EVERY™ LOAD.

ISle

CUMMINS EURO 4 ENGINES 280-400PS

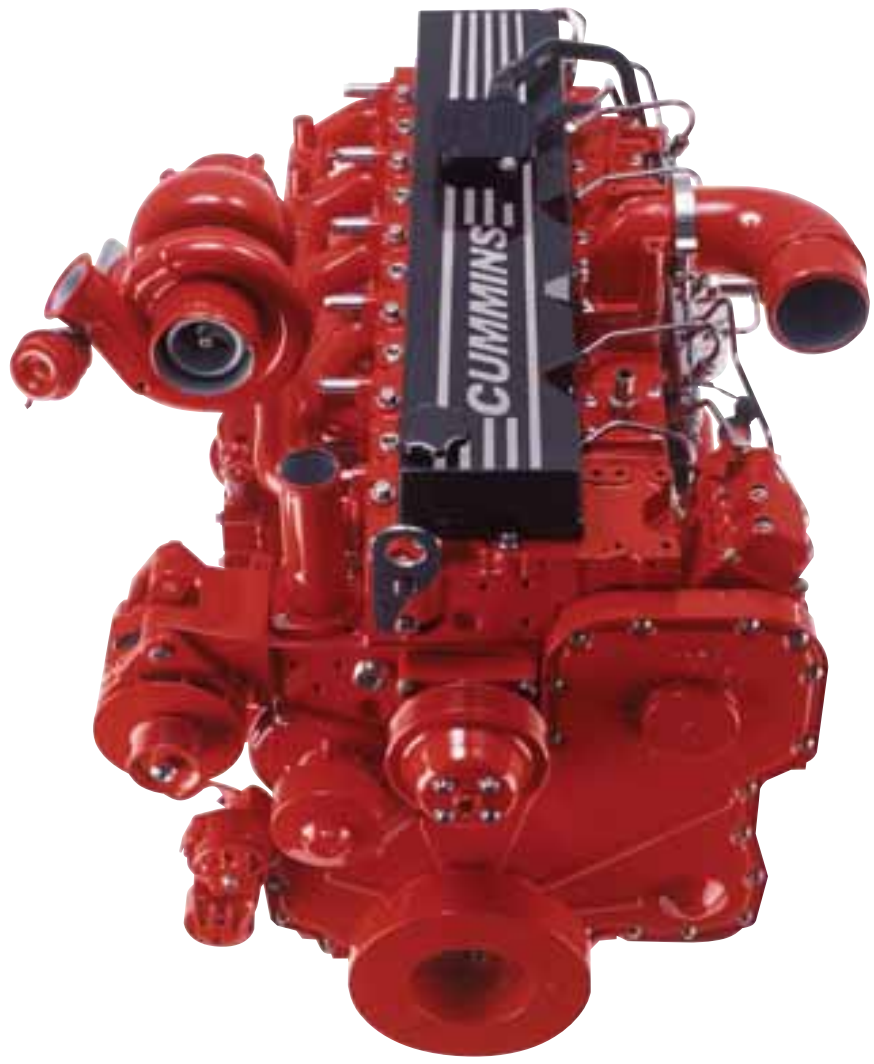
ISL^{e}

Cummins ISL^{e} takes a further leap forward to meet Euro 4 emissions and beyond. It provides a highly flexible power choice with a light weight, compact size and fuel efficient 8.9 litre configuration. The move to Euro 4 affords an increase in torque and power, all managed while maintaining a weight up to 150kg lighter than competitive engines. This benefits operators with higher performance, stronger acceleration and lower operating costs, all with the reliability and durability expected from Cummins.

The ISL^{e} has been designed with the heavy duty structural strength, and incorporates design features which are normally associated with larger Cummins engines. Articulated pistons, an enhanced camshaft and roller cam followers, a viscous damper and high capacity lube system enables Cummins to maintain high durability and reliability in a compact, light weight package. Weighing in at just over 700kg, the ISL^{e} offers significant benefits for payload critical and high bulk volume operations. With unrivalled levels of torque for an engine of this size, the ISL^{e} provides the flexible power solution for premium rigids, lightweight tractor units and higher powered bus and coach installations. Strong accelerating ability also makes the ISL^{e} an ideal choice for armoured fighting vehicles.

Lower maintenance costs are achievable, thanks to a combination of long service intervals and a simpler design. Minimal maintenance intervention is required, valve set checks are way beyond industry standard intervals, while fuel injectors require no scheduled inspection. The water filter has been eliminated but is still available as an option. The auto-tensioning fan drive belt requires only visual inspection.

The ISL^{e} provides equipment manufacturers with a cost effective engine that has a power to weight ratio that few can match. Backed by the renowned reliability and durability of Cummins engines, it is the engine for every load !



Ratings

Engine Model	Power (PS)	Peak Torque (Nm@rpm)	Governed Speed
ISL^{e4} 280	280	1060@1100-1700	2100
ISL^{e4} 320	320	1300@1100-1500	2100
ISL^{e4} 340	340	1500@1200-1400	2100
ISL^{e4} 360	360	1600@1200-1400	2100
ISL^{e4} 380	380	1700@1300-1400	2100
ISL^{e4} 400*	400	1700@1300-1400	2100

*Coach only rating

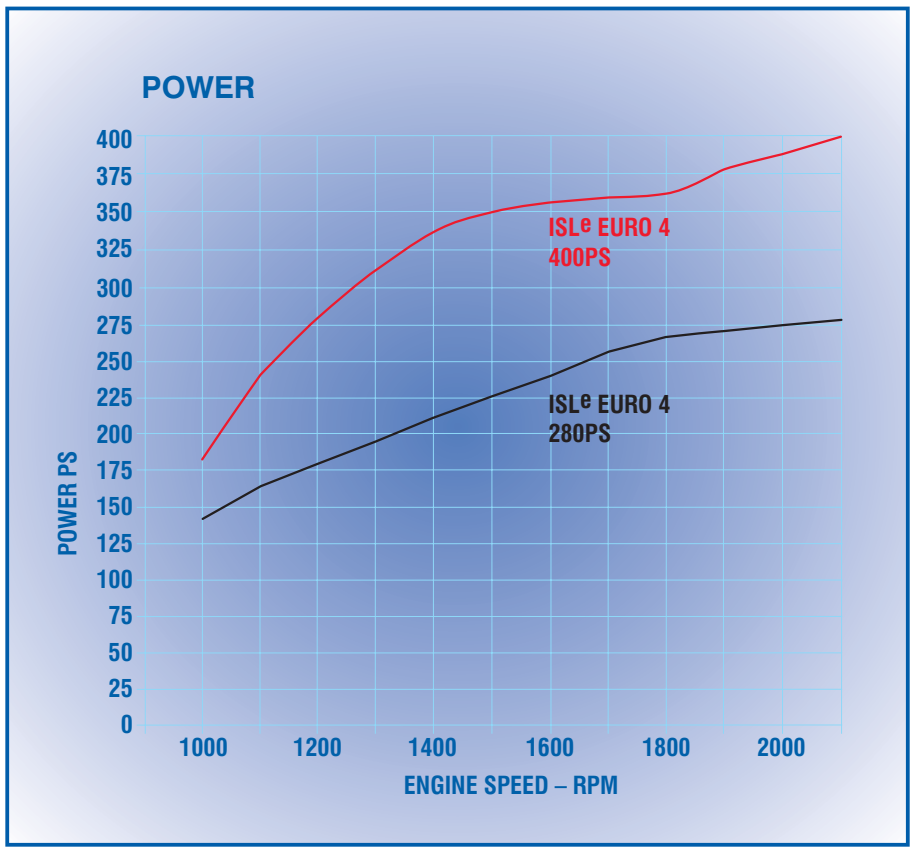
Specifications

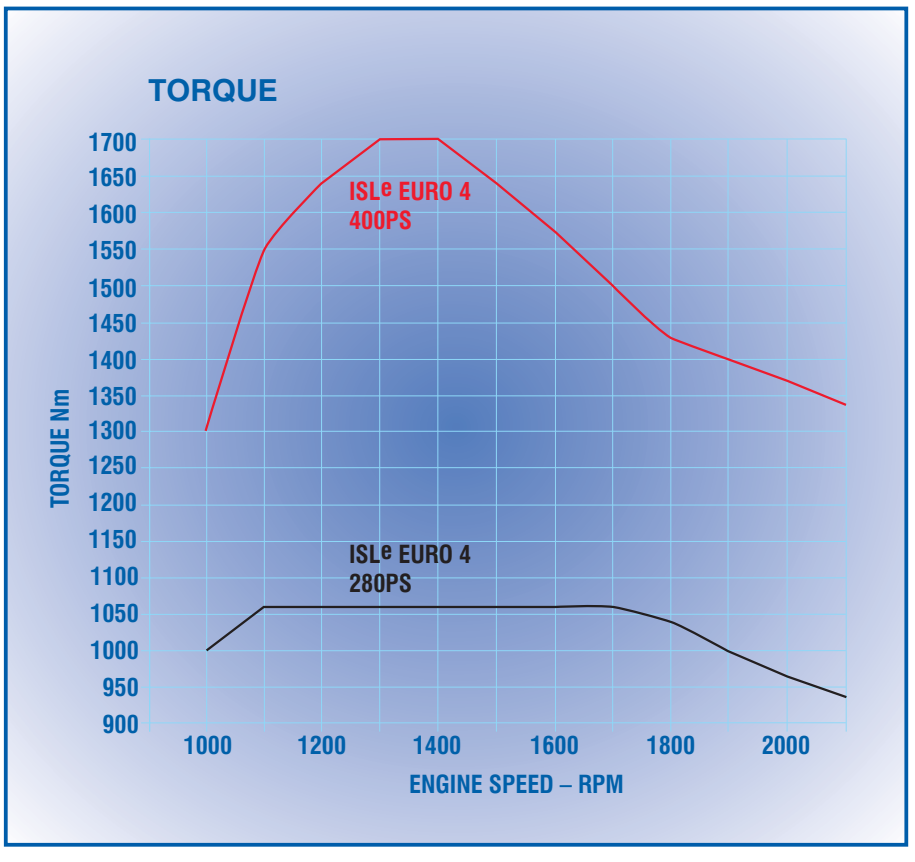
	ISL^{e} (Truck/Coach)	ISL^{e} (Bus)
Power (PS)	400	340
Peak Torque (Nm)	1700	1500
Governed Speed (rpm)	2100	2100
No of Cylinders	6	6
Displacement (litres)	8.9	8.9
Oil system Capacity (litres)	27.6	27.6
Dry Weight (kg)	706	706

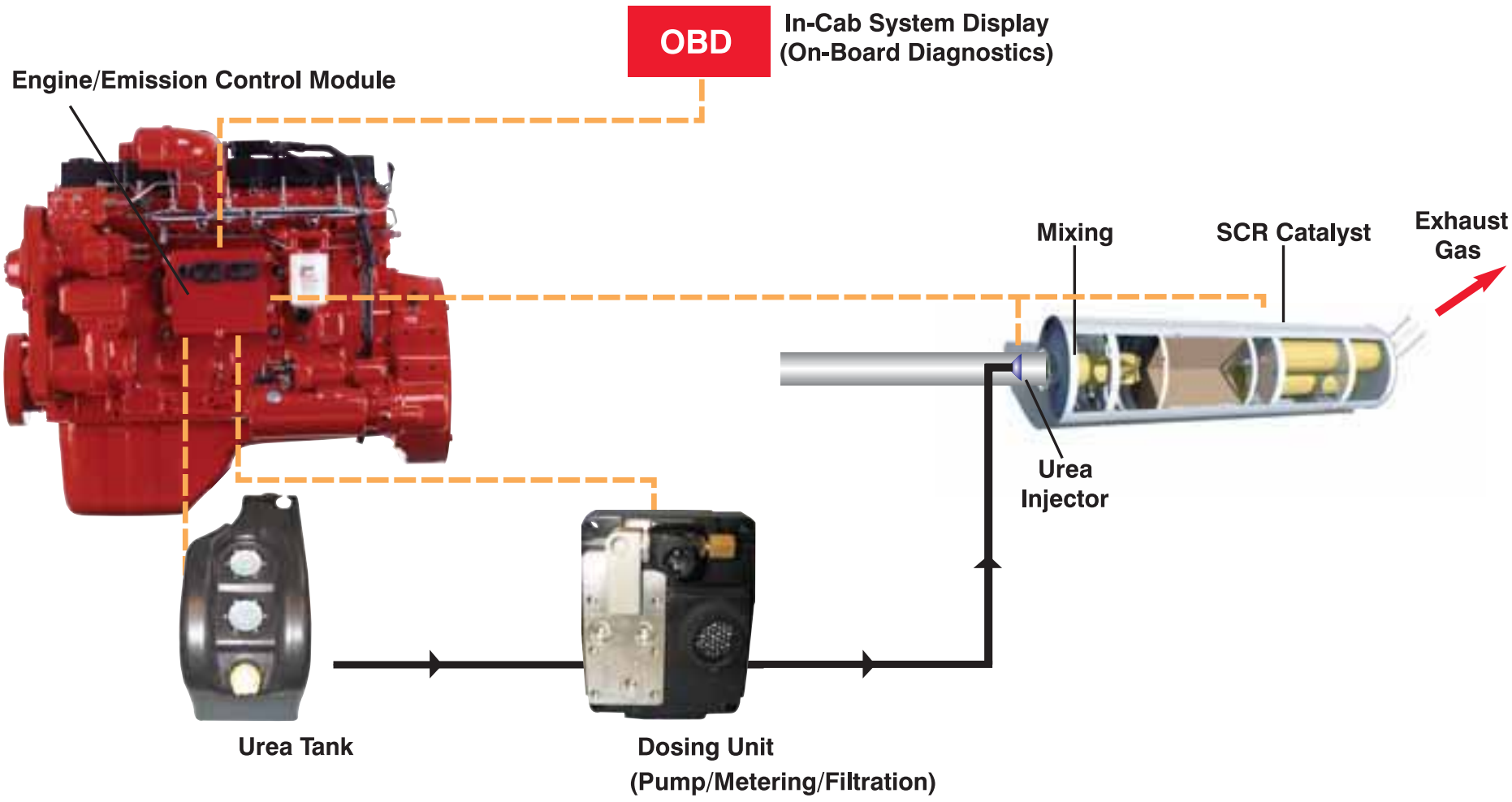
Features and Benefits

To achieve so much performance, the Cummins ISL^{e} comes equipped with leading edge technology, giving key operational benefits.

- Premium Engineering – the single piece cylinder block with integrated fluid lines, high strength tensile steel forged crankshaft, high durability articulated pistons and special surface finish mid-stop cylinder liners support the overhaul durability goal of 850,000km.
- High capacity lubrication system – using the latest Fleetguard 10-micron StrataPore™ filters for exceptional protection, plus inherently low oil consumption with minimal top-up means service costs can be substantially reduced even while using standard mineral oils.
- Emissions technology - meets Euro 4 requirements with the Cummins Integrated Emission Management (I.E.M.) system using Selective Catalytic Reduction (SCR) technology.
- Integrated system - It is a fully integrated engine management and after-treatment system with all components available from Cummins Inc. It includes a catalysed filter which significantly reduces NOx emissions and at the same time filters out particulate matter.
- Electronic Control Module – the latest CM850 ECM with a processing speed over twice as fast as the previous ECM. Maintains an optimum balance between load demands, fuel-efficiency and emissions control. It is designed to be isolated from detrimental thermal and vibration loading for extreme reliability and durability.
- New Common Rail system – works at higher pressure and provides more precise control of the combustion process. Capable of generating up to 1800 bar injection pressures for refined and rapid power delivery, reduced noise, and improved cold start. Allows for pre-injection in advance of main charge which aids cold starting and noise reduction.
- Higher Power – moves up 50ps versus Euro 3 . Available up to 400ps for Euro 4 coach applications.
- Higher torque – increased by over 10% versus Euro 3, providing for improved responsiveness and acceleration.
- Low operating costs – the optimised engine and aftertreatment system provides significant reductions in fuel consumption and extends service intervals.
- Future proof design – minimal changes required to meet Euro 5 and beyond.







Emissions Technology

The ISL^{e} engine will meet the Euro 4 emissions legislation with the I.E.M. system using SCR technology. I.E.M. has all components available from Cummins Inc. The system is controlled and monitored from a single engine mounted ECM, providing a more reliable, cost effective, easier to install system. The SCR strategy was formed around the ability to provide a total solution of engines, air handling and exhaust systems all under the Cummins umbrella. By working closely with Holset Turbochargers and Fleetguard Emissions Solutions, Cummins is in a unique position to provide a complete engine to exhaust pipe package.

How it works

During optimum combustion there are emissions of nitrogen oxide and nitrogen dioxide. These are commonly combined and termed as NOx. In the SCR process a re-agent AdBlue (32.5% UREA dissolved in water) is used to react with and neutralize the NOx. AdBlue which is a non toxic, odourless, non flammable liquid is injected into the exhaust system. The exact amount of AdBlue and hence ammonia introduced into the system is precisely controlled by the electronic dosing unit. In the heat of the exhaust stream the AdBlue hydrolyses, ie. the ammonia molecules are released. The NOx and ammonia molecules react in the catalyst. Nitrogen and water as steam are all that remain after the reaction. This is clean, safe technology as Nitrogen is completely harmless and makes up almost 80% of the air we breathe.

Advantages

The use of SCR as the right technology for Euro 4 has been driven by ever increasing customer demands. Cummins recognises the need for improved fuel economy, longer service intervals and higher vehicle uptime. Compared to Euro 3 the results show substantial savings:

- Fuel economy is improved by up to 5%, depending on duty cycle. This is a major cost benefit to operators.
- Service intervals are increased to 70,000km.
- Durability is improved due to optimised engine timing allowing less unburned fuel to cause sooting in the oil.
- The SCR system has lower heat rejection compared with other emissions technologies, meaning that little change is required to the vehicle cooling system.
- The SCR system also features an integral catalysed filter to remove particulate matter in the exhaust, eliminating the need and cost for additional filters.
- The complete system is supported by Cummins service network.

INTERACT enhances your vehicle

INTERACT intelligence reaches out from the engine to integrate fully with other electronically controlled systems on the vehicle. The engine ECM incorporates an industry standard SAE J1939 datalink to accept inputs from all powertrain components – electronic transmission, ABS brakes and ASR anti-slip, all creating a seamless flow of information shared along a high speed datalink. The engine responds exactly to requested adjustments in torque or speed performance for gear changing or wheel spin correction. The result is smoother and more fuel-efficient performance, with added protection against powertrain wear.

Drive-by-Wire – electronically control-led throttle.

Multiplexing – enables vehicle manufacturers to engineer simplified wiring with improved reliability, carrying data signals through to the instrument panel and driver controls.

Cruise Control – fully integrated into the engine management system and offering a number of trimmable features.

Power Take-Off (PTO) Controls – allow drivers of vehicles such as mixers, tippers and refuse vehicles to ramp up engine speed either in-cab or outside.

Powerful Idle Torque – provides for smooth vehicle movement from rest, particularly useful on inclines or difficult ground.

Fan Clutch Control – OEM option, electronically linked to enhance cooling efficiency.

INTERACT keeps you up and running

Cummins information products provide easy access to the engine management system for rapid diagnostics and data downloading, helping to ensure maximum uptime for vehicles. Cummins INTERACT technology allows the engine to look after itself. Sensors throughout the engine continually send data back to the ECM for self diagnosis and protection.

Electronic Tools

- INSITE™ – For years Cummins INSITE software has been making it easy for technicians to troubleshoot, repair and service our electronic engines through easy-to-follow steps on your computer. Providing the kind of uptime you demand from your vehicles.
- QuickCheck III – Technicians can quickly and easily view engine data from every type of electronic diesel engine you run, using Cummins QuickCheck III and your own PDA device.

  For more information on hardware compatibility, please visit us at http://quickcheck.cummins.com or see Bulletin 4081450.

- QuickServe® Online – Gives Cummins fleets, owner/operators, distributors and dealers rapid access to parts and service information for over 8 million engine serial numbers. Part numbers and diagrams, maintenance information and service bulletins, warranty details and more are available every minute of every day via the Internet.

Every Question, Answered.

- Customer Assistance Centre – Call the Cummins specialists for technical assistance, service locations and product literature at +44 (0)1327 886464.
- Cummins PowerMaster – E-mail the experts for timely answers to Cummins-related questions at powermaster@cummins.com.
- Cummins Online Registration – Register all your Cummins engines quickly and easily at www.everytime.cummins.com to ensure quality parts and service for your engine.

Cummins has always been a pioneer in product development.
Thus specifications may change without notice.
Illustrations may include optional equipment.

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