UPS Air Gateway (09331)

Date: 1/22/2025

New Jersey Department of Environmental Protection
Reason for Application

Permit Being Modified

Permit Class: **Number:** 0

Description of Modifications: The UPS Facility located at 159 Brewster Road, Newark, NJ is submitting this application to permit a 150 kW Caterpillar natural gas generator. The emergency generator is being permitted for emergency use in accordance with the defintion of emergency generator as defined in N.J.A.C. 7:27-19.1.

This unit is not a certified stationary combustion engine as defined in N.J.A.C. 7:27 and therefore does not meet the elegibility requirements for permitting under General Permit-005B (GP) for Emergency Generator(s) burning Gaseous Fuels.
In accordance with EPA rules, emergency generators can be permitted to operate, including maintance and testing, for a total of 500 hours per year. The unit in this application is permitted for a total operation of 500 hours per year.

New Jersey Department of Environmental Protection
Facility Profile (General)

Facility Name (AIMS): UPS Air Gateway

Facility ID (AIMS): 09331

Street Address: UPS AIR GATEWAY
159 BREWSTER RD
NEWARK, NJ 07114

Mailing Address: UPS MEADOWLANDS
493 COUNTY AVE
SECAUCUS, NJ 07094

State Plane Coordinates:

X-Coordinate:	582,785
Y-Coordinate:	682,204
Units:	Feet
Datum:	NAD83
Source Org.:	DEP-GIS
Source Type:	Center of Facility

County: Essex

Location Description: Take exit 57 off of I-78 West towards Brewster Road. At the end of the ramp cross over Brewster Road to the facility entrance.

Industry:

Primary SIC:	
Secondary SIC:	
NAICS:	492110

New Jersey Department of Environmental Protection
Facility Profile (General)

Contact Type: Air Permit Information Contact

Organization: Roux Associates
Org. Type: Corporation
Name: Marissa Magura
NJ EIN:
Title: Senior Scientist
Phone: (862) 432-8140 x
Fax: ( ) - x
Other: ( ) - x
Type:
Email: MMagura@rouxinc.com

Mailing Address: 300 Atrium Drive
Suite 403
Somerset, NJ 08873

Contact Type: Fees/Billing Contact

Organization: UPS
Org. Type: Corporation
Name: Carlos Gomez
NJ EIN:
Title: District Environmental Coordinator
Phone: (551) 225-6818 x
Fax: ( ) - x
Other: ( ) - x
Type:
Email: cegomez@ups.com

Mailing Address: UPS Meadowlands
493 County Avenue
Secaucus, NJ 07094

Contact Type: Responsible Official

Organization: UPS
Org. Type: Corporation
Name: Carlos Gomez
NJ EIN:
Title: District Environmental Coordinator
Phone: (551) 225-6818 x
Fax: ( ) - x
Other: ( ) - x
Type:
Email: cegomez@ups.com

Mailing Address: UPS Meadowlands
493 County Avenue
Secaucus, NJ 07094

New Jersey Department of Environmental Protection
Facility Profile (Permitting)

1. Is this facility classified as a small business by the USEPA?	No
2. Is this facility subject to N.J.A.C. 7:27-22?	No
3. Are you voluntarily subjecting this facility to the requirements of Subchapter 22?	No
4. Has a copy of this application been sent to the USEPA?	No
5. If not, has the EPA waived the requirement?	No
6. Are you claiming any portion of this application to be confidential?	No
7. Is the facility an existing major facility?	No
8. Have you submitted a netting analysis?	No
9. Are emissions of any pollutant above the SOTA threshold?	No
10. Have you submitted a SOTA analysis?	No
11. If you answered "Yes" to Question 9 and "No" to Question 10, explain why a SOTA analysis was not required	
12. Have you provided, or are you planning to provide air contaminant modeling?	No

New Jersey Department of Environmental Protection
Equipment Inventory

Equip. NJID	Facility's Designation	Equipment Description	Equipment Type	Certificate Number	Install Date	Grand-Fathered	Last Mod. (Since 1968)	Equip. Set ID
E3	NG Generator	1.76 MMBTU/Hr Generator (150 kW)	Stationary Reciprocating Engine		4/27/2022	No		

UPS Air Gateway (09331) Date: 1/22/2025

New Jersey Department of Environmental Protection
Control Device Inventory

CD NJID	Facility's Designation	Description	CD Type	Install Date	Grand-Fathered	Last Mod. (Since 1968)	CD Set ID
CD3	Catalyst	Exhaust Catalyst - 3-Way Catalyst	Oxidizer (Catalytic)	4/27/2022	No		

UPS Air Gateway (09331)

Date: 1/22/2025

New Jersey Department of Environmental Protection
Emission Points Inventory

PT NJID	Facility's Designation	Description	Config.	Equiv. Diam. (in.)	Height (ft.)	Dist. to Prop. Line (ft)	Exhaust Temp. (deg. F)			Exhaust Vol. (acfm)			Discharge Direction	PT Set ID
							Avg.	Min.	Max.	Avg.	Min.	Max.		
PT3	NG EG	NG EG Stack	Round	6	10	117	1,130.0	1,099.0	1,161.0	1,102.0	0.0	1,102.0	Up	

UPS Air Gateway (09331)

Date: 1/22/2025

New Jersey Department of Environmental Protection
Emission Unit/Batch Process Inventory

U 1 NG EG Normal Testing and Maintenance

UOS NJID	Facility's Designation	UOS Description	Operation Type	Signif. Equip.	Control Device(s)	Emission Point(s)	SCC(s)	Annual Oper. Hours Min.	Annual Oper. Hours Max.	VOC Range	Flow (acfm) Min.	Flow (acfm) Max.	Temp. (deg F) Min.	Temp. (deg F) Max.
OS1	NJ EG	150 kW Caterpillar	Maintenance	E3	CD3 (P)	PT3	2-01-002-02	0.0	2,080.0		0.0	1,102.0	1,099.0	1,161.0

New Jersey Department of Environmental Protection
Potential to Emit

Subject Item: **U1 NG EG**

Operating Scenario: **OS0 Summary**

Step:

Air Contaminant Category (HAPS)	Fugitive Emissions	Emissions Before Controls	Emissions After Controls	Total Emissions	Units	Alt. Em. Limit
CO	0.00000000	1.64000000	0.25500000	0.25500000	tons/yr	No
HAPs (Total)	0.00000000	D	D	0.00000000	tons/yr	No
NOx (Total)	0.00000000	0.97200000	0.12700000	0.12700000	tons/yr	No
Pb	0.00000000	0.00000000	0.00000000	0.00000000	tons/yr	No
PM-10 (Total)	0.00000000	0.00420000	0.00420000	0.00420000	tons/yr	No
SO2	0.00000000	0.00030000	0.00030000	0.00030000	tons/yr	No
TSP	0.00000000	0.00420000	0.00420000	0.00420000	tons/yr	No
VOC (Total)	0.00000000	1.30100000	0.08920000	0.08920000	tons/yr	No

Subject Item: **U1 NG EG**

Operating Scenario: **OS1**

Step:

Air Contaminant Category (HAPS)	Fugitive Emissions	Emissions Before Controls	Emissions After Controls	Total Emissions	Units	Alt. Em. Limit
CO	0.00000000	6.54100000	1.01990000	1.01990000	lb/hr	No
HAPs (Total)	0.00000000	D	D	0.00000000	lb/hr	No
NOx (Total)	0.00000000	3.88600000	0.50990000	0.50990000	lb/hr	No
Pb	0.00000000	0.00000000	0.00000000	0.00000000	lb/hr	No
PM-10 (Total)	0.00000000	0.01670000	0.01670000	0.01670000	lb/hr	No
SO2	0.00000000	0.00100000	0.00100000	0.00100000	lb/hr	No
TSP	0.00000000	0.01670000	0.01670000	0.01670000	lb/hr	No
VOC (Total)	0.00000000	5.20500000	0.35700000	0.35700000	lb/hr	No

000000 E3 (Stationary Reciprocating Engine)
Print Date: 1/22/2025

Make:	Caterpillar
Manufacturer:	Caterpillar - Foley
Model:	C3406 NA
Maximum Rated Gross Heat Input (MMBtu/hr):	1.76
Class:	Rich Burn
Description:	
Duty:	Standby Power
Description:	
Minimum Load Range (%):	
Maximum Load Range (%):	
Stroke:	4-stroke
Power Output (BHP):	231.00
Electric Output(KW):	150.00
Compression Ratio:	
Ignition Type:	Spark
Description:	
Engine Speed (RPM):	1800.0
Engine Exhaust Temperature (°F):	1161.0
Air to Fuel Ratio at Peak Load:	10.30
Ratio Basis:	Volume Basis
Lambda Factor (scfm/scfm):	1.000
Brake Specific Fuel Consumption at Peak Load (Btu/BHP-hr):	7612.0
Output Type:	Electric
Heat to Power Ratio:	
Is the Engine Using a Turbocharger?	(●) Yes ( ) No
Is the Engine Using an Aftercooler?	(●) Yes ( ) No

Is the Engine Using (check all that apply):

A Prestratified Charge (PSC)	☐	A NOx Converter	☐
Air to Fuel Adjustment (AF)	☑	Ignition Timing Retard	☐
Low Emission Combustion	☐	Non-Selective Catalytic Retard (NSCR)	☐
Other	☑		

Description: 3-Way Catalyst

Have you attached a diagram showing the location and/or the configuration of this equipment? ( ) Yes (●) No

Have you attached any manuf.'s data or specifications to aid the Dept. in its review of this application? (●) Yes ( ) No

Comments:

Include Emission Rates on the Potential to Emit Screen for each contaminant in ppmvd @ 7%O2 in addition to lbs/hr and tons/yr.

000000 CD3 (Oxidizer (Catalytic))
Print Date: 1/22/2025

Make:	CleanAIR Inc.
Manufacturer:	CleanAIR Inc.
Model:	3-Way Catalyst
Minimum Inlet Temperature (°F):	88.0
Maximum Inlet Temperature (°F)	99.0
Minimum Outlet Temperature (°F)	1099.0
Maximum Outlet Temperature (°F):	1161.0
Minimum Residence Time (sec)	
Fuel Type:	Natural gas
Description:	
Maximum Rated Gross Heat Input (MMBtu/hr):	1.76
Minimum Pressure Drop Across Catalyst (psi):	1.500
Maximum Pressure Drop Across Catalyst (psi):	5.000
Catalyst Material:	System is a catalyst with spark-arresting muffler.
Form of Catalyst:	Other
Description:	3-Way
Minimum Expected Life of Catalyst:	10000.00
Units:	hours
Volume of Catalyst (ft^3):	
Maximum Number of Sources Using this Apparatus as a Control Device (Include Permitted and Non-Permitted Sources):	1
Alternative Method to Demonstrate Control Apparatus is Operating Properly:	
Have you attached data from recent performance testing?	○ Yes ● No
Have you attached any manufacturer's data or specifications in support of the feasibility and/or effectiveness of this control apparatus?	● Yes ○ No
Have you attached a diagram showing the location and/or configuration of this control apparatus?	○ Yes ● No
Comments:	

09331 UPS Air Gateway PCP000000 U1 OS1 (Fuel Information Table)
Print Date: 1/22/2025

Is this fuel a blend?	○ Yes ● No
Fuel Category:	Commercial
Fuel Type:	Natural gas
Description (if other):	
Amount of Sulfur in Fuel (%):	0.0010
Amount of Ash in Fuel (%):	
Fuel Heating Value:	1,020.00
Units:	BTU/scf
Estimated Maximum Amount of Fuel Burned Annually:	0.86
Units:	MMft^3/yr
Estimated Actual Amount of Fuel Burned Annually:	0.17
Units:	MMft^3/yr
Amount of Oxygen in Flue Gas (%):	0.50
Amount of Moisture in Flue Gas (%):	
Comments:	Maximum estimate fuel burned based on 500 hours for allowable emergency generator use. Actual Estimate based on 100 hours for testing and maintenance

09331 UPS Air Gateway PCP000000 U1 OS1 (Oxidizer (Catalytic) - CD3)
Print Date: 1/22/2025

Maximum Feed Rate to the Oxidizer (tons/hr):	
Oxygen Content in Exhuast (%O2):	0.05
CO Concentration in Exhaust (ppmvd):	
Total VOC Concentration in Exhaust (ppmvd):	

CLIENT: UPS **BY:** MM

PROJECT NAME: UPS Air Gateway (ID 09331) 159 Brewster Road Newark, NJ

PROJECT NO.: 0762.0392J005

DESCRIPTION: Engine PTE

Engine and Operational Information

Engine Make:	Caterpillar	
Model:	G3406	
SN #:	CTS00918	
Engine:	4-stroke-cycle, gas engine	
Gross Horsepower:	231	HP
Peek Power kW:	150	KW
Fuel:	Natural Gas	
Maximum Fuel Consumption:	7612	BTU/Hp-Hr
USEPA Emission Standard:	NSPS SUB JJJJ	
Operational Period:	Emergency	Use
Hours per year:	500	Hours
MMBTU/Hr	1.76	MMBTU/HR
Heat Index Value Fuel	1020	BTU/SCF
Grams in a Lb	453	G/Lb

			LC 150G Spec Sheet - Engine with 3-Way Catalyst		
Contaminant	**NSPS Emission Rate**		**Emissions (g/hp-hr.)**	**Hourly Emissions (Pounds/Hr)**	**Annualized Emissions (TPY)**
NO_X[1]	1.00	G/Hp-Hr	1.00	**0.5099**	**0.1275**
VOC/THC[1]	0.70	G/Hp-Hr	0.70	**0.3570**	**0.0892**
CO[1]	2.00	G/Hp-Hr	2.00	**1.0199**	**0.2550**
SO2[2]	5.88E-04	Lb/MMBTU		**0.0010**	**0.0003**
PM / TSP[2]	9.50E-03	Lb/MMBTU		**0.0167**	**0.0042**

[1] NSPS Rates (40 CFR Part 60 Subpart JJJJ) (g/hp-hr.); Engine Rates for uncontrolled are found on Spec Sheet for Engine G3406 NA

[2] Air Pollution Emission Factors - AP-42: 3.2 Natural Gas-fired Reciprocating Engines

		AP-42[2]		
Contaminant	**NSPS Emission Rate Reference (G/Hp-Hr)**	**Emission Factor Lb/MMBTU (Fuel Input)**	**Emissions (Lbs/Hr)**	**Annualized Emissions (TPY)**
NO_X[1]	1.00	2.21	**3.886**	**0.9715**
VOC/THC[1]	0.70	2.96	**5.205**	**1.3012**
CO[1]	2.00	3.72	**6.541**	**1.6353**
SO2		5.88E-04	**0.001**	**0.0003**
PM / TSP		9.50E-03	**0.017**	**0.0042**

Notes:

[1] New Source Performance Standards (NSPS) Rates (40 CFR Part 60 Subpart JJJJ) (g/hp-hr.)

[2] Air Pollution Emission Factors - AP-42: 3.2 Natural Gas-fired Reciprocating Engines

Natural Gas		
Rated Input:	1.76	MMBTU/Hr
NG Heat Content (SPEC SHEET):	1020	MMBTU/MMSCF
Hourly Fuel Consumption:	0.002	MMSCF/Hr
Annual Operation:	500	Hr/Yr
Est. Max Annual Fuel Consumption[1]	0.863	MMSCF/Yr
Est. Actual Annual Fuel Consumption[2]	0.173	MMSCF/Yr

[1] Maximum Estimate based on 500 hours for allowable emergency generator use

[2] Actual Estimate based on 100 hours for testing and maintenance

Appendix A: Installation Layout – Woodward AFRC

The following piping and instrumentation drawings (Fig. 1 and 2) provides an overview of the installation requirements for the Woodward AFRC:

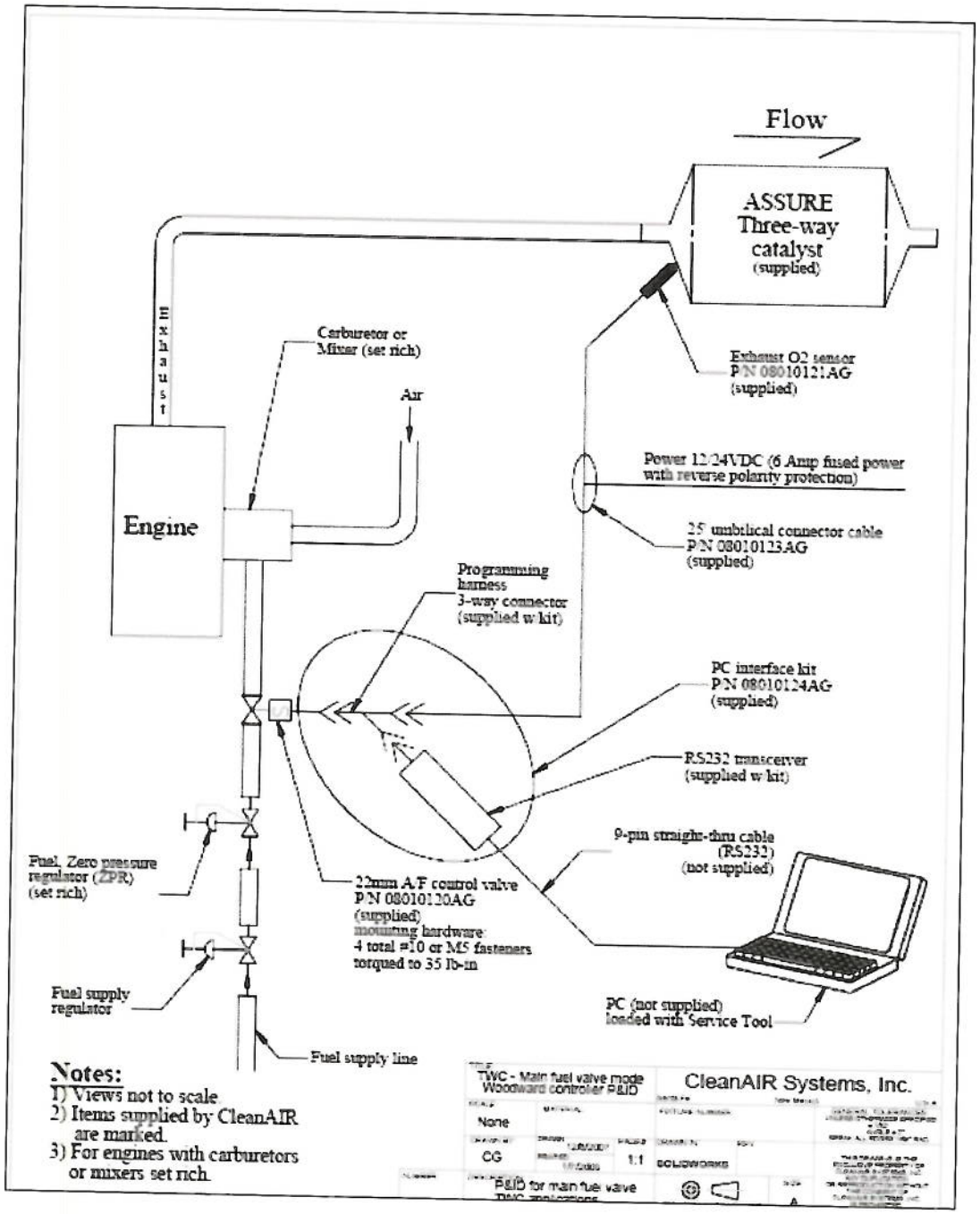
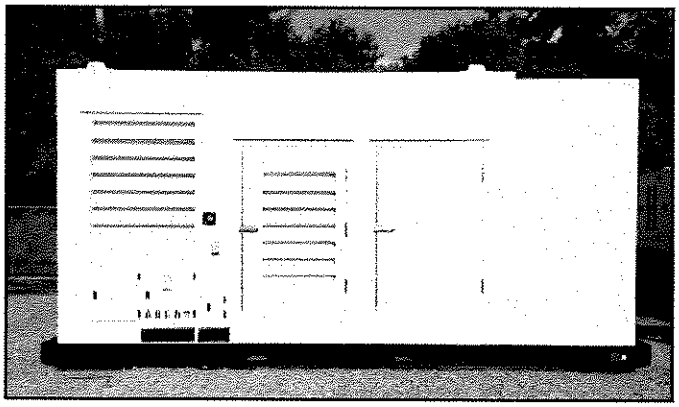


Fig. 1 – Plumbing and wiring schematic for the control valve and oxygen sensor. Configuration shown is the control valve employed in main valve mode. Consult the Woodward user manual for details.

LC 150 G RENTAL



CONTINUOUS 150 kW

60 Hz

Frequency (Hz)	Voltage (V)	Continuous kW (kVA)
60	480/277	150 (187)

FEATURES

FUEL/EMISSIONS STRATEGY

- Capable of NSPS SI emissions site compliance*
- Proper air-fuel-ratio control and three way catalyst provided to reduce emissions
- Customer's responsibility to complete site-specific emissions demonstrating compliance to US EPA NSPS

CAT® G3406 NA GAS ENGINE

- Robust high speed diesel block design provides prolonged life and lower owning and operating costs
- Designed for maximum performance on effective low pressure gaseous fuel supply
- Simple open chamber combustion system for reliability and fuel flexibility

CAT EMCP 4.2 CONTROL PANEL

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

CAT GENERATOR

- Caterpillar SR4B 448 frame generator designed to match performance and output characteristics of the CAT® gas engine
- 4 pole, permanent magnet excitation, random wound
- Segregated AC/DC, low voltage accessory box provides single point access to accessory connections

CAT DIGITAL VOLTAGE REGULATOR (CDVR)

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

ENCLOSURE

- Highly corrosion resistant 12 gauge sheet steel construction
- Two coat polyester powder-coated finish
- Four access doors for ease of maintenance
- Secure and safe design with safety glass control panel viewing window with pad-lockable access door
- Certified single point lifting eye
- Forklift lift pockets on the base frame

DISTRIBUTION PANEL

- 480/277V 3 phase

REAR CUSTOMER ACCESS

- Separate control panel and distribution panel access doors
- Hinged door over main bus connectors
- Emergency stop on panel and exterior doors
- Remote start/stop contacts

ENVIRONMENTALLY FRIENDLY

- Capable NSPS SI emissions site compliant
- 110% spill containment of on board engine fluids
- Meets 80 dB(A) at 7 m per SAE J1074

RENTAL READY FEATURES

- Anti-condensation heater 110-120 VAC
- Coolant heater 110-120 VAC
- UL Listed battery charger
- Full package CSA certification

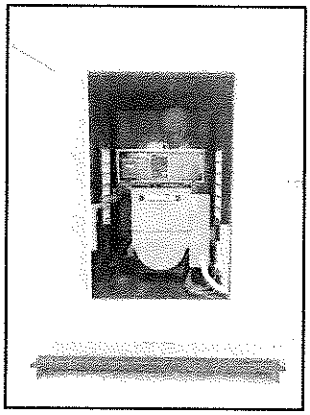
COOLING SYSTEM

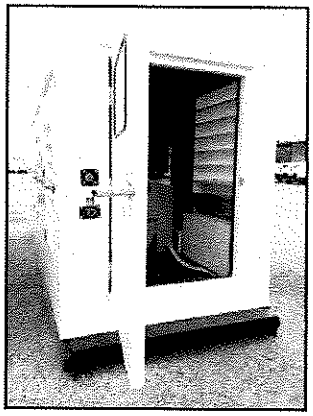
- Provides 26.5 C (80 F) ambient capability with 1.0 g/bhp-hr NOx per NSPS 2010 at 100% continuous rating before derate

LC 150G RENTAL

FACTORY INSTALLED STANDARD EQUIPMENT

SYSTEM	STANDARD EQUIPMENT
Engine	G3406 NA, I-6, 4-stroke-cycle, gas engine
Air Inlet	Single element, canister-type air cleaner with service indicator
Generator	SR4B 448 frame, three-phase, 480V, random wound, 12-lead design, permanent magnet excited, 0.750 pitch — Class H Coastal insulation protection. Windings impregnated in a triple dip, thermo-setting moisture, oil and acid resisting polyester varnish. Heavy coat of anti-tracking varnish for additional protection. Cat digital voltage regulator (CDVR) with VAR/PF control, RFI suppression, exciter diode monitor Anti-condensation heater
Charging System	UL/CSA listed 120V, 10 Amp battery charger, shock mounted and enclosed in dust proof housing Charging alternator, 24V - 45A
Control Panel	EMCP 4.2 genset mounted controller NEMA 2, IP23 dust proof enclosure, UL508 listed Generator Protection features: 32, 32RV, 46, 50/51, 27/59, 81 O/U Metering display: voltage, current, frequency, power factor, kW, WHM, and kVAR Panel illumination lights and Emergency stop switch
Cooling System	Package mounted radiator with vertical air discharge provides 46°C ambient capability Blower fan, fan drive, fan guard and belt guards Coolant sight gauge, level switch and shutdown 50/50 coolant antifreeze (NGEC)
Distribution System	NEMA 3R enclosure for main bus connections with hinged lockable door Main circuit breaker 3-pole, 480V-250A with 24V DC shunt trip Hard mounted current transformers Two wire remote start/stop terminals and 120 VAC shore power connection for rapid starting 2 exterior 120V GFCI receptacles
Enclosure	Sound attenuating, 12 gauge sheet metal enclosure limits overall noise to 80 dB(A) @ 7m (23') Modular panel construction and one piece welded roof design with 2 degree pitch Black stainless steel pad-lockable latches, doorkeepers on all doors and zinc die-cast hinges/grab handles Single point lifting Painted Louisiana Cat power module white
Exhaust System	Catalyst w/spark arresting muffler Crankcase fumes disposal system
Fuel System	Gas pressure regulator, low pressure fuel system, Energize to Run (ETR) gas shutoff valve, air-fuel-ratio-control controlled by ADEM, Coalescing Filter
Lube System	Pump, integral oil cooler, lube oil, filter, filler and dipstick, and oil sampling valve. Make up tank with level switch.
Mounting System	Generator set mounted to the heavy duty, fabricated steel base frame Skid-able steel base frame w/ tie down eyes, tow bars and fork pockets, single point lift Provides integral 110% spill containment system for all engine fluids
Starting System	Single electric starting motor, 24VDC Dual 12V (1000 CCA) maintenance free batteries with disconnect switch, battery rack, and cables UL listed, 120 volt single phase jacket water heater with thermostat and shut off valves, auto disconnect on start-up
General	Factory testing of standard generator set Full manufacturer's warranty ISO 8528 G2 Governing





LC 150 G RENTAL

SPECIFICATIONS

GENERATOR

Frame size 448 SR4B
Pitch 0.75
No. of poles 4
Excitation ..... PM excited
Construction ..... Single bearing, close coupled
Insulation ..... UL 1446 Class H
Coastal Protection ..... Yes
Enclosure ..... Drip proof IP23
Temperature rise ..... 80 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 5%
Telephone Influence Factor (TIF) ..... Less than 50
Harmonic Distortion (THD) ..... Less than 5%

CAT® G3406 NA GAS ENGINE

Number of Cylinders ..... In-Line 6
Type ..... 4 Stroke-Cycle, Spark Ignited
Bore — mm (in) 137 (5.4)
Stroke — mm (in) 164 (6.5)
Displacement — L (cu in) 14.6 (891)
Compression ratio 10.3:1
Engine speed (rpm) 1800
Aspiration ..... Naturally Aspirated
Governor ..... Woodward, Flo-tech 68
Ignition ..... Digital Ignition
Jacket Water Inlet (deg C) 99
Cooling System ..... Combined
Fuel Type ..... Natural Gas
Minimum Inlet Fuel Pressure (PSI) ..... 1.5 - 5
Minimum Methane Number 30

TECHNICAL DATA*

Generator Set Technical Data	Units	60 Hz Continuous
Power Rating	kW (KVA)	150 (169)
Performance Specification		DM5437-03
Engine Speed	RPM	1800
Lubricating System		
Oil Pan Capacity	L (gal)	76 (20)
Fuel System		
Fuel consumption		
100% Load	Btu/hp-hr	7612
75% Load	Btu/hp-hr	8375
50% Load	Btu/hp-hr	9548
Cooling System		
Ambient Capability at 25 deg C (77 deg F)	°C (°F)	40 (104)
Altitude Capability @ Max. Ambient Capability	ft (m)	500 (153)
Coolant Capacity	L (gal)	80 (21.13)
Air Requirements		
Combustion air flow	m³/min (cfm)	9.09 (321)
Exhaust System		
Exhaust stack temperature	°C (°F)	627 (1161)
Exhaust flow (at stack temperature)	m³/min (cfm)	31 (1102)
Sound Performance		
Noise Rating @ 7 meters per SAE J1074	dB (A)	80
Emissions Data**		
NOx (as NO2)	g/hp-hr	1.0
CO	g/hp-hr	2.00
VOC	g/hp-hr	0.70
EXHAUST O2	%	0.5

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

**Catalyst Out

LC 150 G RENTAL

STANDARD FEATURES

ENCLOSURE
- NEMA 2, IP23 dust proof enclosure with hinged lockable door and viewing window
- EMCP 4.2 display
- Panel light on/off switch
- Emergency stop pushbutton
- Lamp test/reset pushbutton
- Voltage adjust potentiometer
- Alarm and shutdown indicators
- Convenient service access for Cat dealers (service tools not included)

EMCP 4.2 ENGINE OPERATOR INTERFACE
- Controls
  - Run/Auto/Stop- Cycle crank
  - Emergency Stop
  - Voltage Adjust
  - Speed Adjust
  - Remote start/stop
- Engine Monitoring
  - RPM
  - Coolant Temp
  - Operating hours
  - DC Volts
  - Oil pressure
  - Crank attempt counter
  - Successful start counter
- Generator Monitoring
  - L-L volts, L-N volts, Current (phase)
  - Average volts, Amps, Frequency
  - ekW, kVA, kVAR, kW-hr (per phase, avg, %)
  - Power Factor (avg, phase)
  - kW-hr, kVA-hr (total)
  - Excitation voltage and current (with CDVR)
- Shutdown & Common Indicating Lighting
  - Low oil pressure
  - Overspeed
  - High Coolant Temp
  - Low Coolant Temp
  - Emergency stop
  - Low Coolant Level
  - Failure to Start (Overcrank)

DISTRIBUTION PANEL
- Separate load and control sections
- Access using a hinged lockable door
- Main buss bar with hinged cover door
- Customer convenience power receptacles protected by miniature circuit breaker:
  2 - 120V, 15A Duplex GFCI Receptacles

CIRCUIT BREAKER
- Includes DC shunt trip coil activated on any monitored engine or electrical fault
- Single Voltage Version
  - 25 KA-interrupting capacity at 440 VAC
  - 250A 100% rated fixed type, 3 pole, generator set mounted
- Multi-Voltage Version
  - 25 KA-interrupting capacity at 440 VAC
  - 600A 100% rated fixed type, 3 pole, generator set mounted

EMCP 4.2 GENERATOR PROTECTIVE RELAYING
- Generator protective features provided by EMCP 4.2
  - Generator phase sequence
  - Over/Under voltage (27/59)
  - Over/Under frequency (81 O/U)
  - Reverse Power (kW) (32)
  - Reverse Reactive Power (kVAR) (32RV)
  - Over current (50/51)

WEIGHTS AND DIMENSIONS

Model	Length (In)	Width (In)	Height (In)	Weight with Lube oil and Coolant (Pounds)
LC150G	244	82	123	19750

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 Caterpillar dealer

FUEL USAGE GUIDE**

Deration Factor/Engine Timing vs Methane Number											
Cat Methane Number	30	35	40	45	50	55	60	65	70	75	80
Ignition Timing	16	17	18	19	20	21	22	23	24	25	26
Deration Factor	1	1	1	1	1	1	1	1	1	1	1

**Table advises air-fuel ratio control required for maximum rating.