



Technology that Transforms

EPA Tier 4 Final/EU Stage IV



Tried and Tested

Cummins range of 2.8-liter to 15-liter engines are specified in hundreds of new machines introduced to meet the near-zero Tier 4 Final/Stage IV regulations. The engines bring lower fuel consumption and higher productivity for equipment used in construction, material-handling, agriculture, mining and other industrial applications.

This success is based on an extensive field test program of over 150,000 hours, including engines operating under the toughest environmental conditions, from high altitudes to humid locations, working in severe heat to the extreme cold. As a result, every Cummins engine is precisely calibrated to achieve optimum performance in a specific machine. The same outstanding dependability proven at Tier 3 and Tier 4 Interim is now carried forward to the Tier 4 Final engine range.

Cummins has the ability to work with the customer to incorporate engines into their machines, enabling equipment manufacturers to easily integrate and better optimize the engine for the equipment application. Cummins field tests specifically targeted the toughest installation and operational challenges in order to gain broad experience and have total confidence in the ability to handle every job.

Advanced Tier 4 Technologies

For optimized performance Cummins uses a combination of different Tier 4 Final technologies across different power bands, ensuring the best result for every application. The commonality is the Cummins commitment to providing the most robust solution in the industry. The technology approach is incremental, enabling the engine systems and aftertreatment to be configured to the right operation and duty cycle, every time.



QSF2.8

**49-74 hp
37-55 kW
300 Nm**



QSF3.8









**100-130 hp
75-97 kW
488 Nm**

Aftertreatment – The Right Approach

Aftertreatment designed by Cummins Emission Solutions is available in multiple configurations to suit the equipment manufacturer, including switchback, horizontal and vertical packages. Cummins leverages previous experience of aftertreatment technology in the on-highway industry with over 1,250,000 units manufactured to date.

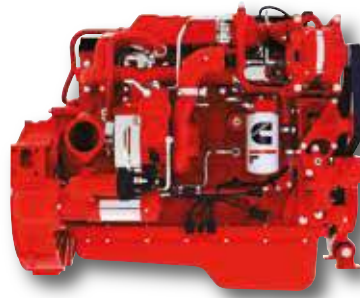
Selective Catalytic Reduction

The Selective Catalytic Reduction (SCR) system developed by Cummins for Tier 4 Final is a technologically advanced design. The system incorporates a copper zeolite-based catalyst capable of up to 95 percent NOx conversion and able to operate more efficiently at lower temperatures. The system features advanced sensors to provide full closed-loop control.

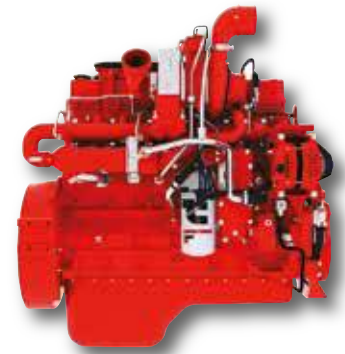
ENGINE	EPA TIER 4 FINAL / EU STAGE IV AFTERTREATMENT		
	DOC	DPF	SCR
 QSF2.8*	 ✓		
 QSF3.8	✓		✓
 QSB4.5	✓		✓
 QSB6.7	✓		✓
 QSL9	✓		✓
 QSG12		✓	✓
 QSX15		✓	✓
*Stage IIIB	DOC – Diesel Oxidation Catalyst DPF – Diesel Particulate Filter SCR – Selective Catalytic Reduction		



QSB4.5
121-173 hp
90-129 kW
705 Nm



QSB6.7
155-310 hp
116-231 kW
1030 Nm



QSL9
250-400 hp
186-298 kW
1627 Nm

Adblue/Diesel Exhaust Fluid dosing levels are minimized with enhanced mixing in the decomposition pipe.

The SCR system is combined with the simplicity of the Diesel Oxidation Catalyst (DOC), using diesel oxidation technology for engines rated from 100-400 hp (75-298 kW). For Cummins heavy duty engines extending up to 675 hp (503 kW) SCR technology is combined with a Diesel Particulate Filter; providing an additional margin of particulate matter emissions control at the higher engine loads and power outputs of heavy-duty engines.

For the compact QSF2.8 with ratings below 75 hp (56 kW), there is no need for SCR, a fit-and-forget DOC is used to reduce engine emissions.

Global Customer Engineering (GCE)

OEM customers have access to secure technical data on every Cummins engine we build, using the Global Customer Engineering (GCE) website

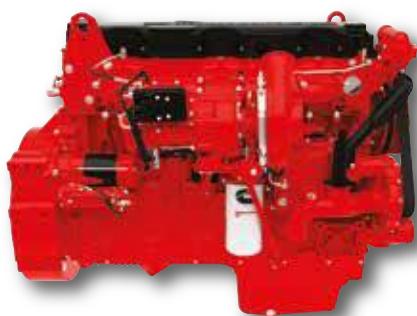
at gce.cummins.com. Everything, from engine performance curves, upfit option availability, CAD models and Application Engineering Bulletins, is available to make it easier to install Cummins engines and aftertreatment systems. Please contact your Cummins representative to enable access to GCE.

Cummins 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 7,200 Cummins dealer locations. Each authorized location maintains a full inventory of Genuine Cummins new and ReCon® parts.

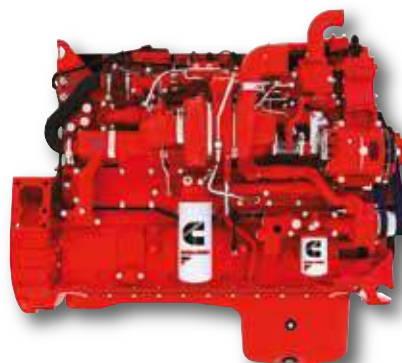
Every Question. Answered

For any additional information, please visit us at cumminsengines.com or www.tier4.info and click on the 'Contact Us' link.



QSG12

**335-512 hp
250-382 kW
2305 Nm**



QSX15

**450-675 hp
336-503 kW
2779 Nm**

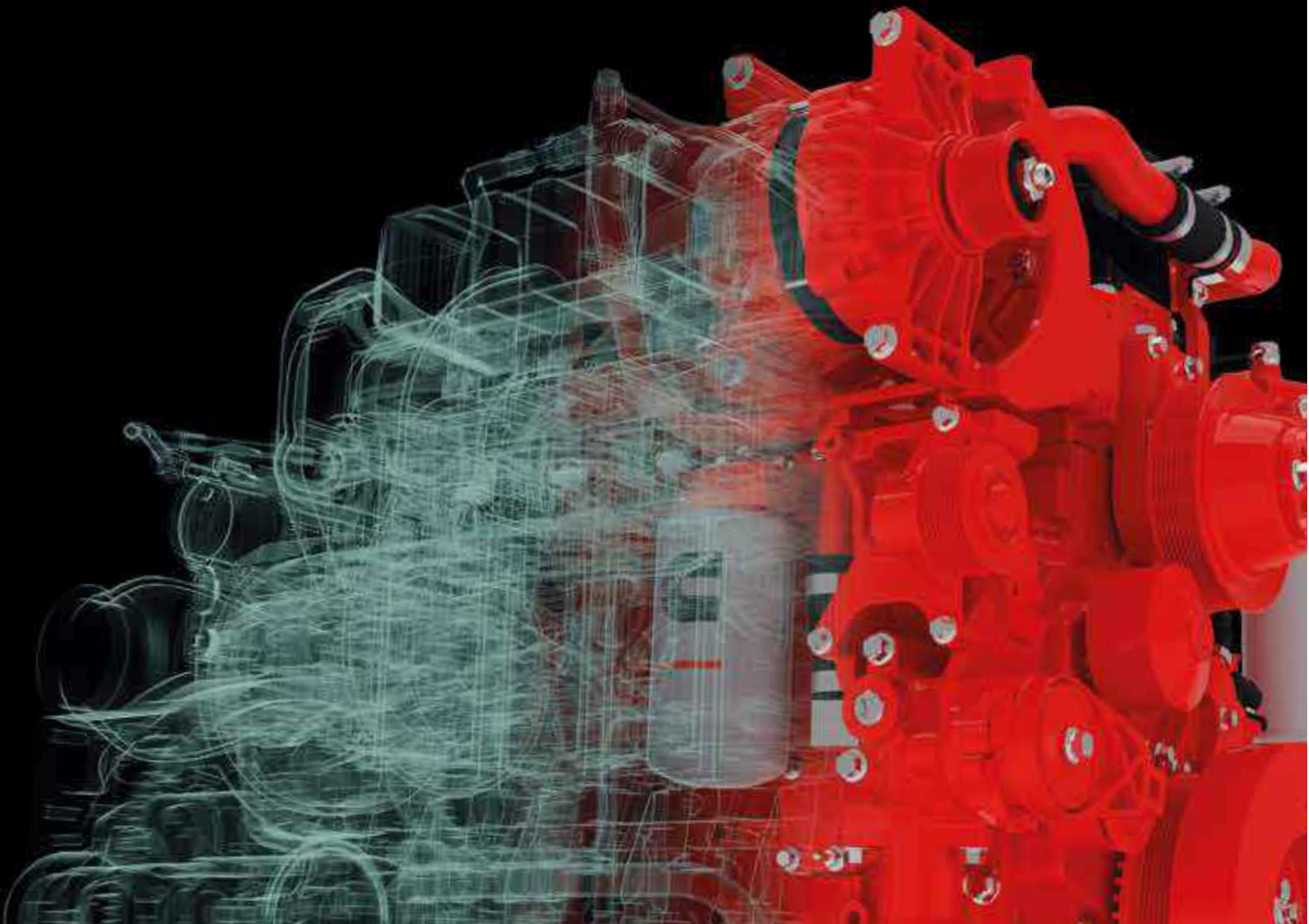


The Right Choice for EPA Tier 4 Final / EU Stage IV

For US EPA Tier 4 Final and EU Stage IV emissions regulations, Cummins has a technology solution with clear advantages for every type of equipment. The regulations require a major reduction in emissions, bringing particulate matter and oxides of nitrogen to near-zero levels.

For equipment manufacturers, the Cummins Tier 4 Final package provides a fully integrated air-intake-to-exhaust

aftertreatment system designed to minimize space and optimize performance for every installation. Cummins designs and manufactures all the key enabling technologies for Tier 4 Final such as filtration, aftertreatment systems, fuel systems, electronics and turbochargers. Combined with industry expertise in combustion technology, Cummins Tier 4 Final provides better performance and the same level of durability that the industry has come to expect from a Cummins engine.





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