



# Spark-ignited generator set

20-40 kW Standby  
EPA emissions



## Description

Cummins® generator sets are fully integrated power generation systems providing optimum performance, reliability and versatility for stationary Standby applications.

## Features

**Gas engine** - Rugged 4-cycle Cummins QSJ2.4 spark-ignited engine delivers reliable power. The electronic air/fuel ratio control provides optimum engine performance 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.

**Control system** - The PowerCommand® 1.1 electronic control is standard equipment and provides total generator set system integration including automatic remote starting/stopping, precise frequency and voltage regulation, alarm and status message display, output metering, auto-shutdown at fault detection and NFPA 110 Level 1 compliance.

**Cooling system** - Standard cooling package provides reliable running at up to 50° C (122° F) ambient temperature.

**Enclosures** - The aesthetically appealing enclosure incorporates special designs that deliver one of the quietest generators of its kind. Aluminium material plus durable powder coat paint provides the best anti-corrosion performance. The generator set enclosure has been evaluated to withstand 180 MPH wind loads in accordance with ASCE7-10. The intelligent design has removable panels and service doors to provide easy access for service and maintenance.

**NFPA** - The generator set 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	Natural gas		Propane		Data sheets 60 Hz
	Standby 60 Hz		Standby 60 Hz		
	kW	kVA	kW	kVA	
C20 N6	20	25	20	25	NAD-5693-EN
C25 N6	25	31	25	31	NAD-5695-EN
C30 N6	30	38	30	38	NAD-5696-EN
C36 N6	36	45	36	45	NAD-5697-EN
C40 N6	40	50	40	50	NAD-5698-EN

## Generator set specifications

Governor regulation class	ISO8528 Part 1 Class G3*
Voltage regulation, no load to full load	± 1.0%
Random voltage variation	± 1.0%
Frequency regulation	Isochronous
Random frequency variation	± 0.25% @ 60 Hz
Radio frequency emissions compliance	Meets requirements of most industrial and commercial applications

\* C36 N6 and C40 N6 are Class G2

## Engine specifications

Design	Naturally aspirated or turbocharged (varies by generator set model)
Bore	86.5 mm (3.4 in.)
Stroke	100.0 mm (3.94 in.)
Displacement	2.4 L (143.5 in <sup>3</sup> )
Cylinder block	Cast iron, in-line 4 cylinder
Battery capacity	550 amps at ambient temperature of 0° F to 32° F (-18° C to 0° C)
Battery charging alternator	50 amps
Starting voltage	12 volt, negative ground
Lube oil filter type(s)	Spin-on with relief valve
Standard cooling system	50° C (122° F) ambient cooling system
Rated speed	1800 rpm

## Alternator specifications

Design	Brushless, 4 pole, drip proof, revolving field
Stator	2/3 pitch
Rotor	Direct coupled, flexible disc
Insulation system	Class H per NEMA MG1-1.65
Standard temperature rise	120° C (248° F) Standby
Exciter type	Torque match (shunt) with EBS as option
Alternator cooling	Direct drive centrifugal blower
AC waveform Total Harmonic Distortion (THDV)	< 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

1-phase	3-phase			
• 120/240	• 120/208	• 120/240 delta	• 277/480	• 347/600

## Generator set options

### Fuel system

- Single fuel - natural gas or propane vapor, field selectable
- Dual fuel – natural gas and propane vapor auto changeover
- Low fuel gas pressure warning

### Engine

- Engine air cleaner – normal or heavy duty
- Shut down – low oil pressure
- Extension – oil drain

### Alternator

- 120° C (248° F) temperature rise alternator
- 105° C (221° F) temperature rise alternator
- Excitation Boost System (EBS)
- PMG available on 36 kW and 40 kW
- Alternator heater, 120 V

### Control

- AC output analog meters (bargraph)
- Stop switch – emergency
- Auxiliary output relays (2)
- Auxiliary configurable signal inputs (8) and relay outputs (8)

### Electrical

- Single circuit breaker
- Dual circuit breakers
- 80% rated circuit breakers
- 100% rated circuit breakers

### Enclosure

- Aluminium enclosure Sound Level 1 or Level 2, with muffler installed, sandstone or green color
- Open set

### Cooling system

- Shutdown – low coolant level
- Warning – low coolant level
- Extension – coolant drain
- Cold weather options:
  - < 4° C (40° F) – cold weather
  - < -17° C (0° F) – extreme cold weather

### Exhaust system

- Exhaust connector NPT

### Generator set application

- Base barrier – elevated generator set
- Battery rack, larger battery
- Radiator outlet duct adapter

## Generator set options (continued)

### Warranty

- Base warranty – 2 year, 1000 hour, Standby
- Standby, 3 year, 1500 hour, parts
- Standby, 5 year, 2500 hour, parts
- Standby, 3 year, 1500 hour, parts and labor
- Standby, 5 year, 2500 hour, parts and labor
- Standby, 3 year, 1500 hour, parts, labor and travel
- Standby, 5 year, 2500 hour, parts, labor and travel

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

### Generator set accessories

- Extreme cold weather kit
- Battery rack, larger battery
- Battery heater kit
- HMI211RS in-home display, including pre-configured 12-inch harness
- HMI211 remote display, including pre-configured 12-inch harness
- HMI220 remote display
- Auxiliary output relays (2)
- Auxiliary configurable signal inputs (8) and relay outputs (8)
- Annunciator – RS485
- Remote monitoring device – PowerCommand 500
- Battery charger – stand-alone, 12 V
- Circuit breakers
- Enclosure Sound Level 1 to Sound Level 2 upgrade kit
- Enclosure paint touch up kit
- Base barrier – elevated generator set
- Mufflers – industrial, residential or critical
- Alternator Excitation Boost System (EBS)
- PMG available on 36 kW and 40 kW
- Alternator heater
- Maintenance and service kit
- Engine lift kit

### Control system PowerCommand 1.1



**PowerCommand control** is an integrated generator set control system providing voltage regulation, engine protection, operator interface and isochronous governing (optional). Major features include:

- Battery monitoring and testing features and smart starting control system.
- Standard PCCNet interface to devices such as remote annunciator for NFPA 110 applications.
- Control boards potted for environmental protection.
- 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

- Manual off switch
- Alpha-numeric display with pushbutton access for viewing engine and alternator data and providing setup, controls and adjustments (English or international symbols)
- LED lamps indicating generator set running, not in auto, common warning, common shutdown, manual run mode and remote start
- Suitable for operation in ambient temperatures from -40 °C to +70 °C
- Bargraph display (optional)

#### AC protection

- Over current warning and shutdown
- Over and under voltage shutdown
- Over and under frequency shutdown
- Over excitation (loss of sensing) fault
- Field overload

#### Engine protection

- Overspeed shutdown
- Low oil pressure warning and shutdown
- High coolant temperature warning and shutdown
- Low coolant level warning or shutdown
- Low coolant temperature warning
- High, low and weak battery voltage warning
- Fail to start (overcrank) shutdown
- Fail to crank shutdown
- Redundant start disconnect
- Cranking lockout
- Sensor failure indication
- Low fuel level warning or shutdown

#### Alternator data

- Line-to-Line and Line-to-Neutral AC volts
- 3-phase AC current
- Frequency
- Total kVa

#### Engine data

- DC voltage
- Lube oil pressure
- Coolant temperature
- Engine speed

#### Other data

- Generator set model data
- Start attempts, starts, running hours
- Fault history
- RS485 Modbus® interface
- Data logging and fault simulation (requires InPower service tool)

#### Digital governing (optional)

- Integrated digital electronic isochronous governor
- Temperature dynamic governing

#### Digital voltage regulation

- Integrated digital electronic voltage regulator
- 2-phase Line-to-Line sensing
- Configurable torque matching

#### Control functions

- Time delay start and cooldown
- Cycle cranking
- PCCNet interface
- (2) Configurable inputs
- (2) Configurable outputs
- Remote emergency stop
- Automatic Transfer Switch (ATS) control
- Generator set exercise, field adjustable

#### Options

- Auxiliary output relays (2)
- Remote annunciator with (3) configurable inputs and (4) configurable outputs
- PMG alternator excitation available on 36 kW and 40 kW
- PowerCommand 500/550 for remote monitoring and alarm notification (accessory)
- Auxiliary, configurable signal inputs (8) and configurable relay outputs (8)
- Digital governing
- AC output analog meters (bargraph)
  - Color-coded graphical display of:
    - 3-phase AC voltage
    - 3-phase current
    - Frequency
    - kVa
- Remote operator panel

## 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):

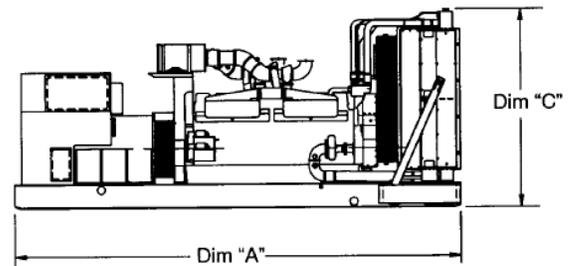
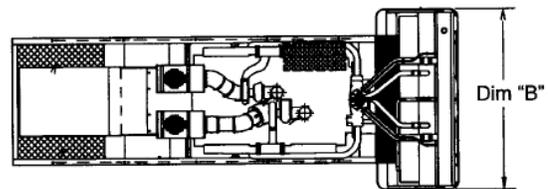
Applicable for supplying power to a constant electrical load for limited hours. Limited-Time Running Power (LTP) is in accordance with ISO 8528.

#### 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)
<b>Open set</b>					
<b>C20 N6</b>	1669 (65.7)	864 (34)	1123 (44.2)	423 (933)	440 (969)
<b>C25 N6</b>	1669 (65.7)	864 (34)	1123 (44.2)	441 (972)	457 (1008)
<b>C30 N6</b>	2225 (87.6)	864 (34)	1123 (44.2)	491 (1083)	508 (1119)
<b>C36 N6</b>	2225 (87.6)	864 (34)	1123 (44.2)	520 (1146)	536 (1182)
<b>C40 N6</b>	2225 (87.6)	864 (34)	1123 (44.2)	548 (1208)	564 (1244)
<b>Sound attenuated enclosure Level 1</b>					
<b>C20 N6</b>	1829 (72)	864 (34)	1156 (45.5)	469 (1034)	485 (1070)
<b>C25 N6</b>	1829 (72)	864 (34)	1156 (45.5)	487 (1073)	503 (1109)
<b>C30 N6</b>	2388 (94)	864 (34)	1156 (45.5)	542 (1195)	558 (1231)
<b>C36 N6</b>	2388 (94)	864 (34)	1156 (45.5)	571 (1258)	587 (1294)
<b>C40 N6</b>	2388 (94)	864 (34)	1156 (45.5)	599 (1320)	615 (1356)
<b>Sound attenuated enclosure Level 2</b>					
<b>C20 N6</b>	2073 (81.6)	864 (34)	1156 (45.5)	474 (1045)	490 (1081)
<b>C25 N6</b>	2073 (81.6)	864 (34)	1156 (45.5)	492 (1084)	508 (1120)
<b>C30 N6</b>	2626 (103.4)	864 (34)	1156 (45.5)	547 (1206)	563 (1242)
<b>C36 N6</b>	2626 (103.4)	864 (34)	1156 (45.5)	576 (1269)	592 (1305)
<b>C40 N6</b>	2626 (103.4)	864 (34)	1156 (45.5)	604 (1331)	620 (1367)

\* Weights based on 1-phase generator set. Weights may vary with a different configuration.

## 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 UL 2200, Stationary Engine Generator Assemblies.
	The Prototype Test Support (PTS) program verifies the performance integrity of the generator set design. Cummins products bearing the PTS symbol meet the prototype test requirements of NFPA 110 for Level 1 systems.	<b>U.S. EPA</b>	Engine certified to U.S. EPA SI Stationary Emission Regulation 40 CFR, Part 60.
	All low voltage models are CSA certified to product class 4215-01.	<b>International Building Code</b>	The generator set is certified to International Building Code (IBC) 2012.

**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.

For more information contact your local Cummins distributor or visit [power.cummins.com](http://power.cummins.com)

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## Generator set data sheet



**Model:** C25 N6  
**kW rating:** 25.0 natural gas Standby  
 25.0 propane Standby  
**Frequency:** 60 Hz  
**Fuel type:** Natural gas/propane  
**Emissions level:** EPA emissions

<b>Fuel consumption</b>	Natural gas				Propane			
	Standby				Standby			
	kW (kVA)				kW (kVA)			
<b>Ratings</b>	25.0 (31.3)				25.0 (31.3)			
<b>Load</b>	<b>1/4</b>	<b>1/2</b>	<b>3/4</b>	<b>Full</b>	<b>1/4</b>	<b>1/2</b>	<b>3/4</b>	<b>Full</b>
<b>scfh</b>	123.8	185.7	247.6	309.5	51.6	75.6	99.6	125.4
<b>m<sup>3</sup>/hr</b>	3.51	5.26	7.01	8.77	1.46	2.14	2.82	3.55

<b>Engine</b>	Natural gas		Propane
	Standby rating		Standby rating
Engine model	QSJ2.4		
Configuration	Cast iron, in-line 4 cylinder		
Aspiration	Naturally aspirated		
Gross engine power output, kW <sub>m</sub> (bhp)	30 (40)		32 (43.5)
Bore, mm (in.)	86.5 (3.41)		
Stroke, mm (in.)	100.0 (3.94)		
Rated speed, rpm	1800		
Compression ratio	9.5:1		
Lube oil capacity, L (qt)	4 (4.54)		
Overspeed limit, rpm	2250		

<b>Fuel supply pressure</b>	
Minimum operating pressure, kPa (in H <sub>2</sub> O)	1.5 (6.0)
Maximum operating pressure, kPa (in H <sub>2</sub> O)	3.2 (13.0)

<b>Air</b>	<b>Natural gas</b>	<b>Propane</b>
	<b>Standby rating</b>	<b>Standby rating</b>
Combustion air, m <sup>3</sup> /min (scfm)	1.5 (51.8)	1.3 (46.5)
Maximum air cleaner restriction, kPa (in H <sub>2</sub> O)	1.24 (5.0)	
Alternator cooling air, m <sup>3</sup> /min (scfm)	N/A	

### **Exhaust**

Exhaust flow at rated load, m <sup>3</sup> /min (cfm)	5.3 (188.1)	4.6 (165.3)
Exhaust temperature, °C (°F)	618 (1145)	628 (1162)
Exhaust back pressure (maximum allowable at engine), kPa (in H <sub>2</sub> O)	5.0 (20)	5.0 (20)
Exhaust back pressure (actual with factory fitted muffler), kPa (in H <sub>2</sub> O)	1.75 (7)	

### **Standard set-mounted radiator cooling**

Ambient design, °C (°F)	50 (122)
Fan load, kW (HP)	0.74 (1.0)
Coolant capacity (with radiator), L (US gal)	12 (3.1)
Cooling system air flow, m <sup>3</sup> /min (scfm)	60.2 (2150)
Maximum cooling air flow static restriction, kPa (in H <sub>2</sub> O)	0.12 (0.5)

### **Weights<sup>2</sup>**

Unit dry weight kgs (lbs)	483 (1067)
Unit wet weight kgs (lbs)	500 (1103)

Notes:

<sup>1</sup>For non-standard remote installations contact your local Cummins representative.

<sup>2</sup>Weights represent a set with 1-phase with sound level 1 enclosure.

## Alternator data

Standard alternators		Natural gas/ propane single phase table	Natural gas/propane three phase table			
Maximum temperature rise above 40 °C ambient		120 °C	120 °C	120 °C	120 °C	120 °C
Feature code		B949-2	B986-2	B946-2	B943-2	B952-2
Alternator data sheet number		ADS-571	ADS-571	ADS-571	ADS-571	ADS-571
Voltage ranges		120/240	120/240	120/208	277/480	347/600
Voltage feature code		R104-2	R106-2	R098-2	R002-2	R114-2
Surge kW		24.4/26.7	24.8/27.1	24.8/27.1	24.8/27.1	24.8/27.1
Motor starting kVA (at 90% sustained voltage)	Shunt	57	59	59	59	59
	EBS	93	94	94	94	94
Full load current amps at Standby rating		104	75	87	38	30

Optional alternators for improved motor starting capability		Natural gas/ propane single phase table	Natural gas/propane three phase table			
Maximum temperature rise above 40 °C ambient			105 °C	105 °C	105 °C	105 °C
Feature code			BB94-2	BB93-2	BB95-2	BB92-2
Alternator data sheet number			ADS-574	ADS-574	ADS-574	ADS-574
Voltage ranges			120/240	120/208	277/480	347/600
Voltage feature code			R106-2	R098-2	R002-2	R114-2
Surge kW			24.9/27.2	24.9/27.2	24.9/27.2	24.9/27.2
Motor starting kVA (at 90% sustained voltage)	Shunt		71	71	71	71
	EBS		113	113	113	113
Full load current amps at Standby rating			75	87	38	30

## Derating factors

<b>Standby</b>	<p><u>Natural gas:</u> Engine power available up to 0 m (0 ft) at ambient temperatures up to 25 °C (77 °F). Above these elevations derate at 4% per 305 m (1000 ft) and 2% per 10 °C above 25 °C (77 °F).</p> <p><u>Propane:</u> Engine power available up to 114 m (375 ft) at ambient temperatures up to 25 °C (77 °F). Above these elevations derate at 4% per 305 m (1000 ft) and 2% per 10 °C above 25 °C (77 °F).</p>
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## Ratings definitions

<b>Emergency Standby Power (ESP):</b>	<b>Limited-Time Running Power (LTP):</b>	<b>Prime Power (PRP):</b>	<b>Base Load (Continuous) Power (COP):</b>
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.

## 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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