



CONTINUOUS 1475 kW

50 Hz

Frequency (Hz)	Voltage (V)	Continuous kW (kVA)
50 Hz	400/230V	1475 (1844)

FEATURES

FUEL/EMISSIONS STRATEGY

- Meets most worldwide emissions requirements down to 250 mg/Nm³ NO_x level without after treatment

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 the Cat dealer with warranty on parts and labor

CAT G3516C ISLAND MODE GAS ENGINE

- Compact, four-stroke-cycle gas engine provides exceptional dependability, fuel economy and power density
- Robust kilowatt based air to fuel ratio control system yields enhanced system performance
- Designed for maximum performance on low pressure pipeline natural gas (3-7 psi), (0.21 kg/cm² - 0.49 kg/cm²) to the container) with a methane number range of 55-100 (derate occurs with methane numbers <55)
- Island mode feature improves engine's capability to handle electrical loading and unloading

REDUCED ENVIRONMENTAL IMPACT

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

COOLING SYSTEM

- Horizontally mounted radiator with vertical discharge
- Sized compatible to rating with energy efficient electric drive fan and core.
- Provides 38C (100F) ambient capability with 500 mg/Nm³ NO_x (1g/hp-hr) at 100% continuous rating before derate
- Variable frequency drive fan controls improve partial load fuel consumption

CAT GENERATOR

- Cat SR4B 826 frame generator designed to match the performance and output characteristics of the Cat gas engine
- Double bearing, wye-connected, static regulated, brushless, permanent magnet excited

ON PACKAGE CONTROL PANEL SYSTEM

- Provides auto paralleling using package mounted controls
- EMCP 4.2 offers engine and generator monitoring and protection
- PL1000E Controller
- Engine Advisor Panel
- AGC-4 provides paralleling, load sharing, VFD control, and primary generator protection

CAT DIGITAL VOLTAGE REGULATOR (Cat DVR)

- Three-phase sensing with adjustable volts-per-hertz regulation
- Provides precise control and constant voltage in the normal operating range.

SOUND ATTENUATED CONTAINER

- Provides 9-high stack CSC rated enclosure for ease of transportation and protection.
- Meets 72 dB(A) at 15 meters or below per SAE J1074 measurement procedure at prime rating

FACTORY INSTALLED STANDARD EQUIPMENT

SYSTEM	STANDARD EQUIPMENT
Engine	Cat G3516C Island Mode Gas Engine (Operates on 31.5 to 47.2 MJ/Nm ³ (800 to 1200 btu/ft ³) dry pipeline natural gas) Cat Engine Advisor Panel provides engine diagnostics and full text descriptions Cat Gas Engine Control Module (Cat GECM) includes electronic speed governor with hydrax actuator and provides transient richening and turbo bypass control Electronic Ignition System (controlled by ECM) Individual cylinder Detonation Sensitive Timing (DST) Engine installed electronic fuel metering valve Hydraulic actuated throttle plate electronically controlled by ECM Heavy duty, single element canister type air cleaner with service indicator Charging Alternator, 60-Amp Dual 24V electric starting motors Integral lube oil cooler, lube oil pump, oil filter, filler, and dipstick and oil drain lines routed to engine rail Prelube Pump, 24VDC continuous type Jacket Water Heater, 9kW, 400/480V, 50/60 Hz, 3-phase with isolation valves
Generator	Double bearing SR-4B brushless, form wound, permanent magnet excited, three-phase with Cat digital voltage regulator (Cat DVR), space heater, 6-lead design, Class H insulation operating at Class F temperature for extended life, winding temperature detectors and anti-condensation space heaters (120/240V 1.2 kW). Generator equipped with System 4 insulation protection.
Containerized Module	40' ISO high cube container, 9-high stack CSC certified Four (4) sound attenuated air intake louvers and 3 lockable personnel doors with panic release Interior walls and ceilings insulated with 100 mm of acoustic paneling Floor of container is undercoated for corrosion protection Side bus bar access door, external access load connection bus bars Shore power connection via distribution block connections for jacket water heater, battery charger, generator space heaters, and generator condensate heaters Six (6) DC lights 3" ANSI flange customer fuel connection with cover to prevent vandalism Energized-to-run (ETR) shutoff valve (double solenoid, low/high pressure switch, CSA/FM approved) Cat Brand fuel filter, wall mounted and gas pressure regulator Lube oil level regulator with makeup tank Sound attenuated 72 dB(A) @ 15 m (50 ft) Four (4) oversized maintenance-free batteries, battery rack and 20-Amp battery charger Critical grade exhaust silencer with vertical discharge and single 2 m (6.5 ft.) stack Vibration isolators, stainless steel fastening hardware and hinges External drain access to standard fluids One 4.5 kg (10 lb) carbon dioxide fire extinguisher Standard Cat rental decals and painted standard Cat power module white LH and RH engine service panels integrated into container side walls 110% spill containment system for on-board engine fluids
Cooling	Standard cooling provides 38C (100F) ambient capability with 500mg/Nm ³ NO _x at 100% Continuous Horizontally mounted radiator with vertical air discharge Variable frequency drive (VFD) for optimal partial load fuel consumption
Generator Controls and Protection	Controls provide auto paralleling AGC-4 controller, CAN-bus, ethernet comm, PWM and analog outputs, legacy analog load sharing; includes PL1000E gas engine Advisor panel for operational/diagnostic information; cabinet houses shore power transformer, distribution, protection, and internal/external power selector switch EMCP 4.2 genset mounted controller Automatic start/stop with cool down timer Generator Protection features: 25, 32, 40, 46, 47, 50/51, 27/59, 81 O/U Reverse compatibility for interface to legacy power modules 3200A IEC rated generator circuit breaker with LSIG trip unit w/ammeter Multi-mode operation (island, multi-island and utility parallel), load sharing (multi-unit only) Manual and automatic paralleling capability Metering display: voltage, current, frequency, power factor, kW, WHM, kVAR, and synchroscope
Quality	Factory testing of standard generator set and complete power module UL, NEMA, ISO and IEEE standards O&M manuals

SPECIFICATIONS

GENERATOR

Frame Size	826
Pitch	0.6667
No. of poles	4
Excitation	Static regulated brushless PM excited
Constructions	Double bearing, close coupled
Insulation	Class H
Enclosure	Drip proof IP22
Temperature rise	105 deg C
Alignment	Pilot shaft
Overspeed capability – % of rated	125% of rated
Voltage regulator	3 phase sensing with Volts-per-Hertz
Voltage regulation	Less than ± 0.5% voltage gain
Adjustable to compensate for engine speed droop and line loss	
Wave form deviation	Less than 3% deviation
Telephone Influence Factor (TIF)	Less than 50
Harmonic Distortion (THD)	Less than 5%

CAT G3516C LOW EMISSIONS GAS ENGINE

Number of Cylinders	V16
Bore – mm (in)	170 (6.7)
Stroke – mm (in)	190 (7.5)
Displacement – L (cu in)	69 (4,210)
Compression ratio	11.3:1
Engine Speed (rpm)	1500
Aspiration	Turbocharged Separate Circuit Aftercooled
Aftercooler Inlet (deg C)	92
Jacket Water Outlet (deg C)	98
Exhaust Manifold	Dry
Fuel system	Cat Low Pressure w/ Air Fuel Ratio Control
Governor type	Cat ADEM™ A3 Control System
Combustion	Low Emission
Fuel	Natural Gas
Fuel Pressure Range (PSI)	3-7
Methane Number	55-100

TECHNICAL DATA*

Generator Set Technical Data	Units	50 Hz Continuous	
Power Rating	ekW	1475	
Lubrication System			
Lube Oil Refill Volume with filter change for standard sump	L (gal)	416 (110)	
Fuel System			
Fuel Consumption (ISO 3046/1)		Max VFD Power (50kW)	Min VFD Power (8 kW)
100% load	MJ/ekW-hr	9.37	9.09
75% load	MJ/ekW-hr	9.66	9.29
50% load	MJ/ekW-hr	10.37	9.76
Altitude Capability			
At 25° C (77°) ambient, above sea level	m (ft)	1500 (4921)	
Cooling System			
Package ambient capability	° C (° F)	38 (100)	
Jacket water temperature (maximum outlet)	° C (° F)	99 (210)	
System coolant capacity	L (gal)	770 (203)	
System required airflow	m ³ /min (ft ³ /min)	2209 (77,998)	
Exhaust System			
Combustion air inlet flow rate	m ³ /min (ft ³ /min)	109.2 (3855.8)	
Exhaust stack gas temperature	° C (° F)	464 (867)	
Exhaust gas flow rate	Nm ³ /min	116.4	
Sound Performance			
Noise rating @ 15 m (per SAE J1074)	dB(a)	72	
Emissions at 100% Load			
No _x (as NO ₂)(corr. 5% O ₂)	mg/Nm ³ (dry)	500	
CO (corr. 5% O ₂)	mg/Nm ³ (dry)	906	
THC (corr. 5% O ₂)	mg/Nm ³ (dry)	2556	
NMHC (corr. To 5% O ₂)	mg/Nm ³ (dry)	383	
Exhaust O ₂	% (dry)	10	

*Materials and specifications are subject to change without notice.

Reference SRR GR-3500-157-01 For Max VFD Power and SRR GR-3500-158-01 for Min VFD Power Data.

METHANE NUMBER OPERATION GUIDELINES**

**This table shows the derate factor required for a given fuel. Note that deration occurs as the methane number decreases. Methane number is a scale to measure detonation characteristics of various fuels. The methane number of a fuel is determined by using the Cat Methane Number Calculation program.

STANDARD FEATURES

XQ1475G Fuel Usage Guidelines												
Cat Methane Number	30	35	40	45	50	55	60	65	70	75	80	85 to 100
Ignition Timing	Contact Factory	Contact Factory	Contact Factory	Contact Factory	Contact Factory	20	22	24	28	28	28	28
Deration Factor	Contact Factory	Contact Factory	Contact Factory	Contact Factory	Contact Factory	0.9	0.91	0.93	1.00	1.00	1.00	1.00

Altitude		XQ1475G 1500rpm (50 Hz) Altitude / Ambient Derate Chart																	
Meters	Feet	Switchable Cams & High Ambient Air Intake System																	
2,400	7,874	84.9%	66.3%	62.0%	61.2%	59.5%	57.9%	56.3%	54.7%	53.0%	42.4%	31.8%	21.2%	10.6%	0.0%	0.0%	0.0%	0.0%	0.0%
2,250	7,382	88.0%	71.6%	66.7%	65.8%	64.1%	62.5%	60.9%	59.2%	57.6%	46.1%	34.6%	23.0%	11.5%	0.0%	0.0%	0.0%	0.0%	0.0%
2,000	6,562	92.0%	79.3%	75.3%	74.4%	72.6%	70.8%	68.9%	67.1%	65.3%	52.2%	39.2%	26.1%	13.1%	0.0%	0.0%	0.0%	0.0%	0.0%
1,750	5,741	97.1%	85.9%	82.7%	82.1%	80.0%	78.0%	76.0%	73.9%	71.9%	68.8%	65.8%	62.7%	59.7%	56.6%	45.3%	34.0%	22.6%	11.3%
1,500	4,921	100.0%	92.7%	89.8%	89.2%	87.3%	85.3%	83.4%	81.5%	79.5%	76.5%	73.4%	70.4%	67.3%	64.2%	56.6%	48.9%	41.3%	33.6%
1,250	4,101	100.0%	99.1%	96.8%	96.4%	94.5%	92.7%	90.9%	89.0%	87.2%	84.3%	81.4%	78.5%	75.6%	72.7%	69.3%	65.9%	62.6%	59.2%
1,000	3,281	100.0%	100.0%	100.0%	100.0%	100.0%	99.2%	97.8%	96.5%	95.1%	92.0%	89.0%	85.9%	82.8%	79.8%	76.3%	72.8%	69.4%	65.9%
900	2,953	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	99.5%	98.7%	97.9%	94.8%	91.8%	88.7%	85.7%	82.6%	79.1%	75.7%	72.2%	68.7%
800	2,625	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	97.9%	94.8%	91.8%	88.7%	85.7%	82.2%	78.7%	75.3%	71.8%
700	2,297	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	98.9%	96.4%	93.8%	91.3%	88.7%	85.1%	81.6%	78.0%	74.4%
600	1,969	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	99.9%	97.9%	95.8%	93.8%	91.8%	88.1%	84.4%	80.8%	77.1%
500	1,640	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	98.9%	97.4%	95.8%	94.3%	90.9%	87.4%	83.9%	80.5%
400	1,312	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	99.9%	98.9%	97.9%	96.9%	93.6%	90.3%	87.1%	83.8%
300	984	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	99.9%	99.4%	96.8%	94.1%	91.5%	88.8%
200	656	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	99.6%	99.0%	97.9%	95.8%
100	328	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	99.6%	99.0%	98.3%	97.6%
0	0	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	99.6%	99.0%	98.3%	97.6%
Ambient (C)		20	25	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45

Chart applicable to 1g/bhp-hr operation only.
For derates less than 50%, refer to partial load operation section in OMM.

Altitude		XQ1475G 1800rpm (60 Hz) Altitude / Ambient Derate Chart																	
Meters	Feet	Switchable Cams & High Ambient Air Intake System																	
2,400	7,874	84.9%	80.7%	76.8%	76.0%	74.0%	72.1%	70.1%	68.1%	66.1%	56.8%	47.4%	38.0%	28.7%	19.3%	14.8%	10.2%	5.7%	1.1%
2,250	7,382	88.0%	83.8%	80.5%	79.8%	77.7%	75.6%	73.5%	71.4%	69.3%	66.1%	63.0%	59.8%	56.6%	53.5%	42.1%	30.7%	19.3%	7.9%
2,000	6,562	92.0%	89.7%	86.8%	86.2%	84.0%	81.9%	79.8%	77.7%	75.6%	72.4%	69.3%	66.1%	63.0%	59.8%	47.1%	34.5%	21.8%	9.2%
1,750	5,741	97.1%	95.0%	92.1%	91.4%	89.5%	87.6%	85.7%	83.8%	81.9%	78.8%	75.6%	72.4%	69.3%	66.1%	63.0%	59.8%	56.6%	53.5%
1,500	4,921	100.0%	100.0%	98.2%	97.7%	95.9%	94.0%	92.1%	90.2%	88.3%	85.3%	82.4%	79.4%	76.5%	73.5%	69.9%	66.3%	62.7%	59.2%
1,250	4,101	100.0%	100.0%	100.0%	100.0%	100.0%	99.0%	97.5%	96.1%	94.6%	91.4%	88.3%	85.1%	81.9%	78.8%	75.2%	71.6%	68.0%	64.4%
1,000	3,281	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	97.7%	94.6%	91.4%	88.3%	85.1%	81.5%	77.9%	74.3%	70.8%
900	2,953	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	98.6%	95.9%	93.1%	90.4%	87.6%	84.0%	80.3%	76.6%	73.0%
800	2,625	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	99.4%	97.1%	94.8%	92.5%	90.2%	86.4%	82.7%	78.9%	75.1%
700	2,297	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	98.2%	96.3%	94.4%	92.5%	88.8%	85.1%	81.3%	77.6%
600	1,969	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	99.0%	97.5%	96.1%	94.6%	91.0%	87.5%	84.0%	80.4%
500	1,640	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	99.9%	98.8%	97.7%	96.7%	93.3%	89.9%	86.6%	83.2%
400	1,312	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	99.4%	98.8%	95.9%	93.1%	90.2%	87.3%
300	984	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	99.6%	98.6%	96.2%	93.8%
200	656	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	99.6%	99.0%	98.3%	96.9%
100	328	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	99.6%	99.0%	98.3%	97.6%
0	0	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	99.6%	99.0%	98.3%	97.6%
Ambient (C)		20	25	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45

Chart applicable to 1g/bhp-hr operation only.
For derates less than 50%, refer to partial load operation section in OMM.

OVERALL PACKAGE DERATE GUIDANCE:

To determine the actual package rating at site conditions, one must consider, separately, limitations due to fuel characteristics and air system limitations. The Fuel Usage Guide deration establishes fuel limitations while the Altitude/Temperature deration factors and RPC (reference the Cat Methane Program) establish air system limitations. RPC is considered when the Altitude/Temperature deration is less than 1.0 (100%). Under this condition, add the two factors together. When the site conditions do not require an Altitude/Temperature derate (factor is 1.0), it is assumed the turbocharger has sufficient capability to overcome the low fuel relative power and RPC is ignored.

To determine the actual power available, take the lowest rating between 1) and 2) below:

- 1) Fuel Usage Guide Deration
- 2) $1 - ((1 - \text{Altitude/Temperature Deration}) + (1 - \text{RPC}))$

STANDARD FEATURES

EMCP 4.2 LOCAL CONTROL PANEL

- Generator mounted EMCP 4.2 provides power metering, protective relaying and engine and generator control and monitoring.
- Convenient service access for Cat service tools (not included).
- Integration with the Cat DVR provides enhanced system monitoring.
- Ability to view and reset diagnostics of all controls networked on J1939 datalink eliminates need for separate service tools for troubleshooting.
- Real-time clock allows for date and time-stamping of diagnostics and events.
- True RMS AC metering, 3 phase: L-L volts, L-N volts, Phase, Amps, Hz, ekW, kVA, kVAR, kWhr, % kW, PF

EMCP 4.2 ENGINE OPERATOR INTERFACE

- Graphical display with positive image, transreflective LCD, adjustable white backlight/contrast.
- Digital indication for
 - RPM
 - DC Volts
 - Operating hours
 - Oil pressure
 - Coolant Temperature
 - Oil Temperature
- 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
 - Overspeed
 - High Oil Temperature
 - Overcrank
 - Emergency stop
 - 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

CIRCUIT BREAKER

- 3200A IEC rated, fixed type, 3 poles, genset mounted, electrically operated.
- Solid state trip unit for overload (time overcurrent) and fault (instantaneous) overcurrent protection. LSIG is standard.
- Includes DC shunt trip coil activated on any monitored engine or electrical fault and DC undervoltage release trip coil (UVR), 65 KA-interrupting capacity at 480 VAC.
- Ground fault sensing/trip (optional ground CT)

BUS BARS

- Three phase, plus full rated neutral, bus bars are tin-plated copper with NEMA standard hole pattern for connection of customer load cables and generator cables.
- Bus bars are sized for full load capacity of the generator set at 0.8 power factor.
- Includes ground bus, tin-plated copper, for connection to the generator frame ground and field ground cable.

CONTAINER

- 40' ISO high cube container, CSC 9-High Stack Certified
- Painted standard Cat Power Module White per Caterpillar Specifications
- Standard air intake louvers
- Three (3) lockable personnel doors with panic release
- Fire extinguisher
- LH and RH engine service panels integrated into container side walls
- 110% spill containment system for on-board engine fluids

INTERNAL LIGHTING

- Six (6) compact LED type internal DC lights with timers located at each personnel door
- One (1) duplex service receptacle

BATTERY CHARGER AND BATTERIES

- 24 VDC/20A battery charger with float/equalize modes and charging ammeter
- Four oversized maintenance free batteries

EMERGENCY STOP PUSHBUTTON

- Single emergency stop pushbuttons (ESP) located on rear face of generator set controls area

EXHAUST SILENCER

- Critical grade, internally mounted rectangular exhaust silencers with vertical discharge
- 2 m high vertical discharging exhaust stack located in radiator discharge area

TRAILER (optional)

- Three axle with Anti-lock brake system
- Goodyear G314 295/75R225 Load Range G

VOLTAGE REGULATION AND POWER FACTOR CONTROL CIRCUITRY

- Generator mounted automatic voltage regulator, microprocessor based
- Manual raise/lower voltage adjust capability and VAR/power factor control circuitry, all via AGC-4, for maintaining constant generator power factor while paralleled with utility
- Includes RFI suppression, exciter limiter and exciter diode monitoring

CURRENT TRANSFORMERS

- CT's rated 3500:5 with secondary wired to shorting terminal strip protection

AC DISTRIBUTION

- 50/60 Hz Transformer distributes utility voltage or customer supplied line voltage, which is selectable via onboard switch, for the Power Module AC auxiliaries .
- Provides 240/120 VAC for all module accessories except Jacket water heater (400V). Includes controls to de-energize jacket water heaters and generator space heater when the engine is running

MODES OF OPERATION

- Provides for single unit stand-alone operation, island mode paralleling and load sharing with other power modules, and single unit-to-utility mode paralleling for base load control (with open transition between paralleling modes)*
- Island mode paralleling features:
 - AGC-4 control allows single unit to connect to a dead bus
 - Auto synchronization (voltage & phase matching)
 - Load sharing (kW) analog signal (like units & legacy compatible)
 - Load sharing (kVAR) analog signal (like units only)
- Utility mode paralleling features:
 - Auto synchronization (voltage & phase matching)
 - Base-load control (selectable: programmable set-point or potentiometer adjust)
 - Soft load/unload (programmable, shared set-point)
 - Power Factor control (programmable set-point)

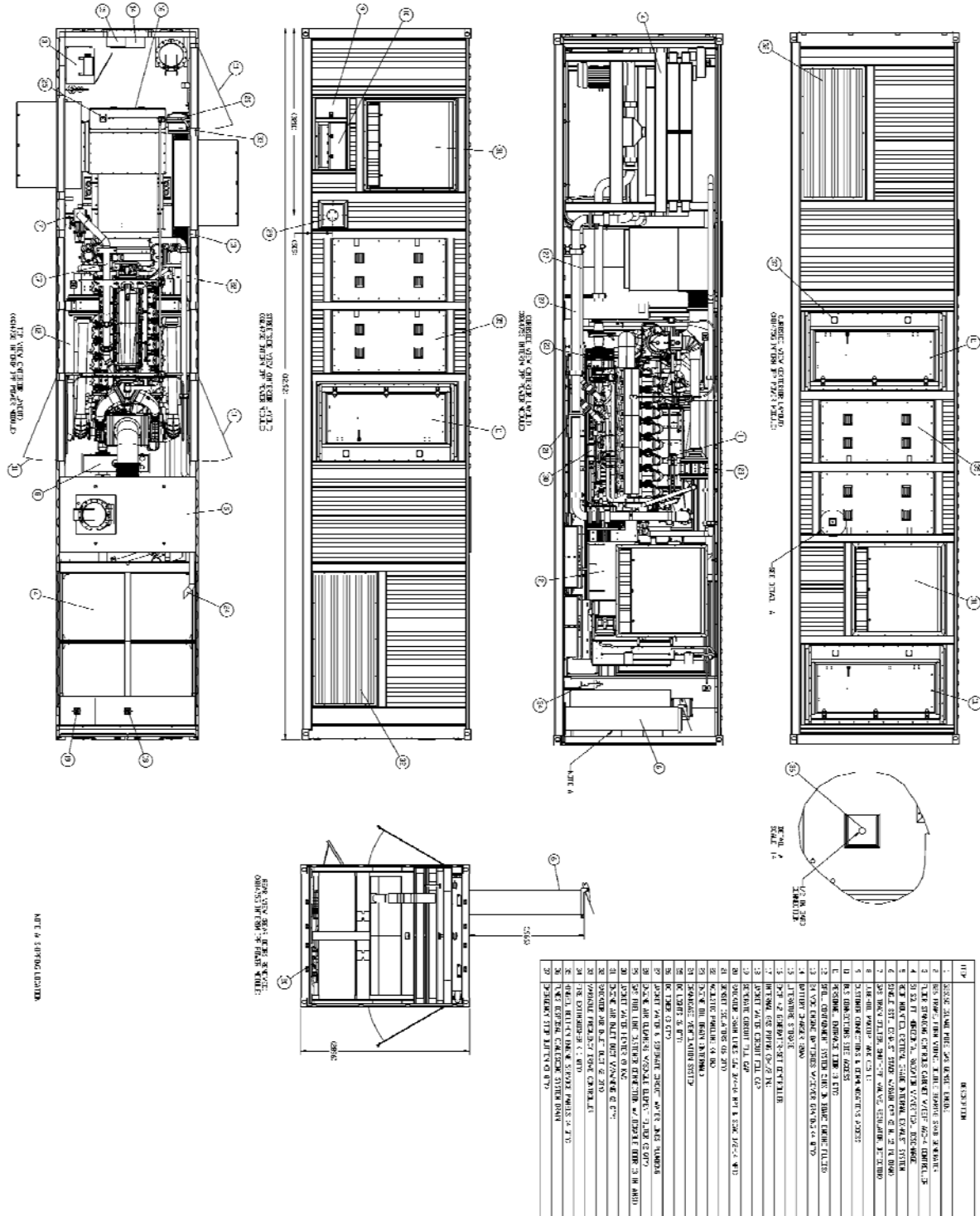
RATING DEFINITIONS AND CONDITIONS

Continuous — Output available without varying load for an unlimited time. Continuous power is in accordance with ISO8528, AS2789, and BS5514. Fuel stop power is in accordance with ISO03036. Natural gas ratings have been established on natural gas with net calorific Low Heat Value (LHV) of approximately 35.6 MJ/Nm³ (905 Btu/cu ft) and 80 Methane Number (MN). For values in excess of altitude, ambient temperature, inlet/exhaust restriction, or different from the conditions listed, contact your local Cat dealer.

WEIGHTS AND DIMENSIONS

Model	Length mm (in)	Width mm (in)	Height mm (in)	Weight with Lube oil and Coolant kg (lb)
XQ1475G	12192 (480)	2438 (96)	2896 (114)	31,920 (70,372)

EQUIPMENT LAYOUT



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ENGINE SPEED (rpm):	1500	RATING STRATEGY:	STANDARD
COMPRESSION RATIO:	11.3:1	APPLICATION:	GENSET
AFTERCOOLER TYPE:	SCAC	RATING LEVEL:	CONTINUOUS
AFTERCOOLER - STAGE 2 INLET (°F):	130	FUEL:	NAT GAS
AFTERCOOLER - STAGE 1 INLET (°F):	198	FUEL SYSTEM:	CAT LOW PRESSURE
JACKET WATER OUTLET (°F):	210		WITH AIR FUEL RATIO CONTROL
ASPIRATION:	TA	FUEL PRESSURE RANGE (psig):	0.5-5.0
COOLING SYSTEM:	JW+OC+1AC, 2AC	FUEL METHANE NUMBER:	80
CONTROL SYSTEM:	ADEM3 W/ IM	FUEL LHV (Btu/scf):	905
EXHAUST MANIFOLD:	DRY	ALTITUDE CAPABILITY AT 77°F INLET AIR TEMP. (ft):	5499
COMBUSTION:	LOW EMISSION	POWER FACTOR:	0.8
NOx EMISSION LEVEL (mg/Nm3 NOx):	500	VOLTAGE(V):	400-11000
ANCILLARY LOAD (ekW):	80		

RATING	NOTES	LOAD	100%	75%	50%
GENSET POWER (WITH ANCILLARY LOAD)	(1)(2)	ekW	1475	1106	737
GENSET POWER (WITH ANCILLARY LOAD)	(1)(2)	kVA	1843	1382	922
ENGINE POWER (WITHOUT FAN)	(2)	bhp	2175	1660	1150
GENERATOR EFFICIENCY	(1)	%	95.8	95.8	95.3
GENSET EFFICIENCY (@ 1.0 Power Factor) (ISO 3046/1)	(3)	%	38.0	36.6	33.7
THERMAL EFFICIENCY	(4)	%	46.1	46.7	48.1
TOTAL EFFICIENCY (@ 1.0 Power Factor)	(5)	%	84.1	83.3	81.8

ENGINE DATA					
GENSET FUEL CONSUMPTION (ISO 3046/1)	(6)	Btu/ekW-hr	9062	9398	10186
GENSET FUEL CONSUMPTION (NOMINAL)	(6)	Btu/ekW-hr	9283	9628	10434
ENGINE FUEL CONSUMPTION (NOMINAL)	(6)	Btu/bhp-hr	6293	6414	6691
AIR FLOW (77°F, 14.7 psia) (WET)	(7)	ft3/min	4297	3330	2375
AIR FLOW (WET)	(7)	lb/hr	19051	14767	10532
FUEL FLOW (60°F, 14.7 psia)		scfm	252	196	142
COMPRESSOR OUT PRESSURE		in Hg(abs)	103.7	82.4	61.2
COMPRESSOR OUT TEMPERATURE		°F	380	312	234
AFTERCOOLER AIR OUT TEMPERATURE		°F	133	132	133
INLET MAN. PRESSURE	(8)	in Hg(abs)	89.1	69.0	49.6
INLET MAN. TEMPERATURE (MEASURED IN PLENUM)	(9)	°F	135	135	137
TIMING	(10)	°BTDC	28	28	28
EXHAUST TEMPERATURE - ENGINE OUTLET	(11)	°F	865	899	931
EXHAUST GAS FLOW (@engine outlet temp, 14.5 psia) (WET)	(12)	ft3/min	11419	9083	6635
EXHAUST GAS MASS FLOW (WET)	(12)	lb/hr	19741	15304	10919
MAX INLET RESTRICTION	(13)	in H2O	10.04	6.23	3.07
MAX EXHAUST RESTRICTION	(13)	in H2O	20.07	9.69	1.93

EMISSIONS DATA - ENGINE OUT					
NOx (as NO2)	(14)(15)	g/bhp-hr	1.00	1.02	1.06
CO	(14)(16)	g/bhp-hr	2.03	2.00	1.99
THC (mol. wt. of 15.84)	(14)(16)	g/bhp-hr	5.05	5.62	6.52
NMHC (mol. wt. of 15.84)	(14)(16)	g/bhp-hr	0.76	0.84	0.98
NMNEHC (VOCs) (mol. wt. of 15.84)	(14)(16)(17)	g/bhp-hr	0.51	0.56	0.65
HCHO (Formaldehyde)	(14)(16)	g/bhp-hr	0.53	0.53	0.55
CO2	(14)(16)	g/bhp-hr	428	437	456
EXHAUST OXYGEN	(14)(18)	% DRY	10.0	9.9	9.7
LAMBDA	(14)(18)		1.73	1.73	1.70

ENERGY BALANCE DATA					
LHV INPUT	(19)	Btu/min	228129	177451	128211
HEAT REJECTION TO JACKET WATER (JW)	(20)(28)	Btu/min	30726	25566	21080
HEAT REJECTION TO ATMOSPHERE	(21)	Btu/min	6546	5513	4490
HEAT REJECTION TO LUBE OIL (OC)	(22)(28)	Btu/min	5612	5034	4338
HEAT REJECTION TO EXHAUST (LHV TO 77°F)	(23)(24)	Btu/min	71113	58088	43700
HEAT REJECTION TO EXHAUST (LHV TO 248°F)	(23)	Btu/min	50406	41563	31410
HEAT REJECTION TO A/C - STAGE 1 (1AC)	(25)(28)	Btu/min	14027	6785	1530
HEAT REJECTION TO A/C - STAGE 2 (2AC)	(26)(29)	Btu/min	6644	4855	3101
PUMP POWER	(27)	Btu/min	1218	1218	1218

CONDITIONS AND DEFINITIONS

Engine rating obtained and presented in accordance with ISO 3046/1. (Standard reference conditions of 77°F, 29.60 in Hg barometric pressure.) No overload permitted at rating shown. Consult the altitude deration factor chart for applications that exceed the rated altitude or temperature.

Emission levels are at engine exhaust flange prior to any after treatment. Values are based on engine operating at steady state conditions, adjusted to the specified NOx level at 100% load. Tolerances specified are dependent upon fuel quality. Fuel methane number cannot vary more than ± 3.

For notes information consult page three.

FUEL USAGE GUIDE												
CAT METHANE NUMBER	30	35	40	45	50	55	60	65	70	75	80	100
SET POINT TIMING	-	-	-	-	-	20	22	24	28	28	28	28
DERATION FACTOR	0	0	0	0	0	0.90	0.91	0.93	1	1	1	1

ALTITUDE DERATION FACTORS AT RATED SPEED														
INLET AIR TEMP °F	130	No Rating	No Rating	No Rating	No Rating	No Rating	No Rating	No Rating	No Rating	No Rating	No Rating	No Rating	No Rating	No Rating
	120	No Rating	No Rating	No Rating	No Rating	No Rating	No Rating	No Rating	No Rating	No Rating	No Rating	No Rating	No Rating	No Rating
	110	No Rating	No Rating	No Rating	No Rating	No Rating	No Rating	No Rating	No Rating	No Rating	No Rating	No Rating	No Rating	No Rating
	100	1	1	1	0.96	0.89	0.81	No Rating	No Rating	No Rating	No Rating	No Rating	No Rating	No Rating
	90	1	1	1	1	0.98	0.92	0.87	0.81	0.76	No Rating	No Rating	No Rating	No Rating
	80	1	1	1	1	1	0.98	0.93	0.88	0.83	0.78	0.67	No Rating	No Rating
	70	1	1	1	1	1	1	0.95	0.90	0.85	0.79	0.73	0.62	No Rating
	60	1	1	1	1	1	1	0.96	0.90	0.85	0.80	0.74	0.65	0.56
	50	1	1	1	1	1	1	0.96	0.91	0.85	0.80	0.74	0.67	0.60
			0	1000	2000	3000	4000	5000	6000	7000	8000	9000	10000	11000
ALTITUDE (FEET ABOVE SEA LEVEL)														

AFTERCOOLER HEAT REJECTION FACTORS (ACHRF)														
INLET AIR TEMP °F	130	No Rating	No Rating	No Rating	No Rating	No Rating	No Rating	No Rating	No Rating	No Rating	No Rating	No Rating	No Rating	No Rating
	120	No Rating	No Rating	No Rating	No Rating	No Rating	No Rating	No Rating	No Rating	No Rating	No Rating	No Rating	No Rating	No Rating
	110	No Rating	No Rating	No Rating	No Rating	No Rating	No Rating	No Rating	No Rating	No Rating	No Rating	No Rating	No Rating	No Rating
	100	1.12	1.17	1.21	1.26	1.31	1.35	No Rating	No Rating	No Rating	No Rating	No Rating	No Rating	No Rating
	90	1.06	1.10	1.15	1.19	1.24	1.28	1.28	1.28	1.28	No Rating	No Rating	No Rating	No Rating
	80	1	1.04	1.08	1.13	1.17	1.22	1.22	1.22	1.22	1.22	1.22	No Rating	No Rating
	70	1	1	1.02	1.06	1.11	1.15	1.15	1.15	1.15	1.15	1.15	1.15	No Rating
	60	1	1	1	1	1.04	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08
	50	1	1	1	1	1	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
			0	1000	2000	3000	4000	5000	6000	7000	8000	9000	10000	11000
ALTITUDE (FEET ABOVE SEA LEVEL)														

FUEL USAGE GUIDE:

This table shows the derate factor and full load set point timing required for a given fuel. Note that deration and set point timing reduction may be required as the methane number decreases. Methane number is a scale to measure detonation characteristics of various fuels. The methane number of a fuel is determined by using the Caterpillar methane number calculation program.

ALTITUDE DERATION FACTORS:

This table shows the deration required for various air inlet temperatures and altitudes. Use this information along with the fuel usage guide chart to help determine actual engine power for your site.

ACTUAL ENGINE RATING:

To determine the actual rating of the engine at site conditions, one must consider separately, limitations due to fuel characteristics and air system limitations. The Fuel Usage Guide deration establishes fuel limitations. The Altitude/Temperature deration factors and RPC (reference the Caterpillar Methane Program) establish air system limitations. RPC comes into play when the Altitude/Temperature deration is less than 1.0 (100%). Under this condition, add the two factors together. When the site conditions do not require an Altitude/Temperature derate (factor is 1.0), it is assumed the turbocharger has sufficient capability to overcome the low fuel relative power, and RPC is ignored. To determine the actual power available, take the lowest rating between 1) and 2).

AFTERCOOLER HEAT REJECTION FACTORS(ACHRF):

To maintain a constant air inlet manifold temperature, as the inlet air temperature goes up, so must the heat rejection. As altitude increases, the turbocharger must work harder to overcome the lower atmospheric pressure. This increases the amount of heat that must be removed from the inlet air by the aftercooler. Use the aftercooler heat rejection factor (ACHRF) to adjust for inlet air temp and altitude conditions. See notes 28 and 29 for application of this factor in calculating the heat exchanger sizing criteria. Failure to properly account for these factors could result in detonation and cause the engine to shutdown or fail.

INLET AND EXHAUST RESTRICTIONS FOR ALTITUDE CAPABILITY:

The altitude derate chart is based on the maximum inlet and exhaust restrictions provided on page 1. Contact factory for restrictions over the specified values. Heavy Derates for higher restrictions will apply.

NOTES:

- Generator efficiencies, power factor, and voltage are based on standard generator. [Genset Power (ekW) is calculated as: (Engine Power (bkW) x Generator Efficiency) - Ancillary Load (ekW)], [Genset Power (kVA) is calculated as: ((Engine Power (bkW) x Generator Efficiency) - Ancillary Load (ekW))/ Power Factor]
- Rating is with two engine driven water pumps. Tolerance is (+)3, (-)0% of full load.
- ISO 3046/1 Genset efficiency tolerance is (+)0, (-)5% of full load % efficiency value based on a 1.0 power factor.
- Thermal Efficiency is calculated based on energy recovery from the jacket water, lube oil, 1st stage aftercooler, and exhaust to 248°F with engine operation at ISO 3046/1 Genset Efficiency, and assumes unburned fuel is converted in an oxidation catalyst.
- Total efficiency is calculated as: Genset Efficiency + Thermal Efficiency. Tolerance is ±10% of full load data.
- ISO 3046/1 Genset fuel consumption tolerance is (+)5, (-)0% of full load data. Nominal genset and engine fuel consumption tolerance is ± 2.5% of full load data.
- Air flow value is on a 'wet' basis. Flow is a nominal value with a tolerance of ± 5 %.
- Inlet manifold pressure is a nominal value with a tolerance of ± 5 %.
- Inlet manifold temperature is a nominal value with a tolerance of ± 9°F.
- Timing indicated is for use with the minimum fuel methane number specified. Consult the appropriate fuel usage guide for timing at other methane numbers.
- Exhaust temperature is a nominal value with a tolerance of (+)63°F, (-)54°F.
- Exhaust flow value is on a 'wet' basis. Flow is a nominal value with a tolerance of ± 6 %.
- Inlet and Exhaust Restrictions are maximum allowed values at the corresponding loads. Increasing restrictions beyond what is specified will result in a significant engine derate.
- Emissions data is at engine exhaust flange prior to any after treatment.
- NOx tolerances are ± 18% of specified value.
- CO, CO₂, THC, NMHC, NMNEHC, and HCHO values are "Not to Exceed" levels. THC, NMHC, and NMNEHC do not include aldehydes.
- VOCs - Volatile organic compounds as defined in US EPA 40 CFR 60, subpart JJJJ
- Exhaust Oxygen tolerance is ± 0.5; Lambda tolerance is ± 0.05. Lambda and Exhaust Oxygen level are the result of adjusting the engine to operate at the specified NOx level.
- LHV rate tolerance is ± 2.5%.
- Heat rejection to jacket water value displayed includes heat to jacket water alone. Value is based on treated water. Tolerance is ± 10% of full load data.
- Heat rejection to atmosphere based on treated water. Tolerance is ± 50% of full load data.
- Lube oil heat rate based on treated water. Tolerance is ± 20% of full load data.
- Exhaust heat rate based on treated water. Tolerance is ± 10% of full load data.
- Heat rejection to exhaust (LHV to 77°F) value shown includes unburned fuel and is not intended to be used for sizing or recovery calculations.
- Heat rejection to A/C - Stage 1 based on treated water. Tolerance is ±5% of full load data.
- Heat rejection to A/C - Stage 2 based on treated water. Tolerance is ±5% of full load data.
- Pump power includes engine driven jacket water and aftercooler water pumps. Engine brake power includes effects of pump power.
- Total Jacket Water Circuit heat rejection is calculated as: (JW x 1.1) + (OC x 1.2) + (1AC x 1.05) + [0.92 x (1AC + 2AC) x (ACHRF - 1) x 1.05]. Heat exchanger sizing criterion is maximum circuit heat rejection at site conditions, with applied tolerances. A cooling system safety factor may be multiplied by the total circuit heat rejection to provide additional margin.
- Total Second Stage Aftercooler Circuit heat rejection is calculated as: (2AC x 1.05) + [(1AC + 2AC) x 0.08 x (ACHRF - 1) x 1.05]. Heat exchanger sizing criterion is maximum circuit heat rejection at site conditions, with applied tolerances. A cooling system safety factor may be multiplied by the total circuit heat rejection to provide additional margin.

FREE FIELD MECHANICAL & EXHAUST NOISE

MECHANICAL: Sound Power (1/3 Octave Frequencies)

Gen Power Without Fan	Percent Load	Engine Power	Overall	100 Hz	125 Hz	160 Hz	200 Hz	250 Hz	315 Hz	400 Hz	500 Hz	630 Hz	800 Hz
ekW	%	bhp	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)
1475	100	2175	113.7	79.3	79.9	85.7	87.8	91.8	92.2	95.2	99.6	98.2	98.1
1106	75	1660	111.0	77.5	77.0	83.6	85.7	88.4	89.5	92.2	97.7	96.6	97.0
737	50	1150	109.5	75.4	75.3	80.9	83.1	86.1	87.8	90.7	96.4	96.0	96.1

MECHANICAL: Sound Power (1/3 Octave Frequencies)

Gen Power Without Fan	Percent Load	Engine Power	1 kHz	1.25 kHz	1.6 kHz	2 kHz	2.5 kHz	3.15 kHz	4 kHz	5 kHz	6.3 kHz	8 kHz	10 kHz
ekW	%	bhp	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)
1475	100	2175	102.4	101.3	101.4	100.3	100.7	99.4	99.4	99.8	101.7	110.1	96.4
1106	75	1660	101.1	100.8	99.7	98.9	99.6	98.1	98.3	99.0	103.5	97.9	93.9
737	50	1150	100.4	100.1	98.8	98.2	99.0	97.4	97.1	99.2	97.6	93.8	93.4

EXHAUST: Sound Power (1/3 Octave Frequencies)

Gen Power Without Fan	Percent Load	Engine Power	Overall	100 Hz	125 Hz	160 Hz	200 Hz	250 Hz	315 Hz	400 Hz	500 Hz	630 Hz	800 Hz
ekW	%	bhp	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)
1475	100	2175	127.3	114.9	117.7	117.8	115.8	111.1	107.7	113.9	117.2	106.2	108.9
1106	75	1660	125.7	114.1	117.3	117.0	115.8	109.0	107.6	111.4	114.5	104.5	107.2
737	50	1150	123.8	114.6	117.3	114.5	113.2	107.0	106.7	108.2	110.8	103.0	105.4

EXHAUST: Sound Power (1/3 Octave Frequencies)

Gen Power Without Fan	Percent Load	Engine Power	1 kHz	1.25 kHz	1.6 kHz	2 kHz	2.5 kHz	3.15 kHz	4 kHz	5 kHz	6.3 kHz	8 kHz	10 kHz
ekW	%	bhp	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)
1475	100	2175	100.7	107.7	107.5	108.8	111.2	113.5	113.9	115.4	115.1	116.0	114.0
1106	75	1660	99.0	105.6	104.8	106.2	109.6	111.8	112.4	113.4	114.2	113.4	109.8
737	50	1150	98.7	101.9	102.3	105.1	108.0	109.5	109.5	110.3	110.9	109.4	105.9

SOUND PARAMETER DEFINITION:

Sound Power Level Data - DM8702-02

Sound power is defined as the total sound energy emanating from a source irrespective of direction or distance. Sound power level data is presented under two index headings:
 Sound power level -- Mechanical
 Sound power level -- Exhaust

Mechanical: Sound power level data is calculated in accordance with ISO 6798. The data is recorded with the exhaust sound source isolated.

Exhaust: Sound power level data is calculated in accordance with ISO 6798 Annex A. Exhaust data is post-catalyst on gas engine ratings labeled as "Integrated Catalyst".

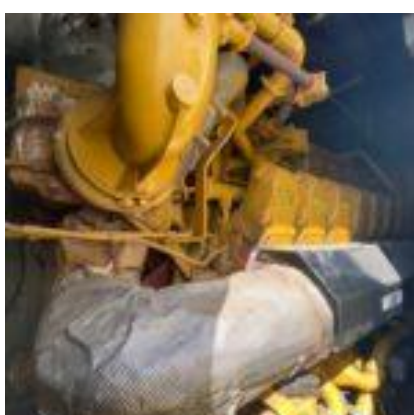
Measurements made in accordance with ISO 6798 for engine and exhaust sound level only. No cooling system noise is included unless specifically indicated. Sound level data is indicative of noise levels recorded on one engine sample in a survey grade 3 environment.

How an engine is packaged, installed and the site acoustical environment will affect the site specific sound levels. For site specific sound level guarantees, sound data collection needs to be done on-site or under similar conditions.



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GENERATOR INSPECTION CHECK LIST

Date: _____ Serial #: _____

Work Ticket #: _____ Make: _____

Model: _____ Hours: _____

Generator Inspection Checklist	Initial
--------------------------------	---------

1	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA	Check block heater for proper operation	
2	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA	Check coolant level	
3	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA	Check coolant freeze point and molybdate / nitrite	
4	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA	Visual inspection of cooling system for leaks	
5	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA	Inspect coolant hoses and replace any cracked or brittle	
6	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA	Inspect belts and replace any cracked or brittle	
7	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA	Change coolant filters, date and hours on filters	
8	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA	Check battery charger for proper operation	
9	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA	Check engine alternator for proper operation	
10	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA	Test batteries, replace and date if new are installed	
11	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA	Clean and apply battery terminal protection	
12	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA	Drain and replace engine oil and filters, date and hours on filters	
13	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA	Visual inspection for engine oil leaks	
14	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA	Replace all fuel filters, date and hours on filters	
15	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA	Inspect fuel lines and replace any cracked or brittle	
16	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA	Visual inspection for fuel leaks	
17	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA	Check fuel tank for cleanliness and fuel condition	
18	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA	Replace engine air filter, date and hours on filter	
19	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA	Visual inspection of engine air intake hoses and piping	
20	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA	Check intake and exhaust louvers for proper operation	
21	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA	Visual inspection of engine exhaust system for leaks	
22	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA	Check exhaust rain cap for proper operation	
23	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA	Check main circuit breaker for proper operation	
24	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA	Visual inspection of wiring harnesses and enclosures	
25	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> NA	Verify engine and generator metering are functioning and accurate	

Notes: _____

Standard Engine Load Test Procedures

Make 100% sure you are clocked into the correct work ticket.

Keep work ticket notes up to date – what have you done to the unit, problems, etc. Keep the work ticket clean and write neatly as this may go to the customer in some cases.

Inspect and make any needed repairs.

- Remove cutoff wiring and inspect entire unit for defects. Repair as needed.
- Open every connection box to check for cut wiring, rodent nests and wasp nests.
- Test engine coolant using coolant test strips and note Measures Freeze Point and Molybdate / Nitrite
- Test battery charger if equipped.
- Test block heaters if equipped.
- If an engine service is required or other parts are needed, order parts so they are ready after load test.

Load Test

- Run unit for 5 minutes with no load, check for leaks and general operating condition. Repair as needed.
- Load test at full load for one hour.
- Block load to maximum capacity and note kW.
- Record readings per our load test form.
- Record short video under full load showing metering and overall view of the unit.

Service

- Service as noted on the work ticket.
- Label all new filters with date changed and engine hours.
- Test batteries and replace as needed.
- Clean battery terminals and coat with anti-corrosive spray. Replace damaged cable terminals.
- Inspect cooling system – belts, hoses, radiator cap, etc. Replace as needed.
- If a mobile unit, test all signal lights and brakes. Repair as needed.

