

**Ring Power®**



**Ring Power Corporation**  
500 World Commerce Parkway  
St. Augustine, FL 32092

Prepared For:  
Florida Sheriff's Association

8/5/2020

**Item #136: (1) NEW CATERPILLAR 500 KW MOBILE GENERATOR**

**CONTRACT DETAILS**

Florida Sheriff's Association  
Bid # FSA20-EQU18.0  
Item #136: Group: GENERATOR: 500kW Mobile Generator Package  
Contract Dates: October 1, 2020 Through September 30, 2023

1. GENERATOR REQUIREMENTS a. Standby duty rated at 500kwe, 625kva, 0.8 power factor. b. Prime power duty rating 450kwe, 563kva, 0.8 power factor. c. Main Breaker shall be equipped with shunt trip. d. Generator end shall be Direct coupled to the engine flywheel with a flexible coupling. e. Generator shall meet performance class G3 of IEC. 2. ENGINE a. 6 cylinder, water cooled, 1800rpm, diesel engine. b. Current emission compliant diesel engine. c. Spin on fuel and oil filters. d. Jacket water heater with service valves to ensure coolant does not need to be drained if heater needs service. e. 120vac, 1ph, 60hz input 10 amp, 24vdc, output automatic battery charger. f. Standard 4D lead acid batteries with battery rack and cables. 3. VOLTAGE CHANGE OVER SWITCH AND DISTRIBUTION a. Manual 2 position voltage change over switch to select each voltage as specified when the unit is not running b. 3ph 120/208, and 3ph 277/480 c. Load leads shall be attached to the generator using two (2) forms and shall be rated for 2000 amps. Generator will be equipped with both: c-1. Five (5) compression lugs per phase rated for 400 amps each d. A 20 amp, 120vac, 1ph, male receptacle shall be provided to power the jacket water heater. e. A 20 amp, 120vac, 1ph, male receptacle shall be provided to power the battery charger. f. Two thumb screw type connection points shall be provided for remote auto start. 4. CONTROLS a. Solid state, microprocessor based generator controls b. Controls shall provide all operating, monitoring and control functions for the generator set. Controls shall provide for auto start/stop functions. c. An emergency stop push button will be installed. d. A voltage adjustment shall be provided in the panel to adjust voltage in all voltage positions. e. A switch shall be provided in the panel to turn all power off in the panel if not being used. f. A front face mounted circuit breaker shall be provided to protect the panel from any D.C. spikes. 5. ENCLOSURE a. Complete diesel engine generator set including control panel, engine starting batteries and fuel tank shall be enclosed in a factory assembled weather protective, sound attenuated enclosure. The sound attenuated enclosure noise level is not to exceed 80 dba @ 21 feet. b. Enclosure shall be constructed from aluminum, preferably out of .125 thickness and 5058 marine grade aluminum. c. Oil and water drain lines shall be provided and extend to the enclosure wall with brass ball valves for easy service. d. Critical grade silencer (25db reduction). e. Companion flanges. f. Flexible exhaust-flex. g. Keyed-alike lockable doors. 6. IN BASE FUEL TANK TRAILER a. Trailer shall be DOT approved with proper serial number data plate indicating weight capacity minimum of 20,000lbs. b. Trailer will have dual axles with torque springs to reduce overall height of package. c. Standard 7 pin vehicle wiring connector to be supplied. d. Trailer will have two rear level jacks with sand shoes and front leveling jack. e. Trailer will have hydraulic brakes. f. Trailer will have all necessary safety equipment to include, but not be limited to, an adjustable and removable pintle hitch, 36 inch safety chains, fenders, lights per DOT, and break away cable. g. Tires will be minimum load range type "D" (8 ply rating) with matching steel rims. Rims are to be finish painted. h. Minimum 8 hour capacity at 75% load rating to determine single wall tank size. i. A mechanical fuel gauge will be provided. j. Locking fuel cap. k. Low fuel level alarm. l. All necessary vents and caps will be provided along with suction, return, and drain points. 7. BATTERY CHARGER a. Battery will be installed in holding container with battery cables. b. Current limiting battery charger to automatically charge batteries.

- c. Charger shall be dual charge rate with automatic switching to boost rate when required.
  - d. Charger mounted inside generator set package.
  - e. Fully charged battery will be provided at time of delivery and start-up.
  - f. 120 volt shore power connector for battery charger.
  - 8. START UP AND COMMISSIONING
    - a. One (1) day start-up including operational test of equipment showing proper connection of cables with safety issues performed by a factory trained technician. The start up technician will instruct personnel how to operate and maintain the equipment in accordance with the manufacturer's requirements.
  - 9. CONDITIONS
    - a. In addition to equipment specified, each generator shall be equipped with all standard equipment as specified by the manufacturer for this model and shall include, but not be limited to, the following items:
    - b. All product shall be new and of current design.
    - c. Initial filling of oil and antifreeze (diesel fuel by others).
    - d. During start-up, the technician shall record the following information and provide to owner for his records:
      - i. Operating Voltage, Hertz, Phase, and connected load (Amperage-if any).
      - ii. Written Information consisting of make, model, serial number, and start-up date.
      - iii. Record Engine and Generator Serial numbers.
    - e. One complete set of operation and maintenance manuals.
    - f. Two (2) years or 1000 hours standard mobile generator warranty will apply, whichever occurs first. Generator to be transported to authorized servicing dealer for warranty repair during normal business hours.
  - 10. TRAILER
    - a. The trailer must have a vin and a certificate of origin.
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#### BASE MACHINE

PRIMEPA_I	PRIME POWER
CERTF4F_I	EPA/CARB TIER 4F EMISSION CERT
KW00455_I	60 Hz, 455 kW W/Fan PRIME
C18DQ02_I	XQ570 480 60 HZ PGS
STDALT_I	STANDARD ALTERNATOR
EMCP44_I	EMCP4.4 CONTROL PANEL
MWCODEF_I	STANDBY POWER
3POLE_I	3POLE CB
STDTRL_I	STANDARD TRAILER
Enclosure	Power Module White Sound Attenuated
STDRAD_I	STANDARD RADIATOR
STDMUFF_I	STANDARD MUFFLER
CEM0005_I	CLEAN EMISSIONS MOD INSTALLED
STDIVR_I	INTEGRATED VOLTAGE REGULATOR
B1W_I	WET BATTERY (B1W)
STDBTC_I	STANDARD BATTERY CHARGER
STDTEST_	STANDARD TEST REPORT
PETU003_I	PUMP ELECT UNIT INSTALLED
XQ570BG	XQ570BG TIER 4 FINAL
3611818	CERTIFICATION AR
PP7129	779 BHP 500 GEN KW W/F 60 HZ STANDBY

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Standby 500 kW  
Prime 455 kW  
60 Hz 1800 rpm 480V

Image shown may not reflect actual configuration

## Specifications

Frequency	Voltage	Standby kW (kVA)	Prime kW (kVA)	Speed rpm
<b>480V 60 Hz Rating</b>				
60 Hz	480/277V	500 (625)	455 (568)	1800
60 Hz	240/139V	500 (625)	455 (568)	1800
60 Hz	208/120V	500 (625)	455 (568)	1800
<b>600V 60 Hz Rating</b>				
60 Hz	600V	500 (625)	455 (568)	1800
60 Hz	480V	400 (500)	365 (456)	1800

Cat® C18 ACERT™ Diesel Engine	Metric	Imperial (English)
Configuration	I-6, 4-Stroke-Cycle Water Cooled Diesel	
Bore	145 mm	5.7 in
Stroke	183 mm	7.2 in
Displacement	18.1 L	1106.4 in <sup>3</sup>
Aspiration	Turbocharged-Aftercooled	
Compression Ratio	14.5:1	
Engine rpm	1800	
Fuel System	MEUI	
Governor Type	ADEM™ A4	
Fuel	Requires Ultra Low Sulfur Diesel (ULSD)	

## Benefits & Features

### Fuel/Emissions Strategy

- Meets U.S. EPA Tier 4 Final emission standards and CARB certified for non-road mobile applications at all 60 Hz ratings

### Design Criteria

- Meets ISO 8528 transient response
- Canadian Standards Association (CSA) Certified

### Single-source Supplier

- Package is factory designed and production tested
- Manufactured in ISO 9001:2000 facility

### Cat C18 ACERT Diesel Engine

- Uses ACERT Technology
- Reliable, rugged, durable design
- Four-stroke diesel engine combines consistent performance and excellent fuel economy with minimum weight
- Electronic ADEM A4 engine control

### Cat Clean Emissions Module (CEM)

- Aftertreatment module consists of Caterpillar Regeneration System (CRS), Diesel Oxidation Catalyst (DOC), Diesel Particulate Filter (DPF), and Selective Catalytic Reduction (SCR)

### Diesel Exhaust Fluid (DEF) Tank

- 25 gallon DEF tank with on-tank fill and integrated pump, level sensor and heating elements
- Electrically heated DEF lines from DEF tank to CEM

### Cat Generator

- Matched to the performance and output characteristics of Cat engines
- Single point access to accessory connections
- UL 1446 Recognized Class H insulation

### Cat EMCP 4.4 Control Panel

- Fully featured power metering, protective relaying engine/generator control and monitoring
- Simple user-friendly interface and navigation
- Automatic set-point adjustment integrated with voltage and frequency selection

### Cat Integrated Voltage Regulator (Cat IVR)

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

### Sound Attenuated Container

- Provides ease of transportation and protection
- Sound levels are 74 dB(A) or less at 7 meters per SAE J1074 measured at 75% prime load

### Reduced Environmental Impact

- 110% spill containment of onboard engine fluids
- Variable speed cooling fan for reduced fuel consumption and reduced sound at partial loads

### Asset Monitoring and Management (Available 3Q2016)

- Product Link™ Generation (PLG) hardware provides two-way communication for remote control and equipment monitoring via cellular network
- Customer-defined, equipment-based, real-time status updates and alerts
- Flexible and customer-configurable user interface
- GPS provides asset location and geo-fencing

## Factory-installed Standard Equipment

- Cat C18 ACERT heavy-duty diesel engine meets Tier 4 Final emission standards

### Air Inlet

- Heavy-duty air cleaner with precleaner, two-stage cyclonic paper with dust cup and service indicator
- Turbocharger and air-to-air aftercooler

### Cat CEM

- CEM comes with integrated CRS, DOC, DPf, and SCR and is located in separate compartment

### DEF System

- 25 gal plastic DEF tank provides capacity to meet or exceed fuel tank runtime @ 75% prime
- DEF tank is equipped with integrated pump, level sensor to display the DEF level in EMCP panel, and electrically heated lines from DEF tank to CEM
- Equipped with low and critically low level alarms with a critically low shutdown

### Fuel System

- 700 gal (2650 L) double-wall fuel tank, UL 142 and ULC 601 Listed and complies with Transport Canada requirements, 27-hour runtime @ 75% prime, internal fuel fill
- Fuel cooler
- Switch operated, electric priming pump
- Auxiliary connections for customer-supplied fuel transfer system with 2-way fuel transfer valve
- Primary fuel filters (2) with integral water separator and differential pressure gauge
- Engine-mounted secondary fuel filters

### Generator

- Three-phase, random wound, coastal insulation protection, 0.6667 pitch, permanent magnet excited, Class H insulation with Class F temperature rise
- Includes anti-condensation heaters (120V, 1.2 kW)
- 12-lead design, with voltage changeover link board (480V)
- 6-lead design, (600V)
- Cat IVR with VAR/PF control

### Charging System

- UL Listed and CSA Certified 120V, 20 amp battery charger, shock-mounted and enclosed in dust-proof housing
- Charging alternator; 24V-100A, heavy duty with integral regulator and belt guards
- Solar maintainer for batteries

### Lube System

- Pump, integral oil cooler, lube oil, filter, filler and dipstick, and oil sampling valve
- Open crankcase breather with cartridge filter
- Oil drain line with internal brass ball valve routed to connection point accessible from exterior
- 500-hour oil change intervals

### Mounting System

- Generator set soft mounted to the heavy duty, fabricated steel base frame
- Steel base frame with tie-down eyes contains integral fuel tank

### Starting System

- Single electric starting motor, 24V
- Dual 12V (1400 CCA) maintenance-free batteries with disconnect switch, battery rack, and cables
- UL Listed, 120V single-phase jacket water heater with thermostat and shut-off valves

## Factory-installed Standard Equipment (continued)

### Containerized Module

- 20' ISO standard cube container
- Sound attenuated air intake louvers and two lockable personnel doors with panic release
- Interior walls and ceilings insulated with 100 mm of acoustic paneling
- Floor of container insulated with acoustic glass and covered with galvanized steel
- Side bus bar access door, external access load connection bus bars
- Shore power connection via distribution block connections for jacket water heater, battery charger, space heaters, generator condensate heaters, and internal duplex service receptacle
- Customer convenience panel with multiple receptacles
- External Emergency Stop pushbuttons (2)
- Duplex service receptacle (1), 120V, connected to shore power with automatic switchover to generator power
- Two internal DC lights with one timer
- Corrosion resistant hardware and hinges
- Cat Rental Power decals
- Painted standard Cat power module white
- External drain access to coolant, oil, and DEF fluids
- Auxiliary connections for customer-supplied fuel transfer system

### Shore Power

- One 110V shore power connection for jacket water heater
- One 110V shore power connection for generator space heater, battery charger, and single duplex service receptacle
- Includes controls to de-energize jacket water heaters and generator space heater when the engine is running

### Cooling

- Provides 43°C ambient capability
- Vertically mounted radiator with vertical air discharge from the container
- Coolant drain line with internal valve and low-level shutdown switch
- Coolant sight gauge and low-level shutdown switch
- 50/50 Extended Life Coolant

### Generator Set Controls and Protection

- EMCP 4.4 generator set mounted controller
- Automatic start/stop with cooldown timer
- Generator features: 32, 32RV, 46, 50/51, 27/59, 81 O/U
- Utility Multi-function Relay (UMR) protective features: 24, 25, 27, 27G, 32, 40, 43, 46, 47, 50, 51, 51N, 59, 59G, 60FL, 67, 79, 81O/U with 4 programmable relay inputs and 5 programmable relay outputs (optional)
- Reverse compatible for interface to legacy power modules
- 2000A electrically operated generator circuit breaker
- Multi-mode operation (island, multi-island and utility parallel (with optional UMR), load sharing (multi-unit only)
- Manual and automatic paralleling capability
- Metering display: voltage, current, frequency, power factor, kW, WHM, kVAR, and synchroscope

### Trailer

- Two-axle, air-rid chassis with anti-lock brake system

### Quality

- Factory testing of standard generator set and complete power module
- UL, NEMA, ISO, and IEEE standards
- O&M manuals
- CSA Certified
- Full manufacturer's warranty

## Technical Data

Cat Generator	
Frame size	LC6134G
Pitch	0.6667
No. of poles	4
Excitation	Static regulated brushless PM excited
Number of bearings	Single bearing, close coupled
Insulation	Class H
Enclosure	Drip proof IP23
Alignment	Pilot shaft
Overspeed capability – % of rated	125% of rated
Voltage regulator	3-phase sensing with volts-per-hertz
Voltage regulation (adjustable to compensate for engine speed droop and line loss)	Less than $\pm 12\%$ voltage gain
Wave form deviation	3%
Telephone Influence Factor (TIF)	Less than 50
Harmonic Distortion (THD)	Less than 5%

Cat Generator Set			
	Units	60 Hz — Standby	60 Hz — Prime
<b>Power Rating</b>	<b>kW (kVA)</b>	<b>500 (625)</b>	<b>455 (568)</b>
<b>Performance Specification</b>			
<b>Lubricating System</b>			
Oil pan capacity	L (gal)	74 (19.5)	74 (19.5)
<b>Fuel System</b>			
Fuel consumption — 100% Load	L/hr (gal/hr)	136 (35.9)	126 (33.2)
75% Load	L/hr (gal/hr)	107 (28.3)	99 (26.2)
50% Load	L/hr (gal/hr)	78 (20.5)	72 (19)
Fuel tank capacity	L (gal)	2650 (700)	2650 (700)
Running time @ 75% rating	Hr	24	27
<b>Cooling System</b>			
Ambient capability	°C (°F)	43 (109)	48 (118)
Engine & radiator coolant capacity	L (gal)	100.7 (26.6)	100.7 (26.6)
Engine coolant capacity	L (gal)	26.9 (7.1)	26.9 (7.1)
<b>Air Requirements</b>			
Combustion air flow	m³/min (cfm)	35.2 (1243)	34.6 (1223)
Max dirty air cleaner restriction	kPa (in H <sub>2</sub> O)	6.2 (24.9)	6.2 (24.9)
<b>Exhaust System</b>			
Exhaust flow at rated	m³/min (cfm)	90.2 (3185)	86.7 (3063)
Exhaust temp at rated kW – dry exhaust	°C (°F)	490 (914)	472 (882)
<b>Noise Rating (with enclosure)*</b>			
@ 7 meters (23 feet) @ 75% rating	dB(A)	74	74

\*Noise level stated at maximum ambient capability. Sound level decreases with ambient temperature due to variable speed fan drive. Contact the factory for sound levels at other ratings and distances.

## Technical Data (continued)

XQ570 — Dimensions			
	Length mm (in)	Width mm (in)	Height mm (in)
Without chassis	6096 (240)	2438 (96)	2591 (102)
With chassis	7182 (282)	2438 (96)	3810 (150)

XQ570 — Weight	
	Weight— kg (lb)
Generator Set with Lube oil and coolant – <u>no Fuel, no DEF, no Chassis</u>	11,021 (24,450)
Generator Set with Lube oil, full fuel and full DEF – <u>No Chassis</u>	13,622 (30,121)
Air ride chassis and ladder boxes – <u>weight addition</u>	3,379 (7,450)

## Standard Features

### EMCP 4.4 Local Control Panel

- Generator-mounted EMCP 4.4 provides power metering, protective relaying, and engine and generator control and monitoring.
- NEMA 12, IP44 dust-proof enclosure
- Convenient service access for Cat service tools (service tools not included)
- Integration with the Cat IVR provides enhanced system monitoring
- Ability to view and reset diagnostics of all controls networked on primary CAN data link eliminates need for separate service tools for troubleshooting.
- True RMS AC metering, 3 phase

### EMCP 4.4 Engine Operator Interface

- Controls
  - Run/auto/stop
  - Speed adjust
  - Voltage adjust
- Engine monitoring
  - rpm
  - Operating hours
  - Coolant temperature
- Emergency stop
- Cycle crank
- Cool-down timer
- DC volts
- Oil pressure
- Oil temperature

- Generator monitoring
  - L-L volts, L-N volts, phase amps
  - Average volts, amps, frequency
  - ekW, kVA, kVAR, kW-hr, %kW
  - Power factor (average, phase)
  - kW-hr, kVA-hr (total)
- Shutdowns with common indicating light for
  - Low oil pressure
  - High coolant temp
  - Failure to start (overcrank)
  - Low coolant level
  - Overspeed
  - High oil temp
  - Emergency stop
- Emergency stop pushbutton
- Panel illuminating lights
- Display navigation keys including two shortcut keys for engine parameters or generator parameters
- Fuel level monitoring and control

### EMCP 4.4 Generator Protective Relaying

- Generator protective features provided by EMCP 4.4
  - Phase over/under voltage (device 27/59)
  - Over/under frequency (device 81 O/U)
  - Reverse power (device 32/32RV)
  - Current balance (46)
  - Overcurrent (device 50/51) (GCB trip unit)
  - Loss of excitation (device 40) (Cat DVR)
  - Generator phase sequence

## Standard Features (continued)

### Voltage Regulation and Power Factor Control Circuitry

- Manual raise/lower voltage adjust capability and VAR/power factor control circuitry for maintaining constant generator power factor while paralleled with the utility. Voltage and power factor adjustments are performed on the generator paralleling control
- Includes RFI suppression, exciter limiter, and exciter diode monitoring

### Circuit Breaker

- 2000A fixed type, 3 poles, generator set mounted, electrically operated, insulated case
- Solid state trip unit for overload (time overcurrent) and fault (instantaneous) overcurrent protection
- Includes DC shunt trip coil activated on any monitored engine or electrical fault, 100 KA-interrupting capacity at 480 VAC
- Undervoltage release

### Distribution

- 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

- Customer convenience panel with multiple output receptacles
  - 1 – 240V, 50A twist lock
  - 1 – 240V, 20A twist lock
  - 2 – 120V, 20A twist lock
  - 2 – 120V, 20A ground fault interrupters
  - 2 – 120V, 15A GFCI protected duplex receptacles
- CTs rated 2000:5

### Link Board Assembly (480V Only)

- Link board for 208/240/400/480 wye operation
- Reconnection via movable link board
- Includes switch to determine operation mode

### UMR (Optional)

- Basler UMR IPS-100 provides the following utility/intertie protection features:
  - Synch check (device 25)
  - Phase undervoltage, 2-stage (device 27)
  - Reverse power (device 32)
  - Negative sequence overvoltage (device 47)
  - Phase time overcurrent (device 51)
  - Neutral overcurrent (device 51N)
  - Phase overvoltage, 2-stage (device 59)
  - Under frequency, 2-stage (device 81U)
  - Over frequency (device 81O)
- Potential transformers 4:1 ratio with primary and secondary fuse protection
- CTs rated 1200:5 wired to shorting terminal strips

## Modes of Operation

- Provides for single unit standalone 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:
  - Lead unit select control allows single unit to connect to a dead bus or Hard Wired Dead Bus Arbitration (HWDBA) to allow first unit up to voltage and speed to be first unit to connect to a dead bus
  - Auto synchronization (voltage and phase matching)
  - Load sharing (kW) analog signal (like units and legacy compatible)
  - Load sharing (kVAR) analog signal (like units only)
- Utility mode paralleling features:
  - Auto synchronization (voltage and phase matching)
  - Base-load control (programmable set-point or potentiometer adjust)
  - Soft load/unload (programmable, shared set-point)
  - Power factor control (programmable set-point)

### Single Unit Standalone and Multi-unit Island Operation

- Utility standby mode (normal)
  - The utility is providing power for the plant loads
  - The PM generator breaker is open
  - The PM is in automatic standby mode to respond to a utility failure
- Emergency mode (emergency)
  - Utility failure
    - a. The customer protective relaying senses a utility abnormal condition

- b. A run request is sent to the PM generator plant
- c. The first PM generator to reach rated voltage and frequency is closed to the bus
- d. In multi-unit island mode, the remaining PM generators are paralleled to the bus as they reach rated voltage and frequency. This function is performed via the lead unit select jumper and interconnect wiring connected between the power modules.
- e. Plant load is transferred to the power modules, which share load equally via load share lines.

### Single Unit Base Load Operation

- Utility mode (normal)
  - The utility is providing power for the plant loads
  - The PM is in auto mode and the generator breaker is open
  - The PM is interconnected to the utility breaker aux contact, lead unit jumper is not installed and load share lines are not connected
  - The paralleling controls automatically detect utility parallel mode when the utility aux contact is closed
- Base load mode
  - Unit receives remote run request and starts
  - Unit reaches rated voltage and frequency
  - UMR performs sync-check to permit generator breaker to close
  - Unit ramps to base-load set point at programmed ramp time
  - Unit continues to run until remote run request is removed or unit is stopped at control panel

## Ratings Definitions and Conditions

**Meets or Exceeds International Specifications:** AS1359, CSA, IEC60034-1, ISO3046, ISO8528, NEMA MG 1-33.

**Prime** — Output available with varying load for an unlimited time. Average power output is 70% of the prime power rating. Typical peak demand is 100% of prime rated kW with 10% overload capability for emergency use for a maximum of 1 hour in 12. Overload operation cannot exceed 25 hours per year. Prime power in accordance with ISO3046. Prime ambients shown indicate ambient temperature at 100% load which results in a coolant top tank temperature below the alarm temperature.

**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.

**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 838.9 g/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.

**BUILT FOR IT.™**

LEHX0028-03 (8-18)

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Effective with sales to the first user on or after August 1, 2018

# CATERPILLAR LIMITED WARRANTY

## Industrial, Petroleum, Locomotive, and Agriculture Engine Products and Electric Power Generation Products

### Worldwide

Caterpillar Inc. or any of its subsidiaries ("Caterpillar") warrants new and remanufactured engines and new and rebuild electric power generation products sold by it (including any products of other manufacturers packaged and sold by Caterpillar), to be free from defects in material and workmanship.

This warranty does not apply engines sold for use in on-highway vehicle or marine applications; engines in machines manufactured by or for Caterpillar; C175, 3500 and 3600 series engines used in locomotive applications; 3000 Family engines, C0.5 through C4.4 and ACERT™ (C6.6, C7, C7.1, C9, C9.3, C11, C13, C15, C18, C27, and C32) engines used in industrial, mobile agriculture and locomotive applications; or Cat<sup>®</sup> batteries; or Electric Power Generation Products manufactured or assembled in India. These products are covered by other Caterpillar warranties.

This warranty is subject to the following:

#### Warranty Period

- For industrial engines, engines in a petroleum applications or Petroleum Power Systems (excluding petroleum fire pump application), or engines in a Locomotive application, or Uninterruptible Power Supply (UPS) systems, the warranty period is 12 months after date of delivery to the first user.
- For engines used in petroleum fire pump and mobile agriculture applications the warranty period is 24 months after date of delivery to the first user.
- For controls only (EPIC), configurable and custom switchgear products, and automatic transfer switch products, the warranty period is 24 months after date of delivery to the first user.
- For new CG132, CG170 and CG260 series power generation products the warranty period is 24 months after date of delivery to first user, but not to exceed 36 months from shipment from the Caterpillar place of manufacture.
- For electric power generation products other than CG132, CG170 and CG260 series in prime or continuous applications the warranty period is 12 months. For standby applications the warranty period is 24 months/1000 hours. For emergency standby applications the warranty period is 24 months/400 hours. All terms begin after date of delivery to the first user.
- For Caterpillar rebuild electric power generation products the warranty period is 12 months, but not to exceed 24 months from shipment of rebuilt electric power generation product from Caterpillar.
- For all other applications the warranty period is 12 months after date of delivery to the first user.

#### Caterpillar Responsibilities

If a defect in material or workmanship is found during the warranty period, Caterpillar will, during normal working hours and at a place of business of a Cat dealer or other source approved by Caterpillar:

- Provide (at Caterpillar's choice) new, Remanufactured, or Caterpillar approved repaired parts or assembled components needed to correct the defect.
- Note:** New, remanufactured, or Caterpillar approved repaired parts or assembled components provided under the terms of this warranty are warranted for the remainder of the warranty period applicable to the product in which installed as if such parts were original components of that product. Items replaced under this warranty become the property of Caterpillar.
- Replace lubricating oil, filters, coolant, and other service items made unusable by the defect.
- Provide reasonable and customary labor needed to correct the defect, including labor to disconnect the product from and reconnect the product to its attached equipment, mounting, and support systems, if required.

For new 3114, 3116, and 3126 engines and, new and Caterpillar rebuild electric power generation products (which includes the following: any new products of other manufacturers packaged and sold by Caterpillar)

- Provide travel labor, up to four hours round trip, if in the opinion of Caterpillar, the product cannot reasonably be transported to a place of business of a Cat dealer or other source approved by Caterpillar (travel labor in excess of four hours round trip, and any meals, mileage, lodging, etc. is the user's responsibility).

For all other products:

- Provide reasonable travel expenses for authorized mechanics, including meals, mileage, and lodging, when Caterpillar chooses to make the repair on-site.

#### User Responsibilities

The user is responsible for:

- Providing proof of the delivery date to the first user.
- Labor costs, except as stated under "Caterpillar Responsibilities," including costs beyond those required to disconnect the product from and reconnect the product to its attached equipment, mounting, and support systems.
- Travel or transporting costs, except as stated under "Caterpillar Responsibilities."

- Premium or overtime labor costs.
- Parts shipping charges in excess of those that are usual and customary.
- Local taxes, if applicable.
- Costs to investigate complaints, unless the problem is caused by a defect in Caterpillar material or workmanship.
- Giving timely notice of a warrantable failure and promptly making the product available for repair.
- Performance of the required maintenance (including use of proper fuel, oil, lubricants, and coolant) and items replaced due to normal wear and tear.
- Allowing Caterpillar access to all electronically stored data.

#### Limitations

Caterpillar is not responsible for:

- Failures resulting from any use or installation that Caterpillar judges improper.
- Failures resulting from attachments, accessory items, and parts not sold or approved by Caterpillar.
- Failures resulting from abuse, neglect, and/or improper repair.
- Failures resulting from user's delay in making the product available after being notified of a potential product problem.
- Failures resulting from unauthorized repairs or adjustments, and unauthorized fuel setting changes.
- Damage to parts, fixtures, housings, attachments, and accessory items that are not part of the engine, Cat Selective Catalytic Reduction System or electric power generation product (including any products of other manufacturers packaged and sold by Caterpillar).
- Repair of components sold by Caterpillar that is warranted directly to the user by their respective manufacturer. Depending on type of application, certain exclusions may apply. Consult your Cat dealer for more information.

(Continued on reverse side...)

This warranty covers every major component of the products. Claims under this warranty should be submitted to a place of business of a Cat dealer or other source approved by Caterpillar. For further information concerning either the location to submit claims or Caterpillar as the issuer of this warranty, write Caterpillar Inc., 100 N. E. Adams St., Peoria, IL USA 61629.

Caterpillar's obligations under this Limited Warranty are subject to, and shall not apply in contravention of, the laws, rules, regulations, directives, ordinances, orders, or statutes of the United States, or of any other applicable jurisdiction, without recourse or liability with respect to Caterpillar.

*A) For products operating outside of Australia, Fiji, Nauru, New Caledonia, New Zealand, Papua New Guinea, the Solomon Islands and Tahiti, the following is applicable:*

NEITHER THE FOREGOING EXPRESS WARRANTY NOR ANY OTHER WARRANTY BY CATERPILLAR, EXPRESS OR IMPLIED, IS APPLICABLE TO ANY ITEM CATERPILLAR SELLS THAT IS WARRANTED DIRECTLY TO THE USER BY ITS MANUFACTURER.

THIS WARRANTY IS EXPRESSLY IN LIEU OF ANY OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, EXCEPT CATERPILLAR EMISSION-RELATED COMPONENTS WARRANTIES FOR NEW ENGINES, WHERE APPLICABLE. REMEDIES UNDER THIS WARRANTY ARE LIMITED TO THE PROVISION OF MATERIAL AND SERVICES, AS SPECIFIED HEREIN.

CATERPILLAR IS NOT RESPONSIBLE FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES.

CATERPILLAR EXCLUDES ALL LIABILITY FOR OR ARISING FROM ANY NEGLIGENCE ON ITS PART OR ON THE PART OF ANY OF ITS EMPLOYEES, AGENTS OR REPRESENTATIVES IN RESPECT OF THE MANUFACTURE OR SUPPLY OF GOODS OR THE PROVISION OF SERVICES RELATING TO THE GOODS.

IF OTHERWISE APPLICABLE, THE VIENNA CONVENTION ON CONTRACTS FOR THE INTERNATIONAL SALE OF GOODS IS EXCLUDED IN ITS ENTIRETY.

For personal or family use engines or electric power generation products, operating in the USA, its territories and possessions, some states do not allow limitations on how long an implied warranty may last nor allow the exclusion or limitation of incidental or consequential damages. Therefore, the previously expressed exclusion may not apply to you. This warranty gives you specific legal rights and you may also have other rights, which vary by jurisdiction. To find the location of the nearest Cat dealer or other authorized repair facility, call (309) 675-1000. If you have questions concerning this warranty or its applications, call or write:

In USA and Canada: Caterpillar Inc, 100 N.E. Adams St., Peoria, IL USA 61629, Attention: Customer Service Manager, Telephone 1 (309) 675-1000, outside the USA and Canada: Contact your Cat dealer.

*B) For products operating in Australia, Fiji, Nauru, New Caledonia, New Zealand, Papua New Guinea, the Solomon Islands and Tahiti, the following is applicable:*

THIS WARRANTY IS IN ADDITION TO WARRANTIES AND CONDITIONS IMPLIED BY STATUTE AND OTHER STATUTORY RIGHTS AND OBLIGATIONS THAT BY ANY APPLICABLE LAW CANNOT BE EXCLUDED, RESTRICTED OR MODIFIED ("MANDATORY RIGHTS"). ALL OTHER WARRANTIES OR CONDITIONS, EXPRESS OR IMPLIED (BY STATUTE OR OTHERWISE), ARE EXCLUDED. WITHOUT LIMITING THE FOREGOING PROVISIONS OF THIS PARAGRAPH, WHERE A PRODUCT IS SUPPLIED FOR BUSINESS PURPOSES, THE CONSUMER GUARANTEES UNDER THE CONSUMER GUARANTEES ACT 1993 (NZ) WILL NOT APPLY.

NEITHER THIS WARRANTY NOR ANY OTHER CONDITION OR WARRANTY BY CATERPILLAR, EXPRESS OR IMPLIED (SUBJECT ONLY TO THE MANDATORY RIGHTS), IS APPLICABLE TO ANY ITEM CATERPILLAR SELLS THAT IS WARRANTED DIRECTLY TO THE USER BY ITS MANUFACTURER.

IF THE MANDATORY RIGHTS MAKE CATERPILLAR LIABLE IN CONNECTION WITH SERVICES OR GOODS, THEN TO THE EXTENT PERMITTED UNDER THE MANDATORY RIGHTS, THAT LIABILITY SHALL BE LIMITED AT CATERPILLAR'S OPTION TO (a) IN THE CASE OF SERVICES, THE SUPPLY OF THE SERVICES AGAIN OR THE PAYMENT OF THE COST OF HAVING THE SERVICES SUPPLIED AGAIN AND (b) IN THE CASE OF GOODS, THE REPAIR OR REPLACEMENT OF THE GOODS, THE SUPPLY OF EQUIVALENT GOODS, THE PAYMENT OF THE COST OF SUCH REPAIR OR REPLACEMENT OR THE ACQUISITION OF EQUIVALENT GOODS.

CATERPILLAR EXCLUDES ALL LIABILITY FOR OR ARISING FROM ANY NEGLIGENCE ON ITS PART OR ON THE PART OF ANY OF ITS EMPLOYEES, AGENTS OR REPRESENTATIVES IN RESPECT OF THE MANUFACTURE OR SUPPLY OF GOODS OR THE PROVISION OF SERVICES RELATING TO THE GOODS.

CATERPILLAR IS NOT LIABLE FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES UNLESS IMPOSED UNDER MANDATORY RIGHTS.

IF OTHERWISE APPLICABLE, THE VIENNA CONVENTION ON CONTRACTS FOR THE INTERNATIONAL SALE OF GOODS IS EXCLUDED IN ITS ENTIRETY.

*C) For products supplied in Australia:*

IF THE PRODUCTS TO WHICH THIS WARRANTY APPLIES ARE:

I. PRODUCTS OF A KIND ORDINARILY ACQUIRED FOR PERSONAL, DOMESTIC OR HOUSEHOLD USE OR CONSUMPTION; OR

II. PRODUCTS THAT COST AUD 40,000 OR LESS,

WHERE THOSE PRODUCTS WERE NOT ACQUIRED FOR THE PURPOSE OF RE-SUPPLY OR FOR THE PURPOSE OF USING THEM UP OR TRANSFORMING THEM IN THE COURSE OF PRODUCTION OR MANUFACTURE OR IN THE COURSE OF REPAIRING OTHER GOODS OR FIXTURES, THEN THIS SECTION C APPLIES.

THE FOLLOWING MANDATORY TEXT IS INCLUDED PURSUANT TO THE AUSTRALIAN CONSUMER LAW AND INCLUDES REFERENCES TO RIGHTS THE USER MAY HAVE AGAINST THE DIRECT SUPPLIER OF THE PRODUCTS: OUR GOODS COME WITH GUARANTEES THAT CANNOT BE EXCLUDED UNDER THE AUSTRALIAN CONSUMER LAW. YOU ARE ENTITLED TO A REPLACEMENT OR REFUND FOR A MAJOR FAILURE AND COMPENSATION FOR ANY OTHER REASONABLY FORESEEABLE LOSS OR DAMAGE. YOU ARE ALSO ENTITLED TO HAVE THE GOODS REPAIRED OR REPLACED IF THE GOODS FAIL TO BE OF ACCEPTABLE QUALITY AND THE FAILURE DOES NOT AMOUNT TO A MAJOR FAILURE. THE INCLUSION OF THIS TEXT DOES NOT CONSTITUTE ANY REPRESENTATION OR ACCEPTANCE BY CATERPILLAR OF LIABILITY TO THE USER OR ANY OTHER PERSON IN ADDITION TO THAT WHICH CATERPILLAR MAY HAVE UNDER THE AUSTRALIAN CONSUMER LAW.

TO THE EXTENT THE PRODUCTS FALL WITHIN THIS SECTION C BUT ARE NOT OF A KIND ORDINARILY ACQUIRED FOR PERSONAL, DOMESTIC OR HOUSEHOLD USE OR CONSUMPTION, CATERPILLAR LIMITS ITS LIABILITY TO THE EXTENT IT IS PERMITTED TO DO SO UNDER THE AUSTRALIAN CONSUMER LAW TO, AT ITS OPTION, THE REPAIR OR REPLACEMENT OF THE PRODUCTS, THE SUPPLY OF EQUIVALENT PRODUCTS, OR THE PAYMENT OF THE COST OF SUCH REPAIR OR REPLACEMENT OR THE ACQUISITION OF EQUIVALENT PRODUCTS.

THE WARRANTY SET OUT IN THIS DOCUMENT IS GIVEN BY CATERPILLAR INC. OR ANY OF ITS SUBSIDIARIES, 100 N. E. ADAMS ST, PEORIA, IL USA 61629, TELEPHONE 1 309 675 1000, THE USER IS RESPONSIBLE FOR ALL COSTS ASSOCIATED WITH MAKING A CLAIM UNDER THE WARRANTY SET OUT IN THIS DOCUMENT, EXCEPT AS EXPRESSLY STATED OTHERWISE IN THIS DOCUMENT, AND THE USER IS REFERRED TO THE BALANCE OF THE DOCUMENT TERMS CONCERNING CLAIM PROCEDURES, CATERPILLAR RESPONSIBILITIES AND USER RESPONSIBILITIES.

TO THE EXTENT PERMISSIBLE BY LAW, THE TERMS SET OUT IN THE REMAINDER OF THIS WARRANTY DOCUMENT (INCLUDING SECTION B) CONTINUE TO APPLY TO PRODUCTS TO WHICH THIS SECTION C APPLIES.

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