Power Generation

Power Solutions — North America

Fully Integrated, Reliable, Efficient

Global Power Leader

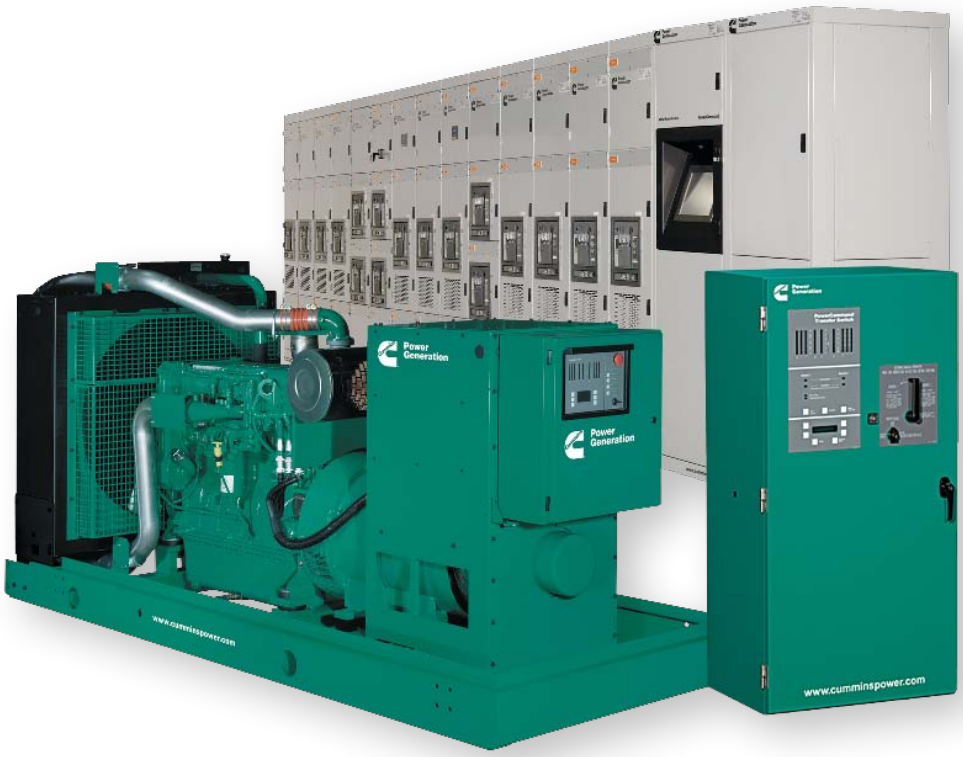
With more than 90 years of experience in power generation and an extensive global distributor network across 190 countries, Cummins Power Generation is ready to match the right generating, transfer and control technologies with your power needs — whether you require continuous, prime, peaking or standby power; cogeneration; or a complete turnkey power plant.

Our global operations:

79 Factories
19 Technical Centers
20 Parts Distribution Centers
550 Distributors
5,200 Sales and Service Centers
190 Countries
40,000 Employees

Contents

Global Strength, Local Partnership



Cummins Power Generation is committed to understanding and meeting our customers' needs worldwide — through trusted local relationships, innovative solutions and dedicated customer service. This promise enables us to deliver power wherever, whenever and however it is needed.

Our worldwide distribution network includes 550 distributors and 5,200 sales and service locations and 20 parts distribution centers. That means you can expect a face-to-face, trustworthy relationship and fast access to reliable service, engineering expertise and parts support. Our service centers, located strategically throughout the world, are staffed with technicians trained to the highest Cummins Power Generation standards.

Wherever you need fully integrated, reliable and efficient power, your local Cummins Power Generation distributor is available. Visit www.cumminspower.com/local to find the distributor nearest you.

Fully integrated, reliable, efficient

For more than a decade, Cummins Power Generation has been the industry leader in power system integrated designs. All major components of our systems — the engine, alternator, generator sets, transfer switches and paralleling controls — are manufactured by Cummins. Because they are designed by one manufacturer, all of the elements of our power generation systems work in harmony from the start. This integral approach — what we call the Power of One™ — gives you the peace of mind that comes from premium customer support and reliable, trouble-free operation.

Cummins Power Generation PowerCommand® diesel-powered generator sets are available in sizes ranging from 10 to 2750 kW. Our spark-ignited generator sets are available from 20 to 150 kW. A complete range of transfer switches and paralleling controls supports our generator sets. As a result, you can expect an industry-leading power solution with unrivaled reliability.

PowerCommand®
Diesel Generator Sets

Integrated design and manufacturing combine to give you unequaled reliability, power quality, rated performance and efficient operation.

PowerCommand diesel-powered generator sets remain the best-value choice for standby and emergency power systems worldwide. Known for their rugged dependability and reliable mechanical and electrical performance, our diesel generators are also well suited to utility peaking plants, distributed generation facilities, peak shaving (or peak lopping), and power management at large commercial or industrial sites.

Powered by Cummins engines, PowerCommand diesel generator sets are available in sizes ranging from 10 to 2750 kW. Heavy-duty Cummins engines are known for their fuel efficiency, responsive transient performance and rugged reliability. Cooling systems are prototype-tested to provide guaranteed performance in high ambient applications, so you get all the power you pay for every day.

High-performance, low-reactance Cummins-manufactured alternators provide good voltage waveform and exceptional motor starting in demanding applications such as data centers, hospitals and industrial facilities.

PowerCommand generator sets are controlled by the world's first and most fully integrated microprocessor-based control system. The system seamlessly integrates governing, voltage regulation, generator set control and protection functions.

You can rely on PowerCommand diesel-powered generator sets to provide these benefits:

- International Building Code (IBC) seismic certification on all emissions-regulated products (up to 2500 kW)
- Proven reliability and low life-cycle costs
- High efficiency and operational flexibility
- High-quality electrical performance
- Well-established service and fuel supply infrastructure
- Optional factory-integrated exhaust after-treatments to reduce emissions for high-hour use in environmentally sensitive locations

Reliability and redundancy meet hospital requirements

Alberta Children's Hospital, Calgary

Three 2 MW diesel generators provide emergency standby power for the 133-bed hospital. The PowerCommand paralleling system features complete integration and interoperability between the generator sets and controls.

Diesel 10 kW to 300 kW

Power output

Model	Standby kW		Prime kW		Standby kVA		Prime kVA		Engine type
	60 Hz	50 Hz	60 Hz	50 Hz	60 Hz	50 Hz	60 Hz	50 Hz	
DSKAA*	10	–	9.1	–	12.5	–	11.4	–	Kubota D1703-M
DSKAB*	15	–	13.6	–	18.8	–	17	–	Kubota D1703-M
DSKBA*	20	–	18.2	–	25	–	22.7	–	Kubota V2203-M
DSKCA*	25	–	22.7	–	31.3	–	28.4	–	Kubota V3300
DGHCA*	30	–	27	–	38	–	34	–	4BT3.3G5 NR4i
DGHCB*	35	–	32	–	44	–	40	–	4BT3.3G5 NR4i
DSFAA*	35	–	32	–	44	–	40	–	QSB5-G3 NR3
DGHCC*	40	–	36	–	50	–	45	–	4BT3.3G5 NR4i
DSFAB*	40	–	35	–	50	–	44	–	QSB5-G3 NR3
DGCA	50	40	45	36	63	50	56	45	4BT3.9-G4
DSFAC*	50	–	45	–	63	–	56	–	QSB5-G3 NR3
DGCB	60	50	55	45	75	63	69	56	4BT3.9-G4
DSFAD*	60	–	55	–	75	–	69	–	QSB5-G3 NR3
DGCG	80	65	72	60	100	81	90	75	4BTA3.9-G3
DSFAE*	80	–	72	–	100	–	90	–	QSB5-G3 NR3
DGDB	100	85	90	80	125	106	113	100	4BT3.9-G4
DSGAA**	100	–	90	–	125	–	113	–	QSB7-G3 NR3
DGDK	125	100	113	90	156	125	141	113	6BTA5.9-G3
DSGAB**	125	–	113	–	156	–	141	–	QSB7-G3 NR3
DGFA	150	140	135	125	188	175	169	156	6CTA8.3-G2
DSGAC**	150	–	135	–	188	–	169	–	QSB7-G3 NR3
DGFB	175	150	160	135	219	188	200	169	6CTA8.3-G2
DSHAB**	175	–	160	–	219	–	200	–	QSL9-G2 NR3
DGFC	200	178	180	180	250	220	225	200	6CTAA8.3-G2
DSHAC**	200	–	180	–	250	–	225	–	QSL9-G2 NR3
DGFS	230	–	–	–	288	–	–	–	6CTAA8.3-G2
DSHAD	230	–	209	–	288	–	261	–	QSL9-G2 NR3
DQDAA**	250	220	225	200	313	275	281	250	QSL9-G3 NR3 QSL9-G5
DQDAB	275	250	250	227	344	313	313	284	QSL9-G5
DQHAA**	275	–	250	–	344	–	313	–	QSM11-G4 NR3
DQDAC	300	265	270	240	375	331	338	300	QSL9-G5
DQHAB**	300	–	270	–	375	–	338	–	QSM11-G4 NR3

For additional technical specifications, visit:
http://www.cumminspower.com/na/products/generators/diesel

*Available with EPA Nonroad Emissions Certification

**Available with EPA Stationary Emergency Certification

Most models UL 2200-listed.

See your distributor for specific details.

DSFAE

DSGAB

DSHAC

Diesel 350 kW to 2750 kW

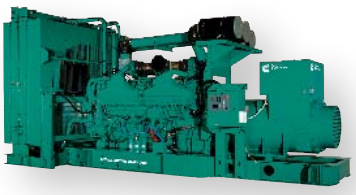
Power output

Model	Standby kW		Prime kW		Standby kVA		Prime kVA		Engine type
	60 Hz	50 Hz	60 Hz	50 Hz	60 Hz	50 Hz	60 Hz	50 Hz	
DFEG**	350	–	320	–	438	–	400	–	QSX15-G9 NR2
DFEH**	400	352	350	320	500	440	438	400	QSX15-G9 NR2 (60 Hz) QSX15-G8 (50 Hz)
DFEJ**	450	400	410	364	563	500	513	455	QSX15-G9 NR2 (60 Hz) QSX15-G8 (50 Hz)
DFEK**	500	440	455	400	625	550	569	500	QSX15-G9 NR2 (60 Hz) QSX15-G8 (50 Hz)
DFGB	600	550	545	500	750	688	681	625	VTA28-G5
DQCA**	600	545	545	500	750	681	681	625	QSK23-G7 (60 Hz) QSK23-G3 (50 Hz)
DFGE	750	–	–	–	938	–	–	–	VTA28-G7
DFHA	750	620	680	560	938	775	850	700	QST30-G1
DQCB**	750	660	680	600	938	825	850	750	QSK23-G7 (60 Hz) QSK23-G3 (50 Hz)
DQFAA**	750	–	680	–	1000	–	850	–	QST30-G5 NR2
DFHB	800	700	725	640	1000	875	906	800	QST30-G2
DQCC**	800	720	725	656	1000	900	906	820	QSK23-G7 (60 Hz) QSK23-G3 (50 Hz)
DQFAB**	800	–	725	–	1125	–	907	–	QST30-G5 NR2
DFHC	900	800	818	725	1125	1000	1023	906	QST30-G3
DQFAC**	900	–	818	–	1250	–	1023	–	QST30-G5 NR2
DFHD	1000	880	900	800	1250	1100	1125	1000	QST30-G5 (60 Hz) QST30-G4 (50 Hz)
DQFAD**	1000	–	900	–	1563	–	1125	–	QST30-G5 NR2
DFLC	1250	1120	1100	1000	1563	1400	1375	1250	KTA50-G3
DQGAA**	1250	–	1100	–	1563	–	1375	–	QSK50-G4 NR2
DQGAE**	1250	–	1135	–	1563	–	1419	–	QSK50-G5
DFLE	1500	1290	1250	1100	1875	1613	1563	1375	KTA50-G9 (60 Hz) KTA50-G8 (50 Hz)
DQGAB**	1500	–	1350	–	1875	–	1688	–	QSK50-G4 NR2
DQGAF**	1500	–	1365	–	1875	–	1706	–	QSK50-G5
DQKB	1750	1500	1600	1350	2188	1875	2000	1688	QSK60-G6 (60 Hz) QSK60-G3 (50 Hz)
DQKAA**	1750	–	1600	–	2188	–	2000	–	QSK60-G6 NR2
DQKAD**	1750	–	1600	–	2188	–	2000	–	QSK60-G6
DQKC	2000	1650	1825	1500	2500	2063	2281	1875	QSK60-G6 (60 Hz) QSK60-G3 (50 Hz)
DQKAB**	2000	–	1825	–	2500	–	2281	–	QSK60-G6 NR2
DQKAE**	2000	–	1825	–	2500	–	2281	–	QSK60-G6
DQKD	–	1800	–	1600	–	2250	–	2000	QSK60-G4
DQKH	2250	2000	–	–	2813	2500	–	–	QSK60-G9 (60 Hz) QSK60-G8 (50 Hz)
DQKAF**	2250	–	1825	–	2813	–	2281	–	QSK60-G14
DQLC	2500	–	2335	–	3125	–	2920	–	QSK78-G6
DQLE**	2500	–	–	–	–	–	–	–	QSK78-G10
DQLD	2750	–	2500	–	–	–	–	–	QSK78-G8

DQDAA

DFEK

DFHC



DQKAA

For additional technical specifications, visit:
http://www.cumminspower.com/na/products/generators/diesel

**Available with EPA Stationary Emergency Certification
Most models UL 2200-listed.
See your distributor for specific details.

Low-Emissions Technologies

We are committed to meeting and exceeding clean air standards worldwide.

Developing products for a cleaner tomorrow

Cummins Power Generation leads the industry in the development of cleaner, quieter and more efficient diesel-powered generators. We are committed to meeting and exceeding all global air-quality regulatory standards for stationary and nonroad diesel engine generators through 2017 and beyond. This protects public health and conserves vital natural resources.

New technologies to reduce emissions

Since 1996, when U.S. EPA emissions regulations for nonroad diesel engines first went into effect, Cummins Power Generation has developed technologies that reduce the primary pollutants in the exhaust of diesel generator sets by approximately 80 percent. Pollutants such as nitrogen oxides (NOx), hydrocarbons (HC) and particulate matter (PM) from diesel engines are precursors to smog and ozone in many populated areas of the world. Our emissions reductions result from a careful balance of in-cylinder and after-treatment technologies.

"Clean" power creates powder

Snow Summit Ski Resort, Big Bear Lake, California

A PowerCommand® system provides 12 megawatts of electricity to power air compressors, water pumps and fan guns that make up the resort's snowmaking equipment. The 2 MW diesel generators are designed to meet Southern California's strict air-quality requirements.

FROST & SULLIVAN
North American Diesel Engine Technology Leadership of the Year Award

Award-winning product quality

Cummins Power Generation received the 2008 North American Product Quality Leadership of the Year Award from Frost & Sullivan, a global growth consulting company. In granting the national award, Frost & Sullivan recognized Cummins Power Generation for its "effective business strategies and adoption of eco–friendly guidelines that establish the superiority of its products."

This was the second time that Frost & Sullivan recognized Cummins Power Generation. In 2006, the company won the North American Diesel Engine Technology Leadership of the Year Award.

Lean-Burn Gas 315 kW to 2 MW

Lean-burn gas generator sets provide premier performance, fuel efficiency, and low emissions for high hour peaking, prime power, combined heat and power (CHP), and waste to energy applications.

Using a lean mixture of fuel and air, this design significantly reduces combustion temperatures, which minimizes the production of nitrogen oxides (NOx). The result is high power output with maximum thermal efficiency and minimal emissions.

The Power Projects Group of Cummins Power Generation can handle the most complex requirements surrounding lean-burn gas applications, from initial site planning to system design, construction and installation, through operation and maintenance. We are a total solutions provider, with a single point of contact for seamless global support.

Power output

50 Hz

Model	RPM	Continuous kW	Engine Type
315GFBE	1500	315	QSK19G
C995 N5C	1500	995	QSK60G
C1160 N5C	1500	1160	QSK60G
C1200 N5C	1500	1200	QSK60G
C1400 N5C	1500	1400	QSV91G
C1540 N5C	1500	1540	QSV91G
C1750 N5C	1500	1750	QSV91G
C2000 N5C	1500	2000	QSV91G

For additional technical specifications, visit:
http://www.cumminspower.com/na/products/generators/leanburn

Power output

60 Hz

Model	Continuous kW	Standby kW	RPM	Engine Type
334GFBE	334	–	1800	QSK19G
C1000 N6C	1000	–	1200	QSK60G
C1000 N6	–	1000	1800	QSK60G
C1100 N6C	1100	–	1200	QSK60G
C1250 N6	–	1250	1800	QSK60G
C1250 N6C	1250	–	1200	QSV91G
C1350 N6	–	1350	1800	QSK60G
C1400 N6C	1400	–	1800	QSK60G
C1700 N6	–	1700	1500	QSV91G
C1750 N6C	1750	–	1500	QSV91G
C2000 N6C	2000	–	1500	QSV91G

For additional technical specifications, visit:
http://www.cumminspower.com/na/products/generators/leanburn

CHP system saves money on high on-peak electric rates

William Floyd School District, Shirley, New York

Facing rapidly rising electricity costs, school district officials installed a 2.5 MW combined heat and power system to power three buildings of the Shirley campus. The CHP system provides nearly all of the electricity, heating and cooling for the campus during the local utility's daily peak usage hours when power is very expensive. In the first three years of operation, the CHP system saved more than $1.2 million.

Spark-Ignited 20 kW to 150 kW

Spark-ignited generator sets are a convenient choice for a variety of emergency and standby applications, including healthcare offices and retail businesses that require gaseous fuel options to meet local codes or fuel containment and economic requirements. They are available with natural gas, propane and dual fuel systems.

Installation and connection to the fuel source lines are both basic and convenient. As with our diesel generator sets, a complete selection of voltages, accessories, generator sets and control options are available for customizing to your specific needs.

Major features include:

- Multiple control system options, including NFPA 110 compliance
- Natural gas, propane or dual fuel systems
- Weather-protective and sound-attenuated enclosures (steel or aluminum)
- Good motor-starting capability and fast recovery from transient load changes
- Closed-loop fuel control system and three-way catalyst to reduce emissions (select models)
- U.S. EPA emissions compliance

GGLA / GGLB

Power output

Model		Standby kW		Prime kW	Standby kVA		Prime kVA	Engine type
		60 Hz	50 Hz	50 Hz	60 Hz	50 Hz	50 Hz	
GGMA°	Natural gas	20	-	-	25	-	-	GM i4 3.0L
	Propane**	20	-	-	25	-	-	GM i4 3.0L
GGMB°	Natural gas	25	-	-	31	-	-	GM i4 3.0L
	Propane**	25	-	-	31	-	-	GM i4 3.0L
GGMC°	Natural gas	29	-	-	36	-	-	GM i4 3.0L
	Propane**	30	-	-	38	-	-	GM i4 3.0L
GGPA°	Natural gas	35	-	-	44	-	-	GM v8 5.0L
	Propane*	35	-	-	44	-	-	GM v8 5.0L
GGPB°	Natural gas	40	-	-	50	-	-	GM v8 5.0L
	Propane*	40	-	-	50	-	-	GM v8 5.0L
GGPC°	Natural gas	45	35	30	56	44	38	GM v8 5.0L
	Propane*	50	35	30	63	44	38	GM v8 5.0L
GGHE°	Natural gas	60	-	-	75	-	-	Ford v10 6.8L
	Propane*	60	-	-	75	-	-	Ford v10 6.8L
GGHF°	Natural gas	70	55	47	88	69	59	Ford v10 6.8L
	Propane*	75	60	51	94	75	64	Ford v10 6.8L
GGHG°	Natural gas	85	-	-	106	-	-	Ford v10T 6.8L
	Propane*	85	-	-	106	-	-	Ford v10T 6.8L
GGHH°	Natural gas	100	75	-	125	94	-	Ford v10T 6.8L
	Propane*	100	75	-	125	94	-	Ford v10T 6.8L
GGLA°	Natural gas	125	-	-	156	-	-	GM v8T 8.1L
GGLB°	Natural gas	150	-	-	188	-	-	GM v8TA 8.1L
	Propane*	140	-	-	175	-	-	GM v8TA 8.1L

For additional technical specifications, visit: http://www.cumminspower.com/na/products/generators/sparkignited

*Liquid or vapor withdrawal

**Vapor withdrawal only

°Models are available with EPA Stationary Emergency Emissions Certification

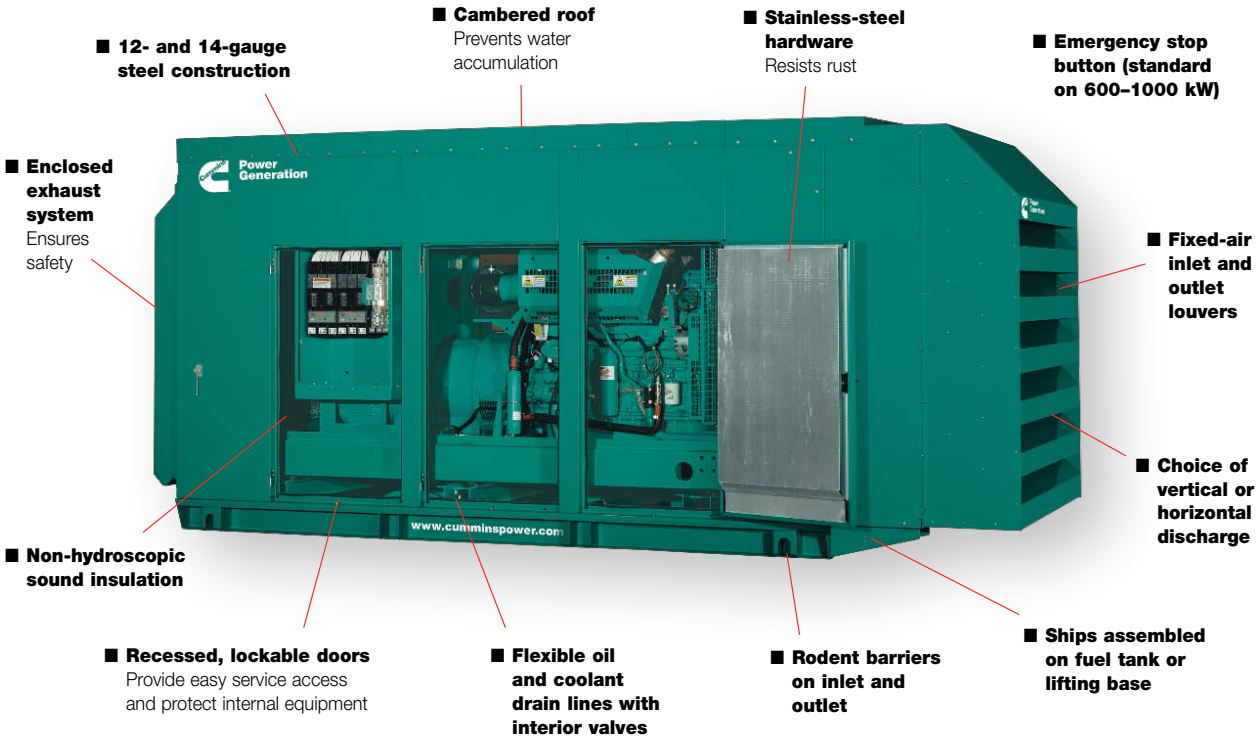
Enclosures

Sound-Attenuated and Weather-Protective

Sound-attenuated and weather-protective enclosures from Cummins Power Generation meet the strictest sound requirements and provide optimum protection from inclement weather.

Cummins Power Generation diesel and spark-ignited generator sets are available with sound-attenuated and weather-protective enclosures. Pre-assembled, pre-integrated and delivered as part of the entire power system, these enclosures are designed to speed installation time and reduce costs.

- Three levels of sound attenuation
- Compact footprint, low-profile design
- Easy access to all major generator and engine control components for servicing
- Fully housed, enclosed exhaust silencer ensures safety and protects against rust
- All-steel construction with stainless-steel hardware offers durability
- Direct-mounted to a sub-base fuel tank or lifting base
- Prototype-tested to verify sound attenuation, cooling and ventilation system performance in extreme temperature environments
- UL2200-listed
- IBC Seismic Certification option available



Sound levels (dB(A))*				
kW	Model	Weather-protective	Level I	Level II
Diesel				
10	DSKAA	78	68	65
15	DSKAB	81	69	66
20	DSKBA	80	70	67
25	DSKCA	82	72	69
30	DGHCA	75	68	62
35	DGHCB	76	68	62
35	DGBB°	82	71	63
40	DGHCC	76	69	62
40	DGBC°	82	72	63
50	DGCA	83	72	66
50	DGHE	79	70	65
60	DGCB	84	73	67
60	DSFAD	87	79	71
80	DGCG	84	76	67
80	DSFAE	87	82	72
100	DGDB	86	77	70
100	DSGAA*	87	-	73
100	DSHAF	95	88	78
125	DGDK	86	80	71
125	DSGAB*	87	-	74
125	DSHAE	95	88	78
150	DGFA	89	77	72
150	DSGAC*	88	-	75
150	DSHAA	95	88	78
175	DGFB	90	78	72
175	DSHAB	95	88	78
200	DGFC	91	80	74
200	DSHAC	95	88	78
230	DGFS	91	81	75
230	DSHAD	96	89	78
250	DQDAA	90	86	71
275	DQDAB	89	86	71
275	DQHAA	86	85	74
300	DFCB	86	84	71
300	DQDAC	89	86	71
300	DQHAB	89	88	76
350	DFEG	85	83	72
400	DFEG	89	85	73
450	DFEJ	87	84	73
500	DFEK	88	85	76
600	DFGB	85	78	74
600	DQCA	87	79	74
750	DFGE	87	80	75
750	DFHA	91	81	77
750	DQCB	87	79	74
750	DQFAA	89	79	75
800	DFHB	91	81	77
800	DQCC	87	79	74
800	DQFAB	89	79	75
900	DFHC	93	83	78
900	DQFAC	88	80	76
1000	DFHD	90	80	76
1000	DQFAD	90	80	76

Sound levels (dB(A))*				
kW	Model	Weather-protective	Level I	Level II
Natural gas				
20	GGMA	77	N/A	66
25	GGMB	78	N/A	66
30	GGMC	79	N/A	67
35	GGPA	82	74	63
40	GGPB	83	74	65
50	GGPC	83	74	65
60	GGHE	86	77	68
70	GGHF	87	77	69
85	GGHG	85	79	75
100	GGHH	86	80	76
125	GGLA	85	79	75
150	GGLB	85	79	75

***Also available Level III**

100 kW	DSGAA	68 dB(A)
125 kW	DSGAB	69 dB(A)
150 kW	DSGAC	70 dB(A)

°Models to be discontinued in 2011

DSGAA

Sound-attenuated generator sets are installed at wastewater lift stations in Camas, Washington, as part of a pre-engineered package that simplifies installation and maintenance while ensuring reliability.

PowerCommand®
Generator Set Controls

PowerCommand controls give you reliable, cost-effective solutions to integrated digital paralleling.

Only generator sets from Cummins Power Generation are available with industry-leading PowerCommand controls. Standard features include not only integrated digital governing and voltage regulation, but also analog and digital metering, digital engine monitoring systems, smart-starting systems, battery monitoring systems, AmpSentry™ true alternator protection, and more.

For non-paralleling applications:

PowerCommand 1.1 and 2.2 controls are your best choice for emergency, standby and prime power applications that do not require paralleling.

PowerCommand 1.1
Reliable and cost-effective control for NFPA 110-level 1 applications

PowerCommand 2.2
Premium control and flexibility for demanding applications such as data centers

For paralleling applications:

For complex applications, PowerCommand 3.3 controls parallel with other generator sets or with the utility service.

PowerCommand 3.3
Paralleling and power transfer control for generator sets with emissions-controlled engines and hydro mechanical fuel system controls

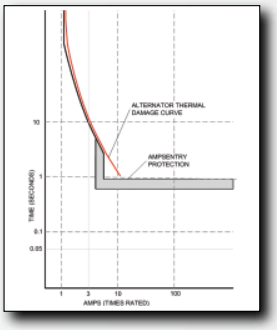
Major features

	PowerCommand 1.1	PowerCommand 2.2	PowerCommand 3.3
General			
AVR	●	●	●
Digital 3-phase sensing voltage regulator	-	●	●
Glow plug control	●	-	-
Cycle cranking	●	●	●
Full authority engine control	o	-	●
Networking (LonWorks)	-	o	o
Networking (PCCNet)	●	-	-
Networking (Modbus)	●	o	o
Fault history	●	●	●
Operator interface			
Manual start/stop	●	●	●
Auto/remote start	●	●	●
Exercise function	-	-	●
Emergency stop (local and remote)	●	●	●
Alphanumeric screen	●	●	●
Remote start input active led	●	-	●
Fault reset	●	●	●
Paralleling capability			
First start sensor system	-	o	●
Phase lock loop synchronizer	-	o	●
Manual sync with synchroscope	-	o	●
kW and kVAR load sharing	-	o	●
Import/export and Var/PF control	-	o	●
Base loading (utility bus)	-	o	●
Power transfer control	-	-	●
Peak shaving	-	o	●
Environment			
Interface temp. range –20°C to +70°C (optional –40°C to +70°C)	● o	● o	● o
Humidity up to 95% (noncondensing)	●	●	●
Codes and standards			
CE-compliant	●	●	●
NFPA110	●	●	●
UL 508-listed/recognized	●	●	●
UL-certified	●	●	●

● Standard o Option - Not Available

	PowerCommand 1.1	PowerCommand 2.2	PowerCommand 3.3
Shutdown protection and indication — engine			
Low fuel level	o	●	●
High fuel level	-	-	o
Low oil pressure	●	●	●
High engine coolant temperature	●	●	●
Failure to crank shutdown	●	●	●
Over crank (failure to start)	●	●	●
High/low battery voltage/weak battery	●	●	●
Overspeed	●	●	●
Shutdown protection and indication — alternator			
Under and over voltage	●	●	●
Under and over frequency	●	●	●
Overcurrent and short circuit	●	●	●
Ground fault (earth leakage)	o	o	o
Reverse power	-	o	●
Reverse Var	-	o	●
Measurement and instrumentation — engine			
Oil pressure	●	●	●
Oil temperature	-	o	o
Coolant temperature	●	●	●
Engine speed	●	●	●
Engine running hours	●	●	●
Number of starts	●	●	●
Battery voltage	●	●	●
Exhaust temperature	-	o	o
Measurement and instrumentation — alternator			
3-phase L-L & L-N voltage, frequency	●	●	●
3-phase current	●	●	●
kWh	-	●	●
Total kVa	●	●	●
Total kWe and kVAr	-	-	●
PF	-	●	●
Per phase kVAr, kWe	-	-	●
Per phase kVa	-	-	●

For additional technical specifications, visit:
http://www.cumminspower.com/na/products/generators/diesel



AmpSentry™ protective relay for monitoring and control

AmpSentry protective relays guard the electrical integrity of the alternator and power system, and facilitate selective coordination while protecting against a wide range of fault conditions.

Single- and three-phase fault regulation gives downstream protective devices reliable levels of fault current to clear faults quickly, without risking the life of the alternator or exposing loads to potentially damaging voltage levels.

AmpSentry protective relays are UL-listed as utility-grade protective relays and are standard on **PowerCommand 2.2 and 3.3 controls**.

Power Transfer Equipment

PowerCommand® automatic transfer switches communicate directly with the generator set controller, providing more reliable communication across the entire system.

In addition to a full line of standard transfer switches, custom-engineered switches are available to fit unique project requirements anywhere in the world.

Orange County Convention Center, Orlando, Florida

A 6 MW standby power system in the Phase V expansion includes 72 automatic transfer switches. The transfer switches are used for load distribution and for switching between the utility source and four 1500 kW PowerCommand diesel generator sets.

OTPC

UL 1008

Automatic transfer switches

PowerCommand automatic transfer switches feature microprocessor-based control technology for easy operation and robust, high-contact-force design to withstand thousands of switching cycles. Applications include utility-to-generator-set, utility-to-utility or generator-set-to-generator-set. Open transition switches can be adjusted to completely disconnect the load from both sources for a programmed time period to prevent unnecessary circuit breaker tripping and load damage.

Major features include:

- UL 1008-listed withstand and closing ratings up to 200kA
- Convenient front-panel display to easily review power and load conditions, make adjustments, review events, and check network status
- Service entrance configurations to 1000 amps

Closed-transition transfer switches

For critical applications where even a momentary loss of power makes a difference, closed transition provides make-before-break transfer between live sources by momentarily paralleling the two sources.

1008

CHPC

1008

BTPC

For installations rated from 800 to 3,000 amps, our digital paralleling load transfer (PLT) equipment, specifically designed for ramping closed-transition transfer, transfers power between a generator set and utility service without disturbing power to critical loads.

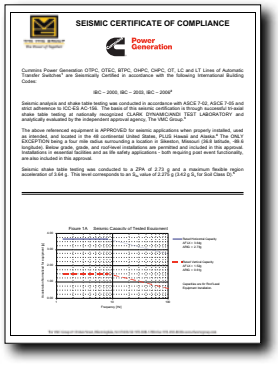
Model	**Features**	**# poles**	**Size** (amps)
OTEC	Basic feature package, heavy-duty switch	3, 4	40–1200 A
OTPC	Fully featured, heavy-duty switch	3, 4	40–4000 A
OTEC-SE	Basic feature package, service entrance switch	3, 4	40–1000 A
OTPC-SE	Fully featured, service entrance switch	3, 4	40–1000 A
BTPC	Fully featured, bypass isolation, heavy-duty switch	3, 4	150–4000 A
OHPC	Premium featured, high withstand rated, heavy-duty switch	2, 3, 4	125–800 A
CHPC	Closed transition, 100ms, high withstand rated, heavy-duty switch	2, 3, 4	125–800 A
PLT	Open, closed or soft transition, breaker-based	3, 4	800–3000 A

Bypass-isolation switches

PowerCommand bypass-isolation transfer switches allow maintenance, service and testing of the automatic transfer switch without disrupting power to critical loads. They are ideal for critical-need applications where any disruption of supply power, even for routine maintenance, is unacceptable.

Major features include:

- Closed-door drawout isolation mechanism
- Two-source bypass switch
- Microprocessor-based controls
- Optional <100-millisecond closed-transition transfer



SEISMIC CERTIFICATE OF COMPLIANCE

Power Generation

Transfer switches are seismically tested and third-party approved in compliance to IBC requirements.

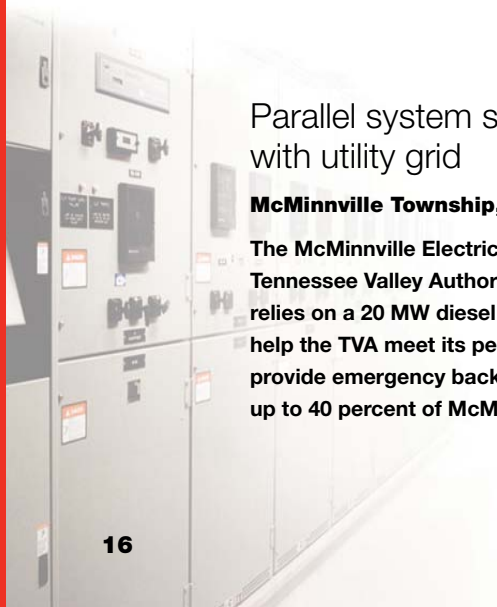
Paralleling Systems

PowerCommand® paralleling systems are operated by DMC Digital MasterControls that interface directly with PowerCommand generator sets. The DMC is a complete logic control system for complex and demanding on-site power systems where reliability, performance and flexibility are paramount.

In PowerCommand paralleling systems, the generator set-mounted control provides all the paralleling functions: generator control and protection, synchronizing, first-to-bus logic, load sharing, and load governing.

The DMC provides system-level functions, including load add and load shed sequencing, load demand, and system operator interface.

DMC controls are available with a wide range of control and display options, so custom control configurations can be achieved with minimal design work.



Parallel system synchronizes with utility grid

McMinnville Township, Tennessee

The McMinnville Electric System, a Tennessee Valley Authority member utility, relies on a 20 MW diesel power plant to help the TVA meet its peak demand and provide emergency backup power for up to 40 percent of McMinnville's load.

Rental Power

Whatever your power need

From providing prime power for a remote gold mine, to backup power for scheduled maintenance, to emergency power after a hurricane, Cummins Power Generation has a Rental Power solution to meet your needs. From a single temporary Rental Power unit to turnkey packages, including product specifications, delivery start-up and fueling, we pair our tailored solution with unparalleled support 24 hours a day, seven days a week.

Cummins Power Generation offers a wide range of Rental Power systems, from 60 kW to 2 MW, and all units are pre-integrated, skid-mounted and containerized or enclosed. Our Rental Power units are configured especially for the rental power market and packaged in an easy-to-operate customer interface to maximize flexibility and minimize setup. Systems include engines, generators, monitoring controls, automatic transfer switches and switchgear equipment.

60–300 kW

	Model		C60	C80	C100	C150	C200	C300
Generator set	Power factor		0.8					
	Standy output (kW)		60	80	100	150	200	300
	Prime output (kW)		55	72	90	135	180	270
	Voltage - 3 phase (V)		208/480 or 600					
	Cooling System		122°F (50°C)			120°F (49°C)	118°F (48°C)	122°F (50°C)
	Fuel consumption at prime	at Full load	5 gph	6 gph	7.2 gph	10.1 gph	13 gph	19.8 gph
		at 3/4 load	4.1 gph	5 gph	5.8 gph	8 gph	10.9 gph	15 gph
		at 1/2 load	2.3 gph	3.3 gph	3.9 gph	5.9 gph	7.8 gph	10.8 gph
		at 1/4 load	1.9 gph	2.1 gph	2.3 gph	3.1 gph	4.5 gph	6.5 gph
Engine(s)	Model		QSB5-G1	QSB5-G2	QSB5-G5	QSB7-G3	QSB7-G3	QSM11-G4
	EPA nonroad tier rating		Tier III			Tier III/TPEM		
	Displacement (in3)		272	272	272	408	408	661
	Starting voltage		12 V, negative ground					24 V, negative ground
	Battery capacity		1000 CCA			2 x 750 CCA		1000 CCA

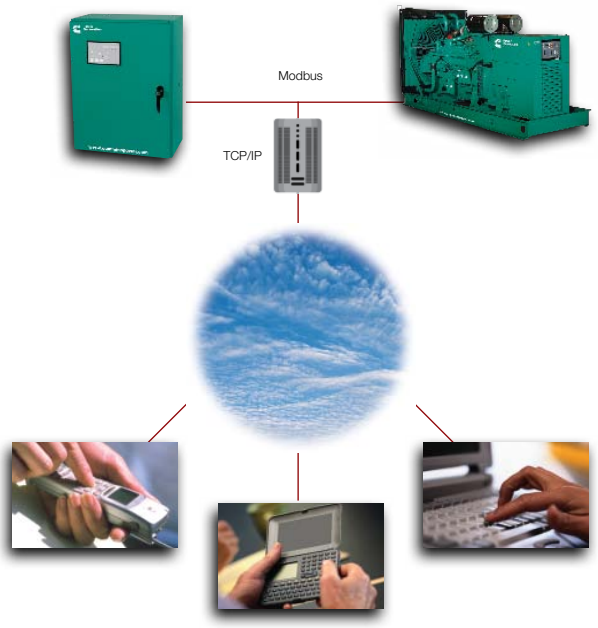
500–2000 kW

	Model		C500	C800	C1000	C1500	C1600	C2000
Generator set	Power factor		0.8					
	Standy output (kW)		500	800	1000	1500	1600	2000
	Prime output (kW)		455	725	900	1350	1450	1800
	Voltage - 3 phase (V)		208/480 or 600			480/600		
	Cooling System		122°F (50°C)			113°F (45°C)	113°F (45°C)	122°F (50°C)
	Paralleling		Standard 480 & 600 only			Standard		
	Fuel consumption at prime	at Full load	30 gph	48 gph	64 gph	95 gph	96 gph	128 gph
		at 3/4 load	24 gph	38 gph	47 gph	71 gph	76 gph	94 gph
		at 1/2 load	18 gph	27 gph	32 gph	53 gph	54 gph	64 gph
		at 1/4 load	11 gph	15 gph	17 gph	29 gph	30 gph	34 gph
Engine(s)	Model		QSX15-G9	QSK23-G7	QST30-G5	QSK50-G4	QSK23-G7 x 2	QST30-G5 x 2
	EPA nonroad tier rating		Tier II/TPEM					
	Displacement (in3)		912	1413	1860	3067	1413 x 2	1860 x 2
	Starting voltage		24 V, negative ground					
	Battery capacity		2 x 12V 1235 CCA	4 x 8D 1250 CCA			8 x 8D 1250 CCA	

Software and Networking

PowerCommand® software and networking tools let you easily manage on-site and off-site power systems from one location.

Whether you're using a desktop computer, a laptop or a cell phone, PowerCommand remote monitoring systems help you reduce power setup time, operation and maintenance.



PowerCommand accessories for reliable web-based monitoring

PowerCommand remote monitoring systems let you monitor generator set and transfer switch functions via the Internet. You can:

- Monitor remotely via wireless connection using cellular or satellite communications
- Communicate via an Ethernet connection, phone line or available wireless configuration
- Connect via an Internet browser on a remote PC
- Send alarms to cell phones, pagers or e-mail addresses
- Display voltage and frequency of each source
- Monitor one or two generator sets and up to four transfer switches

PowerCommand InPower™ for planned maintenance

PowerCommand InPower for service and planned maintenance provides both local and remote setup and diagnostics. The PC-based software allows a technician to "talk to" a remote PowerCommand system, determine its status and make adjustments.

An Internet browser interface provides easy access to PowerCommand InPower's useful functions:

- *Strip charts* — Obtain real-time recordings of changing conditions and performance
- *Adjustments* — Change system operating parameters
- *Monitoring functions* — Use real-time monitoring and data recording to simplify testing and diagnostics
- *Report generation* — Automatically record test data and formats for quick test reporting
- *Fault simulations* — Simulate warning or shutdown conditions

PowerSuite

PowerSuite, on CD-ROM, is available from your local Cummins distributor. This tool contains easy-to-use generator set sizing software, product specification and data sheets, key drawings in both PDF and CAD formats, along with other application technical information. This comprehensive set of product information and software tools helps you select appropriate power generation products and identify facility design and installation requirements.

PowerSuite includes:

GenSize™

A comprehensive, easy-to-use generator set sizing software that lets you quickly determine the optimum generator set required for your application.

Library

This is the electronic version of our power systems manual containing all product specification and data sheets, plus much more. The Library also contains outline, installation and wiring drawings in both PDF and CAD formats.

GenSpec™

This includes a series of product sample specifications in Word format that can be used as a source for power generation project specifications.

Reliability, responsiveness and relationships — that's what you can expect from Cummins Power Generation.

Innovative technology, dependable products and custom solutions for your specific applications are all brought to you by people you can trust: the people of Cummins Power Generation.

You can rely on Cummins Power Generation to deliver complete power equipment solutions plus a full range of services, including system design, project management, financing, operation and maintenance contracts, and development of turnkey power plants.

Dedicated support team

PowerCommand® systems are supported by one of the largest service and support organizations in the world — more than 5,200 sales and service centers in 190 countries. Cummins Power Generation distributors deliver single-source warranty, planned maintenance and round-the-clock emergency service with technicians continually trained and certified in paralleling power system design.

Our planned maintenance program, staffed by factory-certified technicians, not only increases your system reliability and maintains your factory warranty coverage, it also gives you the flexibility to tailor the program to your specific needs. You can count on Cummins Power Generation for expert local service, planned maintenance, troubleshooting, quality parts and comprehensive power systems support.

Put our energy to work for you.

Power Generation

North America
1400 73rd Ave. NE,
Minneapolis, MN 55432
USA
Phone 1 763 574 5000
Fax 1 763 574 5298

Asia Pacific
10 Toh Guan Road, #07-01,
TT International Tradepark
Singapore 608838
Phone 65 6417 2388
Fax 65 6417 2399

Brazil
Rua Jati, 310, Cumbica
Guarulhos, SP 07180-900
Brazil
Phone 55 11 2186 4195
Fax 55 11 2186 4729

China
8 Wanyuan Street, Beijing Economic and Technological Dev. Area
Beijing 100176
P.R. China
Phone 86 10 6788 2258
Fax 86 10 6788 2285

Europe, CIS, Middle East and Africa
Manston Park Columbus Ave.
Manston Ramsgate, Kent CT 12 5BF
United Kingdom
Phone 44 1843 255000
Fax 44 1843 255902

India
35A/1/2, Erandawana,
Pune 411 038
India
Phone 91 020 6602 7525
Fax 91 020 6602 8090

Latin America
3350 Southwest 148th Ave.
Suite 205, Miramar, FL 33027
USA
Phone 1 954 431 5511
Fax 1 954 433 5797

Mexico
Eje 122 No. 200 Zona Industrial
San Luis Potosí, S.L.P. 78395
Mexico
Phone 52 444 870 6700
Fax 52 444 824 0082

www.cumminspower.com