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See
660-0073
063-0001

| | |
|--|-----------|
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COPY



WEST VIRGINIA
 DEPARTMENT OF ENVIRONMENTAL PROTECTION
 DIVISION OF AIR QUALITY
 601 57th Street, SE
 Charleston, WV 25304
 Phone: (304) 926-0475 • www.dep.wv.gov/daq

APPLICATION FOR GENERAL PERMIT REGISTRATION
 CONSTRUCT, MODIFY, RELOCATE OR ADMINISTRATIVELY UPDATE
 A STATIONARY SOURCE OF AIR POLLUTANTS

- CONSTRUCTION MODIFICATION RELOCATION CLASS I ADMINISTRATIVE UPDATE
 CLASS II ADMINISTRATIVE UPDATE

CHECK WHICH TYPE OF GENERAL PERMIT REGISTRATION YOU ARE APPLYING FOR:

- | | |
|---|--|
| <input type="checkbox"/> G10-D – Coal Preparation and Handling | <input type="checkbox"/> G40-C – Nonmetallic Minerals Processing |
| <input type="checkbox"/> G20-B – Hot Mix Asphalt | <input type="checkbox"/> G50-B – Concrete Batch |
| <input type="checkbox"/> G30-D – Natural Gas Compressor Stations | <input checked="" type="checkbox"/> G60-C – Class II Emergency Generator |
| <input type="checkbox"/> G33-A – Spark Ignition Internal Combustion Engines | <input type="checkbox"/> G65-C – Class I Emergency Generator |
| <input type="checkbox"/> G35-A – Natural Gas Compressor Stations (Flare/Glycol Dehydration Unit) | <input type="checkbox"/> G70-A – Class II Oil and Natural Gas Production Facility |

SECTION I. GENERAL INFORMATION

| | | | |
|---|--|---|--|
| 1. Name of applicant (as registered with the WV Secretary of State's Office): TOWN OF ALDERSON, WV | | 2. Federal Employer ID No. (FEIN): 55-6000141 | |
| 3. Applicant's mailing address: P.O. BOX 179 ALDERSON, WV 24910 | | 4. Applicant's physical address: GLEN RAY ROAD ALDERSON, WV 24910 | |
| 5. If applicant is a subsidiary corporation, please provide the name of parent corporation: | | | |
| 6. WV BUSINESS REGISTRATION. Is the applicant a resident of the State of West Virginia? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO ⇒ IF YES, provide a copy of the Certificate of Incorporation/ Organization / Limited Partnership (one page) including any name change amendments or other Business Registration Certificate as Attachment A. ⇒ IF NO, provide a copy of the Certificate of Authority / Authority of LLC / Registration (one page) including any name change amendments or other Business Certificate as Attachment A. | | | |

SECTION II. FACILITY INFORMATION

| | | | |
|--|---|-----|--|
| 7. Type of plant or facility (stationary source) to be constructed, modified, relocated or administratively updated (e.g., coal preparation plant, primary crusher, etc.): WASTEWATER TREATMENT PLANT | 8a. Standard Industrial Classification Classification (SIC) code: 4952 | AND | 8b. North American Industry System (NAICS) code: 221320 |
| 9. DAQ Plant ID No. (for existing facilities only): _____ | 10. List all current 45CSR13 and other General Permit numbers associated with this process (for existing facilities only): N/A _____ _____ | | |

A: PRIMARY OPERATING SITE INFORMATION

| | | | |
|---|--|--|---|
| 11A. Facility name of primary operating site: <u>ALDERSON WASTEWATER TREATMENT PLANT</u> | 12A. Address of primary operating site: Mailing: <u>P.O. BOX 179</u> <u>ALDERSON, WV 24910</u> | | Physical: <u>GLEN RAY ROAD</u> <u>ALDERSON, WV 24910</u> |
| 13A. Does the applicant own, lease, have an option to buy, or otherwise have control of the proposed site? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO ⇨ IF YES, please explain: <u>THE TOWN OF ALDERSON OWNS THE TREATMENT PLANT SITE</u> ⇨ IF NO, YOU ARE NOT ELIGIBLE FOR A PERMIT FOR THIS SOURCE. | | | |
| 14A. ⇨ For Modifications or Administrative Updates at an existing facility, please provide directions to the present location of the facility from the nearest state road; ⇨ For Construction or Relocation permits, please provide directions to the proposed new site location from the nearest state road. Include a MAP as Attachment F. <u>Starting at the split of Route 12 and Route 3 (Route 3 crosses the Greenbrier River and Route 12 continues along the Northern bank of the Greenbrier River) travel southbound across the bridge on Route 3. Turn right onto Railroad Ave (Co Rd 3/17) and travel on it for approximately 0.2 miles. Take a slight left onto Prison Road (Co Rd 3/17) and travel on it for approximately 0.3 miles. Turn right onto Prison Road/Railroad Ave (Co Rd 3/17) stay on this road for approximately 0.1 miles (you should traverse a railroad crossing and the WWTP will be visible to your left across the tracks). Turn left into the WWTP parking area.</u> | | | |
| 15A. Nearest city or town: <u>ALDERSON</u> | 16A. County: <u>MONROE</u> | 17A. UTM Coordinates: Northing (KM): <u>4175626.7</u> Easting (KM): <u>530114.5</u> Zone: <u>17</u> | |
| 18A. Briefly describe the proposed new operation or change (s) to the facility: <u>THE INSTALLATION OF AN EMERGENCY GENERATOR</u> | | 19A. Latitude & Longitude Coordinates (NAD83, Decimal Degrees to 5 digits): Latitude: <u>37.72741</u> Longitude: <u>80.65826</u> | |

B: 1ST ALTERNATE OPERATING SITE INFORMATION (only available for G20, G40, & G50 General Permits)

| | | |
|---|--|--|
| 11B. Name of 1 st alternate operating site: _____ _____ | 12B. Address of 1 st alternate operating site: Mailing: _____ Physical: _____ _____ | |
| 13B. Does the applicant own, lease, have an option to buy, or otherwise have control of the proposed site? <input type="checkbox"/> YES <input type="checkbox"/> NO ⇨ IF YES, please explain: _____ ⇨ IF NO, YOU ARE NOT ELIGIBLE FOR A PERMIT FOR THIS SOURCE. | | |

| | | |
|---|--------------|--|
| <p>14B. ⇨ For Modifications or Administrative Updates at an existing facility, please provide directions to the present location of the facility from the nearest state road;</p> <p>⇨ For Construction or Relocation permits, please provide directions to the proposed new site location from the nearest state road. Include a MAP as Attachment F.</p> <p>_____</p> <p>_____</p> | | |
| 15B. Nearest city or town: | 16B. County: | 17B. UTM Coordinates: Northing (KM): _____ Easting (KM): <u>530114.5</u> Zone: _____ |
| 18B. Briefly describe the proposed new operation or change (s) to the facility: | | 19B. Latitude & Longitude Coordinates (NAD83, Decimal Degrees to 5 digits): Latitude: _____ Longitude: _____ |

C: 2nd ALTERNATE OPERATING SITE INFORMATION (only available for G20, G40, & G50 General Permits):

| | | |
|---|---|--|
| 11C. Name of 2 nd alternate operating site: _____ | 12C. Address of 2 nd alternate operating site: Mailing: _____ Physical: _____ | |
| <p>13C. Does the applicant own, lease, have an option to buy, or otherwise have control of the proposed site? <input type="checkbox"/> YES <input type="checkbox"/> NO</p> <p>⇨ IF YES, please explain: _____</p> <p>⇨ IF NO, YOU ARE NOT ELIGIBLE FOR A PERMIT FOR THIS SOURCE.</p> | | |
| <p>14C. ⇨ For Modifications or Administrative Updates at an existing facility, please provide directions to the present location of the facility from the nearest state road;</p> <p>⇨ For Construction or Relocation permits, please provide directions to the proposed new site location from the nearest state road. Include a MAP as Attachment F.</p> <p>_____</p> <p>_____</p> | | |
| 15C. Nearest city or town: | 16C. County: | 17C. UTM Coordinates: Northing (KM): _____ Easting (KM): _____ Zone: _____ |
| 18C. Briefly describe the proposed new operation or change (s) to the facility: | | 19C. Latitude & Longitude Coordinates (NAD83, Decimal Degrees to 5 digits): Latitude: _____ Longitude: _____ |

| | |
|--|--|
| <p>20. Provide the date of anticipated installation or change:</p> <p><u>10 / 15 / 15</u></p> <p>If this is an After-The-Fact permit application, provide the date upon which the proposed change did happen: :</p> <p>____ / ____ / ____</p> | <p>21. Date of anticipated Start-up if registration is granted:</p> <p><u>11 / 01 / 15</u></p> |
| <p>22. Provide maximum projected Operating Schedule of activity/activities outlined in this application if other than 8760 hours/year. (Note: anything other than 24/7/52 may result in a restriction to the facility's operation). --*The generator will operate approximately less than or equal to 500 hours per year.*~</p> <p>Hours per day _____ Days per week _____ Weeks per year _____ Percentage of operation _____</p> | |

SECTION III. ATTACHMENTS AND SUPPORTING DOCUMENTS

23. Include a check payable to WVDEP – Division of Air Quality with the appropriate application fee (per 45CSR22 and 45CSR13).

24. Include a **Table of Contents** as the first page of your application package.

All of the required forms and additional information can be found under the Permitting Section (General Permits) of DAQ's website, or requested by phone.

25. Please check all attachments included with this permit application. Please refer to the appropriate reference document for an explanation of the attachments listed below.

- ATTACHMENT A : CURRENT BUSINESS CERTIFICATE
- ATTACHMENT B: PROCESS DESCRIPTION
- ATTACHMENT C: DESCRIPTION OF FUGITIVE EMISSIONS
- ATTACHMENT D: PROCESS FLOW DIAGRAM
- ATTACHMENT E: PLOT PLAN
- ATTACHMENT F: AREA MAP
- ATTACHMENT G: EQUIPMENT DATA SHEETS AND REGISTRATION SECTION APPLICABILITY FORM
- ATTACHMENT H: AIR POLLUTION CONTROL DEVICE SHEETS
- ATTACHMENT I: EMISSIONS CALCULATIONS
- ATTACHMENT J: CLASS I LEGAL ADVERTISEMENT
- ATTACHMENT K: ELECTRONIC SUBMITTAL
- ATTACHMENT L: GENERAL PERMIT REGISTRATION APPLICATION FEE
- ATTACHMENT M: SITING CRITERIA WAIVER
- ATTACHMENT N: MATERIAL SAFETY DATA SHEETS (MSDS)
- ATTACHMENT O: EMISSIONS SUMMARY SHEETS
- OTHER SUPPORTING DOCUMENTATION NOT DESCRIBED ABOVE (Equipment Drawings, Aggregation Discussion, etc.)

Please mail an original and two copies of the complete General Permit Registration Application with the signature(s) to the DAQ Permitting Section, at the address shown on the front page of this application. Please DO NOT fax permit applications. For questions regarding applications or West Virginia Air Pollution Rules and Regulations, please refer to the website shown on the front page of the application or call the phone number also provided on the front page of the application.

SECTION IV. CERTIFICATION OF INFORMATION

This General Permit Registration Application shall be signed below by a Responsible Official. A Responsible Official is a President, Vice President, Secretary, Treasurer, General Partner, General Manager, a member of a Board of Directors, or Owner, depending on business structure. A business may certify an Authorized Representative who shall have authority to bind the Corporation, Partnership, Limited Liability Company, Association, Joint Venture or Sole Proprietorship. Required records of daily throughput, hours of operation and maintenance, general correspondence, Emission Inventory, Certified Emission Statement, compliance certifications and all required notifications must be signed by a Responsible Official or an Authorized Representative. If a business wishes to certify an Authorized Representative, the official agreement below shall be checked off and the appropriate names and signatures entered. Any administratively incomplete or improperly signed or unsigned Registration Application will be returned to the applicant.

FOR A CORPORATION (domestic or foreign)

I certify that I am a President, Vice President, Secretary, Treasurer or in charge of a principal business function of the corporation

FOR A PARTNERSHIP

I certify that I am a General Partner

FOR A LIMITED LIABILITY COMPANY

I certify that I am a General Partner or General Manager

FOR AN ASSOCIATION

I certify that I am the President or a member of the Board of Directors

FOR A JOINT VENTURE

I certify that I am the President, General Partner or General Manager

FOR A SOLE PROPRIETORSHIP

I certify that I am the Owner and Proprietor

I hereby certify that (please print or type) _____ is an Authorized Representative and in that capacity shall represent the interest of the business (e.g., Corporation, Partnership, Limited Liability Company, Association Joint Venture or Sole Proprietorship) and may obligate and legally bind the business. If the business changes its Authorized Representative, a Responsible Official shall notify the Director of the Office of Air Quality immediately, and/or,

I hereby certify that all information contained in this General Permit Registration Application and any supporting documents appended hereto is, to the best of my knowledge, true, accurate and complete, and that all reasonable efforts have been made to provide the most comprehensive information possible

Signature _____ Responsible Official _____ Date 14 JAN 15
(please use blue ink)

Name & Title TRAVIS L. COPENHAVER, Mayor
(please print or type)

Signature _____ Authorized Representative (if applicable) _____ Date _____
(please use blue ink)

Applicant's Name _____

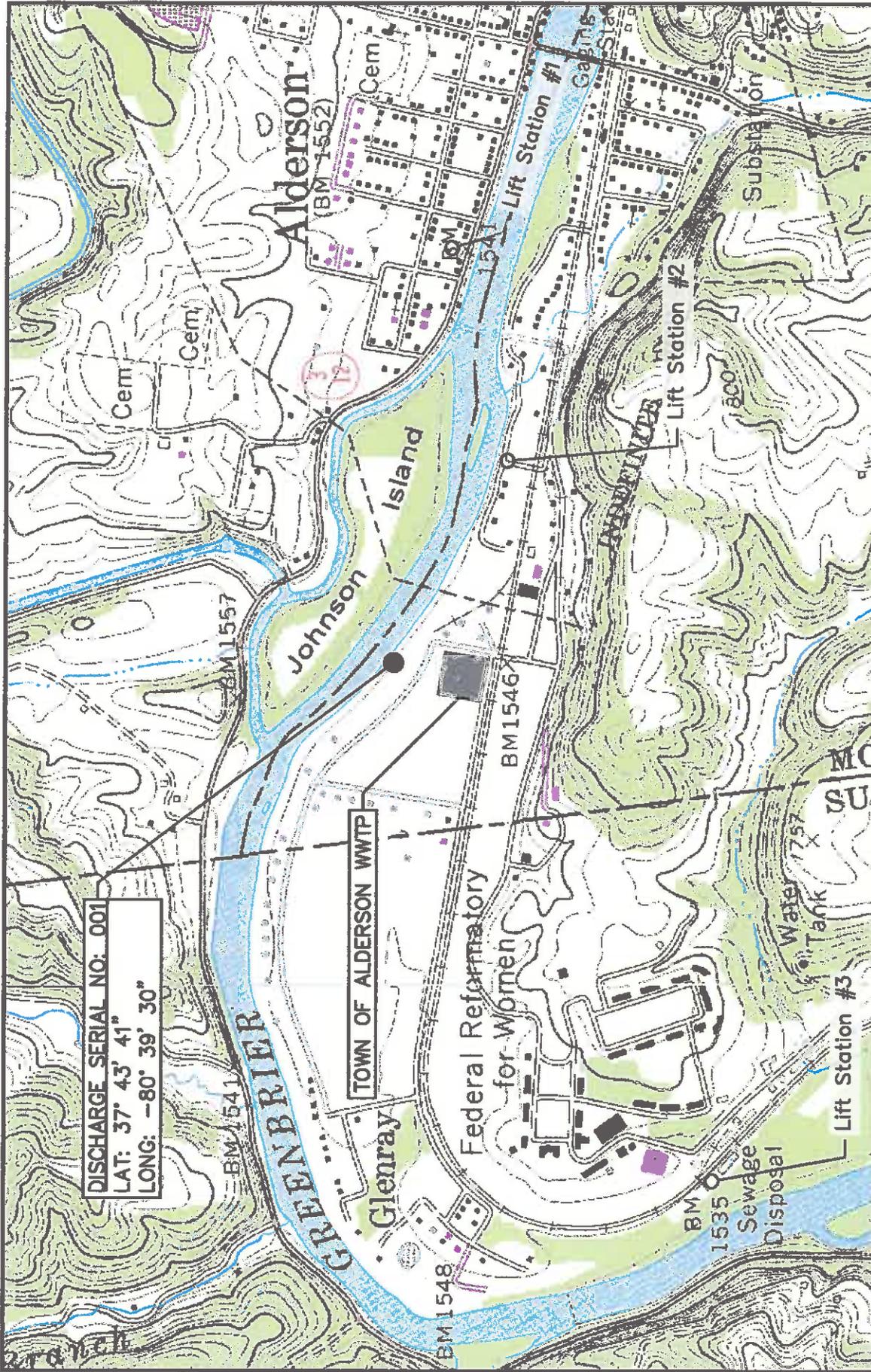
Phone & Fax _____
Phone Fax

Email _____

ATTACHMENT A

The Town of Alderson, WV does not have, and is not required to have a Business Registration Certificate.

ATTACHMENT F



DISCHARGE SERIAL NO. 001
 LAT: 37° 43' 41"
 LONG: -80° 39' 30"

| NO. | REVISIONS | DATE | BY |
|-----|-----------|------|----|
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |

| | | | |
|---|----------------|-------------------|-----------------|
| STAFFORD CONSULTANTS INCORPORATED ENGINEERING DESIGN AND CONSULTING PRINCETON, WEST VIRGINIA | | | |
| WASTEWATER TREATMENT PLANT UPGRADES & LIFT STATION REPLACEMENTS GREENBRIER/MONROE/SUMMERS COUNTY, WEST VIRGINIA | | | |
| TOWN OF ALDERSON USGS ALDERSON 7.5 MINUTE QUADRANGLE | | | |
| DRAWN MWP | CHECKED WBK | APPROVED WBK | DATE 9/13/12 |
| PROJECT NUMBER: 12-7328 | | SCALE 1"=1000' | |
| SHEET NUMBER 1 | | OF 2 | |
| REV. NO. | | | |

ATTACHMENT G

EMERGENCY GENERATOR ENGINE DATA SHEET

| | | | | | | | |
|--|---|------------------------|-----------------------|----------------------|---------|--------|---------|
| Source Identification Number ¹ | | EG - 1 | | EG-2 | | | |
| Engine Manufacturer and Model | | Cummins GGHE - 3042031 | | Cummins QSL9-G7 | | | |
| Manufacturer's Rated bhp/rpm | | 97.7/1800 | | 464/1800 | | | |
| Source Status ² | | ES | | NS | | | |
| Date Installed/Modified/Removed ³ | | 3/1/2010 | | Not installed Yet | | | |
| Engine Manufactured/Reconstruction Date ⁴ | | 1/21/2010 | | Has Not Been Ordered | | | |
| Is this a Certified Stationary Spark Ignition Engine according to 40CFR60 Subpart IIII? (Yes or No) ⁵ | | No | | No | | | |
| Is this a Certified Stationary Spark Ignition Engine according to 40CFR60 Subpart JJJJ? (Yes or No) ⁶ | | No | | No | | | |
| Engine, Fuel and Combustion Data | Engine Type ⁷ | LB4s | | LB4s | | | |
| | APCD Type ⁸ | A/F | | A/F | | | |
| | Fuel Type ⁹ | LPG | | #2FO | | | |
| | H ₂ S (gr/100 scf) | | | | | | |
| | Operating bhp/rpm | 97.7/1800 | | 464/1800 | | | |
| | BSFC (Btu/bhp-hr) | 3410 | | 6.64 | | | |
| | Fuel throughput (ft ³ /hr) | | | | | | |
| | Fuel throughput (MMft ³ /yr) | | | | | | |
| Operation (hrs/yr) | Less than 500 hr/year | | Less than 500 hr/year | | | | |
| Reference ¹⁰ | Potential Emissions ¹¹ | lbs/hr | tons/yr | lbs/hr | tons/yr | lbs/hr | tons/yr |
| MD | NO _x | 1.08 | 0.27 | 4.985 | 1.25 | | |
| MD | CO | 14.91 | 3.73 | N/A | N/A | | |
| MD | VOC | - | - | - | - | | |
| MD | SO ₂ | - | - | 0.0002 | 0.03 | | |
| MD | PM ₁₀ | - | - | - | - | | |
| MD | Formaldehyde | - | - | - | - | | |
| MD | Smoke | - | - | 0.379 | 0.09 | | |
| MD | HC (unburned hydrocarbons) | 0.2 | .05 | 0.044 | 0.01 | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |

1. Enter the appropriate Source Identification Number for each emergency generator. Generator engines should be designated EG-1, EG-2, EG-3 etc. If more than three (3) engines exist, please use additional sheets.

2. Enter the Source Status using the following codes:

| | | | |
|----|---|----|-------------------|
| NS | Construction of New Source (installation) | ES | Existing Source |
| MS | Modification of Existing Source | RS | Removal of Source |

General Permit G60-C Registration Section Applicability Form

General Permit G60-C was developed to allow qualified registrants to seek registration for emergency generator(s).

General Permit G60-C allows the registrant to choose which sections of the permit that they wish to seek registration under. Therefore, please mark which sections that you are applying for registration under. Please keep in mind, that if this registration is approved, the issued registration will state which sections will apply to your affected facility.

- | | | |
|-----------|--|-------------------------------------|
| Section 5 | Reciprocating Internal Combustion Engines (R.I.C.E.)* | <input checked="" type="checkbox"/> |
| Section 6 | Tanks | <input type="checkbox"/> |
| Section 7 | Standards of Performance for Stationary Compression Ignition Internal Combustion Engines (40CFR60 Subpart III) | <input type="checkbox"/> |
| Section 8 | Standards of Performance for Stationary Spark Ignition Internal Combustion Engines (40CFR60 Subpart JJJ) | <input type="checkbox"/> |

* Affected facilities that are subject to Section 5 may also be subject to Sections 7 or 8. Therefore, if the applicant is seeking registration under both sections, please select both.

ATTACHMENT I

| | | |
|------|---------------|----------|
| EG-1 | 0.00204622618 | grams/lb |
| EG-2 | 97.7 | bhp |
| | 464 | bhp |
| | 2000 | lb/ton |
| | 500 | hr/yr |

| EG-1 | grams/hp.hr | lbs/hr | tons/yr |
|--------------|-------------|--------|---------|
| Nox | 5.4 | 1.08 | 0.27 |
| CO | 74.6 | 14.91 | 3.73 |
| VOC | | 0 | 0.00 |
| So2 | | 0 | 0.00 |
| PM | | 0 | 0.00 |
| Formaldahyde | | 0 | 0.00 |
| Smoke | | 0 | 0.00 |
| HC | 1 | 0.2 | 0.05 |

| EG-2 | grams/hp.hr | lbs/hr | tons/yr |
|--------------|-------------|--------|---------|
| Nox | 5.25 | 4.985 | 1.25 |
| CO | 0 | 0 | 0.00 |
| VOC | 0 | 0 | 0.00 |
| So2 | 0.11 | 0.104 | 0.03 |
| PM | 0 | 0 | 0.00 |
| Formaldahyde | 0 | 0 | 0.00 |
| Smoke | 0.399 | 0.379 | 0.09 |
| HC | 0.046 | 0.044 | 0.01 |

Note: All emission calculations were performed with the following methodology:

1. Information was obtained from manufacturer emission data sheets.
2. Values obtained were converted from grams/hp.hr to lbs/hr. by multiplying by the factor 0.00204622618 grams/lb. and then multiplying the resulting value by the bhp value obtained from manufacturer data sheets.
3. Multiply the previously obtained value by 500 hr/yr.
4. Divide the previous total by 2,000 lb/ton to get the total tons per year of emissions.

ATTACHMENT J

AIR QUALITY PERMIT NOTICE
Notice of Application

Notice is given that **Town of Alderson, WV** has applied to the West Virginia Department of Environmental Protection, Division of Air Quality, for a **(General Permit Registration for an Emergency Generator located at the Wastewater Treatment Plant Site, in Alderson WV, in Monroe County, West Virginia.**

The applicant estimates the potential to discharge the following Regulated Air Pollutants will be:

| Potential Emissions | Tons/year |
|--|-----------|
| NOx (Oxides of Nitrogen as NO ₂) | 1.52 |
| CO (Carbon Monoxide) | 3.73 |
| SO ₂ (Sulfur Dioxide) | 0.03 |

Startup of operation is planned to begin on or about the 1st day of **November, 2015**. Written comments will be received by the West Virginia Department of Environmental Protection, Division of Air Quality, 601 57th Street, SE, Charleston, WV 25304, for at least 30 calendar days from the date of publication of this notice.

Any questions regarding this permit application should be directed to the DAQ at (304) 926-0499, extension 1227, during normal business hours.

Dated this the **28th** day of **February, 2015**.

By: **Town of Alderson, WV**
Travis L. Copenhaver
Mayor
P.O. Box 179
Alderson, WV 24910

ATTACHMENT L

ATTACHMENT O

EMERGENCY GENERATOR EMISSION SUMMARY SHEET FOR CRITERIA POLLUTANTS

| Emergency Generator Location: WASTEWATER TREATMENT PLANT | | Registration Number (Agency Use) <u>G60-C</u> | | | | | | | | | | | | | |
|--|------------------------------|---|----------|-----------------|------------------|-------------|-------------|----------|-----------------|------------------|-------------------------------|-------------|----------|-----------------|------------------|
| Source ID No. | Potential Emissions (lbs/hr) | | | | | | | | | | Potential Emissions (tons/yr) | | | | |
| | NOx | CO | VOC | SO ₂ | PM ₁₀ | NOx | CO | VOC | SO ₂ | PM ₁₀ | NOx | CO | VOC | SO ₂ | PM ₁₀ |
| EG-1 | 1.08 | 14.91 | - | - | - | 0.27 | 3.73 | - | - | - | - | - | - | - | - |
| EG-2 | 4.985 | - | - | 0.002 | - | 1.25 | - | - | 0.03 | - | - | - | - | - | - |
| | | | | | | | | | | | | | | | |
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| | | | | | | | | | | | | | | | |
| Total | 6.065 | 14.91 | - | 0.002 | - | 1.52 | 3.73 | - | 0.03 | - | 1.52 | 3.73 | - | 0.03 | - |

OTHER SUPPPORTING DOCUMENTATION



**Exhaust Emission Data Sheet
60GGHE
60 Hz Spark Ignited Generator Set
EPA Emissions**

Engine Information:

| | | | |
|--------------------------|--|---------------|----------------------------|
| Model: | WSG-1068 | Bore: | 3.55 in. (90.2 mm) |
| Type: | 4 Cycle, V-10 Cylinder Spark-Ignited | Stroke: | 4.17 in. (105.9 mm) |
| Aspiration: | Naturally aspirated | Displacement: | 412.5 cu. in. (6.8 liters) |
| Compression Ratio: | 9:1 | | |
| Emission Control Device: | Electronics Air/Fuel Ratio Control and Closed-loop Breather System | | |

| PERFORMANCE DATA | Natural Gas | Propane |
|---|------------------------------|---------|
| | Standby | Standby |
| Genset Rating (kW) @1800 RPM (60 Hz) | 60 | 60 |
| BHP @ 1800 RPM (60 Hz) | 97.7 | 97.7 |
| Fuel Consumption (SCFH) | 861 | 345 |
| Air to Fuel Ratio | 16.2 | 14.5 |
| Exhaust Gas Flow (CFM) | 470 | 445 |
| Exhaust Gas Temperature (°F) | 1211 | 1207 |
| EXHAUST EMISSION DATA | | |
| HC (Total Unburned Hydrocarbons)* | 850 | 1680 |
| NOx (Oxides of Nitrogen as NO ₂) | 1680 | 1557 |
| CO (Carbon Monoxide) | 20121 | 31097 |
| | Values are ppmvd | |
| HC (Total Unburned Hydrocarbons)* | 1.2 | 1.0 |
| NOx (Oxides of Nitrogen as NO ₂) | 6.1 | 5.4 |
| CO (Carbon Monoxide) | 50.3 | 74.6 |
| | Values are Grams per HP-Hour | |
| *HC includes all NMHC, VOC, POC, and ROC constituents (Non-Methane HC, Volatile Organic Compounds, Precursor Organic Compounds, and Reactive Organic Compounds) | | |

TEST CONDITIONS

Data was recorded during steady-state rated engine speed (± 25 RPM) with full load ($\pm 2\%$). Pressures, temperatures, and emission rates were stabilized.

Fuel Specification:

Natural Gas: Dry gas as received from Supplier (1000 BTU/SCF).
 Propane: Meets the requirements for Commercial Grade Propane under the ASTM D1835 Standard Specification for Liquefied Gases

Fuel Temperature: 60 ± 9 °F at Flow Transmitter

Fuel Pressure: 14.73PSIA \pm 0.5 PSIA at Flow Transmitter

Intake Air Temperature: 77 ± 9 °F at inlet

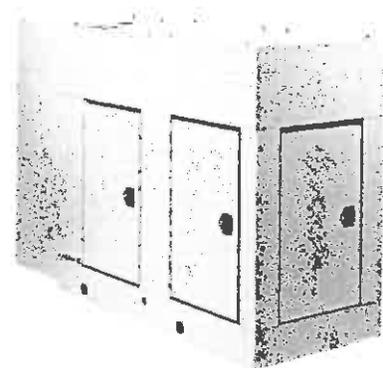
Barometric Pressure: 29.92 in. Hg \pm 1 in. Hg

Humidity: NOx measurement corrected to 75 grains H₂O/lb dry air

The NOx, HC, and CO emission data tabulated here were from a single engine under the test conditions shown above. These data are subjected to instrumentation and engine-to-engine variability. Field emission test data are not guaranteed to these levels. Actual field test results may vary due to test site conditions, installation, fuel specification, test procedures and instrumentation. Engine operation with excessive air intake or exhaust restriction beyond published maximum limit, or with improper maintenance, may result in elevated emission levels.



Spark ignited generator set 60 kW standby



Features and benefits

- Extremely quiet operation
- Fully automatic operation when used with a Cummins automatic transfer panel
- Available for use with natural gas or LP vapor
- Attractive and discreet sound attenuated housing
- Electronic governor for precise frequency control
- Includes 120 V coolant heater for cold weather
- Listed to UL 2200
- EPA certified for dual fuel
- Steel enclosure
- IBC and OSHPD seismic certified

Size and sound level

Size: Length 101.5 in (2578 mm),
width 41.3 in (1049 mm),
height 71.8 in (1824 mm)

Sound: 68 dB(A) measured at 7 m, average at full load with steel enclosure

Models and ratings

| Order model | Fuel | Voltage | Phase | Rated kW | kVA | Rated amps | Circuit breaker | Enclosure |
|-------------|-------------------------|---------|-------|----------|-----|-------------|-----------------|-----------|
| GGHE | Natural gas/ Propane | 120/240 | 1 | 60 | 60 | 500/250 | 300 A, 2 pole | Steel |
| | Natural gas/ Propane | 120/208 | 3 | 60 | 60 | 361.3/208.4 | 300 A, 3 pole | Steel |

Note: See page 4 of this document for derating factors.

Our energy working for you.™

©2014 Cummins Inc. | A-1564d (5/14)

power.cummins.com

Standard features

Engine:

- Electronic ignition
- Electronic governor
- Full-pressure lubrication
- High-capacity oil sump, spin-on oil filter
- Solenoid shift starter
- 65 A, engine-driven battery charger
- 120 V coolant heater
- Oil drain extension

Control system:

- PCC 2100 control system
- Automatic remote starting
- Controls generator set starting and shutdown
- Control components designed to withstand the vibration levels typical in generator sets
- Field circuit breaker
- High temperature, low oil pressure, low coolant level, overcrank and over speed shutdowns
- Running time meter
- UL Listed circuit breaker
- DC control fuse

Exhaust muffler:

- Enclosed exhaust silencer
- Low noise

Engine details

Engine: Ford industrial, spark-ignited

Design: 10-cylinder V, liquid-cooled

Compression ratio: 9.0:1

Displacement: 415 cu in (6.8 L)

Cooling system: 122° F (50 °C) ambient cooling system

Oil sump capacity, L (qt): 6.1 (6.5)

Operating speed: 1800 RPM

Gross engine power output, kWm (bhp):

| Model | Natural Gas | Propane |
|-------|-------------|-------------|
| GGHE | 72.7 (97.5) | 72.9 (97.7) |

Genset weight:

| Model | Enclosure | Weight lbs (kg) |
|-------|-----------|-----------------|
| GGHE | Steel | 2991 (1357) |

Average fuel consumption

Fuel consumption - natural gas - GGHE

| Load: | 1/4 | 1/2 | 3/4 | Full |
|---------------------|-------|-------|------|-------|
| ft ³ /hr | 375.6 | 533.8 | 692 | 850.1 |
| M ³ /hr: | 10.6 | 15.1 | 19.6 | 24.1 |

Fuel consumption - propane - GGHE

| Load: | 1/4 | 1/2 | 3/4 | Full |
|---------------------|-------|-------|-------|-------|
| ft ³ /hr | 145.5 | 208.1 | 270.6 | 333.2 |
| M ³ /hr: | 4.1 | 5.9 | 7.7 | 9.4 |
| Gal/hr | 4.0 | 5.7 | 7.4 | 9.2 |
| L/hr | 15.1 | 21.6 | 28.1 | 34.7 |

Alternator details

Design: Brushless, revolving field, 12 lead re-connectable, single phase design.

Insulation system: Class H per NEMA MG1-1.65.

Temperature rise: At rated load is less than 125 °C at standby rating, per NEMA MG1.22.40, IEEE 115 and IEC 34-1.

Exciter type: The excitation system derives its power from the main output of the generator, eliminating the need for a separate excitation power source.

Alternator cooling: Direct drive centrifugal blower.

Rotor: Supported by a pre-lubricated maintenance-free ball bearing.

AC wave form total harmonic distortion: Less than 5% total no load to full load, less than 3% for any single harmonic.

Generator set performance

Voltage: 120/240 V AC, single phase, 1.0 pf.

Governor regulation class: ISO 8528 Part 1 Class G3

Voltage regulation: 1%, no load to full load.

Frequency regulation: Isochronous, 0% no load to full load.

Operating temperature: -20 °F (-28.8 °C) to 122 °F (50 °C).

Motor starting kVA (at 90% sustained voltage):
GGHE: 155

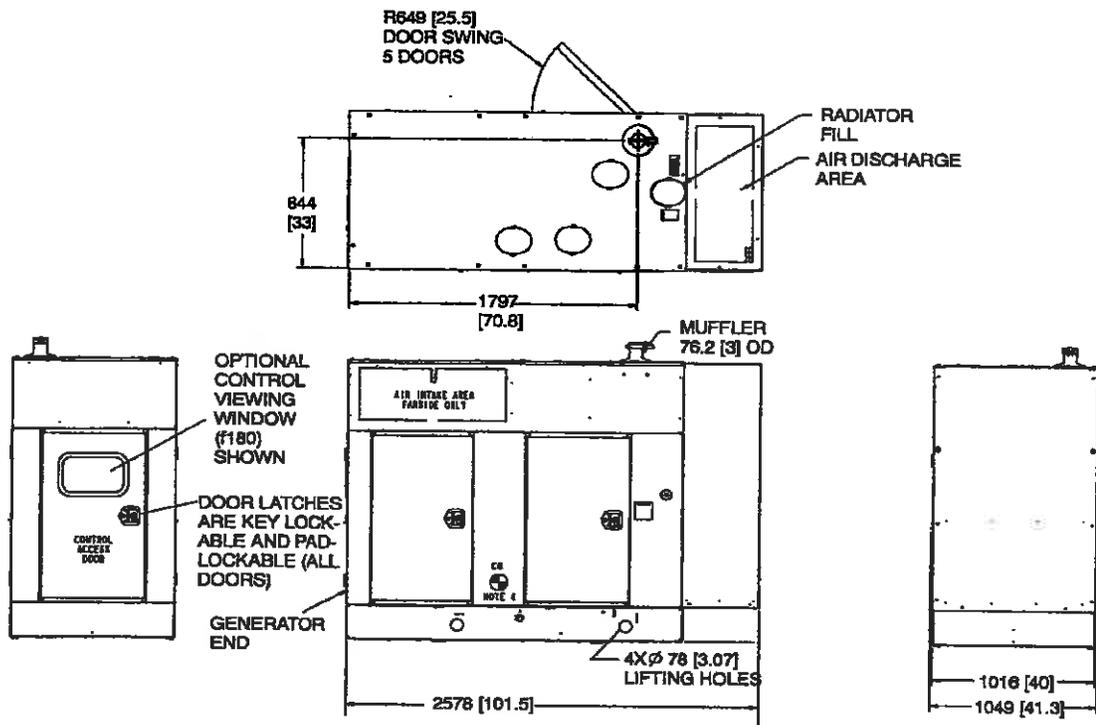
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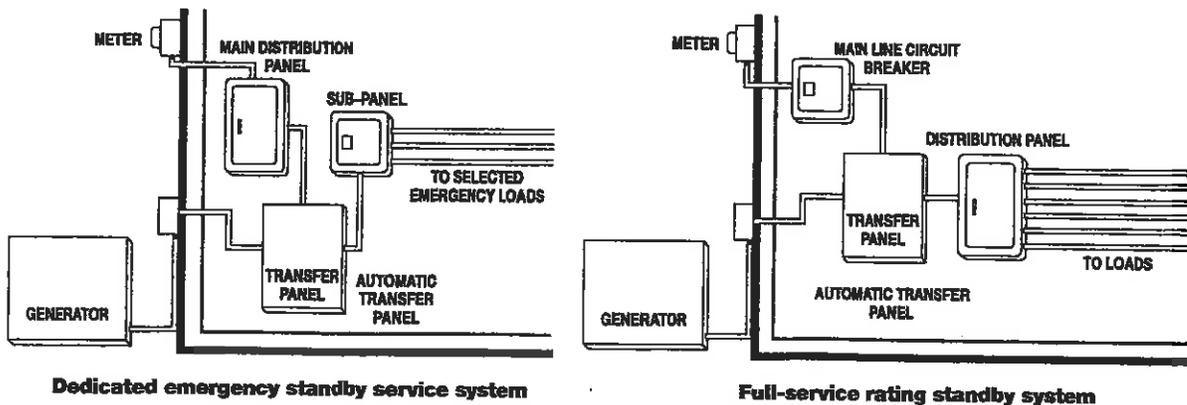
Basic dimensions

Dimensions: mm/in



Note: This outline drawing is provided for general reference only and is not intended for design or installation. For more information see Operation and Installation manuals or obtain drawing 500-3167 and wiring diagram from your distributor/dealer.

Automatic transfer panel configurations



Options and accessories

- Battery, 12 V, 620 cca (P/N 416-0823)
- Battery heater kit (P/N 333-0469)
- Full line of complementing automatic transfer panels

Housing features

- Sound attenuated, weather protective design, key-lockable service access doors
- Internal starting battery tray and tie down
- Heavy-duty steel housing, stainless steel fasteners

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Derating factors

60GGHE Model, Natural Gas

Rated power available up to 915 m (3000 ft) at ambient temperatures up to 40 °C (104 °F). Above 915 m (3000 ft) derate at 4% per 305 m (1000 ft), and 2% per 11 °C (1% per 10 °F) above 40 °C (104 °F).

60GGHE Model, Propane

Rated power available up to 1220 m (4000 ft) at ambient temperatures up to 40 °C (104 °F). Above 1220 m (4000 ft) derate at 4% per 305 m (1000 ft), and 2% per 11 °C (1% per 10 °F) above 40 °C (104 °F).

Testing and standards



This generator set is designed in facilities certified to ISO 9001 and manufactured in facilities certified to ISO 9001 or ISO 9002.



The Prototype Test Support (PTS) program verifies the performance integrity of the generator set design. Cummins Power Generation products bearing the PTS symbol meet the prototype test requirements of NFPA 110 for Level 1 systems.



All low voltage models are CSA certified to product class 4215-01.



The generator set is available Listed to UL 2200, Stationary Engine Generator Assemblies. The PowerCommand control is Listed to UL 508 - Category NITW7 for U.S. and Canadian usage.

U.S. EPA

Engine certified to U.S. EPA SI Stationary Emergency Emission Regulation 40 CFR, Part 60.

After sale support

Largest distributor/dealer support network

Cummins generator sets are supported by the largest and best trained worldwide certified distributor/dealer network in the industry. This network of knowledgeable Cummins distributor/dealers will help you select and install the right generator set and accessories to meet the requirements of your specific application. This same network offers a complete selection of commonly used generator set maintenance parts, accessories and products plus manuals and specification sheets. Plus, they can answer your questions regarding proper operation, maintenance schedules and more.

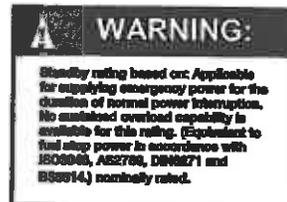
Manuals: Operation and installation manuals ship with the generator set. To obtain additional copies or other manuals for this model, see your Cummins distributor/dealer and request the following manual numbers: Operation (928-0143), Installation (928-0617), Parts (928-0244).

To easily locate the nearest Cummins distributor/dealer in your area, or for more information, visit www.cumminsonan.com or www.cumminspower.com.

Warranty policy

Cummins generators come with a standard two-year warranty. Additional two and five-year warranty options are available. Some restrictions apply.

This product is EPA Emissions certified for emergency standby use only.



Contact your distributor/dealer for more information.

North America
1400 73rd Avenue N.E.
Minneapolis, MN 55432
USA

Phone 763 574 5000
Fax 763 574 5298

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Power Generation

Exhaust Emission Data Sheet 300DQDAC 60 Hz Diesel Generator Set EPA NSPS Stationary Emergency

Engine Information:

| | | | |
|--------------------------|-------------------------------------|---------------|--------------------------|
| Model: | Cummins Inc. QSL9-G7 NR3 | Bore: | 4.49 in. (114 mm) |
| Type: | 4 Cycle, In-line, 6 Cylinder Diesel | Stroke: | 5.69 in. (145 mm) |
| Aspiration: | Turbocharged and CAC | Displacement: | 543 cu. in. (8.9 liters) |
| Compression Ratio: | 16.1:1 | | |
| Emission Control Device: | Turbocharger and CAC | | |

| | 1/4 | 1/2 | 3/4 | Full | Full |
|------------------------------------|---------|---------|---------|---------|-------|
| PERFORMANCE DATA | Standby | Standby | Standby | Standby | Prime |
| Engine HP @ Stated Load (1800 RPM) | 113.75 | 227.5 | 341.25 | 455 | 407 |
| Fuel Consumption (gal/hr) | 6.82 | 12.23 | 17.65 | 23.07 | 20.78 |
| Exhaust Gas Flow (CFM) | 1099.6 | 1714.8 | 2118.6 | 2279.4 | N/A |
| Exhaust Gas Temperature (°F) | 678 | 785 | 915 | 990 | 945 |
| EXHAUST EMISSION DATA | | | | | |
| HC (Total Unburned Hydrocarbons) | 0.25 | 0.129 | 0.052 | 0.046 | 0.042 |
| NOx (Oxides of Nitrogen as NO2) | 1.60 | 1.70 | 2.65 | 5.25 | 3.98 |
| CO (Carbon Monoxide) | 3.20 | 3.17 | 0.73 | 0.30 | N/A |
| PM (particular Matter) | 0.20 | 0.14 | 0.04 | 0.03 | N/A |
| SO2 (Sulfur Dioxide) | 0.14 | 0.13 | 0.12 | 0.11 | 0.119 |
| Smoke (Bosch) | 0.396 | 0.462 | 0.299 | 0.399 | 0.160 |

All values are Grams per HP-Hour

TEST CONDITIONS

Data was recorded during steady-state rated engine speed (± 25 RPM) with full load ($\pm 2\%$). Pressures, temperatures, and emission rates were stabilized.

Fuel Specification: 46.5 Cetane Number, 0.035 Wt.% Sulfur; Reference ISO8178-5, 40 CFR86.1313-98 Type 2-D and ASTM D975 No. 2-D.

Fuel Temperature: 99 ± 9 °F (at fuel pump inlet)

Intake Air Temperature: 77 ± 9 °F

Barometric Pressure: 29.6 ± 1 in. Hg

Humidity: NOx measurement corrected to 75 grains H2O/lb dry air

Reference Standard: ISO 8178

The NOx, HC, CO and PM emission data tabulated here were taken from a single engine under the test conditions shown above. Data for the other components are estimated. These data are subjected to instrumentation and engine-to-engine variability. Field emission test data are not guaranteed to these levels. Actual field test results may vary due to test site conditions, installation, fuel specification, test procedures and instrumentation. Engine operation with excessive air intake or exhaust restriction beyond published maximum limits, or with improper maintenance, may result in elevated emission levels.



**Power
Generation**

| PROTOTYPE TEST SUPPORT (PTS) 60 HZ TEST SUMMARY | | | | |
|--|----------|--|--------------------------|----------|
| GENERATOR SET MODELS | | | REPRESENTATIVE PROTOTYPE | |
| 250DQDAA | 275DQDAB | | Model: | 300DQDAC |
| 300DQDAC | | | Alternator: | HC4F |
| | | | Engine: | QSL9-G5 |



The following summarizes prototype testing conducted on the designated representative prototype of the specified models. This testing is conducted to verify the complete generator set electrical and mechanical design integrity. Prototype testing is conducted only on generator sets not sold as new equipment.

Maximum Surge Power: 315

The generator set was evaluated to determine the stated maximum surge power.

Maximum Motor Starting: 1372

The generator set was tested to simulate motor starting by applying the specified kVA load at low lagging power factor (0.4 or lower). With this load applied, the generator set recovered to a minimum of 90% rated voltage

Torsional Analysis and Testing:

The generator set was tested to verify that the design is not subjected to harmful torsional stresses. A spectrum analysis of the transducer output was conducted over the speed range of 1350 to 1950 RPM.

**Cooling System: 50 °C Ambient
0.5 in. H2O restriction**

The cooling system was tested to determine ambient temperature and static restriction capabilities. The test was performed at full rated load in elevated ambient temperature under-stated static restriction conditions.

Durability:

The generator set was subjected to a minimum 500 hour endurance test operating at variable load up to the standby rating based upon MIL-STD-705 to verify structural soundness and durability of the design.

Electrical and Mechanical Strength:

The generator set was tested to several single phase and three phase faults to verify that the generator can safely withstand the forces associated with short circuit conditions. The generator set was capable of producing full rated output at the conclusion of the testing.

Steady State Performance:

The generator set was tested to verify steady state operating performance was within the specified maximum limits.

| | |
|-----------------------------|-------------|
| Voltage Regulation: | ±0.50% |
| Random Voltage Variation: | ±0.50% |
| Frequency Regulation: | Isochronous |
| Random Frequency Variation: | ±0.25% |

Transient Performance:

The generator set was tested with the standard alternator to verify single step loading capability as required by NFPA 110. Voltage and frequency response on load addition or rejection were evaluated. The following results were recorded:

Full Load Acceptance:

| | | |
|----------------|------|--------|
| Voltage Dip: | 30.5 | % |
| Recovery Time: | 2.1 | Second |
| Frequency Dip: | 12.8 | % |
| Recovery Time: | 2.6 | Second |

Full Load Rejection:

| | | |
|-----------------|------|--------|
| Voltage Rise: | 15.8 | % |
| Recovery Time: | 0.7 | Second |
| Frequency Rise: | 3.5 | % |
| Recovery Time: | 2.8 | Second |

Harmonic Analysis:

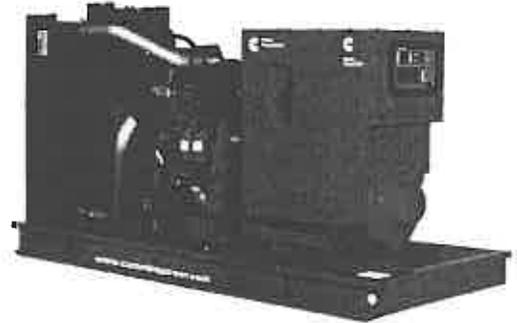
(per MIL-STD-705B, Method 601.4)

| Harmonic | Line to Line | | Line to Neutral | |
|----------|--------------|-----------|-----------------|-----------|
| | No Load | Full Load | No Load | Full Load |
| 3 | 0.09 | 0.035 | 0.16 | 0.054 |
| 5 | 0.62 | 1.95 | 0.66 | 2 |
| 7 | 0.58 | 0.73 | 0.6 | 0.72 |
| 9 | 0.028 | 0.029 | 0.058 | 0.098 |
| 11 | 0.7 | 0.37 | 0.7 | 0.36 |
| 13 | 0.13 | 0.32 | 0.33 | 0.36 |
| 15 | 0.05 | 0.016 | 0.08 | 0.076 |

Specification sheet



Diesel generator set QSL9-G7 series engine



250 kW - 300 kW standby

Description

Cummins Power Generation commercial generator sets are fully integrated power generation systems providing optimum performance, reliability and versatility for stationary standby and prime power applications.

Features

Cummins® heavy-duty engine - Rugged 4-cycle, industrial diesel delivers reliable power, low emissions and fast response to load changes.

Alternator - Several alternator sizes offer selectable motor starting capability with low reactance 2/3 pitch windings, low waveform distortion with non-linear loads and fault clearing short-circuit capability.

Permanent magnet generator (PMG) - Offers enhanced motor starting and fault clearing short-circuit capability.

Control system - The PowerCommand® electronic control is standard equipment and provides total genset system integration including automatic remote starting/stopping, precise frequency and voltage regulation, alarm and status message display, AmpSentry™ protection, output metering, auto-shutdown at fault detection and NFPA 110 Level 1 compliance.

Cooling system - Standard cooling package provides reliable running at the rated power level.

Enclosures - Optional weather protective and sound attenuated enclosures are available.

Fuel tanks - Dual wall sub-base fuel tanks are also available.

NFPA - The genset accepts full rated load in a single step in accordance with NFPA 110 for Level 1 systems.

Warranty and service - Backed by a comprehensive warranty and worldwide distributor network.

| Model | Standby rating | | Prime rating | | Continuous rating | | Data sheets | |
|-------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------|-------|
| | 60 Hz kW (kVA) | 50 Hz kW (kVA) | 60 Hz kW (kVA) | 50 Hz kW (kVA) | 60 Hz kW (kVA) | 50 Hz kW (kVA) | 60 Hz | 50 Hz |
| DQDAA | 250 (313) | | 225 (281) | | | | D-3442 | |
| DQDAB | 275 (344) | | 250 (313) | | | | D-3443 | |
| DQDAC | 300 (375) | | 270 (338) | | | | D-3444 | |

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Generator set specifications

| | |
|--|---|
| Governor regulation class | ISO 8528 Part 1 Class G3 |
| Voltage regulation, no load to full load | ± 0.5% |
| Random voltage variation | ± 0.5% |
| Frequency regulation | Isochronous |
| Random frequency variation | ± 0.5% |
| Radio frequency emissions compliance | IEC 801.2 through IEC 801.5; MIL-STD-461C, Part 9 |

Engine specifications

| | |
|-----------------------------|--|
| Bore | 114.0 mm (4.49 in) |
| Stroke | 145 mm (5.69 in) |
| Displacement | 8.9 L (543 in ³) |
| Configuration | Cast iron, in-line 6 cylinder |
| Battery capacity | 750 amps minimum at ambient temperature of -18 °C (-0.4 °F) and above |
| Battery charging alternator | 70 amps |
| Starting voltage | 24 volt, negative ground |
| Fuel system | Direct injection: number 2 diesel fuel, fuel filter, automatic electric fuel shutoff |
| Fuel filter | Dual element with water separator |
| Air cleaner type | Normal duty |
| Lube oil filter type(s) | Single spin-on, combination full flow and bypass filters |
| Standard cooling system | High ambient radiator |

Alternator specifications

| | |
|---------------------------------------|--|
| Design | Brushless, 4 pole, drip proof revolving field |
| Stator | 2/3 pitch |
| Rotor | Single bearing, flexible discs |
| Insulation system | Class H |
| Standard temperature rise | 125 °C standby, 105 °C prime |
| Exciter type | PMG (Permanent magnet generator) |
| Phase rotation | A (U), B (V), C (W) |
| Alternator cooling | Direct drive centrifugal blower |
| AC waveform total harmonic distortion | < 5% no load to full linear load, < 3% for any single harmonic |
| Telephone influence factor (TIF) | < 50 per NEMA MG1-22.43 |
| Telephone harmonic factor (THF) | < 3 |

Available voltages

| 60 Hz 3-phase | | | 50 Hz 3-phase | |
|---|---|---|--|-------------------|
| Reconnectable | Non-Reconnectable | | Reconnectable | Non-Reconnectable |
| <ul style="list-style-type: none"> • 110/190 • 139/240 • 240/416 | <ul style="list-style-type: none"> • 120/208 • 120/240 • 254/440 | <ul style="list-style-type: none"> • 127/220 • 220/380 • 277/480 | <ul style="list-style-type: none"> • 277/480 • 347/600 | |

Note: Consult factory for other voltages.

Generator set options and accessories

- | | | | |
|---|---|--|--|
| <p>Engine</p> <ul style="list-style-type: none"> <input type="checkbox"/> 120/240 V 1500 W coolant heater <input type="checkbox"/> 120/240 V 150 W lube oil heater <input type="checkbox"/> Heavy duty air cleaner <input type="checkbox"/> Engine oil temperature <p>Control panel</p> <ul style="list-style-type: none"> <input type="checkbox"/> 120/240 V 100 W control anti-condensation heater <input type="checkbox"/> Exhaust pyrometer <input type="checkbox"/> Ground fault indication <input type="checkbox"/> Remote fault signal package <input type="checkbox"/> Run relay package <input type="checkbox"/> Paralleling configuration | <p>Alternator</p> <ul style="list-style-type: none"> <input type="checkbox"/> 80 °C rise <input type="checkbox"/> 105 °C rise <input type="checkbox"/> 125 °C rise <input type="checkbox"/> 120/240 V 100 W anti-condensation heater <input type="checkbox"/> PMG excitation <input type="checkbox"/> Single phase <p>Exhaust system</p> <ul style="list-style-type: none"> <input type="checkbox"/> Genset mounted muffler <input type="checkbox"/> Heavy duty exhaust elbow <input type="checkbox"/> Slip on exhaust connection <input type="checkbox"/> NPT exhaust connection | <p>Fuel system</p> <ul style="list-style-type: none"> <input type="checkbox"/> 1022 L (270 gal) sub-base tank <input type="checkbox"/> 1136 L (300 gal) sub-base tank <input type="checkbox"/> 1514 L (400 gal) sub-base tank <input type="checkbox"/> 1893 L (500 gal) sub-base tank <input type="checkbox"/> 2271 L (600 gal) sub-base tank <input type="checkbox"/> 2498 L (660 gal) sub-base tank <input type="checkbox"/> 2725 L (720 gal) sub-base tank <input type="checkbox"/> 5565 L (1470 gal) sub-base tank <p>Generator set</p> <ul style="list-style-type: none"> <input type="checkbox"/> AC entrance box <input type="checkbox"/> Battery <input type="checkbox"/> Battery charger <input type="checkbox"/> Export box packaging <input type="checkbox"/> UL 2200 Listed | <ul style="list-style-type: none"> <input type="checkbox"/> Main line circuit breaker <input type="checkbox"/> PowerCommand Network <input type="checkbox"/> Communications Module (NCM) <input type="checkbox"/> Remote annunciator panel <input type="checkbox"/> Spring isolators <input type="checkbox"/> Enclosure: aluminum, steel, weather protective or sound attenuated <input type="checkbox"/> 2 year standby power warranty <input type="checkbox"/> 2 year prime power warranty <input type="checkbox"/> 5 year basic power warranty <input type="checkbox"/> 10 year major components warranty |
|---|---|--|--|

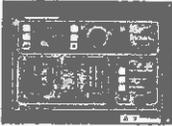
Note: Some options may not be available on all models - consult factory for availability.

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Control system PCC 2100



PowerCommand control is an integrated generator set control system providing governing, voltage regulation, engine protection and operator interface functions. Major features include:

- Integral AmpSentry™ Protective Relay providing a full range of alternator protection functions that are matched to the alternator provided.
- Battery monitoring and testing features and smart starting control system.
- Three phase sensing, full wave rectified voltage regulation system, with a PWM output for stable operation with all load types.
- Standard PCCNet™ and optional Echelon® LonWorks® network interface.
- Control suitable for operation in ambient temperatures from -40 °C to +70 °C (-40 °F to +158 °F) and altitudes to 5000 meters (13,000 feet).
- Prototype tested; UL, CSA, and CE compliant.
- InPower™ PC-based service tool available for detailed diagnostics.

Operator/display panel

- Off/manual/auto mode switch
- Manual run/stop switch
- Panel lamp test switch
- Emergency stop switch
- Alpha-numeric display with pushbutton access for viewing engine and alternator data and providing setup, controls and adjustments
- LED lamps indicating genset running, not in auto, common warning, common shutdown
- Configurable LED lamps (5)
- Configurable for local language

Engine protection

- Overspeed shut down
- Low oil pressure warning and shut down
- High coolant temperature warning and shut down
- High oil temperature warning (some models)
- Low coolant level warning or shut down
- Low coolant temperature warning
- High and low battery voltage warning
- Weak battery warning
- Dead battery shut down
- Fail to start (overcrank) shut down
- Fail to crank shut down
- Redundant -start disconnect
- Cranking lockout
- Sensor failure indication

Engine data

- DC voltage
- Lube oil pressure
- Coolant temperature
- Lube oil temperature (some models)
- Engine speed

AmpSentry AC protection

- Over current and short-circuit shut down
- Over current warning
- Single and three phase fault regulation
- Over and under voltage shut down
- Over and under frequency shut down
- Overload warning with alarm contact
- Reverse power and reverse Var shut down
- Excitation fault

Alternator data

- Line-to-line and line-to-neutral AC volts
- Three phase AC current
- Frequency
- Total and individual phase power factor, kW and kVA

Other data

- Genset model data
- Start attempts, starts, running hours
- kW hours (total and since reset)
- Fault history
- Load profile (hours less than 30% and hours more than 90% load)
- System data display (optional with network and other PowerCommand gensets or transfer switches)

Governing

- Digital electronic isochronous governor
- Temperature dynamic governing
- Smart idle speed mode
- Glow plug control (some models)

Voltage regulation

- Digital PWM electronic voltage regulation
- Three phase line-to-neutral sensing
- Suitable for PMG or shunt excitation
- Single and three phase fault regulation
- Configurable torque matching

Control functions

- Data logging on faults
- Fault simulation (requires InPower)
- Time delay start and cooldown
- Cycle cranking
- PCCNet interface
- Configurable customer inputs (4)
- Configurable customer outputs (4)
- Configurable network inputs (8) and outputs (16) (with optional network)
- Remote emergency stop

Options

- LED bargraph AC data display
- Thermostatically controlled space heater
- Key-type mode switch
- Ground fault module
- Auxiliary relays (3)
- Echelon LONWORKS interface
- Modlon Gateway to convert to Modbus (loose)
- PowerCommand iWatch web server for remote monitoring and alarm notification (loose)
- Digital input and output module(s) (loose)
- Remote annunciator (loose)

For further detail see document S-1409.

Ratings definitions

Emergency standby power (ESP):

Applicable for supplying power to varying electrical load for the duration of power interruption of a reliable utility source. Emergency Standby Power (ESP) is in accordance with ISO 8528. Fuel Stop power in accordance with ISO 3046, AS 2789, DIN 6271 and BS 5514.

Limited-time running power (LTP):

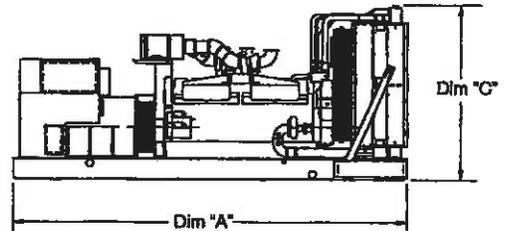
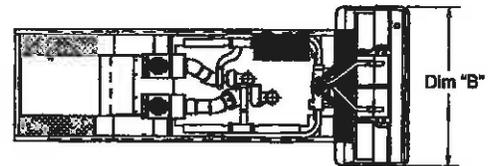
Applicable for supplying power to a constant electrical load for limited hours. Limited Time Running Power (LTP) is in accordance with ISO 8528.

Prime power (PRP):

Applicable for supplying power to varying electrical load for unlimited hours. Prime Power (PRP) is in accordance with ISO 8528. Ten percent overload capability is available in accordance with ISO 3046, AS 2789, DIN 6271 and BS 5514.

Base load (continuous) power (COP):

Applicable for supplying power continuously to a constant electrical load for unlimited hours. Continuous Power (COP) in accordance with ISO 8528, ISO 3046, AS 2789, DIN 6271 and BS 5514.



This outline drawing is for reference only. See respective model data sheet for specific model outline drawing number.

Do not use for installation design

Dimensions and weights with standard cooling system

| Model | Dim "A" mm (in.) | Dim "B" mm (in.) | Dim "C" mm (in.) | Estimated Set Weight* dry kg (lbs) | Estimated Set Weight* wet kg (lbs) |
|-------|---------------------|---------------------|---------------------|---------------------------------------|---------------------------------------|
| DQDAA | 3023 (119.0) | 1270 (50.0) | 1617 (64.0) | 2184 (4814) | 2234 (4926) |
| DQDAB | 3023 (119.0) | 1270 (50.0) | 1617 (64.0) | 2184 (4814) | 2234 (4926) |
| DQDAC | 3023 (119.0) | 1270 (50.0) | 1617 (64.0) | 2319 (5113) | 2370 (5225) |

Dimensions and weights with optional cooling system with seismic feature codes L228-2 and/or L225-2

| Model | Dim "A" mm (in.) | Dim "B" mm (in.) | Dim "C" mm (in.) | Estimated Set Weight* dry kg (lbs) | Estimated Set Weight* wet kg (lbs) |
|-------|---------------------|---------------------|---------------------|---------------------------------------|---------------------------------------|
| DQDAA | 3023 (119.0) | 1270 (50.0) | 1676 (66.0) | 2184 (4814) | 2234 (4926) |
| DQDAB | 3023 (119.0) | 1270 (50.0) | 1676 (66.0) | 2184 (4814) | 2234 (4926) |
| DQDAC | 3023 (119.0) | 1270 (50.0) | 1676 (66.0) | 2319 (5113) | 2370 (5225) |

* Weights represent a set with standard features. See outline drawings for weights of other configurations.

Codes and standards

Codes or standards compliance may not be available with all model configurations – consult factory for availability.

| | | | |
|---|---|---|--|
|  | This generator set is designed in facilities certified to ISO 9001 and manufactured in facilities certified to ISO 9001 or ISO 9002. |  | The generator set is available Listed to UL2200, Stationary Engine Generator Assemblies for all 60 Hz low voltage models. |
|  | The Prototype Test Support (PTS) program verifies the performance integrity of the generator set design. Cummins Power Generation products bearing the PTS symbol meet the prototype test requirements of NFPA 110 for Level 1 systems. | U.S. EPA | Engine certified to Stationary Emergency U.S. EPA New Source Performance Standards, 40 CFR 60 subpart III Tier 3 exhaust emission levels. U.S. applications must be applied per this EPA regulation. |
|  | All low voltage models are CSA certified to product class 4215-01. | International Building Code | The generator set package is available certified for seismic application in accordance with the following International Building Code: IBC2000, IBC2003, IBC2006, IBC2009 and IBC2012. |

Warning: Back feed to a utility system can cause electrocution and/or property damage. Do not connect to any building's electrical system except through an approved device or after building main switch is open.

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Generator set data sheet



Model: DQDAC
Frequency: 60
Fuel type: Diesel
KW rating: 300 standby
 270 prime
Emissions level: EPA NSPS Stationary Emergency Tier 3

| | |
|---|-----------------|
| Exhaust emission data sheet: | EDS-1073 |
| Exhaust emission compliance sheet: | EPA-1101 |
| Sound performance data sheet: | MSP-1030 |
| Cooling system data in various ambient conditions: | MCP-150 |
| Prototype test summary data sheet: | PTS-164 |
| Standard set-mounted radiator cooling outline: | A048R355 |
| Optional set-mounted radiator cooling outline with seismic feature codes L228-2 (IBC) or L225-2 (OSHPD): | A041F691 |

| Fuel consumption | Standby | | | | Prime | | | | Continuous |
|------------------|------------|------------|------------|-------------|------------|------------|------------|-------------|-------------|
| | kW (kVA) | | | | kW (kVA) | | | | kW (kVA) |
| Ratings | 300 (375) | | | | 270 (338) | | | | |
| Load | 1/4 | 1/2 | 3/4 | Full | 1/4 | 1/2 | 3/4 | Full | Full |
| US gph | 6.8 | 12.2 | 17.7 | 23.1 | 6.3 | 11.1 | 15.9 | 20.8 | |
| L/hr | 25.8 | 46.3 | 66.8 | 87.3 | 23.6 | 42.0 | 60.3 | 78.7 | |

| Engine | Standby rating | Prime rating | Continuous rating |
|--------------------------------------|-------------------------------|--------------|-------------------|
| Engine manufacturer | Cummins Inc. | | |
| Engine model | QSL9-G7 | | |
| Configuration | Cast iron, in-line 6 cylinder | | |
| Aspiration | Turbocharged and CAC | | |
| Gross engine power output, kWm (bhp) | 346 (464) | 312 (419) | |
| BMEP at set rated load, kPa (psi) | 2606 (378) | 2351 (341) | |
| Bore, mm (in) | 114.0 (4.49) | | |
| Stroke, mm (in) | 145 (5.69) | | |
| Rated speed, rpm | 1800 | | |
| Piston speed, m/s (ft/min) | 8.7 (1707.0) | | |
| Compression ratio | 16.1:1 | | |
| Lube oil capacity, L (qt) | 22.7 (24.0) | | |
| Overspeed limit, rpm | 2070 ± 50 | | |
| Regenerative power, kW | 35.00 | | |

Fuel flow

| | | |
|---|--------------|--|
| Fuel flow at rated load, L/hr (US gph) | 156.7 (41.4) | |
| Maximum inlet restriction, mm Hg (in Hg) | 152.4 (6.0) | |
| Maximum return restriction, mm Hg (in Hg) | 254.0 (10.0) | |

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| Air | Standby rating | Prime rating | Continuous rating |
|--|----------------|--------------|-------------------|
| Combustion air, m ³ /min (scfm) | 25.1 (885.8) | 23.2 (820.7) | |
| Maximum air cleaner restriction, kPa (in H ₂ O) | 6.2 (25.0) | | |
| Alternator cooling air, m ³ /min (scfm) | 59.4 (2100.0) | | |

Exhaust

| | | | |
|---|--------------|-------------|--|
| Exhaust flow at set rated load, m ³ /min (cfm) | 65.0 (2296) | 60.5 (2137) | |
| Exhaust temperature, °C (°F) | 551.8 (1025) | 515.9 (961) | |
| Maximum back pressure, kPa (in H ₂ O) | 10.2 (41.0) | | |

Standard set-mounted radiator cooling (non-seismic)

| | | | |
|--|----------------|--------------|--|
| Ambient design, °C (°F) | 50 (122) | | |
| Fan load, kW _m (HP) | 26.09 (35) | | |
| Coolant capacity (with radiator), L (US Gal) | 34.29 (9.06) | | |
| Cooling system air flow, m ³ /min (cfm) | 427.58 (15100) | | |
| Total heat rejection, MJ/min (Btu/min) | 10.5 (9924.0) | 9.3 (8727.0) | |
| Maximum cooling air flow static restriction, kPa (in H ₂ O) | 0.12 (0.5) | | |

Optional set-mounted radiator cooling (with seismic feature codes L228-2 (IBC) and/or L225-2 (OSHPD))

| | | | |
|--|-----------------|--------------|--|
| Ambient design, °C (°F) | 40 (104) | | |
| Fan load, kW _m (HP) | 27.8 (37.2) | | |
| Coolant capacity (with radiator), L (US gal) | 30.3 (8.0) | | |
| Cooling system air flow, m ³ /min (cfm) | 568.1 (20075.0) | | |
| Total heat rejection, MJ/min (Btu/min) | 10.5 (9924.0) | 9.3 (8727.0) | |
| Maximum cooling air flow static restriction, kPa (in H ₂ O) | 0.12 (0.5) | | |

Optional heat exchanger cooling

| | | | |
|--|--|--|--|
| Set coolant capacity, L (US Gal.) | | | |
| Heat rejected, jacket water circuit, MJ/min (Btu/min) | | | |
| Heat rejected, aftercooler circuit, MJ/min (Btu/min) | | | |
| Heat rejected, fuel circuit, MJ/min (Btu/min) | | | |
| Total heat radiated to room, MJ/min (Btu/min) | | | |
| Maximum raw water pressure, jacket water circuit, kPa (psi) | | | |
| Maximum raw water pressure, aftercooler circuit, kPa (psi) | | | |
| Maximum raw water pressure, fuel circuit, kPa (psi) | | | |
| Maximum raw water flow, jacket water circuit, L/min (US Gal/min) | | | |
| Maximum raw water flow, aftercooler circuit, L/min (US Gal/min) | | | |
| Maximum raw water flow, fuel circuit, L/min (US Gal/min) | | | |
| Minimum raw water flow at 27 °C (80 °F) inlet temp, jacket water circuit, L/min (US Gal/min) | | | |
| Minimum raw water flow at 27 °C (80 °F) inlet temp, aftercooler circuit, L/min (US Gal/min) | | | |
| Minimum raw water flow at 27 °C (80 °F) inlet temp, fuel circuit, L/min (US Gal/min) | | | |
| Raw water delta P at min flow, jacket water circuit, kPa (psi) | | | |
| Raw water delta P at min flow, aftercooler circuit, kPa (psi) | | | |
| Raw water delta P at min flow, fuel circuit, kPa (psi) | | | |
| Maximum jacket water outlet temp, °C (°F) | | | |
| Maximum aftercooler inlet temp, °C (°F) | | | |
| Maximum aftercooler inlet temp at 25 °C (77 °F) ambient, °C (°F) | | | |

| Optional remote radiator cooling¹ | Standby rating | Prime rating | Continuous rating |
|--|-----------------------|---------------------|--------------------------|
| Set coolant capacity, L (US gal) | | | |
| Max flow rate at max friction head, jacket water circuit, L/min (US gal/min) | | | |
| Max flow rate at max friction head, aftercooler circuit, L/min (US gal/min) | | | |
| Heat rejected, jacket water circuit, MJ/min (Btu/min) | | | |
| Heat rejected, aftercooler circuit, MJ/min (Btu/min) | | | |
| Heat rejected, fuel circuit, MJ/min (Btu/min) | | | |
| Total heat radiated to room, MJ/min (Btu/min) | | | |
| Maximum friction head, jacket water circuit, kPa (psi) | | | |
| Maximum friction head, aftercooler circuit, kPa (psi) | | | |
| Maximum static head, jacket water circuit, m (ft) | | | |
| Maximum static head, aftercooler circuit, m (ft) | | | |
| Maximum jacket water outlet temp, °C (°F) | | | |
| Maximum aftercooler inlet temp at 25 °C (77 °F) ambient, °C (°F) | | | |
| Maximum aftercooler inlet temp, °C (°F) | | | |
| Maximum fuel flow, L/hr (US gph) | | | |
| Maximum fuel return line restriction, kPa (in Hg) | | | |

Weights²

| | |
|---------------------------|-------------|
| Unit dry weight kgs (lbs) | 2319 (5113) |
| Unit wet weight kgs (lbs) | 2370 (5225) |

Notes:

¹ For non-standard remote installations contact your local Cummins Power Generation representative.

² Weights represent a set with standard features. See outline drawing for weights of other configurations.

Derating factors

| | |
|-------------------|--|
| Standby | Engine power available up to 549 m (1800 ft) at ambient temperature up to 40 °C (104 °F). Above these elevations, derate at 7% per 305 m (1000 ft). Above 40 °C (104 °F) derate 12% per 10 °C (18 °F). |
| Prime | Engine power available up to 0 m (0 ft) at ambient temperature up to 40 °C (104 °F). Above these elevations, derate at 7% per 300m (984 ft). Above 40 °C (104 °F) derate 19% per 10 °C (18 °F). |
| Continuous | |

Ratings definitions

| Emergency standby power (ESP): | Limited-time running power (LTP): | Prime power (PRP): | Base load (continuous) power (COP): |
|--|--|---|--|
| Applicable for supplying power to varying electrical load for the duration of power interruption of a reliable utility source. Emergency Standby Power (ESP) is in accordance with ISO 8528. Fuel Stop power in accordance with ISO 3046, AS 2789, DIN 6271 and BS 5514. | Applicable for supplying power to a constant electrical load for limited hours. Limited Time Running Power (LTP) is in accordance with ISO 8528. | Applicable for supplying power to varying electrical load for unlimited hours. Prime Power (PRP) is in accordance with ISO 8528. Ten percent overload capability is available in accordance with ISO 3046, AS 2789, DIN 6271 and BS 5514. | Applicable for supplying power continuously to a constant electrical load for unlimited hours. Continuous Power (COP) is in accordance with ISO 8528, ISO 3046, AS 2789, DIN 6271 and BS 5514. |

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Alternator data

| Three Phase Table ¹ | | 80 °C | 80 °C | 105 °C | 105 °C | 105 °C | 125 °C | 125 °C | 125 °C | 125 °C | 125 °C | | |
|---|-------|-----------------|----------------|--|--|----------------|--|--|----------------|---------|---------|--|--|
| Feature Code | | B251 | B302 | B259 | B256 | B301 | B258 | B252 | B246 | B247 | B300 | | |
| Alternator Data Sheet Number | | 342 | 342 | 342 | 342 | 341 | 342 | 341 | 341 | 341 | 341 | | |
| Voltage Ranges | | 277/480 | 347/600 | 110/190 thru 139/240 220/380 thru 277/480 | 120/208 thru 139/240 240/416 thru 277/480 | 347/600 | 110/190 thru 139/240 220/380 thru 277/480 | 120/208 thru 139/240 240/416 thru 277/480 | 277/480 | 277/480 | 347/600 | | |
| Surge kW | | 322 | 322 | 322 | 322 | 322 | 322 | 322 | 322 | 322 | 322 | | |
| Motor Starting kVA (at 90% sustained voltage) | Shunt | | | | | | | | | | | | |
| | PMG | 1372 | 1372 | 1372 | 1372 | 1210 | 1372 | 1210 | 1210 | 1210 | 1210 | | |
| Full Load Current Amps at Standby Rating | | 120/208 1042 | 127/220 985 | 139/240 903 | 220/380 570 | 240/416 521 | 254/440 483 | 277/480 452 | 347/600 361 | | | | |

Note:

¹ Single phase power can be taken from a three phase generator set at up to 40% of the generator set nameplate kW rating at unity power factor.

Formulas for calculating full load currents:

Three phase output

$$\frac{\text{kW} \times 1000}{\text{Voltage} \times 1.73 \times 0.8}$$

Single phase output

$$\frac{\text{kW} \times \text{SinglePhaseFactor} \times 1000}{\text{Voltage}}$$

Warning: Back feed to a utility system can cause electrocution and/or property damage. Do not connect to any building's electrical system except through an approved device or after building main switch is open.

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**2015 EPA Tier 3 Exhaust Emission
Compliance Statement
300DQDAC
Stationary Emergency
60 Hz Diesel Generator Set**

Compliance Information:

The engine used in this generator set complies with Tier 3 emissions limit of U.S. EPA New Source Performance Standards for stationary emergency engines under the provisions of 40 CFR 60 Subpart IIII when tested per ISO8178 D2.

| | |
|---|--------------------|
| Engine Manufacturer: | Cummins Inc |
| EPA Certificate Number: | FCEXL0540AAB-030 |
| Effective Date: | 12/09/2014 |
| Date Issued: | 12/09/2014 |
| EPA Engine Family (Cummins Emissions Family): | FCEXL0540AAB(B563) |

Engine Information:

| | | | |
|--------------------------|-------------------------------------|-------------------------|--------------------------|
| Model: | QSL / QSL9 / QSL9-G7 NR3 | Bore: | 4.49 in. (114 mm) |
| Engine Nameplate HP: | 464 | Stroke: | 5.69 in. (145 mm) |
| Type: | 4 Cycle, In-line, 6 Cylinder Diesel | Displacement: | 543 cu. in. (8.9 liters) |
| Aspiration: | Turbocharged and CAC | Compression Ratio: | 16.1:1 |
| Emission Control Device: | | Exhaust Stack Diameter: | 6 in. |

Diesel Fuel Emission Limits

D2 Cycle Exhaust Emissions

| | Grams per BHP-hr | | | Grams per kWm-hr | | |
|--|-------------------|-----------|-----------|-------------------|-----------|-----------|
| | <u>NOx + NMHC</u> | <u>CO</u> | <u>PM</u> | <u>NOx + NMHC</u> | <u>CO</u> | <u>PM</u> |
| Test Results - Diesel Fuel (300-4000 ppm Sulfur) | 2.8 | 1.7 | 0.07 | 3.8 | 2.3 | 0.10 |
| EPA Emissions Limit | 3.0 | 2.6 | 0.15 | 4.0 | 3.5 | 0.20 |
| Test Results - CARB Diesel Fuel (<15 ppm Sulfur) | 2.6 | 1.7 | 0.07 | 3.5 | 2.3 | 0.09 |
| CARB Emissions Limit | 3.0 | 2.6 | 0.15 | 4.0 | 3.5 | 0.20 |

The CARB emission values are based on CARB approved calculations for converting EPA (500 ppm) fuel to CARB (15 ppm) fuel.

Test Methods: EPA/CARB Nonroad emissions recorded per 40CFR89 (ref. ISO8178-1) and weighted at load points prescribed in Subpart E, Appendix A for Constant Speed Engines (ref. ISO8178-4, D2)

Diesel Fuel Specifications: Cetane Number: 40-48. Reference: ASTM D975 No. 2-D.

Reference Conditions: Air Inlet Temperature: 25°C (77°F), Fuel Inlet Temperature: 40°C (104°F). Barometric Pressure: 100 kPa (29.53 in Hg), Humidity: 10.7 g/kg (75 grains H2O/lb) of dry air; required for NOx correction, Restrictions: Intake Restriction set to a maximum allowable limit for clean filter; Exhaust Back Pressure set to a maximum allowable limit.

Tests conducted using alternate test methods, instrumentation, fuel or reference conditions can yield different results.

Engine operation with excessive air intake or exhaust restriction beyond published maximum limits, or with improper maintenance, may result in elevated emission levels.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
2015 MODEL YEAR
CERTIFICATE OF CONFORMITY
WITH THE CLEAN AIR ACT

OFFICE OF TRANSPORTATION
AND AIR QUALITY
ANN ARBOR, MICHIGAN 48105

Certificate Issued To: **Cummins Inc.**

(U.S. Manufacturer or Importer)

Certificate Number: **FCEXL0540AAB-030**


Byron J. Bunker, Division Director
Compliance Division

Effective Date:
12/09/2014

Expiration Date:
12/31/2015

Issue Date:
12/09/2014

Revision Date:
N/A

Model Year: 2015

Manufacturer Type: Original Engine Manufacturer

Engine Family: FCEXL0540AAB

Mobile/Stationary Indicator: Stationary

Emissions Power Category: 225<=kW<450

Fuel Type: Diesel

After Treatment Devices: No After Treatment Devices Installed

Non-after Treatment Devices: No Non-After Treatment Devices Installed

Pursuant to Section 111 and Section 213 of the Clean Air Act (42 U.S.C. sections 7411 and 7547) and 40 CFR Part 60, and subject to the terms and conditions prescribed in those provisions, this certificate of conformity is hereby issued with respect to the test engines which have been found to conform to applicable requirements and which represent the following engines, by engine family, more fully described in the documentation required by 40 CFR Part 60 and produced in the stated model year.

This certificate of conformity covers only those new compression-ignition engines which conform in all material respects to the design specifications that applied to those engines described in the documentation required by 40 CFR Part 60 and which are produced during the model year stated on this certificate of the said manufacturer, as defined in 40 CFR Part 60.

It is a term of this certificate that the manufacturer shall consent to all inspections described in 40 CFR 1068 and authorized in a warrant or court order. Failure to comply with the requirements of such a warrant or court order may lead to revocation or suspension of this certificate for reasons specified in 40 CFR Part 60. It is also a term of this certificate that this certificate may be revoked or suspended or rendered void *ab initio* for other reasons specified in 40 CFR Part 60.

This certificate does not cover engines sold, offered for sale, or introduced, or delivered for introduction, into commerce in the U.S. prior to the effective date of the certificate.