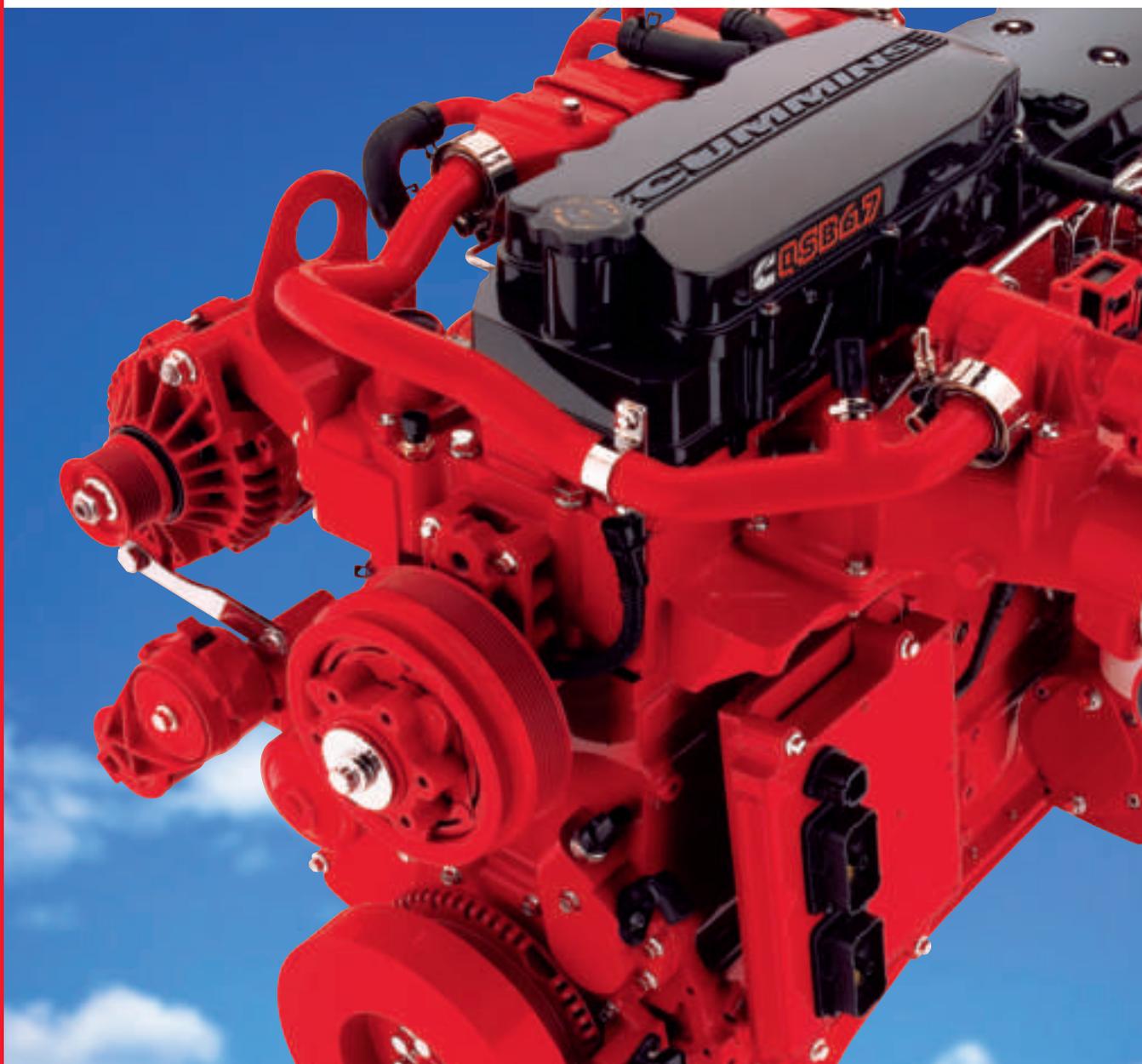




# Clear Advantage. Every™ Engine.

Tier 4 Interim/Stage IIIB Certified Products



# The Best Performance. Every™ Time.

Whether constructing roads or buildings, moving material, felling trees or harvesting fields, you can rely on Cummins power. For every piece of equipment, you will find a clean, fuel-efficient, dependable engine to meet every need across a 75- to 600-hp (56-447 kW) range, ready to meet EPA Tier 4 Interim and EU Stage IIIB low-emissions regulations in 2011 and 2012.

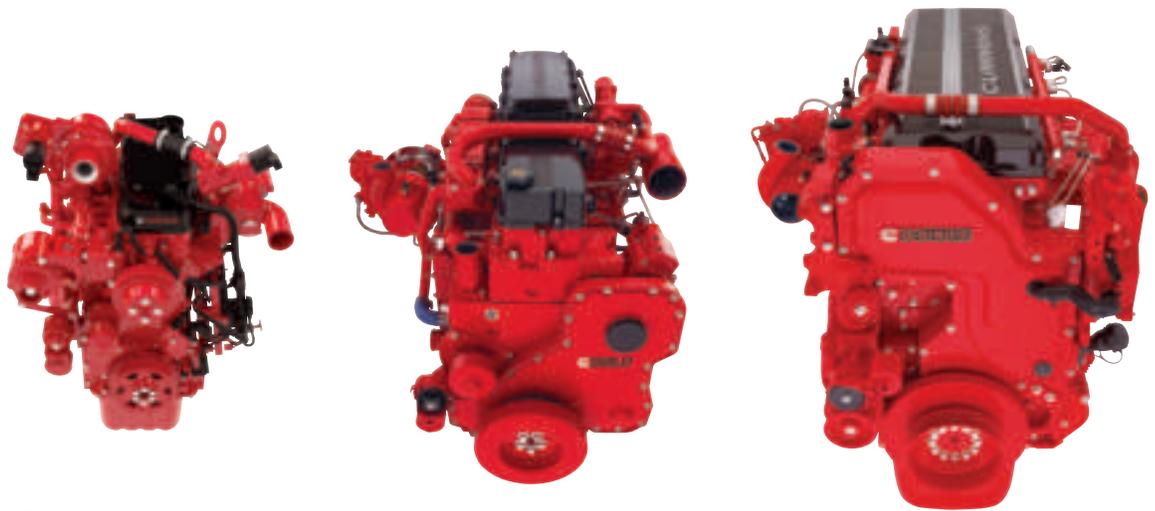
Tier 4 Interim/Stage IIIB regulations took effect in North America and the European Union in January 2011. The regulations require a major reduction of particulate matter (PM) and also require significant oxides of nitrogen (NOx) reductions. These new restrictions drive the need for cooled Exhaust Gas Recirculation (EGR) and PM exhaust aftertreatment.



For equipment manufacturers, Cummins Tier 4 Interim solution means a user-friendly, fully integrated air-intake-to-exhaust aftertreatment system designed to minimize space and optimize performance for every installation. Unique in the industry, Cummins designs and manufactures the key enabling technologies for Tier 4 Interim, including our own exhaust aftertreatment.

For equipment operators, Cummins Tier 4 Interim means a lower cost of operation with better performance and the same level of durability as our class-leading Tier 3/Stage IIIA engines.





## Specifications

Engine	QSB3.3	QSB4.5	QSB6.7	QSL9	QSX11.9	QSX15
Power	75-120 HP (56-90 kW)	110-163 HP (82-122 kW)	140-300 HP (104-224 kW)	240-400 HP (179-298 kW)	300-500 HP (224-373 kW)	400-600 HP (298-447 kW)
Displacement	3.3 LITERS	4.5 LITERS	6.7 LITERS	9 LITERS	11.9 LITERS	15 LITERS
Fuel System	High Pressure Common Rail (HPCR)	HPCR	HPCR	Xtra-High Pressure Injection (XPI)	XPI	XPI
Air Filter	Direct Flow™	Direct Flow	Direct Flow	Direct Flow	Direct Flow	Direct Flow
Emissions Control	Cooled EGR and Cummins Compact Catalyst	Cooled EGR and Cummins Compact Catalyst	Cooled EGR and Cummins Particulate Filter*	Cooled EGR and Cummins Particulate Filter	Cooled EGR and Cummins Particulate Filter	Cooled EGR and Cummins Particulate Filter
Turbocharging	Variable Flow	Variable Flow	Variable Geometry	Variable Geometry	Variable Geometry	Variable Geometry

\*Cummins Compact Catalyst is used on the QSB6.7 below 174 hp (130 kW).

Equally important is the unrivaled experience Cummins has obtained from using the same core technologies for Tier 4 Interim that we used to meet EPA 2007 on-highway regulations. Our production experience speaks for itself:

- Over one million EGR engines in operation
- Production of over 650,000 diesel particulate filters
- 3 million VGT™ Turbochargers manufactured

With Cummins Tier 4 Interim/Stage IIIB engines, you can be confident in our ability to provide the right technology for the off-highway equipment markets. At an early stage, we initiated the most comprehensive field test installation program we have ever undertaken for our off-highway product range.

With Cummins working closely with its OEM customers and operators, this program encompassed the most challenging types of equipment installations and duty cycles. The results of our field tests met our customers' highest expectations of performance, fuel efficiency and uptime availability.

Our engines extend from a compact 75-hp (56 kW) QSB3.3 all the way to the 600-hp (447 kW) QSX15. Each engine is custom-engineered to specific load and work environment factors. For the user, it means the best performance – every time.

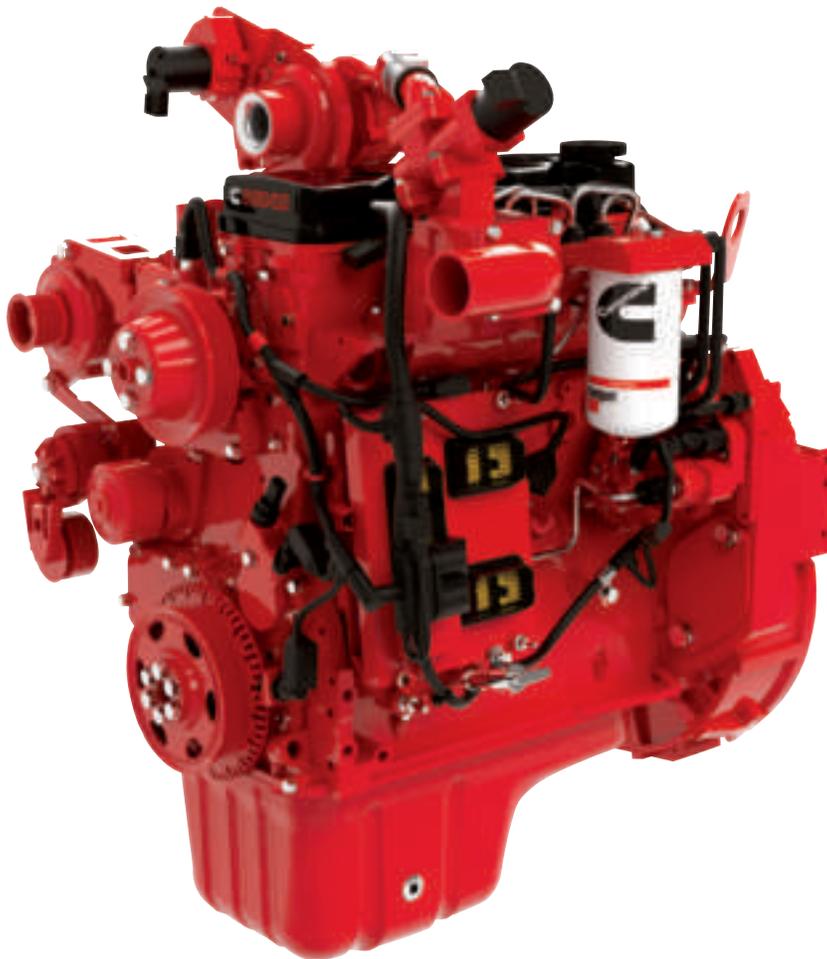
# Cost-Efficient, Powerful Compact Engines 75-163 hp (56-122 kW).

Cummins next-generation QSB4.5 and QSB3.3 continue to deliver the ideal solution for customers looking for a compact package with Tier 4 Interim technology specifically developed for 4-cylinder platforms. The QSB4.5 and QSB3.3 leverage Cummins fully integrated system from air intake to exhaust aftertreatment, delivering up to 5% better fuel economy in order to lower operating costs and improve your bottom line.

## Cummins Compact Catalyst.

The QSB4.5 and QSB3.3 achieve very low PM emissions using the Cummins Compact Catalyst exhaust aftertreatment. The system is maintenance-free and offers a space-efficient installation profile. Cummins proven EGR system is utilized for NOx reduction.

Engine	Power	Peak Torque
QSB4.5	110-163 HP (82-122 kW)	466 LB-FT (632 N•M)
QSB3.3	75-120 HP (56-90 kW)	306 LB-FT (415 N•M)

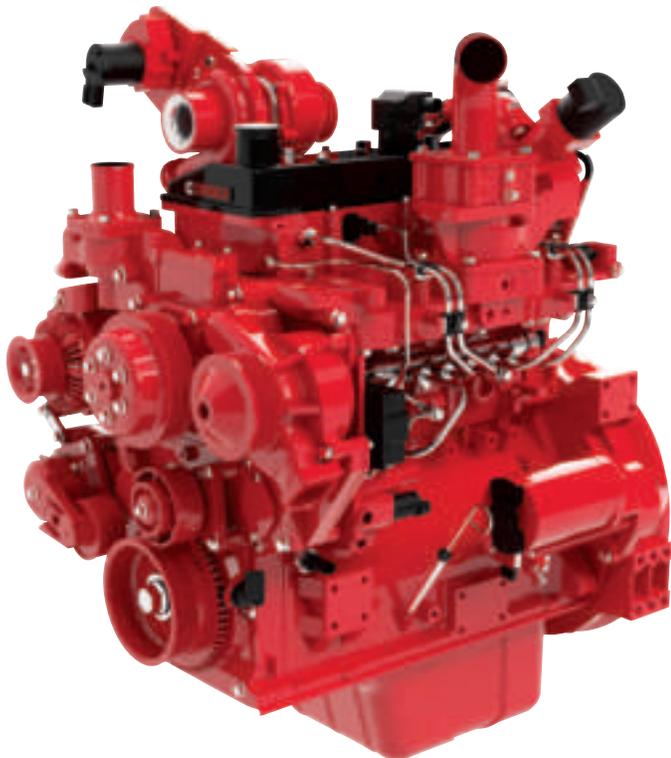


### **Variable Flow Turbocharger.**

The new variable flow turbocharger with electronic control optimizes the cooled-EGR flow across the entire rpm range. Variable flow turbocharging provides increased airflow efficiency compared with a wastegate turbocharger.

### **Electronic Management.**

Cummins Electronic Control Module (ECM) manages all components for a completely integrated system and assures the impressive reliability and durability and long maintenance intervals you expect from the industry's technology leader.



### **Advanced Filtration.**

Tier 4 Interim and Stage IIIB performance-enhancing features include the Fleetguard® Direct Flow™ air filtration system, providing a smaller installation profile than radial air filters and adding improved filtration efficiency. The engines incorporate a crankcase ventilation system with a highly efficient coalescing filter for cleaner engine operating conditions.

### **High Pressure Common Rail (HPCR).**

Cummins cooled EGR, coupled with our HPCR fuel system, provides cleaner and more efficient combustion, resulting in up to 5% better fuel efficiency compared with the Tier 3/Stage IIIA engines. With better fuel efficiency and ratings that extend from 110 hp to 163 hp (82-122 kW) for the QSB4.5 and 75 hp to 120 hp (90 kW) for the QSB3.3, these engines provide the lowest cost of ownership while retaining a high power output for engines of their size.



The Cummins Compact Catalyst size allows for an easier installation.

# Fuel-Efficient, Reliable MidRange Engines 140-400 hp (104-298 kW).

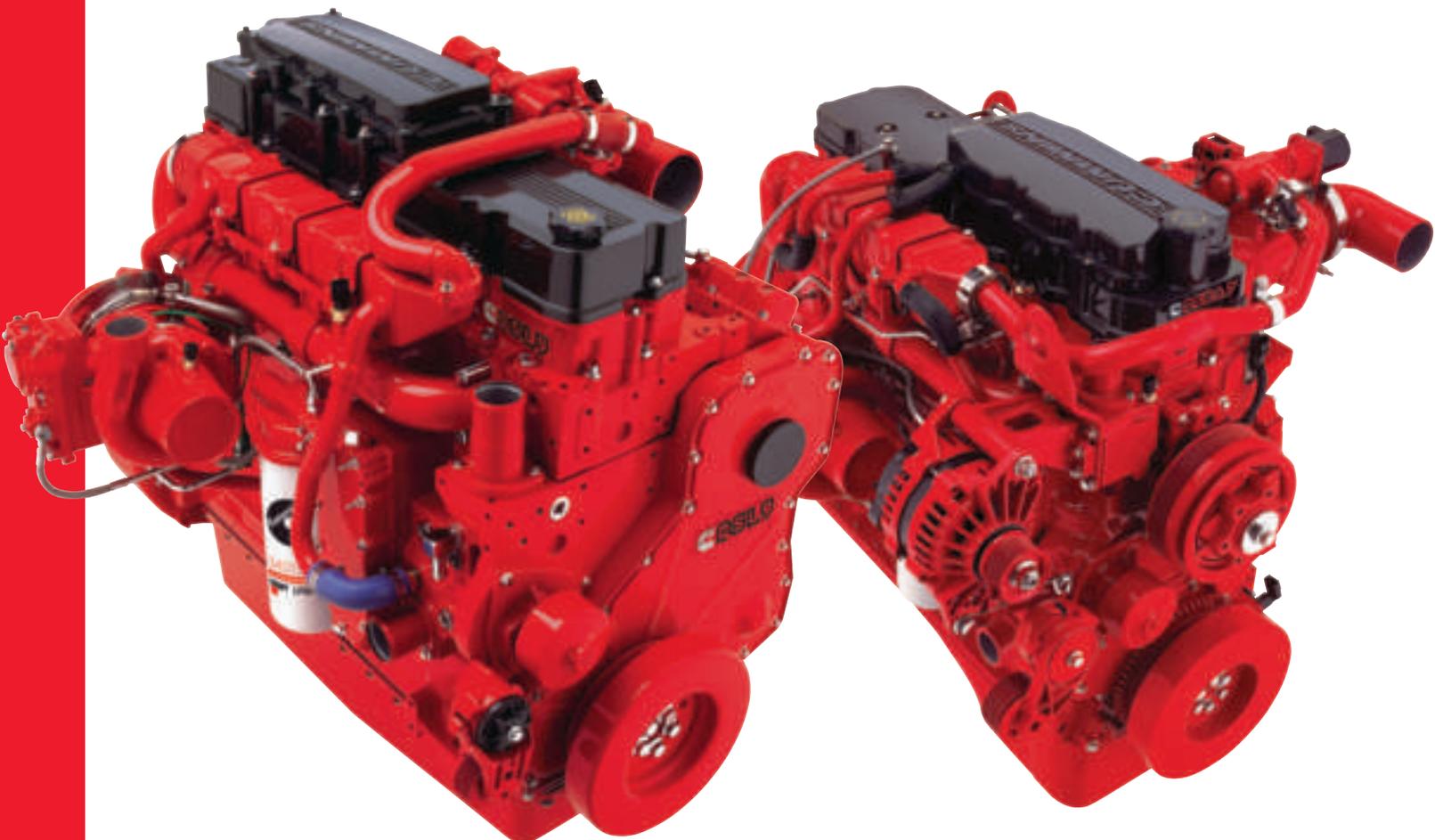
Cummins QSL9 and QSB6.7 for Tier 4 Interim/ Stage IIIB are designed to take on your toughest jobs with a fully integrated system from air intake to exhaust aftertreatment. We've enhanced every aspect of our existing Tier 3 engines. This results in the QSL9 and QSB6.7 delivering up to 5% better fuel economy, which lowers your operating costs and improves your bottom line.

The QSL9 is now available with a wider power range, from 240 to 400 hp (179-298 kW) peak power.

Ratings for the QSB6.7 extend from 140-300 hp (104-224 kW) and provide the performance of a larger displacement engine while offering a significant installation advantage.

We've combined our on-highway experience and validated our testing for off-highway applications, which results in better-performing engines.

Engine	Power	Peak Torque
QSL9	240-400 HP (179-298 kW)	1200 LB-FT (1627 N•M)
QSB6.7	140-300 HP (104-224 kW)	760 LB-FT (1030 N•M)





Cummins Particulate Filter

## **Exhaust Aftertreatment.**

### ■ **Cummins Particulate Filter**

The proven Cummins Particulate Filter reduces particulate matter by over 90%. The Cummins Particulate Filter has been specifically developed for industrial applications, delivering premium performance and durability you can depend on.

### ■ **Cummins Compact Catalyst**

For ratings below 174 hp (130 kW), the QSB6.7 utilizes the Cummins Compact Catalyst specifically designed for more space-constrained applications.

## **High Pressure Common Rail (HPCR).**

The QSB6.7 engine combines cooled EGR with an improved High Pressure Common Rail (HPCR) fuel system, enabling cleaner and more efficient combustion and resulting in better fuel economy without compromising performance.

## **Xtra-High Pressure Injection (XPI) Fuel System.**

The Tier 4 Interim/Stage IIIB QSL9 engine incorporates Cummins XPI fuel system, enabling very high fuel injection pressure across all engine rpm speeds, providing cleaner combustion and improved engine response.

## **VGT™ Turbocharger.**

Improved fuel efficiency isn't the only benefit that the new QSL9 and QSB6.7 engines have to offer. The fuel systems are complemented by our patented VGT Turbocharger, which continuously varies the airflow boost to precisely match engine rpm and load demands for optimal performance.

## **Advanced Filtration.**

The next-generation Fleetguard Direct Flow air filter offers better engine protection and lower maintenance costs within a smaller profile than conventional air filtration systems. Additional performance-enhancing features include a smaller installation profile than radial air filters. This system is uniquely designed for dusty environments while providing extended air filter life. The engines incorporate a crankcase ventilation system with a highly efficient coalescing filter for cleaner engine operating conditions.

## **Exhaust Gas Recirculation (EGR).**

The QSL9 and QSB6.7 meet very low emissions standards by using our proven cooled EGR to reduce NOx emissions by 45%.

## **Electronic Management.**

Cummins Electronic Control Module (ECM) manages all components for a completely integrated system and assures the impressive reliability and durability and long maintenance intervals you expect from the industry's Tier 4 Interim technology leader.



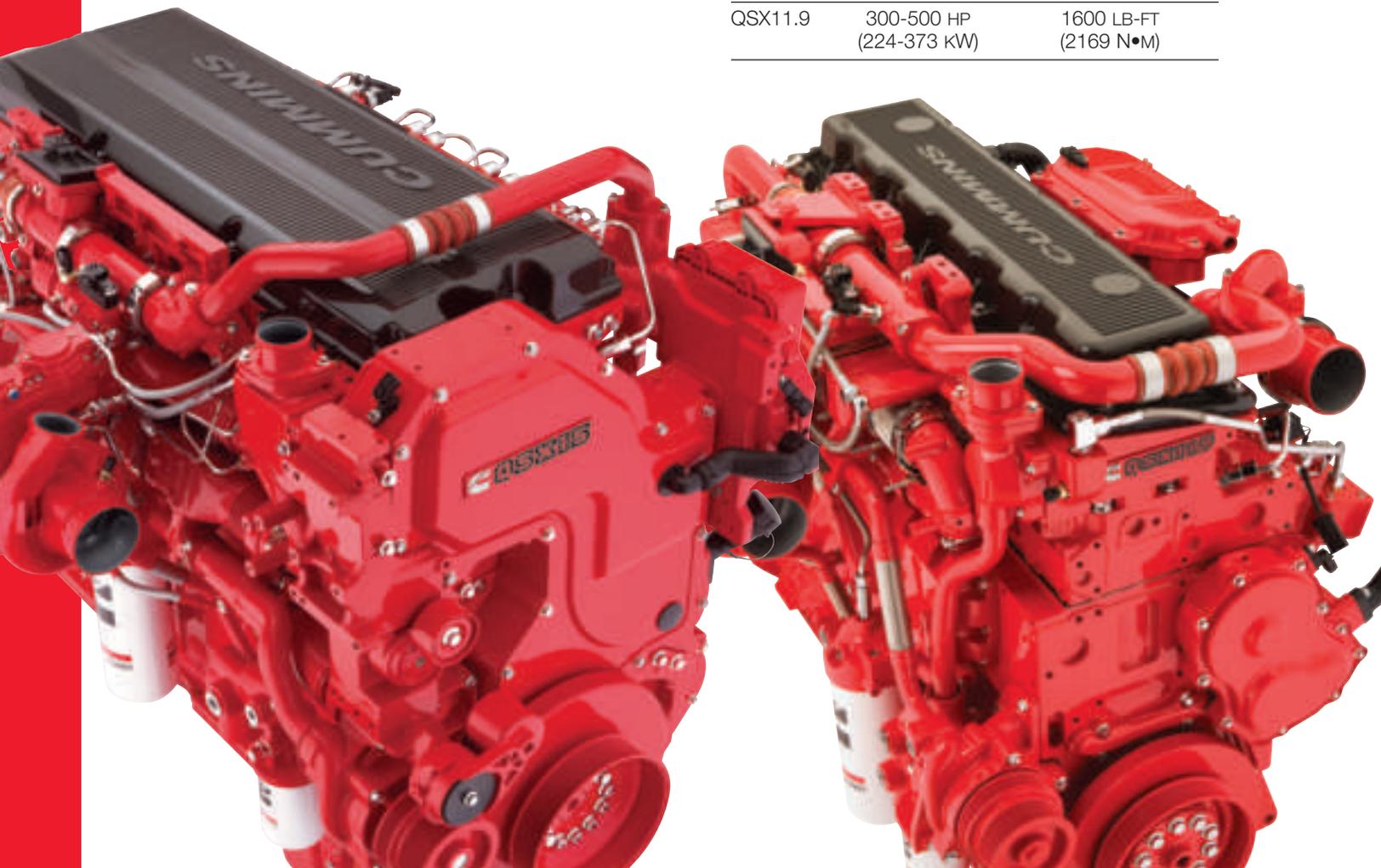
# High-Productivity Heavy-Duty Engines 300 to 600 hp (224-447 kW).

Cummins QSX15 and QSX11.9 deliver superior performance while meeting Tier 4 Interim/ Stage IIIB emissions regulations to give you the highest productivity on any job site today. These engines provide a better overall value for your business, with up to 5% better fuel efficiency. Cummins has designed and built every major component on the engine and its subsystem, so you know you're getting the best integrated solution in the market.

The QSX15 is built on the success of the Tier 3 QSX to offer a better engine for Tier 4 Interim. The QSX11.9 is a clean-sheet design created from the ground up to be the most compact and powerful engine in its class. It shares many major components with the QSX15 and has plenty of torque to handle any application.

Cummins has leveraged our experience and success in the on-highway market to develop better off-highway engines to meet Tier 4 Interim/Stage IIIB standards. The following fully integrated components give you a better engine from air intake to exhaust aftertreatment.

Engine	Power	Peak Torque
QSX15	400-600 HP (298-447 kW)	2050 LB-FT (2779 N•M)
QSX11.9	300-500 HP (224-373 kW)	1600 LB-FT (2169 N•M)





### **Xtra-High Pressure Injection (XPI) Fuel System.**

The proven technology of the XPI common-rail fuel system delivers a precise quantity of fuel at ultra-high pressure. This, together with more robust electronic engine controls, enables multiple injection events per cycle. Flexibility in injection timing increases fuel economy and performance while decreasing exhaust emissions.

### **Advanced Filtration.**

The Fleetguard Direct Flow air filter enables a smaller installation profile than radial air filters. The rectangular shape of the Direct Flow filter is up to 35% smaller than competitive brands and allows it to fit into spaces that a traditional round air housing cannot. An optional pre-cleaner cover is available which removes up to 90% of all particles before they even reach the filter. The engines incorporate a crankcase ventilation system with a highly efficient coalescing filter for cleaner engine operating conditions.

### **Cooled EGR.**

This next-generation system lowers combustion temperatures for reduced emissions and optimized fuel efficiency.

### **Cummins Particulate Filter.**

The proven Cummins Particulate Filter reduces particulate matter by over 90%. This insulated filter is integrated with the Cummins VGT Turbocharger and Electronic Control Module (ECM) to maximize passive particulate filter self-regeneration.

### **Fully Integrated Electronic Controls.**

A single higher-capacity ECM controls everything from air intake to exhaust aftertreatment for peak performance and low emissions.

### **VGT Turbocharger.**

The Cummins VGT Turbocharger is both simple and precise. Electric actuation allows infinite adjustment, providing the exact amount of boost necessary for superior response. The proven sliding-nozzle design has best-in-class reliability and durability. The VGT Turbocharger works well with the XPI fuel system to provide optimal performance with a precise match of engine rpm and load demands.





### **Customer Support. Everywhere.**

No matter where your equipment is put to work, Cummins stands ready to service it. Our parts and service network is the world's largest, with over 6,600 Cummins distributor and dealer locations. Each authorized location maintains a full inventory of Genuine Cummins new and ReCon® parts. Their fleet of QuickServe® trucks stands ready to be deployed to job sites. Each is equipped with the latest diagnostic and repair equipment – and is staffed by certified technicians, factory trained in the latest technology. Plus, you have 24/7/365 access to [quickservice.cummins.com](http://quickservice.cummins.com) for the latest information on parts, service, information tools, training, special promotions and more. It's all part of the total package that makes Cummins a better choice for you – and your customers.

### **Global Customer Engineering.**

OEM customers have unrivaled access to secure technical data 24/7 on every Cummins engine at the Global Customer Engineering (GCE) website at [gce.cummins.com](http://gce.cummins.com). Unique in the industry, the GCE website provides engine performance curves, upfit option availability, CAD models and Application Engineering Bulletins to make it easier for OEMs to install Cummins engines and have the right solution the first time. Please contact your Cummins representative to enable access.

### **Every Question. Answered.**

For additional information, please visit [cumminsengines.com](http://cumminsengines.com) or [tier4.info](http://tier4.info) and click on the Contact Us link.







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Bulletin 4087165 Printed in U.S.A. Rev. 3/11  
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