

Autoinjector / Autosampler

AOC-30 Series



Next Industry Standard

Today's laboratories face an increasing demand to produce better quality results in a shorter amount of time. The AOC-30 was designed to address these problems and provide laboratories with a practical solution that is approachable, simple, and easy to use.

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Reliable Automatic Operation

02

Space-saving Efficiency

03

Built-in Pro Tips



AOC™-30 Series

AUTOINJECTOR / AUTOSAMPLER

*AOC: Automatic Operation Controller

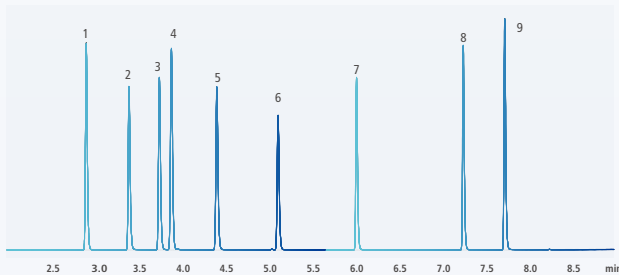




Reliable Automatic Operation

High Reproducibility

AOC-30 automates the analysis, reduces an operator's workload, and enables continuous analysis with a high degree of accuracy that cannot be achieved by manual operation. Shimadzu's unique injection method achieves high reproducibility while preventing septum damage and liner contamination.



Chromatogram Overdraw (n=10)

Area Reproducibility (%RSD)

1 n-Decane	0.162	6 Methyl nonanoate	0.157
2 n-Octyl alcohol	0.163	7 Methyl decanoate	0.141
3 2,6-Dimethylphenol	0.160	8 Methyl dodecanoate	0.180
4 n-Undecane	0.145	9 Dicyclohexylamine	0.208
5 2,6-Dimethylaniline	0.149		

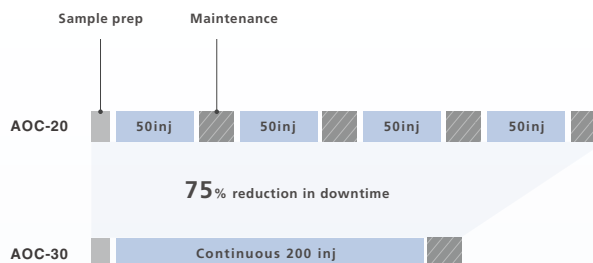
Injection method suppressing damage to septa and contamination of liner

(Patent Pending)

The injection speed is controlled stepwise by the septa structure to achieve excellent performance and reduce damage to the septa.

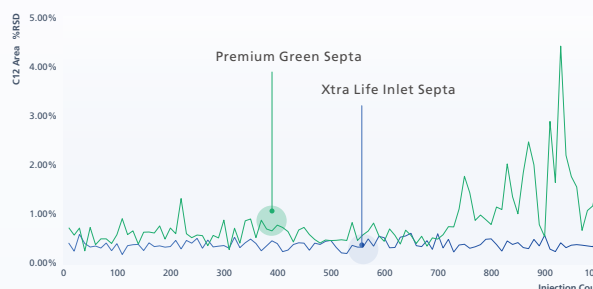
Long-term Stability

Various advances in sample washing enable worry-free long-term analysis. Furthermore, by using AOC-30 in conjunction with Shimadzu's genuine, high-quality consumables, the maintenance frequency can be significantly reduced. Less maintenance leads to less downtime and, therefore, higher efficiency.



10-times Longer Septa Life

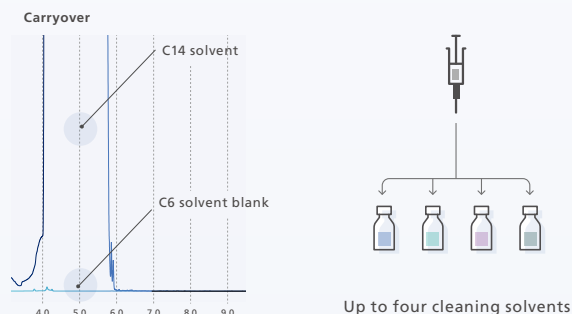
The unique structure of Shimadzu's Xtra Life Inlet Septa results in excellent injection durability and enables continuous analysis of approximately ten times that of conventional systems, up to 1000 injections before replacement.



Comparison of C12 area reproducibility of Xtra Life inlet septa and Premium Green septa for 1000 continuous injections

Ability to Customize Cleaning Solvent Types and Cleaning Sequences (patent pending)

By changing the cleaning solvent and its cleaning sequence, the optimum cleaning effect for each analysis can be obtained.



Vast Cleaning Solvent

Four 4-mL vials (up to 11.2 mL*) can be used in a single tower. Twelve 4-mL vials (up to 33.6 mL*) can be used in a sampler system. The vast cleaning solvent eliminates the need to worry about running out of solvent for continuous analysis.

* Calculated with an effective solvent volume fraction of 70%. It depends on the system environment, such as septa/cap conditions and temperature/humidity.

Space-saving Efficiency

Configurable for Analysis Purposes

The single tower system provides automated analysis of up to 30 samples, covering a wide range of analysis needs, and is recommended as the first selection. Injectors and samplers can be added to increase analysis capacity.

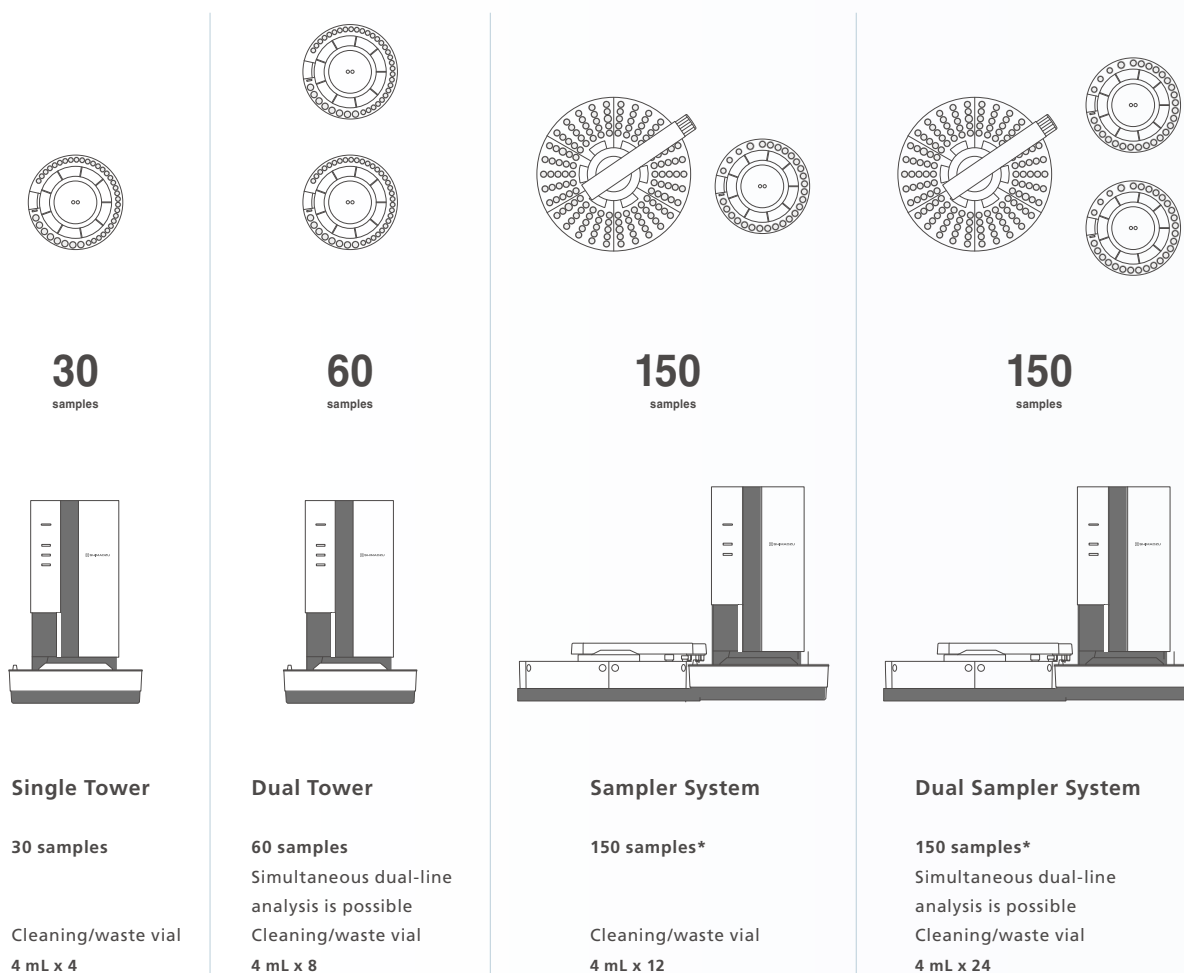
Space-saving Design

When combined with the Nexis™ GC-2030, the AOC-30 single tower/sampler offers a space-saving design with system widths of just 553 mm/851 mm to maximize lab space use.




Space-saving Sampler Configuration (patent pending)

To save lab space, even as the system expands, the housing structure was devised to make the installation area, including the sampler, as compact as possible.



* 150 samples for 1.5 mL vials. 96 samples for 4 mL vials.



Dual Tower System Doubles Throughput

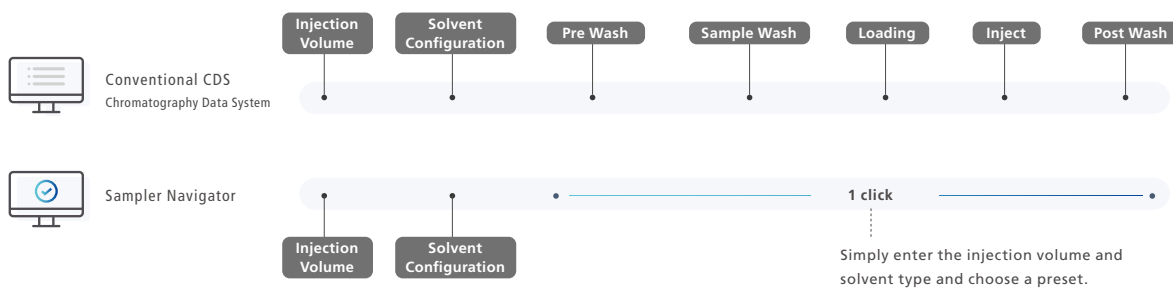
Installing two AOC-30 systems on one GC enables analysis of up to 60 samples. It saves space by eliminating the need for two GCs, doubles analysis throughput, and is recommended for those who want more productivity.

Built-in Pro Tips

Sampler Navigator, Built-in Injection Expertise



Injection may seem trivial, but in reality it is a very complex process that requires a lot of optimization. The Sampler Navigator reduces the guesswork involved by letting you choose from a carefully curated list of optimized methods, meticulously prepared by experts in gas chromatography. Get up and running with a single click.



Simply enter the injection volume and solvent type and choose a preset. (patent pending)

The animation of the icon displayed along the sequencing process shows what changes by applying the preset. After you apply a preset, you can finetune it for a more optimal sequence.

Preset Menu

- Default
- Minimize Carryover
- Conserve Solvent
- Conserve Sample
- Inject Viscous Sample
- Sandwich-Injection

Sampler Navigator

Application: High-viscous sample

For highly viscous samples, such as glycerin, engine oil, and lemon oil, analyzed without dilution, the parameters are optimized to achieve more accurate injection.

Continuous analysis of viscous lemon oil

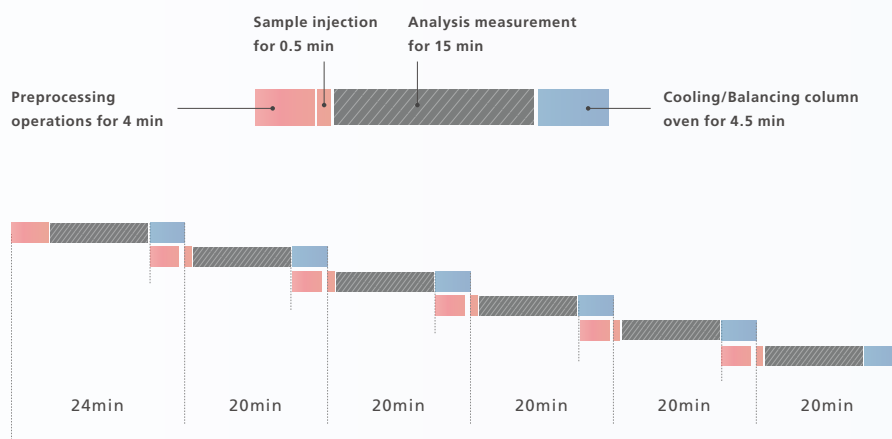
Sample injection may not be accurate with standard injection settings

Standard injection setting

High-viscous sample preset

Higher Throughput for Continuous Analysis with Overlap

The AOC-30 overlap feature allows preprocessing operations to be initiated for the next sample injection at specified times, such as during or after GC analysis. The pre-treatment operation immediately before sample loading/injection is overlapped to increase throughput during continuous analysis. In the following six times continuous analysis example, a time reduction of 20 min corresponding to 1 analysis cycle time can be achieved.

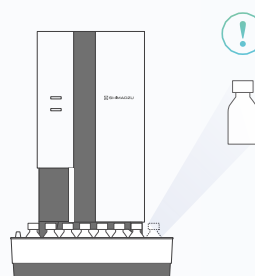


* When the AOC-30 preprocessing operation is started immediately after the end of the analysis



Supports Flexible Working Styles such as Telework

LabSolutions™ Direct, a standard feature of LabSolutions, enables remote offices and smart devices to monitor the device status and chromatograms and start, stop, and run GC analysis.

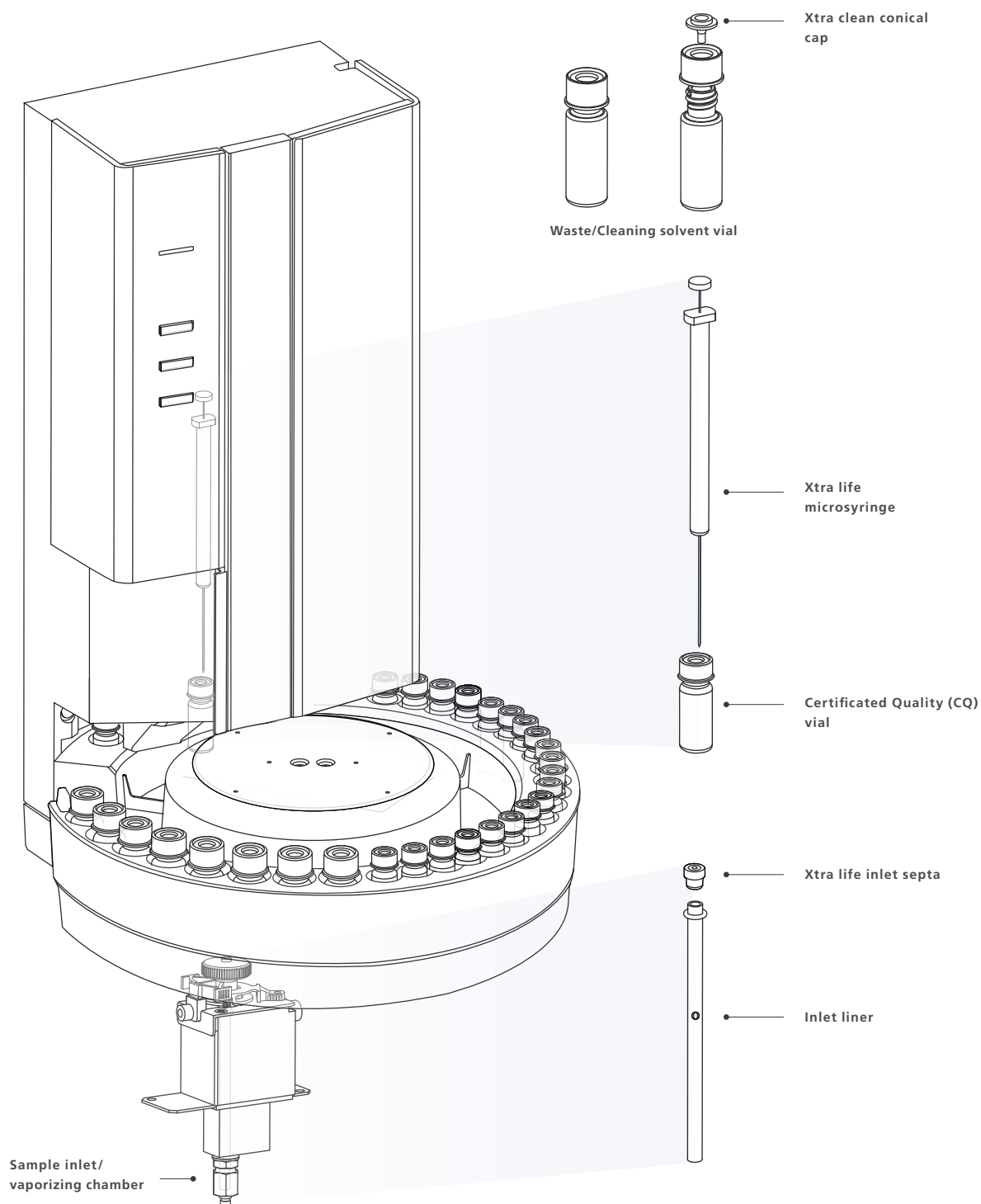


Prevention of Errors through Vial Detection

AOC-30 is equipped with a transmissive vial sensor that can detect the presence or absence of vials. Misplaced sample/solvent/effluent vials are notified before analysis. If you have misplaced sample vials, you can stop the analysis or skip and continue with the next analysis.

Tested & Proven Consumables

To obtain correct results or minimize unexpected system downtime, the presence of reliable quality consumables is essential. Shimadzu offers a wide range of consumables to maximize the performance of GC/GCMS systems.





Certificated Quality (CQ) vial

The Shimadzu CQ vial is a high-quality vial with significantly reduced septa bleed. Analysis with low-quality vials results in incorrect analysis and risks contamination of the equipment and loss of valuable samples. CQ vial comes with quality certificates that ensure performance and always provide reliable results.



Xtra clean conical cap

This item is ideal for a vial cap for washing/cleaning solvents. The septa-less structure ensures that the cleaning solvent is not contaminated by the septum, making it safe to use for long-term multi-sample analysis.



Xtra life microsyringe

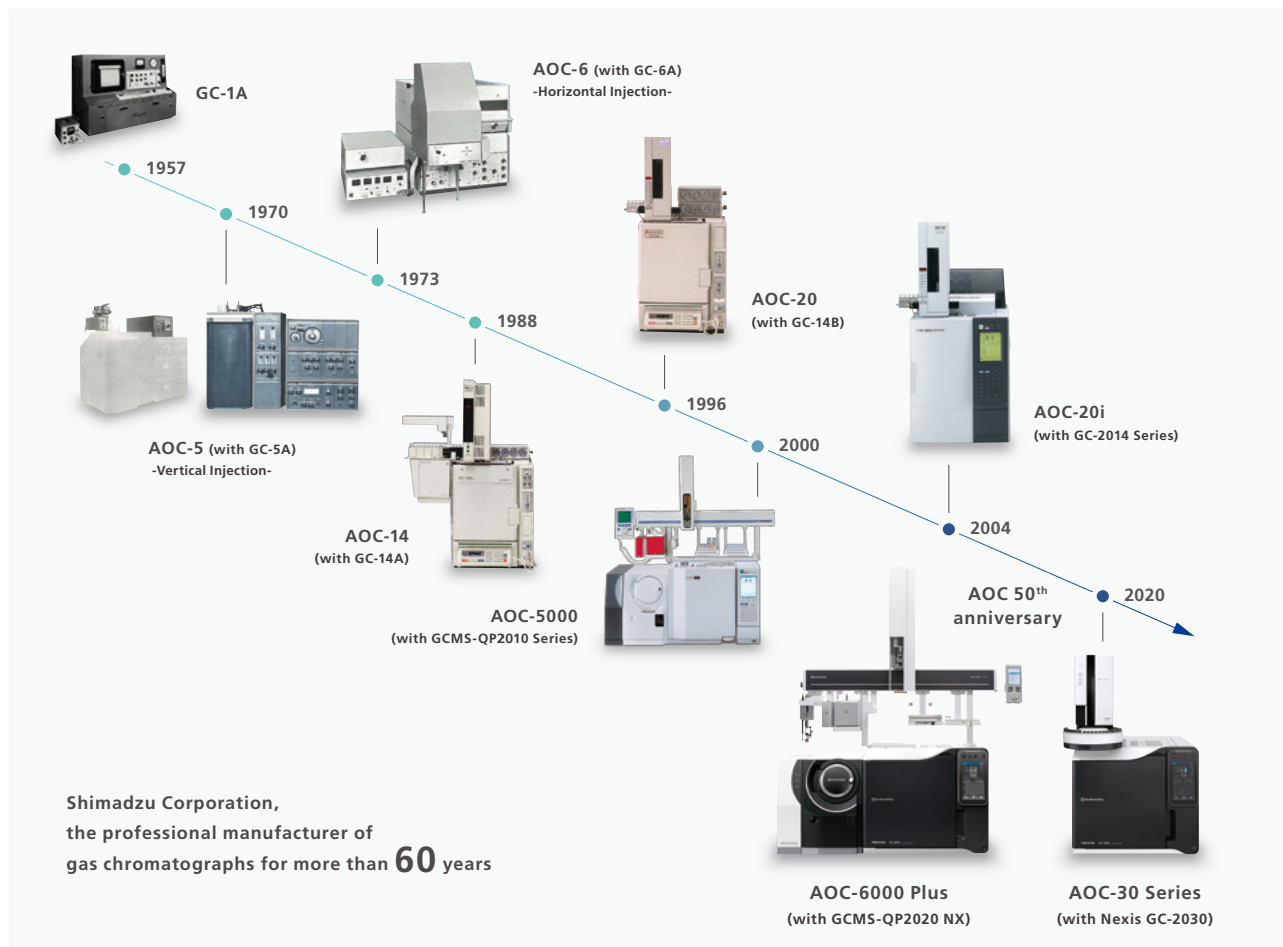
The plunger made of a special titanium alloy has excellent flexibility, enabling you to perform long-term analysis without worrying about poor plunger operation due to bending or sliding friction. This syringe is also recommended for the analysis of water-soluble samples that can be challenging for conventional stainless-steel plungers, which tend to get stuck after only a few injections.



Xtra life inlet septum

The unique structure achieves ten times more leak-free analysis than conventional methods and minimizes the amount of septa dust generated repeatedly during injections. Shimadzu's New Normal septa makes worry-free long-term analysis possible and is ideal for trace-level analysis where septum particles can get in the way of results.

Timeline of Shimadzu AOC Autoinjectors/Autosamplers



ANALYTICAL INTELLIGENCE

- Automated support functions utilizing digital technologies, such as M2M, IoT, and Artificial Intelligence (AI), that enable higher productivity and maximum reliability.
- Allows a system to monitor and diagnose itself, handle any issues during data acquisition without user input, and automatically behave as if it were operated by an expert.
- Supports the acquisition of high quality, reproducible data regardless of an operator's skill level for both routine and demanding applications.

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