



POWER MODULE PRIME 1360 kW CONTINUOUS 1230 kW 50/60 Hz Switchable

Frequency (Hz)	Voltage (V)	Prime kW (kVA)	Continuous kW (kVA)
60	480/277	1360 (1700)	1230 (1537)
50	400/240	1200 (1500)	1056 (1320)

DEIF CONTROLLER

FEATURES

SINGLE SOURCE SUPPLIER

- Generator set manufactured in ISO 9001:2000 compliant facility
- Package factory designed and production tested
- Generator set and components meet or exceed the following specifications: AS1359, AS2789, BS4999, DIN6271, DIN6280, EGSA101P, JEM1359, IEC 34/1, ISO3046/1, ISO8528, NEMA MG1-22

WORLDWIDE PRODUCT SUPPORT

- Cat® dealers provide extensive post sale support including maintenance and repair agreements
- Supported 100% by your Cat dealer with warranty on parts and labor

RELIABLE, FUEL EFFICIENT DIESEL ENGINE

- The compact, four-stroke-cycle Cat 3512B turbocharged-aftercooled diesel engine combines durability while providing dependability and economy; fuel system operates on a variety of fuels

CAT GENERATOR

- Cat SR5 1622 frame generator designed to match the performance and output characteristics of the Cat diesel engine
- Double bearing, Wye-connected, static regulated, brushless, permanent magnet excited

ENVIRONMENTALLY FRIENDLY

- 110% spill containment of onboard engine fluids
- Positive crankcase fumes ventilation

CAT COOLING SYSTEM

- Horizontally mounted radiator with vertical discharge
- Sized compatible to rating with energy efficient fan
- Provides 45C ambient capability at Prime power and 50C ambient at Continuous power

ON-PACKAGE PARALLELING CONTROL SYSTEM

- Provides auto paralleling using package mounted controls
- EMCP 4.2 offers engine and generator monitoring and protection
- AGC-4 provides paralleling, load sharing, VFD control, and primary generator protection

CAT DIGITAL VOLTAGE REGULATOR (CAT DVR)

- Three-phase sensing and adjustable volts-per-hertz regulation
- Provides precise control, excellent block loading, and constant voltage in the normal operating range

SOUND ATTENUATED CONTAINER

- Provides 5-high stack CSC rated enclosure for ease of transportation and protection
- Meets 77 dB(A) at 15 meters or below per SAE J1074 measurement procedure at prime rating

GENERATOR SET & CONTAINER

- ISO high cube (2.896 m), 20 feet long (6 m), 2.438m wide container. Interior walls and roof are insulated with (80 mm) 3.14 inches of rock wool from the inside.
- Two doors (one on each side) for service accessibility.
- Rigid, fully welded support steel work with inserted 2 mm thick corrugated sheet steel panels and fully welded in position.
- An integral base to support the generator set inside is sized according to static requirements. This includes two (2) pieces of steel bars installed on the floor for mounting of the generator set.
- Separate compartment for the cooler; a service fuel tank with a 400 L (105.67 gallons) fuel capacity is supplied with four (4) level switches:
 - High-High
 - High
 - Low
 - Low-Low
- Cables will be mechanically protected by heavy-duty, hot dip galvanized after-fabrication steel conduits or by cable trays with cover.
- 50/60 Hz Conversion: The module can be converted between 50 & 60 Hz with flash files and settings provided. No fan conversion required
- A fuel solenoid valve is included for pressurized automatic filling

CONTROL SYSTEM

EMCP 4.2 ENGINE OPERATOR INTERFACE

- Graphical display with positive image, transfective LCD, adjustable white backlight/contrast.
- Digital indication for
 - RPM
 - Operating hours
 - Coolant Temperature
 - DC Volts
 - Oil pressure
 - Oil Temperature

CONTROL SYSTEM (continued)

- Two LED status indicators (1 red, 1 amber)
- Engine cool-down timer
- Engine cycle crank
- Three engine control keys and status indicators (Run/Auto/Stop).
- Lamp test and Alarm acknowledgement keys
- Warnings/shutdowns with indicating text for:
 - Low oil pressure
 - High Oil Temperature
 - Emergency stop
 - Overspeed
 - Overcrank
 - AGC-4
- Emergency stop pushbutton
- Display navigation keys including two shortcut keys for Engine Parameters or Generator Parameters

AGC-4/EMCP 4.2 PROTECTIVE RELAYING

- Generator protective features
 - 25 sync-check (AGC-4)
 - 32 rev. power (EMCP 4.2 and AGC-4)
 - 40 loss of excitation (Cat DVR and AGC-4 impedance based)
 - 50/51 Inst. and time overcurrent (GCB trip unit and AGC-4)
 - 47 Negative Voltage Sequence (AGC-4)
 - 46 Negative Sequence Current (AGC-4)
 - 27/59 phase under/over voltage (EMCP 4.2 and AGC-4)
 - 81O/U under/over frequency (EMCP 4.2 and AGC-4)
- Package mounted AGC-4 controls provides auto paralleling, CAN-bus, Ethernet communications, PWM and Analog outputs, and legacy analog load sharing (real and reactive)
- AGC-4 main display/ AOP secondary display

GENERATOR PROTECTION FEATURES:

- Generator Over Current ANSI 50/51
- Differential Protection ANSI 87 G
- Generator Under Voltage ANSI 46G
- Generator Current Imbalance ANSI 27G
- Generator Voltage Imbalance ANSI 18
- Generator Over Voltage ANSI 59 G
- Generator Under/Over Frequency ANSI 81
- Generator Reverse Power ANSI 32 G
- Generator Overload ANSI 32
- Busbar ROCOF

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FACTORY INSTALLED STANDARD EQUIPMENT

SYSTEM	STANDARD EQUIPMENT
Engine	Cat 3512B heavy duty diesel engine Heavy duty air cleaner with service indicator 45A Charging alternator Primary fuel filter Spin on, full flow oil filters with water cooled oil cooler. Requires API CF-4 lube oil Lubricating oil system including oil drain lines routed to engine rail Jacket water heater Fuel cooler and priming pump Electronic ADEM™ A3 controls 24V electric starting motors Batteries, rack and cables
Generator	SR5, three-phase, 6-lead, brushless, permanent magnet excited, Class H insulation, form wound, 2/3 pitch with Cat Digital Voltage Regulator (Cat DVR) and anti-condensation space heaters (120/240V 1.2 kW). This generator is oversized to 80 degree rise, to provide extra long life.
Containerized Module	20' ISO container, CSC certified for low cost stackable transport worldwide Sound attenuated air intake louvers and 2 lockable personnel doors with panic release Side bus bar access door, external access load connection bus bars Shore power connection for incoming auxiliaries Battery charger with instrumentation, alarms, and protection AC and DC lights with respective switches and timers 400 liter fuel tank, with vent, sight gauge, and exterior fill Fuel supply and return piped to module wall Fuel solenoid valve for automatic fuel filling Lube oil level make-up system with tank, hoses and sump level regulator Sound attenuated 85 dB(A) @ 1 meter Internally mounted, fully insulator exhaust silencer Exhaust outlet on top of module with rain cap provided with provisions to mount an exhaust stack extension Vibration isolators, corrosion resistant hardware and hinges Lube oil and fuel tank drains piped to edge of container Two 5 kg carbon dioxide fire extinguishers Standard Cat rental decals and painted standard Cat power module white Standard fork lift pockets on module sides to facilitate transport
Cooling	Standard cooling provides 45° C ambient capability at 50 & 60 Hz prime rating and 50° C at the 50 & 60 Hz continuous ratings Vertically mounted radiator with vertical air discharge and electrically driven fans
Generator Controls and Protection	Custom switchgear control with EMCP 4.2 genset mounted controller and wall-mounted paralleling controls Automatic start/stop with cool down timer Generator mounted, electrically operated circuit breaker Multi-mode operation - single unit stand-alone, island mode paralleling with other power modules for load sharing, and single unit-to-utility mode paralleling for baseload control. Metering display: voltage, current, frequency, power factor, kW, WHM, kVAR, and synchroscope Generator protective features: 25,27/59, 32, 40, 50/51, 81 O/U
Quality	Each module is tested individually for four hours, and then in parallel with a like unit. Complete modules comply with the following EU directives: Low Voltage Safety; Machinery; and Electromagnetic Compatibility. NEMA, ISO and IEEE standards

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SPECIFICATIONS

GENERATOR

Frame Size.....	1622
Arrangement.....	252-3932
Pitch.....	0.6667
No. of poles.....	4
Excitation.....	Static regulated brushless PM excited
Constructions.....	Single bearing, close coupled
Insulation.....	Class H
Enclosure.....	proof IP22
Alignment.....	Pilot shaft
Overspeed capability – % of rated.....	125% of rated
Voltage regulator.....	3 phase sensing with Volts-per-Hertz
Voltage regulation.....	Less than $\pm 1/2\%$ voltage gain
Wave form deviation.....	Less than 5% deviation
Telephone Influence Factor (TIF).....	Less than 50
Harmonic Distortion (THD).....	Less than 5%

CAT 3512B DIESEL ENGINE

3512B, 4-Stroke diesel	
Bore – mm (in).....	170 (6.7)
Stroke – mm (in).....	190 (7.5)
Displacement – L (cu in).....	51.8 (3158)
Compression ratio.....	14:1
Aspiration.....	TA
Fuel.....	EUI
Governor type.....	Cat ADEM A3 Control System
After Cooler.....	SCAC

TECHNICAL DATA*

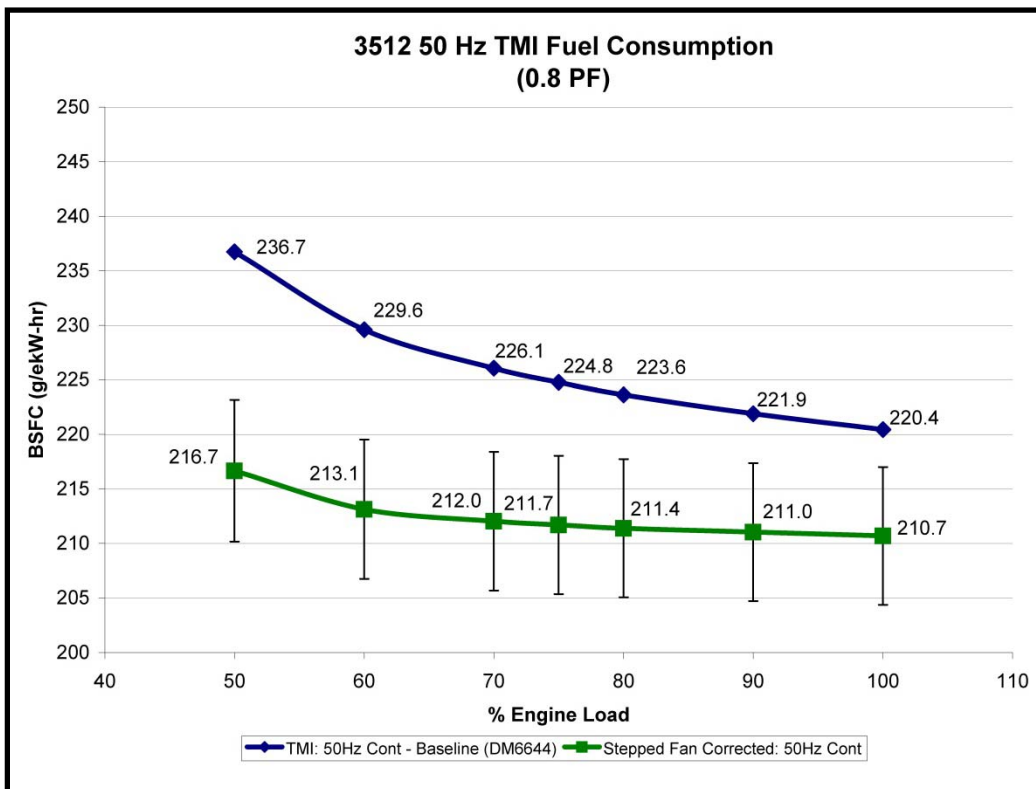
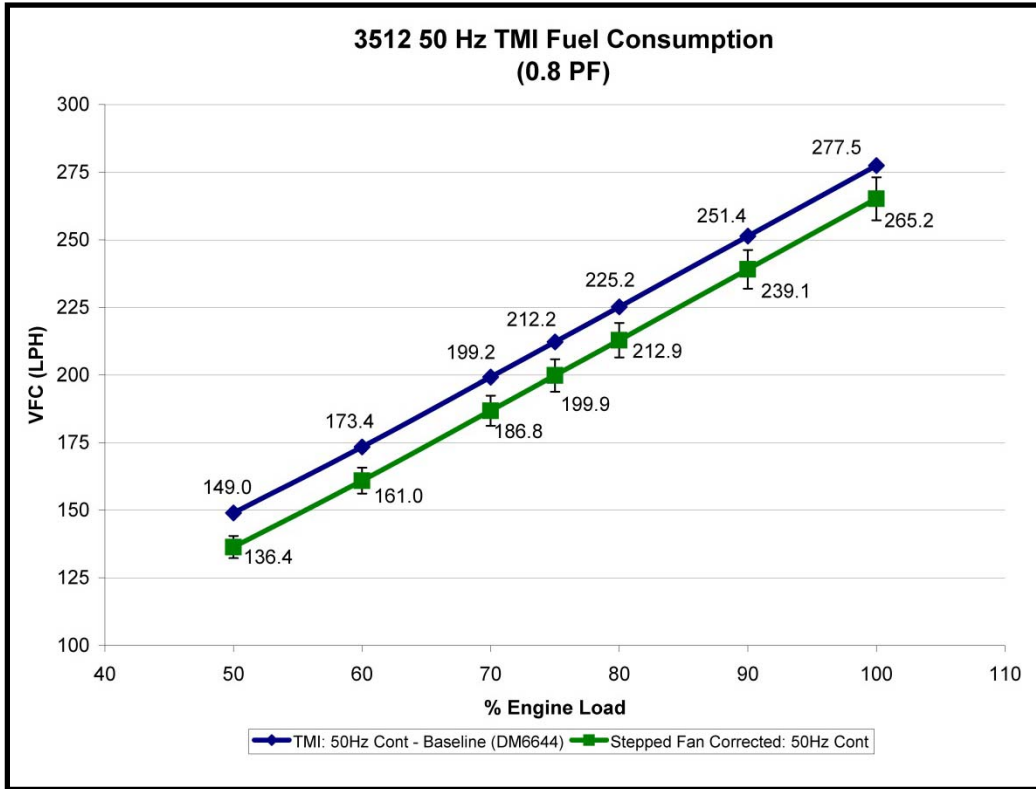
*Materials and specifications are subject to change without notice
 **Data represented is at standard conditions

Generator Set Technical Data	Units	50 Hz		60 Hz	
		Continuous	Prime	Continuous	Prime
Power Rating	kW	1056	1200	1230	1360
	(kVA)	(1320)	(1500)	(1537)	(1700)
Lubricating System	L	333			
Total oil pan capacity	(US gal)	(88)			
Fuel System					
Generator set fuel consumption**					
100% Load	L/hr	272.8	311.1	332.2	365.5
	(gal/hr)	(72.1)	(82.2)	(87.7)	(96.5)
75% Load	L/hr	202.7	231.0	241.6	268
	(gal/hr)	(53.5)	(61.0)	(63.8)	(70.8)
50% Load	L/hr	138.0	155.4	168.3	184.1
	(gal/hr)	(36.5)	(41.1)	(44.5)	(48.6)
Fuel Tank Capacity	L	400			
	(gal)	(140)			
Max Rated Running Time	hours	>1	>1	<1	>1
Cooling System					
Radiator Capacity	L (U.S. gal)	530 (140)			
Air Requirements					
Combustion air flow	m ³ /min	90.3	99.8	116.4	122.1
	(cfm)	(3,189)	(3,524)	(4,110)	(4,312)
Maximum air cleaner restriction	kPa	6.2			
	(in H ₂ O)	(24.91)			
Exhaust System					
Exhaust Flow	m ³ /min	229.2	253.7	287.8	310.0
	(cfm)	(8,094)	(8,959)	(10,164)	(10,948)
Exhaust Temperature (Dry Exhaust)	deg C	446.2	448.3	430.3	448.1
	(deg F)	(835.2)	(839.0)	(806.0)	(838.6)

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TECHNICAL DATA (CONT.)*

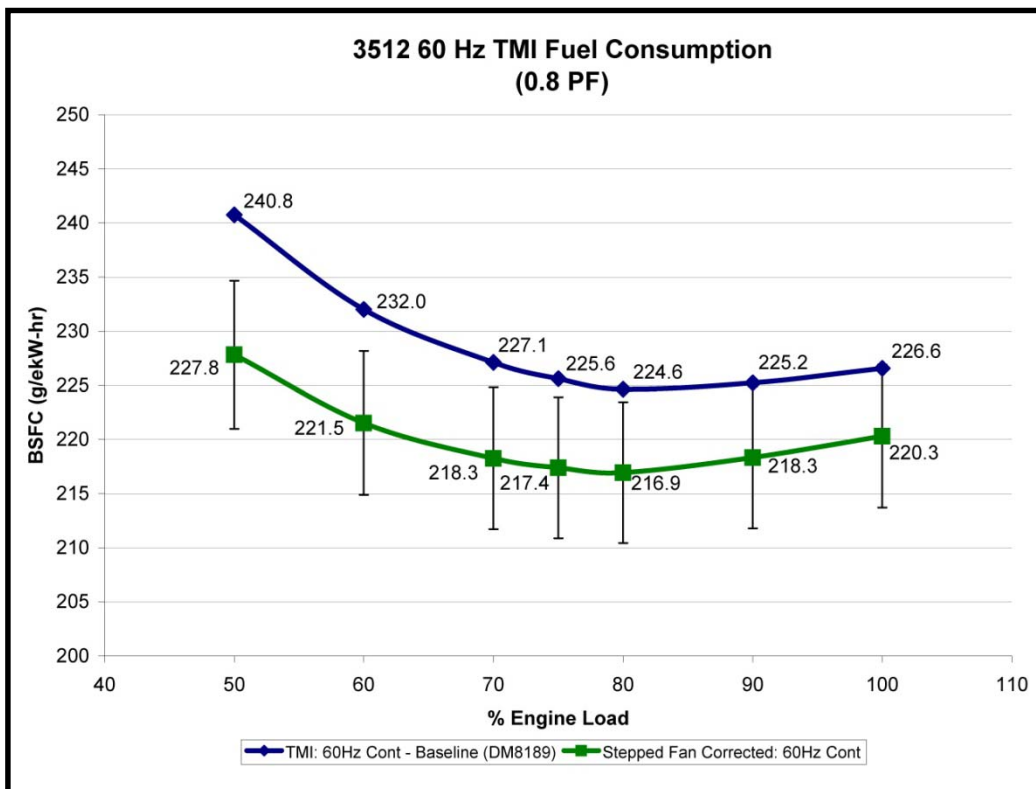
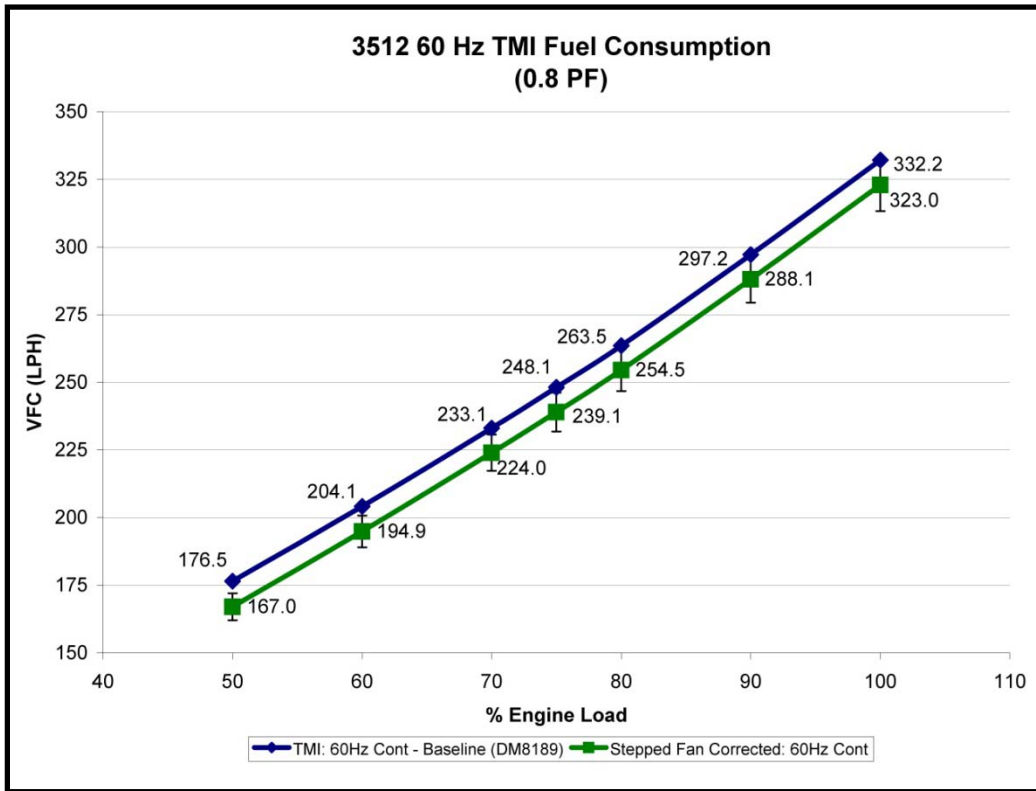


Stepped Fan Corrected data shows 3% error bars at each data point

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TECHNICAL DATA (CONT.)*



VFD Corrected data shows 3% error bars at each data point

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RATING DEFINITIONS

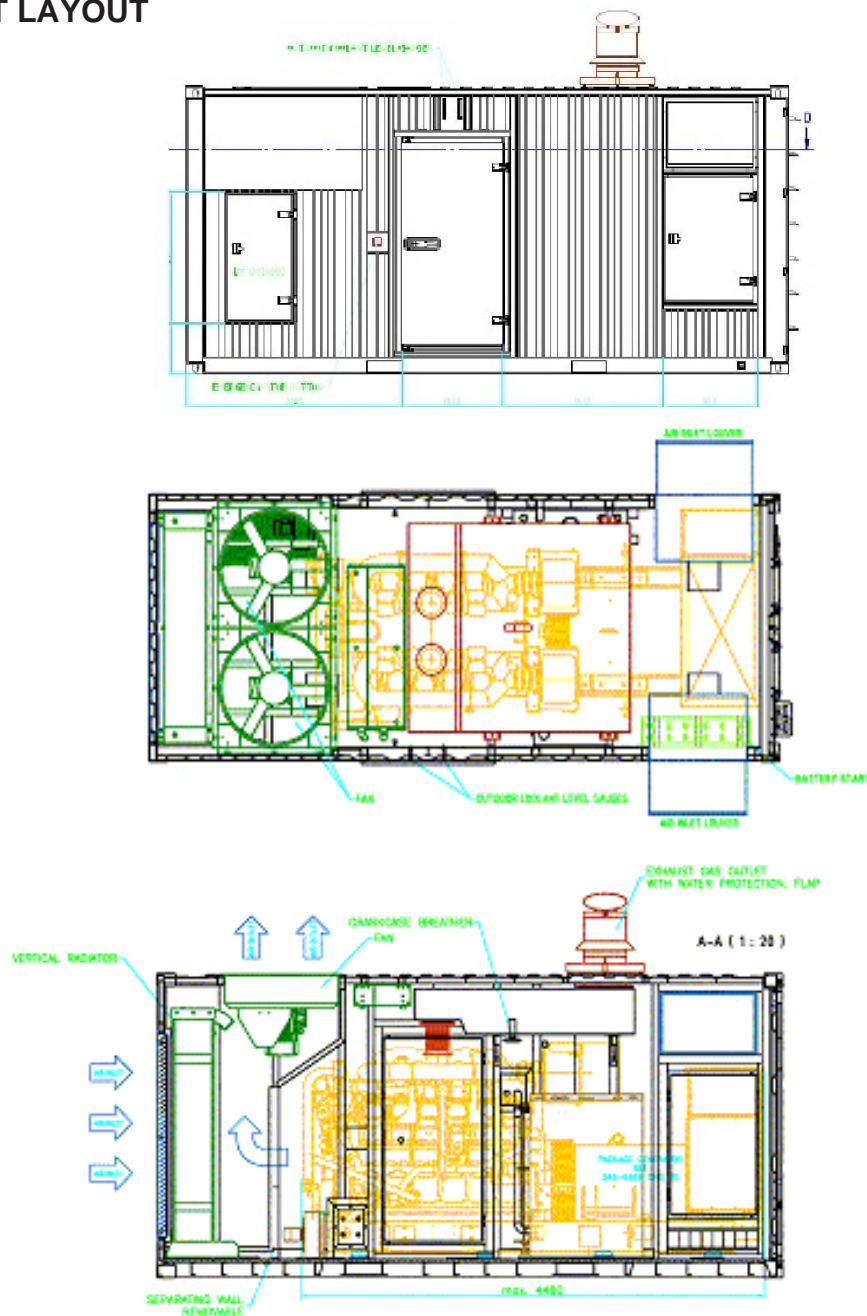
Prime – Output available with varying load for an unlimited time. Average power output is 70% of the prime rating. Typical peak demand is 100% of prime rated eKW with 10% overload capability for emergency use for a maximum of 1 hour in 12. Overload operation cannot exceed 25 hours per year.

Continuous – Output available with non-varying load for an unlimited time. Average output is 70-100% of the continuous power rating. Typical peak demand is 100% of continuous rated eKW for 100% of operating hours.

WEIGHTS AND DIMENSIONS

Model	Length in (mm)	Width in (mm)	Height in (mm)	Weight with Lube Oil and Coolant lbs (kg)	Weight with Fuel, Lube Oil and Coolant lbs (kg)
PM1360 w/o Chassis	240 (6,058)	97.5 (2,438)	114 (2,896)	44,092.45 (20,000)	44,972.47 (20,400)

EQUIPMENT LAYOUT



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