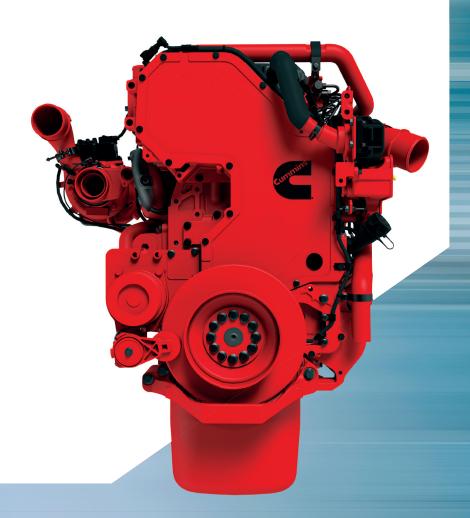


Fluid Watch[®]

Know what your engines need to stay always on



FluidWatch® is a fluids analysis service for everyone

It protects your equipment and your uptime.

Why FluidWatch®?

RIGHT TECHNOLOGY

Patented, best-in-class reports and preventative maintenance feedback.

RIGHT PEOPLE

Connected directly to engine designers and engine fluids experts.

RIGHT COST

Low-cost samples with key tests recommended by engine manufacturers.

Who is eligible?

FluidWatch* is available for most U.S. On-Highway engines and also for customers with other engine applications and markets, such as Off-Highway and High Horsepower models. This service is not exclusive to Cummins engines.

FEATURE	COMPETITORS	FLUIDWATCH [*]
Official ODI Extensions*	×	✓
Access to Engine Experts	×	✓
Engine Telematics*	×	✓
Patented, Best-in-Class Reports	×	✓

^{*}For select Cummins engines, based on fleet duty cycle and performance.

Analysis made for you



Avoided \$400,000 in engine overhaul/repair costs for a large northwest US transit fleet by managing risk for an older engine population.



Optimized oil/filter intervals for a large linehaul fleet using oil sampling to save > \$1.3 MM in maintenance costs.



Partnered with a large rail fleet to improve coolant maintenance avoiding > \$200,000 in downtime on coolant-related components.

What we test











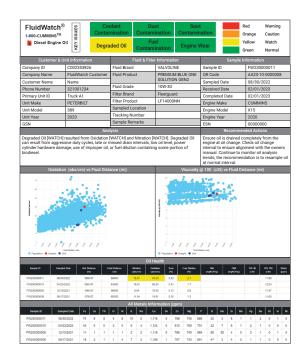


DIESEL/GASOLINE ENGINE OIL

COOLANTS

NG/HYDROGEN ENGINE OIL OTHER LUBRICANTS

LIQUID FUELS E-DRIVELINE FLUIDS



What you get

- Key Issues flags create a clear picture of your engine's health using color-coded severity on important fluid and engine conditions.
- Analysis and Recommended Actions give a clear explanation why a Key Issue occured and what practical steps are next.
- Sample data is graphed with similar engine platform data to make it easy for performance comparison.
- Conveniently display the five most recent samples from this unit providing trends over time.

Selecting the right package

- Fleet Package/Fuel Properties:
 The best value for routine sampling
- Basic Package/Contaminant Evaluation/Fuel Cleanliness: Provides Cummins recommended test standards
- Advanced Package/Fuel Quality:
 Offers a comprehensive suite of tests
 designed to assist in troubleshooting issues

How it works

IT STARTS AT



- Create your online account
- Purchase the right kit package for lubricant, fuel or coolant samples
- Register equipment for fluid analysis
- Register samples ready for lab testing
- Ship samples to laboratory
- Review your data online
- Call 1-800-CUMMINS if you need support

Lubricants	PACKAGE	(ENGINE ONLY)	ADVANCED PACKAGE	
Test Method	Testing appropriate for general fleet maintenance	Testing for fleet maintenance programs and oil drain optimization	Full coverage of tests for addressing issues or troubleshooting	
Oxidation/Nitration/Soot/Water/ Fuel Dilution by FTIR (ASTM E2412)	V	V	V	
Viscosity at 100°C (ASTM D445)	✓	✓	V	
Elemental Analysis (ASTM D5185)	✓	✓	~	
Fuel Dilution (ASTM D7593)		V	✓ (Engine only)	
Water Content (ASTM D6304)			✓	
Acid Number (AN) (ASTM D664)			V	
Base Number (BN) (ASTM D4739)			V	
Particle Count (ISO 4406)			✓ (Non-Engine only)	

Coolants	FLEET PACKAGE	CONTAMINANT EVALUATION	ADVANCED PACKAGE
Test Method	For general fleet maintenance	To assess contamination & degradation of coolant	For addressing issues or troubleshooting
Elemental Analysis (ASTM D6130)	V	✓	✓
pH (ASTM D1287)	V	V	V
Glycol (ASTM D3321)	✓	✓	✓
Electrical Conductivity (ASTM D1125)	✓	✓	✓
Qualitative Observations (Internal Method)	✓	✓	✓
SCA Number (Internal Method)	V	✓	✓
Total Dissolved Solids (Internal Method)	✓	✓	✓
Nitrite/Molybdate (Test strip)	✓		
ION Chromatography (ASTM D5827)		✓	✓
HPLC (ASTM D8567)			✓

Diesel Fuel	FUEL PROPERTIES	FUEL CLEANLINESS	FUEL QUALITY
Test Method	To verify common fuel properties	To monitor fuel contamination	To identify problems with fuel Meets NFPA 110 testing requirements
Viscosity at 40°C (ASTM D445)	V		✓
Sulfur Content (ASTM D5453)	V		V
Specific Gravity (Density) (ASTM D7777)	V		V
Simulated Distillation (ASTM D2887)	V		V
Cetane Index (ASTM D976)	✓		✓
Biodiesel Content (ASTM D8274)	V		✓
Cloud Point (ASTM D2500)	V		✓
Oxidation Stability (EN 15751)		V	V
Water & Sediment (ASTM D2709)		✓	✓
Water Content (ASTM D6304)		✓	V
Bacterial Content (ASTM D7463)		✓	✓
Particle Count (ISO 4406)		✓	V
Filter Blocking Tendency (ASTM DM2068)		✓	✓
Elemental Analysis (ASTM D5185)			V
Flash Point (ASTM D93)			V
Acid Number (AN) (ASTM D664)			V

What's in your sample kit

- Sample bottle with label
- Pre-addressed return label
- · Sample registration form and instructions
- · Supplies to ensure your sample makes it through the shipping process

Start protecting with FluidWatch® today



To learn more about FluidWatch talk to you local Cummins representative, visit our website or call 1-800-CUMMINS.



Cummins endorses











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cummins.com

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