



**DNREC – Air Quality Management Section
Application to Construct, Operate, or Modify
Stationary Sources**

Form AQM-1
Page 1 of 4

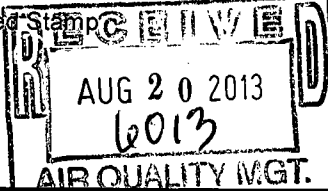
Administrative Information

If you are using this form electronically, press F1 at any time for help

All Application Forms Should Be Mailed To:

**Air Quality Management
Blue Hen Corporate Center
655 S. Bay Road, Suite 5 N
Dover, DE 19901**

**All Checks Should Be Made Payable To:
State of Delaware**

<u>For Department Use Only</u>	
Date Received Stamp	Assigned Permit Number
	APC-2014/0011-C

<u>Company and Site Information</u>	
1. Company Name:	Comcast of New Castle County, LLC
2. Company Mailing Address:	2215 N. DuPont Highway
City:	New Castle
State:	DE
Zip Code:	19720
3. Site Name:	New Castle Headend
4. Site Mailing Address: <i>(if different from above)</i>	
City:	
State:	
Zip Code:	
5. Physical Location of Site: <i>(if different from above)</i>	2215 N. DuPont Highway
City:	New Castle
State:	DE
Zip Code:	19720
6. Air Quality Management Facility ID Number:	1000300634
7. Site NAICS Code):	515210
<i>(list all that apply)</i>	
8. Site SIC Code):	4841
<i>(list all that apply)</i>	
9. Site Location Coordinates:	39.70177, -75.57156
10. Is the Facility New or Existing?	<input type="checkbox"/> NEW <input checked="" type="checkbox"/> EXISTING
<i>If the Facility is an Existing Facility, Complete the Rest of Question 10. If Not, Proceed to Question 11.</i>	
10.1. Does the Facility Have Active Air Permits?	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO



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<u>Company and Site Information</u>	
11.	Is this Application For a New Source or Modification of an Existing Source? <input checked="" type="checkbox"/> New Source <input type="checkbox"/> Modification of Existing Source <input type="checkbox"/> Other (Specify):
<i>If the application is for the modification of an existing source, complete the rest of Question 11. If not, proceed to Question 12.</i>	
11.1.	Does the Source Have an Active Air Permit? <input type="checkbox"/> YES <input type="checkbox"/> NO
<i>If the source has an active air permit, complete the rest of Question 11. If not, proceed to Question 12.</i>	
11.2.	Permit Number of Existing Source:
12.	Status of Source Being Applied For: <input checked="" type="checkbox"/> Natural Minor Source <input type="checkbox"/> Synthetic Minor Source <input type="checkbox"/> Major Source
13.	Facility Status: <input checked="" type="checkbox"/> Natural Minor Facility <input type="checkbox"/> Synthetic Minor Facility <input type="checkbox"/> Major Facility
<i>If the source is a Major Source, complete the rest of Question 13. If not, proceed to Question 14.</i>	
13.1.	Responsible Official Name: Richard Raines
13.2.	Responsible Official Title: Facility Manager

<u>Contact Information</u>	
14.	Name of Owner or Facility Manager: Richard Raines
15.	Title of Owner or Facility Manager: Facility Manager
16.	Permit Contact Name: Richard Raines
17.	Permit Contact Title: Facility Manager
18.	Permit Contact Telephone Number: (484) 302-9410
19.	Permit Contact Fax Number:
20.	Permit Contact E-Mail Address: Richard_Raines@cable.comcast.com

<u>Proposed Operating Schedule</u>	
21.	Proposed Operating Schedule: 24 hours/day 7 days/week 52 weeks/year
21.1.	Is There Any Additional Information Regarding the Operating Schedule? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO
<i>If YES, complete the rest of Question 21. If NO, proceed to Question 22.</i>	
21.2.	Describe the Additional Information: This application is for an emergency generator. The generator will operate one (1) hour per week for testing and maintenance and during emergencies that cause the facility to lose power.



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<u>Coastal Zone Information</u>	
22. Is the Facility Located in the Coastal Zone?	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO
<i>If the facility is located in the Coastal Zone complete the rest of Question 22. If not, proceed to Question 23.</i>	
22.1. Is a Coastal Zone Permit Required for Construction or Operation of the Source Being Applied for?	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO
Attach a copy of the Coastal Zone Determination if it has not been previously submitted	
<i>If a Coastal Zone Permit is required complete the rest of Question 22. If not, proceed to Question 23.</i>	
22.2. Has a Coastal Zone Permit Been Issued?	<input type="checkbox"/> YES <input type="checkbox"/> NO
Attach a copy of the Coastal Zone Permit if it has not been previously submitted	

<u>Local Zoning Information</u>	
23. Parcel Zoning: Industrial	
Attach Proof of Local Zoning if it has not been previously submitted	

<u>Application Information</u>																																				
24. Is the Appropriate Application Fee Attached?	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO																																			
25. Is the Advertising Fee Attached?	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO																																			
Attach the appropriate fees. Note that your Application will not be considered complete if the appropriate fees are not included.																																				
26. Is a Cover Letter Describing the Process Attached?	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO																																			
Attach a brief cover letter describing your Application.																																				
<i>If the Facility is a New Facility complete Question 27. If not, proceed to Question 28.</i>																																				
27. Is a Copy of the Applicant Background Information Questionnaire on Record at the Department?	<input type="checkbox"/> YES <input type="checkbox"/> NO																																			
<i>If NO, complete the rest of Question 27. If YES, process to Question 28.</i>																																				
27.1 Is a Copy of the Applicant Background Information Questionnaire Attached?	<input type="checkbox"/> YES <input type="checkbox"/> NO																																			
Attach a copy of the Applicant Background Information Questionnaire if applicable.																																				
28. Check Which Application Forms are Attached:																																				
<table style="width: 100%; border: none;"> <tr> <td><input checked="" type="checkbox"/> AQM-1</td> <td><input type="checkbox"/> AQM-3.4</td> <td><input type="checkbox"/> AQM-3.9</td> <td><input type="checkbox"/> AQM-3.14</td> <td><input type="checkbox"/> AQM-4.4</td> <td><input type="checkbox"/> AQM-4.9</td> <td><input type="checkbox"/> AQM-6</td> </tr> <tr> <td><input checked="" type="checkbox"/> AQM-2</td> <td><input type="checkbox"/> AQM-3.5</td> <td><input type="checkbox"/> AQM-3.10</td> <td><input type="checkbox"/> AQM-3.15</td> <td><input type="checkbox"/> AQM-4.5</td> <td><input type="checkbox"/> AQM-4.10</td> <td></td> </tr> <tr> <td><input type="checkbox"/> AQM-3.1</td> <td><input type="checkbox"/> AQM-3.6</td> <td><input type="checkbox"/> AQM-3.11</td> <td><input type="checkbox"/> AQM-4.1</td> <td><input type="checkbox"/> AQM-4.6</td> <td><input type="checkbox"/> AQM-4.11</td> <td></td> </tr> <tr> <td><input type="checkbox"/> AQM-3.2</td> <td><input type="checkbox"/> AQM-3.7</td> <td><input type="checkbox"/> AQM-3.12</td> <td><input type="checkbox"/> AQM-4.2</td> <td><input type="checkbox"/> AQM-4.7</td> <td><input type="checkbox"/> AQM-4.12</td> <td></td> </tr> <tr> <td><input checked="" type="checkbox"/> AQM-3.3</td> <td><input type="checkbox"/> AQM-3.8</td> <td><input type="checkbox"/> AQM-3.13</td> <td><input type="checkbox"/> AQM-4.3</td> <td><input type="checkbox"/> AQM-4.8</td> <td><input checked="" type="checkbox"/> AQM-5</td> <td></td> </tr> </table>		<input checked="" type="checkbox"/> AQM-1	<input type="checkbox"/> AQM-3.4	<input type="checkbox"/> AQM-3.9	<input type="checkbox"/> AQM-3.14	<input type="checkbox"/> AQM-4.4	<input type="checkbox"/> AQM-4.9	<input type="checkbox"/> AQM-6	<input checked="" type="checkbox"/> AQM-2	<input type="checkbox"/> AQM-3.5	<input type="checkbox"/> AQM-3.10	<input type="checkbox"/> AQM-3.15	<input type="checkbox"/> AQM-4.5	<input type="checkbox"/> AQM-4.10		<input type="checkbox"/> AQM-3.1	<input type="checkbox"/> AQM-3.6	<input type="checkbox"/> AQM-3.11	<input type="checkbox"/> AQM-4.1	<input type="checkbox"/> AQM-4.6	<input type="checkbox"/> AQM-4.11		<input type="checkbox"/> AQM-3.2	<input type="checkbox"/> AQM-3.7	<input type="checkbox"/> AQM-3.12	<input type="checkbox"/> AQM-4.2	<input type="checkbox"/> AQM-4.7	<input type="checkbox"/> AQM-4.12		<input checked="" type="checkbox"/> AQM-3.3	<input type="checkbox"/> AQM-3.8	<input type="checkbox"/> AQM-3.13	<input type="checkbox"/> AQM-4.3	<input type="checkbox"/> AQM-4.8	<input checked="" type="checkbox"/> AQM-5	
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Application Information

29. Check Which Documents are Attached:

- | | |
|---|---|
| <input type="checkbox"/> Coastal Zone Determination | <input type="checkbox"/> Claim of Confidentiality |
| <input type="checkbox"/> Coastal Zone Permit | <input checked="" type="checkbox"/> Manufacturer Specification(s) |
| <input type="checkbox"/> Proof of Local Zoning | <input type="checkbox"/> Material Safety Data Sheets (MSDSs) |
| <input checked="" type="checkbox"/> Application Fee | <input checked="" type="checkbox"/> Supporting Calculations |
| <input checked="" type="checkbox"/> Advertising Fee | <input checked="" type="checkbox"/> Descriptive Cover Letter |
| <input type="checkbox"/> Applicant Background Information Questionnaire | <input checked="" type="checkbox"/> Other (Specify): Stationary Generator Initial Notification |

Confidentiality Information

30. Do You Consider Any of the Information Submitted With this Application Confidential? YES NO


If a Claim of Confidentiality is made it MUST meet the requirements of Section 6 of DNREC's Freedom of Information ("FOIA") Regulation at the time the Application is submitted.

Signature Block

I, the undersigned, hereby certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all of its attachments as to the truth, accuracy, and completeness of this information. I certify based on information and belief formed after reasonable inquiry, the statements and information in this document are true, accurate, and complete. By signing this form, I certify that I have not changed, altered, or deleted any portions of this application. I acknowledge that I cannot commence construction, alteration, modification or initiate operation until I receive written approval (i.e. permit, registration, or exemption letter) from the Department. I acknowledge that I may be required to perform testing of the equipment to receive construction or operation approval, and that if I do not receive approval to construct or operate that I may appeal the decision.

Richard Raines
Owner or Authorized Agent

8/15/13
Date


Signature of Owner or Authorized Agent

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Air Quality Management
Blue Hen Corporate Center
655 S. Bay Road, Suite 5 N
Dover, Delaware 19901**

**All Checks Should Be Made Payable To:
State of Delaware**

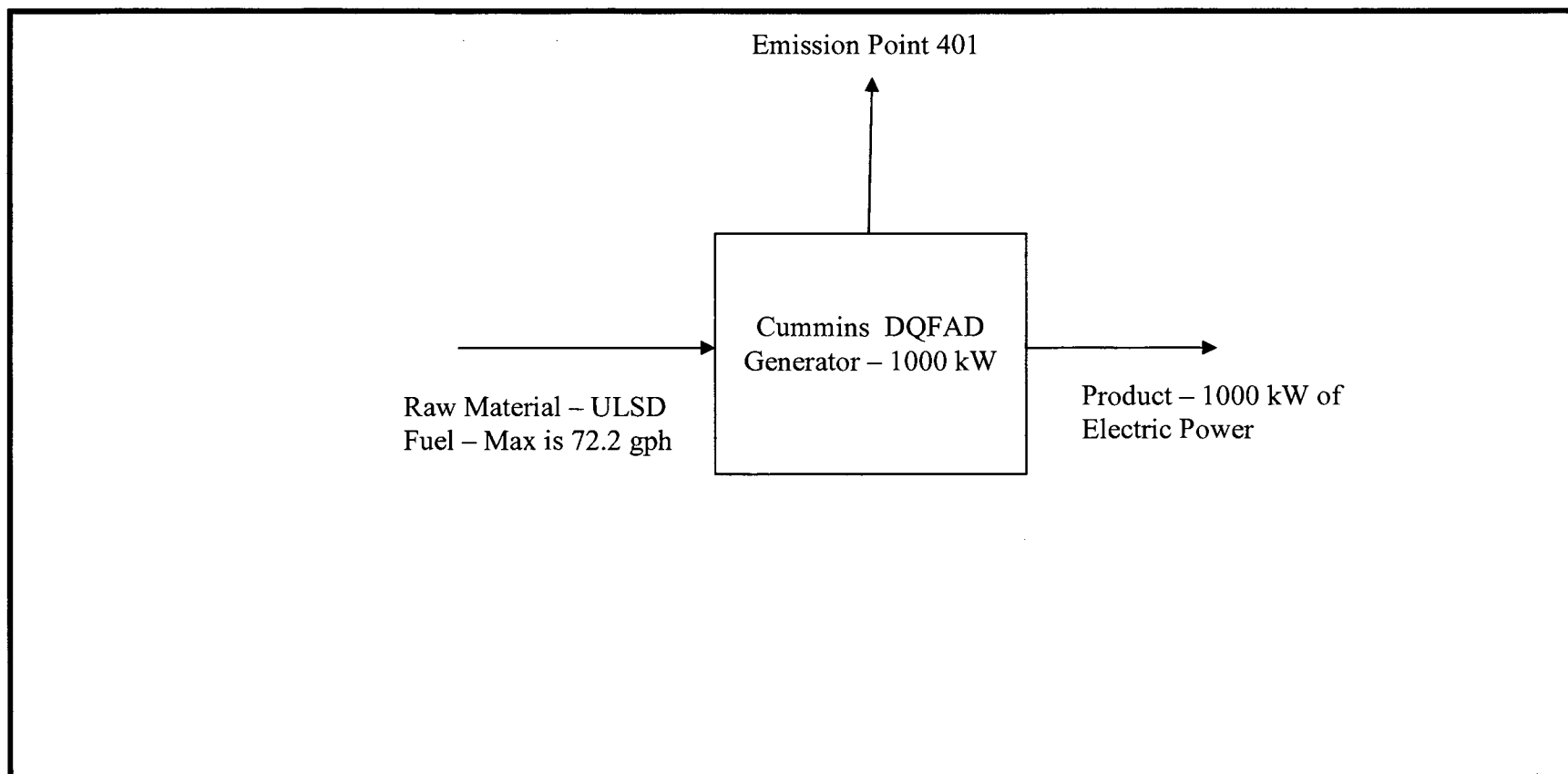


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Process Flow Diagram

Sketch the Process Flow Diagram for the equipment or process being applied for. Include each emission unit and control device (even existing emission units that will not be modified by this application). You may identify each emission unit with a simple shape. Label each emission unit and control device with a unique identifier. Show the relationship between each emission unit and/or control device by drawing arrows between them to indicate the flow of air pollutants. List which application forms are included for each emission unit or control device below the shape representing each emission unit or control device. See <http://www.delaware.gov/reg2/default.htm> for example Process Flow Diagrams for common processes. If you already have a Process Flow Diagram for the equipment or process being applied for, you may attach it to the application instead of using this form.





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Generator/Engine Application

If you are using this form electronically, press F1 at any time for help

<u>General Information</u>	
1.	Facility Name: Comcast - New Castle Headend
2.	Equipment ID: 401
3.	Manufacturer: Cummins Power
4.	Model: DQFAD
5.	Serial Number: To Be Determined
6.	Rated Heat Input: 9.89 MMBTU/hour
7.	Maximum Power Output: 1490 horsepower
8.	Date of Manufacture: To Be Determined
9.	Installation Date: October 1, 2013 (estimate)
10.	Is the Equipment Being Applied For a Generator or an Engine? <input checked="" type="checkbox"/> Generator <input type="checkbox"/> Engine
<i>If the equipment is a Generator, complete the rest of Question 10. If not, proceed to Question 11.</i>	
10.1.	Is the Generator Existing or New? <input type="checkbox"/> Existing <input checked="" type="checkbox"/> New
10.2.	Will the Generator Be Classified as an Emergency Generator or a Distributed Generator? <input checked="" type="checkbox"/> Emergency <input type="checkbox"/> Distributed
10.3.	Has an Initial Notification Pursuant to 7 DE Admin. Code 1144 Been Submitted for this Generator? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO
<i>If NO, include a copy of the Initial Notification with this application.</i>	
10.4.	Have the Emissions From the Generator Been Certified to Meet the Currently Applicable US EPA Non-Road Emission Standards? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO
<i>If YES, attach a copy of the Manufacturer's Certification. If NO, attach copies of any/all of the following: any maintenance or operating requirements/instructions provided by the generator manufacturer; the type, or a description, of any emission control equipment use; and/or emissions test data for the generator (such as a manufacturer's technical data sheet), any supporting documentation for any emission control equipment used, any supporting calculations, any quality control or assurance information, and any other information needed to demonstrate compliance with the requirements. Proceed to Question 11.</i>	
11.	Primary Fuel: <input type="checkbox"/> Natural Gas <input type="checkbox"/> Biodiesel <input checked="" type="checkbox"/> Diesel <input type="checkbox"/> Other (specify): <input type="checkbox"/> Propane
11.1.	Maximum Annual Primary Fuel Consumption: 36,100 (based on 500 hrs/yr) gal
11.2.	Heat Content of Primary Fuel: 137,000 BTU/gal
11.3.	Maximum Firing Rate: 72.2 gallons/hr
11.4.	Percent Sulfur of Primary Fuel: 0.0015 %
11.5.	Percent Ash of Primary Fuel: 0 %



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<u>General Information</u>	
12. Secondary Fuel:	<input type="checkbox"/> Natural Gas <input type="checkbox"/> Biodiesel <input type="checkbox"/> Diesel <input type="checkbox"/> Other (specify): <input type="checkbox"/> Propane
12.1. Maximum Annual Secondary Fuel Consumption:	MMCF
12.2. Heat Content of Secondary Fuel:	BTU/CF
12.3. Maximum Firing Rate:	MMCF/hr
12.4. Percent Sulfur of Secondary Fuel:	%
12.5. Percent Ash of Secondary Fuel:	%

<u>Stack Information</u>	
13. How Does the Process Equipment Vent: <i>(check all that apply)</i>	<input checked="" type="checkbox"/> Directly to the Atmosphere <input type="checkbox"/> Through a Control Device Covered by Forms AQM-4.1 through 4.12
<i>If any of the process equipment vents directly to the atmosphere proceed to Question 14. If the process equipment vents through a control device, provide the stack parameters on the control device form and proceed to Question 15.</i>	
14. Emission Point Name:	1000 kW Generator #1 Em Pt 401
14.1. Stack Height Above Grade:	12.4 feet
14.2. Stack Exit Diameter:	0.83 feet <i>(Provide Stack Dimensions If Rectangular Stack)</i>
14.3. Is a Stack Cap Present?	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO
14.4. Stack Configuration:	<input checked="" type="checkbox"/> Vertical <input type="checkbox"/> Horizontal <input type="checkbox"/> Downward-Venting <i>(check all that apply)</i> <input type="checkbox"/> Other (Specify):
14.5. Stack Exit Gas Temperature:	890 °F
14.6. Stack Exit Gas Flow Rate:	7540 ACFM
14.7. Distance to Nearest Property Line:	75 ft
14.8. Describe Nearest Obstruction:	Building
14.9. Height of Nearest Obstruction:	17 ft
14.10. Distance to Nearest Obstruction:	30 ft
14.11. Are Stack Sampling Ports Provided?	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO

<u>Monitoring Information</u>	
15. Will Emissions Data be Recorded by a Continuous Emission Monitoring System?	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO
If Yes, Attach a Copy of the Continuous Emission Monitoring System Manufacturer's Specification Sheets	
<i>If YES, complete the rest of Question 15. If NO, proceed to Question 16.</i>	



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Monitoring Information	
15.1. Pollutants Monitored:	<input type="checkbox"/> VOCs <input type="checkbox"/> HAPs <input type="checkbox"/> PM <input type="checkbox"/> PM ₁₀ <input type="checkbox"/> PM _{2.5} <input type="checkbox"/> NO _x <input type="checkbox"/> SO _x <input type="checkbox"/> Metals <input type="checkbox"/> Other (Specify):
15.2. Describe the Continuous Emission Monitoring System:	
15.3. Manufacturer:	
15.4. Model:	
15.5. Serial Number:	
15.6. Will Multiple Emission Units Be Monitored at the Same Point?	<input type="checkbox"/> YES <input type="checkbox"/> NO
<i>If YES, complete the rest of Question 15. If NO, proceed to Question 16.</i>	
15.7. Emission Units Monitored:	
15.8. Will More Than One Emission Unit be Emitting From the Combined Point At Any Time?	<input type="checkbox"/> YES <input type="checkbox"/> NO
<i>If YES, complete the rest of Question 15. If NO, proceed to Question 16.</i>	
15.9. Emission Units Emitting Simultaneously:	

Visible Emissions Monitoring Information	
<i>For Primary Fuel</i>	
16. Proposed Technique Used to Monitor Visible Emissions:	<input type="checkbox"/> Opacity Monitor (COM) <input type="checkbox"/> Manual (Method 9) <input type="checkbox"/> Manual (Method 22) <input checked="" type="checkbox"/> Other (Describe): 5 minute observation
<i>If an Opacity Monitor (COM) is used, complete the rest of Question 16. If not, proceed to Question 17.</i>	
16.1. Describe the Continuous Opacity Monitoring System:	
16.2. Manufacturer:	
16.3. Model:	
16.4. Serial Number:	
17. Proposed Frequency of Opacity Monitoring:	Quarterly, results will be logged
<i>For Secondary Fuel. If no Secondary Fuel is used, proceed to Question 20.</i>	
18. Proposed Technique Used to Monitor Visible Emissions:	<input type="checkbox"/> Opacity Monitor (COMs) <input type="checkbox"/> Manual (Method 9) <input type="checkbox"/> Manual (Method 22) <input type="checkbox"/> Other (Describe):
<i>If an Opacity Monitor (COMs) is used, complete the rest of Question 18. If not, proceed to Question 19.</i>	
18.1. Describe the Continuous Opacity Monitoring System:	
18.2. Manufacturer:	
18.3. Model:	



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Visible Emissions Monitoring Information

18.4. Serial Number:

19. Proposed Frequency of Opacity Monitoring:

Monitoring and Alarm Information

20. Are There Any Alarms You Would Like the Department to Consider When Drafting the Permit? YES NO

If YES, complete the rest of Question 20. If NO, proceed to Question 21.

20.1. Describe the System Alarm(s):

If there are more than five alarms, attach additional copies of this page as needed.

	Operating Parameter Monitored	Describe Alarm Trigger	Monitoring Device or Alarm Type	Does the Alarm Initiate an Automated Response?
20.1.1.			<input type="checkbox"/> Visual <input type="checkbox"/> Auditory <input type="checkbox"/> Automatic (Remote Monitoring) <input type="checkbox"/> Other	<input type="checkbox"/> NO <input type="checkbox"/> YES Describe:
20.1.2.			<input type="checkbox"/> Visual <input type="checkbox"/> Auditory <input type="checkbox"/> Automatic (Remote Monitoring) <input type="checkbox"/> Other	<input type="checkbox"/> NO <input type="checkbox"/> YES Describe:
20.1.3.			<input type="checkbox"/> Visual <input type="checkbox"/> Auditory <input type="checkbox"/> Automatic (Remote Monitoring) <input type="checkbox"/> Other	<input type="checkbox"/> NO <input type="checkbox"/> YES Describe:
20.1.4.			<input type="checkbox"/> Visual <input type="checkbox"/> Auditory <input type="checkbox"/> Automatic (Remote Monitoring) <input type="checkbox"/> Other	<input type="checkbox"/> NO <input type="checkbox"/> YES Describe:
20.1.5.			<input type="checkbox"/> Visual <input type="checkbox"/> Auditory <input type="checkbox"/> Automatic (Remote Monitoring) <input type="checkbox"/> Other	<input type="checkbox"/> NO <input type="checkbox"/> YES Describe:

Emissions Information

21. Do You Plan to Take Any Emission Limitations to Avoid Major Source Status, Minor New Source Review, MACT, NSPS, etc.? YES NO

If YES, complete the rest of Question 21. If NO, proceed to Question 22.



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Emissions Information

21.1. Describe Any Proposed Emission Limitations:

Operating Information

22. Do You Plan to Take Any Operating Limitations to Avoid Major Source Status, Minor New Source Review, MACT, NSPS, etc.? YES NO

If YES, complete the rest of Question 22. If NO, proceed to Question 23.

22.1. Describe Any Proposed Operating Limitations:

Additional Information

23. Is There Any Additional Information Pertinent to this Application? YES NO

If YES, complete the rest of Question 23.

23.1. Describe: **The 2013 model year engine satisfies Tier 2 emission requirements. The generator will only be used to provide stand-by electrical power to avoid an interruption in operations. As this is a stand-by generator, it will regularly operate for testing and maintenance purposes. The generator is equipped with a totalizing meter on the engine, to record actual hours of usage. In addition, usage records will be maintained at the facility. Since the engine was manufactured after April 1, 2006, it is applicable to 40 CFR 60 Subpart IIII (NSPS for Stationary Compression Ignition Internal Combustion Engines). The engine will comply with the standard by using diesel fuel with a sulfur content less than 15 ppm and logging all uses of the generator.**



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Emissions Information Application

If you are using this form electronically, press F1 at any time for help

<u>Process Information</u>	
1.	Number of Individual Pieces of Process Equipment in Process: 1
2.	Number of Individual Control Devices in Process: 0

<u>Emissions Information for First Emission Point/Stack</u>						
3. Emission Point Name: 1000 kW Generator #1						
4. Equipment ID Number for all Process Equipment and Control Devices Venting Through Emission Point/Stack: 401						
5. Pollutant Emissions						
If more than 18 pollutants are emitted at this Emission Point/Stack, attach additional copies of this page as needed.						
	Pollutant Name (Specify VOCs and HAPs Individually in 5.10 through 5.18)	CAS Number (Not required for 5.1 through 5.9)	Maximum Uncontrolled Emission Rate at Design Capacity	Maximum Controlled Emission Rate at Design Capacity	Annual Potential to Emit (PTE)	Expected Annual Emissions
5.1.	Particulate Matter (PM)		0.492 lbs/hour	lbs/hour	0.123 tons/year	0.013 tons/year
5.2.	PM ₁₀		0.492 lbs/hour	lbs/hour	0.123 tons/year	0.013 tons/year
5.3.	PM _{2.5}		0.492 lbs/hour	lbs/hour	0.123 tons/year	0.013 tons/year
5.4.	Sulfur Oxides (SO _x)		0.018 lbs/hour	lbs/hour	0.005 tons/year	0.000 tons/year
5.5.	Nitrogen Oxides (NO _x)		15.75 lbs/hour	lbs/hour	3.938 tons/year	0.410 tons/year
5.6.	Carbon Monoxide (CO)		8.53 lbs/hour	lbs/hour	2.133 tons/year	0.222 tons/year
5.7.	Lead		NA lbs/hour	lbs/hour	NA tons/year	NA tons/year
5.8.	Total Volatile Organic Compounds (VOCs)		15.75 lbs/hour	lbs/hour	3.938 tons/year	0.410 tons/year



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Emissions Information for First Emission Point/Stack						
5.9.	Total Hazardous Air Pollutants (HAPs)		0.0148 lbs/hour	lbs/hour	0.0037 tons/year	0.0004 tons/year
5.10.	Benzene	71-43-2	0.0077 lbs/hour	lbs/hour	0.0019 tons/year	0.0002 tons/year
5.11.	Toluene	108-88-3	0.0028 lbs/hour	lbs/hour	0.0007 tons/year	0.0001 tons/year
5.12.	Xylenes	1330-20-7	0.0019 lbs/hour	lbs/hour	0.0005 tons/year	0.000 tons/year
5.13.	Acetaldehyde	75-07-0	0.0002 lbs/hour	lbs/hour	0.0001 tons/year	0.000 tons/year
5.14.	Acrolein	107-02-8	0.0001 lbs/hour	lbs/hour	0.000 tons/year	0.000 tons/year
5.15.	Naphthalene	91-20-3	0.0013 lbs/hour	lbs/hour	0.0003 tons/year	0.000 tons/year
5.16.	Formaldehyde	50-00-0	0.0008 lbs/hour	lbs/hour	0.0002 tons/year	0.0000 tons/year
5.17.			lbs/hour	lbs/hour	tons/year	tons/year
5.18.			lbs/hour	lbs/hour	tons/year	tons/year
6.	Provide Any Additional Information Necessary to Understanding the Emission Rates Provided Above: Annual PTE is based upon 500 hours of operation per year. Expected annual emissions is based on 52 hours of operation per year (testing and maintenance operation only).					
Attach the Basis of Determination or Calculations for each Emission Rate provided above.						

Emissions Information for Second Emission Point/Stack						
7.	Emission Point Name:					
8.	Equipment ID Number for all Process Equipment and Control Devices Venting Through Emission Point/Stack:					
9.	Pollutant Emissions					
If more than 18 pollutants are emitted at this Emission Point/Stack, attach additional copies of this page as needed.						
	<u>Pollutant Name</u> (Specify VOCs and HAPs)	<u>CAS Number</u> (Not required for	<u>Maximum Uncontrolled Emission Rate at</u>	<u>Maximum Controlled Emission Rate at</u>	<u>Annual Potential to Emit (PTE)</u>	<u>Expected Annual</u>



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Emissions Information for Second Emission Point/Stack					
Individually in 9.10 through 9.18)	9.1 through 9.9)	<u>Design Capacity</u>	<u>Design Capacity</u>		<u>Emissions</u>
9.1. Particulate Matter (PM)		lbs/hour	lbs/hour	tons/year	tons/year
9.2. PM ₁₀		lbs/hour	lbs/hour	tons/year	tons/year
9.3. PM _{2.5}		lbs/hour	lbs/hour	tons/year	tons/year
9.4. Sulfur Oxides (SO _x)		lbs/hour	lbs/hour	tons/year	tons/year
9.5. Nitrogen Oxides (NO _x)		lbs/hour	lbs/hour	tons/year	tons/year
9.6. Carbon Monoxide (CO)		lbs/hour	lbs/hour	tons/year	tons/year
9.7. Lead		lbs/hour	lbs/hour	tons/year	tons/year
9.8. Total Volatile Organic Compounds (VOCs)		lbs/hour	lbs/hour	tons/year	tons/year
9.9. Total Hazardous Air Pollutants (HAPs)		lbs/hour	lbs/hour	tons/year	tons/year
9.10.		lbs/hour	lbs/hour	tons/year	tons/year
9.11.		lbs/hour	lbs/hour	tons/year	tons/year
9.12.		lbs/hour	lbs/hour	tons/year	tons/year
9.13.		lbs/hour	lbs/hour	tons/year	tons/year
9.14.		lbs/hour	lbs/hour	tons/year	tons/year
9.15.		lbs/hour	lbs/hour	tons/year	tons/year
9.16.		lbs/hour	lbs/hour	tons/year	tons/year
9.17.		lbs/hour	lbs/hour	tons/year	tons/year
9.18.		lbs/hour	lbs/hour	tons/year	tons/year
10. Provide Any Additional Information Necessary to Understanding the Emission Rates Provided Above:					



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Emissions Information for Second Emission Point/Stack

Attach the Basis of Determination or Calculations for each Emission Rate provided above.

Emissions Information for Third Emission Point/Stack

11. Emission Point Name:

12. Equipment ID Number for all Process Equipment and Control Devices Venting Through Emission Point/Stack:

13. Pollutant Emissions

If more than 18 pollutants are emitted at this Emission Point/Stack, attach additional copies of this page as needed.

	<u>Pollutant Name</u> (Specify VOCs and HAPs Individually in 13.10 through 13.18)	<u>CAS Number</u> (Not required for 13.1 through 13.9)	<u>Maximum Uncontrolled Emission Rate at Design Capacity</u>	<u>Maximum Controlled Emission Rate at Design Capacity</u>	<u>Annual Potential to Emit (PTE)</u>	<u>Expected Annual Emissions</u>
13.1.	Particulate Matter (PM)		lbs/hour	lbs/hour	tons/year	tons/year
13.2.	PM ₁₀		lbs/hour	lbs/hour	tons/year	tons/year
13.3.	PM _{2.5}		lbs/hour	lbs/hour	tons/year	tons/year
13.4.	Sulfur Oxides (SO _x)		lbs/hour	lbs/hour	tons/year	tons/year
13.5.	Nitrogen Oxides (NO _x)		lbs/hour	lbs/hour	tons/year	tons/year
13.6.	Carbon Monoxide (CO)		lbs/hour	lbs/hour	tons/year	tons/year
13.7.	Lead		lbs/hour	lbs/hour	tons/year	tons/year
13.8.	Total Volatile Organic Compounds (VOCs)		lbs/hour	lbs/hour	tons/year	tons/year
13.9.	Total Hazardous Air Pollutants (HAPs)		lbs/hour	lbs/hour	tons/year	tons/year
13.10.			lbs/hour	lbs/hour	tons/year	tons/year
13.11.			lbs/hour	lbs/hour	tons/year	tons/year
13.12.			lbs/hour	lbs/hour	tons/year	tons/year



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Emissions Information for Third Emission Point/Stack					
13.13.		lbs/hour	lbs/hour	tons/year	tons/year
13.14.		lbs/hour	lbs/hour	tons/year	tons/year
13.15.		lbs/hour	lbs/hour	tons/year	tons/year
13.16.		lbs/hour	lbs/hour	tons/year	tons/year
13.17		lbs/hour	lbs/hour	tons/year	tons/year
13.18.		lbs/hour	lbs/hour	tons/year	tons/year
14. Provide Any Additional Information Necessary to Understanding the Emission Rates Provided Above:					
Attach the Basis of Determination or Calculations for each Emission Rate provided above.					

Emissions Information for Fourth Emission Point/Stack						
15. Emission Point Name:						
16. Equipment ID Number for all Process Equipment and Control Devices Venting Through Emission Point/Stack:						
17. Pollutant Emissions						
If more than 18 pollutants are emitted at this Emission Point/Stack, attach additional copies of this page as needed.						
	<u>Pollutant Name</u> (Specify VOCs and HAPs Individually in 17.10 through 17.18)	<u>CAS Number</u> (Not required for 17.1 through 17.9)	<u>Maximum Uncontrolled Emission Rate at Design Capacity</u>	<u>Maximum Controlled Emission Rate at Design Capacity</u>	<u>Annual Potential to Emit (PTE)</u>	<u>Expected Annual Emissions</u>
17.1.	Particulate Matter (PM)		lbs/hour	lbs/hour	tons/year	tons/year
17.2.	PM ₁₀		lbs/hour	lbs/hour	tons/year	tons/year
17.3.	PM _{2.5}		lbs/hour	lbs/hour	tons/year	tons/year
17.4.	Sulfur Oxides (SO _x)		lbs/hour	lbs/hour	tons/year	tons/year



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<u>Emissions Information for Fourth Emission Point/Stack</u>						
17.5.	Nitrogen Oxides (NO _x)		lbs/hour	lbs/hour	tons/year	tons/year
17.6.	Carbon Monoxide (CO)		lbs/hour	lbs/hour	tons/year	tons/year
17.7.	Volatile Organic Compounds (VOCs)		lbs/hour	lbs/hour	tons/year	tons/year
17.8.	Lead		lbs/hour	lbs/hour	tons/year	tons/year
17.9.			lbs/hour	lbs/hour	tons/year	tons/year
17.10.			lbs/hour	lbs/hour	tons/year	tons/year
17.11.			lbs/hour	lbs/hour	tons/year	tons/year
17.12.			lbs/hour	lbs/hour	tons/year	tons/year
17.13.			lbs/hour	lbs/hour	tons/year	tons/year
17.14.			lbs/hour	lbs/hour	tons/year	tons/year
17.15.			lbs/hour	lbs/hour	tons/year	tons/year
17.16.			lbs/hour	lbs/hour	tons/year	tons/year
17.17.			lbs/hour	lbs/hour	tons/year	tons/year
17.18.			lbs/hour	lbs/hour	tons/year	tons/year
18. Provide Any Additional Information Necessary to Understanding the Emission Rates Provided Above:						
Attach the Basis of Determination or Calculations for each Emission Rate provided above.						
If there are more than four Emission Points/Stacks, attach additional copies of this form as needed.						

<u>Overall Process Emissions</u>
19. Pollutant Emissions
If more than 18 pollutants are emitted from this Process, attach additional copies of this page as needed.



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Overall Process Emissions					
<u>Pollutant Name</u> (Specify VOCs and HAPs Individually in 19.10 through 19.18)	<u>CAS Number</u> (Not required for 19.1 through 19.9)	<u>Maximum Uncontrolled Emission Rate at Design Capacity</u>	<u>Maximum Controlled Emission Rate at Design Capacity</u>	<u>Annual Potential to Emit (PTE)</u>	<u>Expected Annual Emissions</u>
19.1. Particulate Matter (PM)		0.492 lbs/hour	lbs/hour	0.123 tons/year	0.013 tons/year
19.2. PM ₁₀		0.492 lbs/hour	lbs/hour	0.123 tons/year	0.013 tons/year
19.3. PM _{2.5}		0.492 lbs/hour	lbs/hour	0.123 tons/year	0.013 tons/year
19.4. Sulfur Oxides (SO _x)		0.018 lbs/hour	lbs/hour	0.005 tons/year	0.000 tons/year
19.5. Nitrogen Oxides (NO _x)		15.75 lbs/hour	lbs/hour	3.938 tons/year	0.410 tons/year
19.6. Carbon Monoxide (CO)		8.53 lbs/hour	lbs/hour	2.133 tons/year	0.222 tons/year
19.7. Lead		NA lbs/hour	lbs/hour	NA tons/year	NA tons/year
19.8. Total Volatile Organic Compounds (VOCs)		15.75 lbs/hour	lbs/hour	3.938 tons/year	0.410 tons/year
19.9. Total Hazardous Air Pollutants (HAPs)		0.0148 lbs/hour	lbs/hour	0.0037 tons/year	0.0004 tons/year
19.10. Benzene	71-43-2	0.0077 lbs/hour	lbs/hour	0.0019 tons/year	0.0002 tons/year
19.11. Toluene	108-88-3	0.0028 lbs/hour	lbs/hour	0.0007 tons/year	0.0001 tons/year
19.12. Xylenes	1330-20-7	0.0019 lbs/hour	lbs/hour	0.0005 tons/year	0.000 tons/year
19.13. Acetaldehyde	75-07-0	0.0002 lbs/hour	lbs/hour	0.0001 tons/year	0.000 tons/year
19.14. Acrolein	107-02-8	0.0001 lbs/hour	lbs/hour	0.000 tons/year	0.000 tons/year
19.15. Naphthalene	91-20-3	0.0013 lbs/hour	lbs/hour	0.0003 tons/year	0.000 tons/year
19.16. Formaldehyde	50-00-0	0.0008 lbs/hour	lbs/hour	0.0002 tons/year	0.000 tons/year
19.17.		lbs/hour	lbs/hour	tons/year	tons/year
19.18.		lbs/hour	lbs/hour	tons/year	tons/year



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Overall Process Emissions

20. Provide Any Additional Information Necessary to Understanding the Emission Rates Provided Above:

Attach the Basis of Determination or Calculations for each Emission Rate provided above.

Minor New Source Review Information

21. Does the Process Have the Potential to Emit More Than Five Tons Per Year of Any Pollutant? YES NO

22. Is the Source New or Existing? NEW EXISTING
See Question 11 of AQM-1

If the Process has the Potential to Emit more than five tons per year of any pollutant, and is a New Source, a Control Technology Analysis pursuant to Regulation No. 1125 Section 4 must be conducted and attached to this application.

Additional Information

23. Is There Any Additional Information Pertinent to this Application? YES NO

If YES, complete the rest of Question 23.



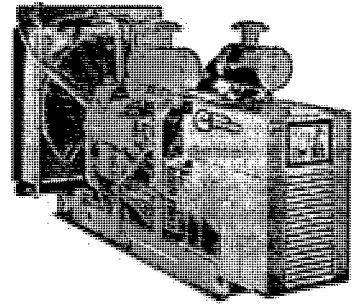
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23.1. Describe:

A large, empty rectangular box with a black border, intended for the user to describe the project details.

Diesel generator set QST30 series engine



> **Specification sheet**
680 kW - 1000 kW 60 Hz



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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. 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 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 for all 60 Hz low voltage models. The PowerCommand control is Listed to UL 508 - Category NITW7 for U.S. and Canadian usage. Circuit breaker assemblies are UL 489 Listed for 100% continuous operation and also UL 869A Listed Service Equipment.

U.S. EPA

Engine certified to Stationary Emergency U.S. EPA New Source Performance Standards, 40 CFR 60 subpart IIII Tier 2 exhaust emission levels. U.S. applications must be applied per this EPA regulation.

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 integral set-mounted radiator system, designed and tested for rated ambient temperatures, simplifies facility design requirements for rejected heat.

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
DQFAA	750 (938)		680 (850)				D-3329	
DQFAB	800 (1000)		725 (907)				D-3330	
DQFAC	900 (1125)		818 (1023)				D-3331	
DQFAD	1000 (1250)		900 (1125)				D-3332	

Generator set specifications

Governor regulation class	ISO8328 Part 1 Class G3
Voltage regulation, no load to full load	± 0.5%
Random voltage variation	± 0.5%
Frequency regulation	Isochronous
Random frequency variation	± 0.25%
Radio frequency emissions compliance	IEC 801.2 through IEC 801.5; MIL STD 461C, Part 9

Engine specifications

Bore	140 mm (5.51 in)
Stroke	165.0 mm (6.5 in)
Displacement	30.5 litres (1860 in ³)
Configuration	Cast iron, V 12 cylinder
Battery capacity	1800 amps minimum at ambient temperature of -18 °C to 0 °C (0 °F to 32 °F)
Battery charging alternator	35 amps
Starting voltage	24 volt, negative ground
Fuel system	Direct injection: number 2 diesel fuel, fuel filter, automatic electric fuel shutoff
Fuel filter	Triple element, 10 micron filtration, spin-on fuel filter with water separator
Air cleaner type	Dry replaceable element
Lube oil filter type(s)	Four spin-on, combination full flow filter 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 on low and medium voltage, Class F on high voltage
Standard temperature rise	150 °C standby at 40 °C
Exciter type	PMG (permanent magnet generator)
Phase rotation	A (U), B (V), C (W)
Alternator cooling	Direct drive centrifugal blower fan
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 line-neutral/line-line	50 Hz line-neutral/line-line
<ul style="list-style-type: none"> • 120/208 • 139/240 • 220/380 • 230/400 • 240/416 • 277/480 • 347/600 	

* Note: Consult factory for other voltages.

Generator set options and accessories

Engine

- 208/240/480 V coolant heater for ambient above 4.5 °C (40 °F)
- 208/240/480 V coolant heater for ambient below 4.5 °C (40 °F)

Control panel

- 120/240 V 100 W control anti-condensation heater
- Paralleling configuration
- Remote fault signal package
- Run relay package

Alternator

- 80 °C rise
- 105 °C rise
- 125 °C rise
- 120/240 V 300 W, anti-condensation heater
- Temperature sensor - RTDs, 2/phase
- Temperature sensor - alternator bearing RTD
- Differential current transformers

Exhaust system

- Industrial grade exhaust silencer
- Residential grade exhaust silencer
- Critical grade exhaust silencer

Cooling system

- Remote radiator

Generator set

- AC entrance box
- Battery

- Battery rack with hold-down - floor standing
- Circuit breaker - set mounted
- Disconnect switch - set mounted
- PowerCommand Network
- Remote annunciator panel
- Spring isolators
- 2 year warranty
- 5 year warranty
- 10 year major components warranty

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

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**Power
Generation**

Control system PCC 3201



- 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.
 - 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.
 - Optional Echelon® LONWORKS® network interface.

Operator/display panel

- Off/manual/auto mode switch
- Manual run/stop switch
- Panel lamp test switch
- Emergency stop switch
- Exercise switch
- Alpha-numeric display with pushbutton access for viewing engine and alternator data and providing setup, controls and adjustments
- LED lamps indicating not in auto, common warning, common shutdown, remote start
- 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
- 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
- Engine speed
- Engine ECM data

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

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
- Bus voltage and frequency (with paralleling options)

Other data

- Genset model data
- Start attempts, starts, running hours
- kW hours (total and since reset)
- Fault history
- Load profile (accessible with InPower)

Governing

- Digital electronic isochronous governor
- Temperature dynamic governing
- Smart idle speed mode

Voltage regulation

- Digital PWM electronic voltage regulation
- Three phase line-to-neutral sensing
- 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
- Configurable customer outputs (4)
- Configurable network inputs (8) and outputs (16) (with optional network)
- Remote emergency stop

Paralleling (Option)

- Active digital phase lock loop synchronizer
- Isochronous kW and kVar load sharing controls
- kW import/export and kVar/PF control for utility (mains) paralleling

Options

- Thermostatically controlled space heater
- Key-type mode switch
- Ground fault module
- Auxiliary relays (3)
- Echelon LONWORKS interface
- Modicon 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)
- Paralleling
- Power transfer control

For further detail see document S-1444.

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S-1508h (6/11)



**Power
Generation**

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):

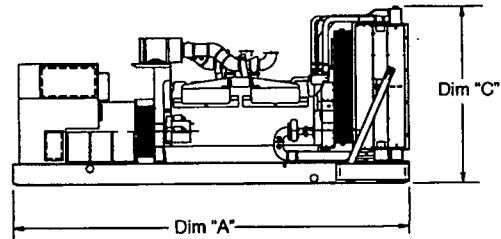
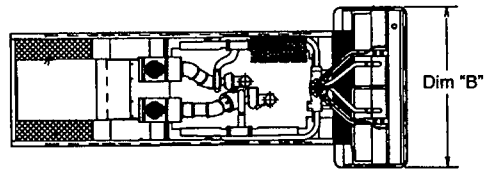
Applicable for supplying power to a constant electrical load for limited hours. Limited Time Running Power (LTP) is in accordance with ISO 8528.

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

Model	Dim "A" mm (in.)	Dim "B" mm (in.)	Dim "C" mm (in.)	Set Weight* dry kg (lbs)	Set Weight* wet kg (lbs)
DQFAA	4338 (170.7)	2000 (79)	2353 (93)	6673 (14707)	6971 (15363)
DQFAB	4338 (170.7)	2000 (79)	2353 (93)	6696 (15199)	7194 (15855)
DQFAC	4338 (170.7)	2000 (79)	2353 (93)	7375 (16254)	7672 (16910)
DQFAD	4338 (170.7)	2000 (79)	2353 (93)	7633 (16824)	7931 (17480)

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

Cummins Power Generation

1400 73rd Avenue N.E.
Minneapolis, MN 55432 USA
Telephone: 763 574 5000
Fax: 763 574 5298

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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S-1508h (6/11)



Model: DQFAD
Frequency: 60
Fuel type: Diesel
KW rating: 1000 standby
900 prime

Emissions level: EPA NSPS Stationary Emergency Tier 2

➤ **Generator set data sheet**

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Exhaust emission data sheet:	EDS-1063
Exhaust emission compliance sheet:	EPA-1097
Sound performance data sheet:	MSP-1038
Cooling performance data sheet:	MCP-156
Prototype test summary data sheet:	PTS-266
Standard set-mounted radiator cooling outline:	0500-4391
Optional set-mounted radiator cooling outline:	
Optional heat exchanger cooling outline:	
Optional remote radiator cooling outline:	0500-4390

Fuel consumption	Standby				Prime				Continuous
	kW (kVA)				kW (kVA)				kW (kVA)
Ratings	1000 (1250)				900 (1125)				
Load	1/4	1/2	3/4	Full	1/4	1/2	3/4	Full	
US gph	19.1	35.8	54.1	72.2	17.3	32.1	47.5	63.9	
L/hr	72.3	135.5	204.8	273.3	65.5	121.5	179.8	241.9	

Engine	Standby rating	Prime rating	Continuous rating
Engine manufacturer	Cummins Inc.		
Engine model	QST30-G5 NR2		
Configuration	Cast iron, V 12 cylinder		
Aspiration	Turbocharged and low temperature aftercooled		
Gross engine power output, kWm (bhp)	1112 (1490)	1007 (1350)	
BMEP at set rated load, kPa (psi)	2417 (351)	2160 (313)	
Bore, mm (in)	140 (5.51)		
Stroke, mm (in)	165 (6.5)		
Rated speed, rpm	1800		
Piston speed, m/s (ft/min)	9.91 (1950)		
Compression ratio	14.7:1		
Lube oil capacity, L (qt)	154 (162.8)		
Overspeed limit, rpm	2100 ±50		
Regenerative power, kW	82		

Fuel flow		
Maximum fuel flow, L/hr (US gph)	570 (150)	
Maximum fuel inlet restriction, kPa (in Hg)	27 (8.0)	
Maximum fuel inlet temperature, °C (°F)	66 (150)	