFM	LB/HR	LB/HR	FT3/MIN	FT3/MIN
750.0	100	1,141	55	340.2	2,073.6	5,610.2	8,929.7	9,304.9	1,958.6	1,773.7
675.0	90	1,036	51	321.4	1,972.9	5,269.2	8,478.1	8,823.2	1,856.4	1,685.5
600.0	80	931	46	304.2	1,874.4	4,932.9	8,053.0	8,368.4	1,757.3	1,600.2
562.5	75	878	43	295.1	1,825.8	4,766.3	7,827.5	8,127.9	1,709.1	1,558.8
525.0	70	826	40	282.3	1,763.3	4,540.6	7,544.0	7,828.2	1,639.5	1,497.3
450.0	60	722	34	253.9	1,610.3	4,039.0	6,871.8	7,121.9	1,485.0	1,359.5
375.0	50	618	27	225.6	1,444.6	3,541.1	6,147.8	6,362.8	1,334.4	1,225.1
300.0	40	516	21	197.9	1,288.0	3,054.4	5,467.1	5,647.9	1,193.2	1,099.5
225.0	30	413	15	170.0	1,143.5	2,567.6	4,844.7	4,992.1	1,059.4	981.2
187.5	25	361	12	155.9	1,073.8	2,322.4	4,546.8	4,677.5	992.1	921.8
150.0	20	309	10	141.7	1,005.3	2,074.6	4,256.4	4,370.3	923.1	860.8
75.0	10	201	6	120.2	905.7	1,659.5	3,831.9	3,913.1	822.6	775.2

Heat Rejection Data

GENSET POWER WITH FAN	PERCENT LOAD	ENGINE POWER	REJECTION TO JACKET WATER	REJECTION TO ATMOSPHERE	REJECTION TO EXH	EXHUAUST RECOVERY TO 350F	FROM OIL COOLER	FROM AFTERCOOLER	WORK ENERGY	LOW HEAT VALUE ENERGY	HIGH HEAT VALUE ENERGY
EKW	%	BHP	BTU/MIN	BTU/MIN	BTU/MIN	BTU/MIN	BTU/MIN	BTU/MIN	BTU/MIN	BTU/MIN	BTU/MIN
750.0	100	1,141	18,420	5,664	42,192	23,831	6,126	7,849	48,396	115,016	122,520
675.0	90	1,036	17,400	5,193	39,249	22,066	5,635	6,330	43,919	105,788	112,691
600.0	80	931	16,092	4,896	36,354	20,327	5,147	6,123	39,470	96,630	102,935
562.5	75	878	15,154	5,120	34,836	19,404	4,904	5,715	37,253	92,070	98,078
525.0	70	826	14,494	5,043	33,095	18,346	4,642	5,184	35,034	87,162	92,850
450.0	60	722	13,468	4,399	29,123	15,903	4,084	4,077	30,613	76,677	81,680
375.0	50	618	11,700	4,303	24,895	13,283	3,509	3,072	26,205	65,876	70,174
300.0	40	516	10,463	3,778	20,710	10,638	2,951	2,194	21,876	55,406	59,021
225.0	30	413	9,817	2,772	16,546	7,940	2,405	1,443	17,528	45,159	48,105
187.5	25	361	9,420	2,280	14,506	6,617	2,133	1,114	15,330	40,038	42,651
150.0	20	309	8,879	1,864	12,505	5,323	1,858	813	13,103	34,888	37,164
75.0	10	201	6,965	1,736	8,856	2,900	1,326	427	8,541	24,901	26,525

Emissions Data

RATED SPEED NOMINAL DATA: 1800 RPM

GENSET POWER WITH FAN	EKW	750.0	562.5	375.0	187.5	75.0
ENGINE POWER	BHP	1,141	878	618	381	201
PERCENT LOAD	%	100	75	50	25	10
TOTAL NOX (AS NO2)	G/HR	5,935	3,437	2,181	1,507	1,082
TOTAL CO	G/HR	278	365	351	289	296
TOTAL HC	G/HR	29	43	51	47	53
TOTAL CO2	KG/HR	525	419	298	180	112
PART MATTER	G/HR	24.2	30.5	77.2	59.9	40.4
TOTAL NOX (AS NO2)	(CORR 5% O2) MG/NM3	2,637.1	1,922.9	1,717.8	2,003.7	2,400.0
TOTAL CO	(CORR 5% O2) MG/NM3	123.9	205.1	277.9	413.1	720.4
TOTAL HC	(CORR 5% O2) MG/NM3	11.2	21.5	34.9	58.9	113.6
PART MATTER	(CORR 5% O2) MG/NM3	8.8	14.2	53.2	65.9	82.0
TOTAL NOX (AS NO2)	(CORR 5% O2) PPM	1,285	937	837	976	1,169
TOTAL CO	(CORR 5% O2) PPM	99	164	222	330	576
TOTAL HC	(CORR 5% O2) PPM	21	40	65	110	212
TOTAL NOX (AS NO2)	G/HP-HR	5.25	3.94	3.54	4.18	5.39
TOTAL CO	G/HP-HR	0.25	0.42	0.57	0.80	1.48
TOTAL HC	G/HP-HR	0.03	0.05	0.08	0.13	0.27
PART MATTER	G/HP-HR	0.02	0.03	0.13	0.17	0.20
TOTAL NOX (AS NO2)	LB/HR	13.08	7.58	4.81	3.32	2.39
TOTAL CO	LB/HR	0.61	0.81	0.77	0.64	0.65
TOTAL HC	LB/HR	0.06	0.10	0.11	0.10	0.12
TOTAL CO2	LB/HR	1,157	924	658	397	246
PART MATTER	LB/HR	0.05	0.07	0.17	0.13	0.09
OXYGEN IN EXH	%	8.9	10.1	11.2	13.2	15.4
DRY SMOKE OPACITY	%	0.4	1.4	2.9	4.4	3.8
BOSCH SMOKE NUMBER		0.18	0.48	1.07	1.51	1.40

Regulatory Information

EPA TIER 2		2006 - 2010		
GASEOUS EMISSIONS DATA MEASUREMENTS ARE CONSISTENT WITH THOSE DESCRIBED IN EPA 40 CFR PART 89 SUBPART D AND ISO 8178 FOR MEASURING HC, CO, PM, AND NOX. GASEOUS EMISSIONS VALUES ARE WEIGHTED CYCLE AVERAGES AND ARE IN COMPLIANCE WITH THE NON-ROAD REGULATIONS.				
Locality	Agency	Regulation	Tier/Stage	Max Limits - G/BKW - HR
U.S. (INCL CALIF)	EPA	NON-ROAD	TIER 2	CO: 3.5 NOx + HC: 6.4PM: 0.20

EPA EMERGENCY STATIONARY		2011 - ----		
GASEOUS EMISSIONS DATA MEASUREMENTS ARE CONSISTENT WITH THOSE DESCRIBED IN EPA 40 CFR PART 60 SUBPART III AND ISO 8178 FOR MEASURING HC, CO, PM, AND NOX. GASEOUS EMISSIONS LIMIT VALUES ARE WEIGHTED CYCLE AVERAGES AND ARE IN COMPLIANCE WITH THE NON-ROAD REGULATIONS.				
Locality	Agency	Regulation	Tier/Stage	Max Limits - G/BKW - HR
U.S. (INCL CALIF)	EPA	STATIONARY	EMERGENCY STATIONARY	CO: 3.5 NOx + HC: 6.4PM: 0.20

Altitude Derate Data

ALTITUDE CORRECTED POWER CAPABILITY (BHP)

AMBIENT OPERATING TEMP (F)	50	60	70	80	90	100	110	120	130	NORMAL
ALTITUDE (FT)										
0	1,141	1,141	1,141	1,141	1,141	1,141	1,141	1,141	1,141	1,141
1,000	1,141	1,141	1,141	1,141	1,141	1,141	1,141	1,141	1,141	1,141
2,000	1,141	1,141	1,141	1,141	1,141	1,141	1,141	1,141	1,141	1,141
3,000	1,141	1,141	1,141	1,141	1,141	1,141	1,141	1,141	1,141	1,141
4,000	1,141	1,141	1,141	1,141	1,141	1,141	1,141	1,141	1,141	1,141
5,000	1,141	1,141	1,141	1,141	1,141	1,141	1,141	1,141	1,141	1,141
6,000	1,141	1,141	1,141	1,141	1,141	1,141	1,141	1,141	1,141	1,141
7,000	1,141	1,141	1,141	1,141	1,141	1,141	1,141	1,141	1,141	1,141
8,000	1,141	1,141	1,141	1,141	1,141	1,141	1,141	1,141	1,127	1,141
9,000	1,141	1,141	1,141	1,141	1,141	1,140	1,120	1,101	1,082	1,141
10,000	1,141	1,141	1,141	1,135	1,114	1,094	1,075	1,056	1,038	1,141
11,000	1,141	1,131	1,109	1,089	1,069	1,050	1,031	1,014	996	1,141
12,000	1,106	1,084	1,064	1,044	1,025	1,007	989	972	956	1,137
13,000	1,060	1,039	1,020	1,001	983	965	948	932	916	1,098
14,000	1,016	996	977	959	942	925	909	893	878	1,060
15,000	973	954	936	919	902	886	870	855	841	1,023

Cross Reference

Engine Arrangement			
Arrangement Number	Effective Serial Number	Engineering Model	Engineering Model Version
2671232	MJE00001	GS327	-
3541450	PEN00001	GS582	-

Test Specification Data						
Test Spec	Setting	Effective Serial Number	Engine Arrangement	Governor Type	Default Low Idle Speed	Default High Idle Speed
OK7492	PP5659	MJE00001	2671232	ADEM4		
OK4032	GG0384	PEN00001	3541450	ADEM4		

Performance Parameter Reference

Parameters Reference:DM9600-04 PERFORMANCE DEFINITIONS

PERFORMANCE DEFINITIONS DM9600

APPLICATION:

Engine performance tolerance values below are representative of a typical production engine tested in a calibrated dynamometer test cell at SAE J1995 standard reference conditions. Caterpillar maintains ISO9001:2000 certified quality management systems for engine test facilities to assure accurate calibration of test equipment. Engine test data is corrected in accordance with SAE J1995. Additional reference material SAE J1228, J1349, ISO 8665, 3046-1:2002E, 3046-3:1989, 1585, 2534, 2288, and 9249 may apply in part or are similar to SAE J1995. Special engine rating request(SERR)test data shall be noted.

PERFORMANCE PARAMETER TOLERANCE FACTORS:

Power ¹	+/- 3%
Torque ²	+/- 3%
Exhaust stack temperature	+/- 8%
Inlet airflow	+/- 5%
Intake manifold pressure-gage	+/- 10%
Exhaust flow	+/- 6%
Specific fuel consumption	+/- 3%
Fuel rate	+/- 5%
Heat rejection ³	+/- 5%
Heat rejection exhaust only ³	+/- 10%

¹ Torque is included for truck and industrial applications, do not use for Gen Set or steady state applications.

² On C7 - C18 engines, at speeds of 1100 RPM and under these values are provided for reference only, and may not meet the tolerance listed.

³ These values do not apply to C280/3600. For these models, see the tolerances listed below.

C280/3600 HEAT REJECTION TOLERANCE FACTORS:

Heat rejection	+/- 10%
Heat rejection to Atmosphere	+/- 50%
Heat rejection to Lube Oil	+/- 20%
Heat rejection to Aftercooler	+/- 5%

TEST CELL TRANSDUCER TOLERANCE FACTORS:

Torque	+/- 0.5%
Speed	+/- 0.2%
Fuel flow	+/- 1.0%
Temperature	+/- 2.0 C degrees
Intake manifold pressure	+/- 0.1 kPa

OBSERVED ENGINE PERFORMANCE IS CORRECTED TO SAE J1995 REFERENCE AIR AND FUEL CONDITIONS.

REFERENCE ATMOSPHERIC INLET AIR

FOR 3500 ENGINES AND SMALLER

SAE J1228 reference atmospheric pressure is 100 KPA (29.61 in hg) and standard temperature is 25°C (77°F) at 60% relative humidity.

FOR 3600 ENGINES

Engine rating obtained and presented in accordance with ISO 3046/1 and SAE J1995 JAN90 standard reference conditions of 25°C, 100 KPA 30% relative humidity and 150M altitude at the stated aftercooler water temperature.

MEASUREMENT LOCATION FOR INLET AIR TEMPERATURE

Location for air temperature measurement air cleaner inlet at stabilized operating conditions.

PERFORMANCE DATA[DM9071]

REFERENCE EXHAUST STACK DIAMETER

The Reference Exhaust Stack Diameter published with this dataset is only used for the calculation of Smoke Opacity values displayed in this dataset. This value does not necessarily represent the actual stack diameter of the engine due to the variety of exhaust stack adapter options available. Consult the price list, engine order or general dimension drawings for the actual stack diameter size ordered or options available.

REFERENCE FUEL

DIESEL

Reference fuel is #2 distillate diesel with a 35° API gravity; A lower heating value is 42,780 KJ/KG (18,390 BTU/LB) when used at 29°C (84.2°F), where the density is 838.9 G/Liter (7.001 Lbs/Gal).

GAS

Reference natural gas fuel has a lower heating value of 33.74 KJ/L (905 BTU/CU Ft). Low BTU ratings are based on 18.64 KJ/L (500 BTU/CU FT) lower heating value gas. Propane ratings are based on 87.56 KJ/L (2350 BTU/CU Ft) lower heating value gas.

ENGINE POWER (NET) IS THE CORRECTED FLYWHEEL POWER (GROSS) LESS EXTERNAL AUXILIARY LOAD

Engine corrected gross output includes the power required to drive standard equipment; lube oil, scavenge lube oil, fuel transfer, common rail fuel, separate circuit aftercooler and jacket water pumps. Engine net power available for the external (flywheel) load is calculated by subtracting the sum of auxiliary load from the corrected gross flywheel output power. Typical auxiliary loads are radiator cooling fans, hydraulic pumps, air compressors and battery charging alternators.

ALTITUDE CAPABILITY

Altitude capability is the maximum altitude above sea level at standard temperature and standard pressure at which the engine could develop full rated output power on the current performance data set. Standard temperature values versus altitude could be seen on TM2001.

Engines with ADEM MEUI and HEUI fuel systems operating at conditions above the defined altitude capability derate for atmospheric pressure and temperature conditions outside the values defined, see TM2001. Mechanical governor controlled unit injector engines require a setting change for operation at conditions above the altitude defined on the engine performance sheet. See your Caterpillar technical representative for non standard ratings.

REGULATIONS AND PRODUCT COMPLIANCE

TMI Emissions information is presented at 'nominal' and 'not to exceed' values for standard ratings. No tolerances are applied to the emissions data. These values are subject to change at any time. The controlling federal and local emission requirements need to be verified by your Caterpillar technical representative. Log on to the Technology and Solutions Divisions (T&SD) web page (http://tsd.cat.com/etsd/index.cfm?tech_id=2635ICAL) for information including federal regulation applicability and time lines for implementation. Information for labeling and tagging requirements is also provided.

NOTES:

Regulation watch covers regulations in effect and future regulation changes for world, federal, state and local. This page includes items on the watch list where a regulation change or product change might be pending and may need attention of the engine product group. For additional emissions information log on to the TMI web page.

Additional product information for specific market application is available.

Customer's may have special emission site requirements that need to be verified by the Caterpillar Product Group engineer.

HEAT REJECTION DEFINITIONS:

Diesel Circuit Type and HHV Balance : DM9500

SOUND DEFINITIONS:

Sound Power : DM8702

Sound Pressure : TM7080

RATING DEFINITIONS:

Agriculture : TM6008

Fire Pump : TM6009

Generator Set : TM6035

Generator (Gas) : TM6041

Industrial Diesel : TM6010

Industrial (Gas) : TM6040

Irrigation : TM5749

Locomotive : TM6037

Marine Auxiliary : TM6036

Marine Prop (Except 3600) : TM5747

Marine Prop (3600 only) : TM5748

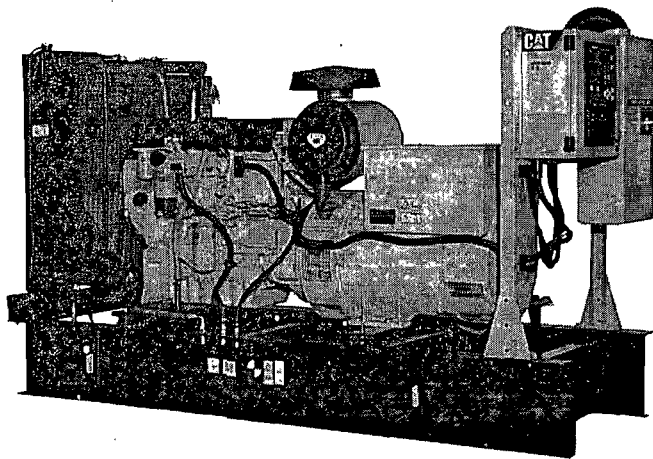
MSHA : TM6042

Oil Field (Petroleum) : TM6011

Off-Highway Truck : TM6039

On-Highway Truck : TM6038

Date Released : 08/10/11



Picture shown may not reflect actual package

STANDBY 125-150 kW
PRIME 114-135 kW

60 Hz

Model	Standby kW (kVA)	Prime kW (kVA)
D125-6	125 (156.3)	114 (142.5)
D150-8	150 (187.5)	135 (168.8)

Tier 3 EPA Approved, Emissions Certified

FEATURES

GENERATOR SET

- Complete system designed and built at ISO 9001 certified facilities
- Factory tested to design specifications at full load conditions

ENGINE

- Governor, electronic
- Electrical system, 12 VDC
- Cartridge type filters
- Battery rack and cables
- Coolant and lube drains piped to edge of base

GENERATOR

- Insulation system, class H
- Drip proof generator air intake (NEMA 2, IP23)
- Electrical design in accordance with BS5000 Part 99, EN61000-6, IEC60034-1, NEMA MG-1.33

CONTROL SYSTEM

- EMCP 3.1 digital control panel
- Vibration isolated NEMA 1 enclosure with lockable hinged door
- DC and AC wiring harnesses

MOUNTING ARRANGEMENT

- Heavy-duty fabricated steel base with lifting points
- Anti-vibration pads to ensure vibration isolation
- Complete OSHA guarding
- Stub-up pipe ready for connection to silencer pipework
- Flexible fuel lines to base with NPT connections

COOLING SYSTEM

- Radiator and cooling fan complete with protective guards
- Standard ambient temperatures up to 50° C (122° F)

CIRCUIT BREAKER

- UL/CSA listed
- 3-pole with solid neutral
- NEMA 1 steel enclosure, vibration isolated
- Electrical stub-up area directly below circuit breaker

AUTOMATIC VOLTAGE REGULATOR

- Voltage within $\pm 0.5\%$ 3-phase at steady state from no load to full load
- Provides fast recovery from transient load changes

EQUIPMENT FINISH

- All electroplated hardware
- Anticorrosive paint protection
- High gloss polyurethane paint for durability and scuff resistance

QUALITY STANDARDS

- BS4999, BS5000, BS5514, EN61000-6, IEC60034, NEMA MG-1.33, NFPA 110 (with optional equipment)

DOCUMENTATION

- Operation and maintenance manuals provided
- Wiring diagrams included

WARRANTY

- All equipment carries full manufacturer's warranty.

OPTIONAL EQUIPMENT*

ENCLOSURE

- B Series weather protective enclosure (includes internal silencer system)
- Sound attenuated enclosure (includes internal silencer system)
 - Single point lift
 - Panel viewing window
 - External emergency stop pushbutton

SILENCER SYSTEM – OPEN UNIT

- Level 1 silencer
- Level 2 silencer
- Level 3 silencer
- Mounting kit
- Through-wall installation kits

ENGINE

- Battery heater
- Lube oil drain pump
- High lube oil temperature shutdown
- Lube oil sump heater

CIRCUIT BREAKER

- Auxiliary voltfree contacts
- Shunt trip

GENERATOR

- Anti-condensation heater
- Permanent magnet generator
- AREP excitation system
- Generator upgrade 1 size

CONTROL SYSTEM

- No control system
- EMCP 3.2 digital control panel

MOUNTING ACCESSORIES

- Seismic (Zone 4) vibration isolators

FUEL SYSTEM

- UL listed closed top-diked skid-mounted fuel tank base (12/24-hour capacity) with fuel alarm (low level/leak detected)
- Critical high fuel alarm
- Critical low fuel level shutdown

COOLING SYSTEM

- Coolant heater
- Low coolant temperature alarm
- Low coolant level shutdown
- Radiator transition flange

REMOTE ANNUNCIATORS

- 16-channel remote annunciator panel (supplied loose)

MISCELLANEOUS ACCESSORIES

- Toolkit
- Additional operator's manual pack
- Special enclosure color
- UL listing
- CSA certification
- French or Spanish language labels

EXTENDED SERVICE CONTRACTS

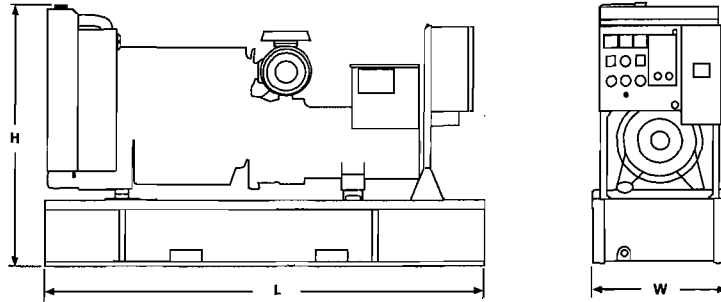
- Extended Service Coverage available

* Some options may not be available on all models. Not all options are listed.

STANDBY 125 - 150 kW
PRIME 114 - 135 kW
60 Hz



GENERATOR SET DIMENSIONS AND WEIGHTS



Model	Length mm (in)	Width mm (in)	Height mm (in)	Weight kg (lb)*
D125-6	2780 (109.4)	900 (35.4)	1543 (60.7)	1347 (2,970)
D150-8	2780 (109.4)	900 (35.4)	1543 (60.7)	1407 (3,102)

NOTE: General configuration not to be used for installation. See specific dimensional drawings for detail.

*Includes oil and coolant

SPECIFICATIONS



GENERATOR

Voltage regulation	± 0.5% 3-phase at steady state from no load to full load
Frequency	± 0.25% for constant load, no load to full load
Waveform distortion	THD < 4%, at no load
Radio interference	Compliance with EN61000-6
Telephone interference	TIF < 50, THF < 2%
Overspeed limit	2250 rpm
Insulation	Class H
Temperature rise	Within Class H limits
Available voltages	120/240, 127/220, 120/208, 347/600
Deration	Consult factory for available outputs
Ratings	At 30° C (86° F), 152.4 m (500 ft), 60% humidity, 0.8 pf



ENGINE

Manufacturer	Caterpillar
Type	4-cycle
Bore – mm (in)	105.0 (4.13)
Stroke – mm (in)	127.0 (5.00)
Governor Type	Electronic
Class	G2
Piston speed – m/sec (ft/sec)	7.62 (25.0)
Engine speed – rpm	1800
Air cleaner type	Dry, replaceable paper element type with restriction indicator

D125-6 – C6.6 ACERT

Aspiration	ATAAC
Cylinder configuration	In-line 6
Displacement – L (cu in)	6.6 (404)
Compression ratio	16.3:1
Max power at rated rpm – kW (hp)	
Standby	161.6 (217)
Prime	144.6 (194)
BMEP – kPa (psi)	
Standby	1633 (237)
Prime	1461 (212)
Regenerative power – kW (hp)	14.9 (20)

D150-8 – C6.6 ACERT

Aspiration	ATAAC
Cylinder configuration	In-line 6
Displacement – L (cu in)	6.6 (404)
Compression ratio	16.3:1
Max power at rated rpm – kW (hp)	
Standby	171.3 (230)
Prime	154.4 (207)
BMEP – kPa (psi)	
Standby	1731 (251)
Prime	1560 (226)
Regenerative power – kW (hp)	14.9 (20)



CONTROL PANEL

- Heavy duty sheet steel enclosure with lockable hinged door
- Vibration isolated from generating set
- LCD display
- AC metering
- DC metering
- Fail to start shutdown
- Low oil pressure shutdown
- High engine temperature
- Low/high battery voltage
- Underspeed/overspeed
- Loss of engine speed detection
- 2 spare fault channels
- 20 event fault log
- 2 LED status indicators
- Lockdown emergency stop push button

RATING DEFINITIONS AND CONDITIONS

Standby – Applicable for supplying continuous electrical power (at variable load) in the event of a utility power failure. No overload is permitted on these ratings. The generator is peak rated (as defined in ISO8528-3).

Prime – Applicable for supplying continuous electrical power (at variable load) in lieu of commercially purchased power. There is no limitation to the annual hours of operation and the generator set can supply 10 percent overload power for 1 hour in 12 hours.

STANDBY 125 - 150 kW
PRIME 114 - 135 kW
60 Hz



D125-6 (3-Phase)

Materials and specifications are subject to change without notice.

Generator Set Technical Data – 1800 rpm/60 Hz			Standby		Prime	
Power Rating	kW	kVA	125	156.3	114	142.5
Lubricating System						
Type: full pressure						
Oil filter: spin-on, full flow						
Oil cooler: watercooled						
Oil type required: API CH4/CI4						
Total oil capacity	L	U.S. gal	16.5	4.4	16.5	4.4
Oil pan	L	U.S. gal	15.5	4.1	15.5	4.1
Fuel System						
Generator set fuel consumption						
100% load	L/hr	gal/hr	40.6	10.7	36.0	9.5
75% load	L/hr	gal/hr	31.6	8.3	30.0	7.9
50% load	L/hr	gal/hr	24.5	6.5	23.2	6.1
Engine Electrical System						
Voltage/ground: 12/negative						
Battery charging generator ampere rating						
			amps		100	
Cooling System						
Water pump type: centrifugal						
Radiator system capacity incl. engine	L	U.S. gal	21.0	5.5	21.0	5.5
Maximum coolant static head	m H ₂ O	ft H ₂ O	8.0	26.0	8.0	26.0
Coolant flow rate	L/hr	U.S. gal/hr	10 200	2,693	10 200	2,693
Minimum temperature to engine	°C	°F	85	185	85	185
Temperature rise across engine	°C	°F	7.9	14.2	7.9	14.2
Heat rejected to coolant at rated power	kW	Btu/min	74.9	4,262	69.8	3,971
Total heat radiated to room at rated power	kW	Btu/min	13.0	740	12.1	688
Radiator fan load	kW	hp	8.0	10.7	8.0	10.7
Air Requirements						
Combustion air flow	m ³ /min	cfm	12.6	445	12.3	434
Maximum air cleaner restriction	kPa	in H ₂ O	5	20	5	20
Radiator cooling air (zero restriction)	m ³ /min	cfm	327	11,548	327	11,548
Generator cooling air	m ³ /min	cfm	26.4	923	26.4	923
Allowable air flow restriction (after radiator)	kPa	in H ₂ O	0.12	0.50	0.12	0.50
Cooling air flow (@ rated speed)						
Rate with restriction	m ³ /min	cfm	317	11,195	317	11,195
Exhaust System						
Maximum allowable backpressure	kPa	in Hg	15	4.4	15	4.4
Exhaust flow at rated kW	m ³ /min	cfm	29.7	1,049	28.6	1,010
Exhaust temperature at rated kW – Dry exhaust	°C	°F	437	819	427	801
Generator Set Noise Rating*						
(without attenuation) at 1 m (3 ft)						
			dB(A)		97	

Generator Technical Data		277/480V	266/460V	127/220V	120/240V 120/208V	347/600V
Motor Starting Capability: (kVA)						
(30% voltage dip)						
Self excited		360	335	311	283	N/A
PM excited**		469	437	406	370	437
AREP excited		469	437	406	370	437
Full Load Efficiencies:						
Standby		92.7	92.6	92.5	92.3	92.6
Prime		92.8	92.8	92.7	92.5	92.8
Reactances (per unit):						
X _d		2.74	2.99	3.27	3.65	2.99
X' _d		0.10	0.10	0.11	0.13	0.10
Reactances shown are applicable to the standby rating.	X'' _d	0.057	0.062	0.068	0.076	0.062
	X _a	1.65	1.79	1.96	2.19	1.79
	X'' _a	0.068	0.074	0.080	0.090	0.074
	X ₂	0.063	0.068	0.075	0.083	0.068
	X _s	0.004	0.005	0.005	0.006	0.005
Time Constants:		t' _d	t'' _d	t' _{do}	t _a	
		100 ms	10 ms	2865 ms	15 ms	

* dB(A) levels are for guidance only

** With PMG Excited Option AVR12

STANDBY 125 - 150 kW
PRIME 114 - 135 kW
60 Hz



D150-8 (3-Phase)

Materials and specifications are subject to change without notice.

Generator Set Technical Data – 1800 rpm/60 Hz			Standby		Prime	
Power Rating	kW	kVA	150	187.5	135	168.8
Lubricating System						
Type: full pressure						
Oil filter: spin-on, full flow						
Oil cooler: watercooled						
Oil type required: API CH4/CI4						
Total oil capacity	L	U.S. gal	16.5	4.4	16.5	4.4
Oil pan	L	U.S. gal	15.5	4.1	15.5	4.1
Fuel System						
Generator set fuel consumption						
100% load	L/hr	gal/hr	44.7	11.8	41.5	11.0
75% load	L/hr	gal/hr	36.8	9.7	34.3	9.1
50% load	L/hr	gal/hr	28.4	7.5	26.6	7.0
Engine Electrical System						
Voltage/ground: 12/negative						
Battery charging generator ampere rating	amps		100		100	
Cooling System						
Water pump type: centrifugal						
Radiator system capacity incl. engine	L	U.S. gal	21.0	5.5	21.0	5.5
Maximum coolant static head	m H ₂ O	ft H ₂ O	8.0	26.0	8.0	26.0
Coolant flow rate	L/hr	U.S. gal/hr	10 200	2,693	10 200	2,693
Minimum temperature to engine	°C	°F	85	185	85	185
Temperature rise across engine	°C	°F	7.9	14.2	7.9	14.2
Heat rejected to coolant at rated power	kW	Btu/min	78.4	4,461	73.5	4,182
Total heat radiated to room at rated power	kW	Btu/min	13.6	774	12.7	723
Radiator fan load	kW	hp	8.0	10.7	8.0	10.7
Air Requirements						
Combustion air flow	m ³ /min	cfm	12.9	456	12.6	445
Maximum air cleaner restriction	kPa	in H ₂ O	5	20	5	20
Radiator cooling air (zero restriction)	m ³ /min	cfm	327	11,548	327	11,548
Generator cooling air	m ³ /min	cfm	26.4	923	26.4	923
Allowable air flow restriction (after radiator)	kPa	in H ₂ O	0.12	0.50	0.12	0.50
Cooling airflow (@ rated speed)						
Rate with restriction	m ³ /min	cfm	317	11,195	317	11,195
Exhaust System						
Maximum allowable backpressure	kPa	in Hg	15	4.4	15	4.4
Exhaust flow at rated kW	m ³ /min	cfm	31.5	1,112	30.5	1,077
Exhaust temperature at rated kW – Dry exhaust	°C	°F	625	1,157	610	1,130
Generator Set Noise Rating*						
(without attenuation) at 1 m (3 ft)	dB(A)		97.3		97.3	

Generator Technical Data	277/480V	266/460V	127/220V	120/240V 120/208V	347/600V
Motor Starting Capability: (kVA)					
(30% voltage dip)					
Self excited	420	391	363	330	N/A
PM excited**	548	511	476	433	511
AREP excited	548	511	476	433	511
Full Load Efficiencies:					
Standby	92.9	92.9	92.9	92.5	92.9
Prime	93.1	93.1	93.1	92.8	93.1
Reactances (per unit):					
X _d	2.90	3.16	3.45	3.86	3.16
X' _d	0.10	0.11	0.12	0.13	0.11
Reactances shown are applicable to the standby rating.					
X'' _d	0.058	0.063	0.069	0.078	0.063
X _q	1.74	1.89	2.07	2.32	1.89
X'' _q	0.069	0.075	0.082	0.092	0.075
X ₂	0.063	0.069	0.075	0.084	0.069
X ₀	0.005	0.005	0.006	0.007	0.005
Time Constants:	t' _d	t'' _d	t' _{do}	t _o	
	100 ms	10 ms	2966 ms	15 ms	

* dB(A) levels are for guidance only

** With PMG Excited Option AVR12

STANDBY 125-150 kW
PRIME 114-135 kW
60 Hz



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STANDBY 125-150 kW
PRIME 114-135 kW
60 Hz



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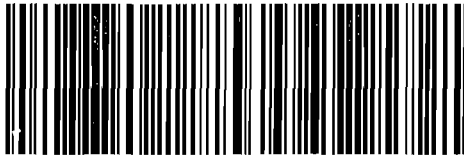
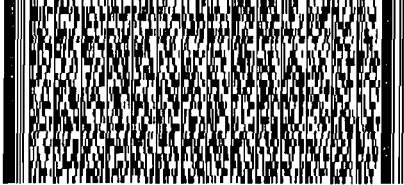
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