



*vision***CATS**
CAMAG HPTLC SOFTWARE

HPTLC WORKFLOW MANAGEMENT
INSTRUMENT CONTROL
DATA EVALUATION

CAMAG[®]



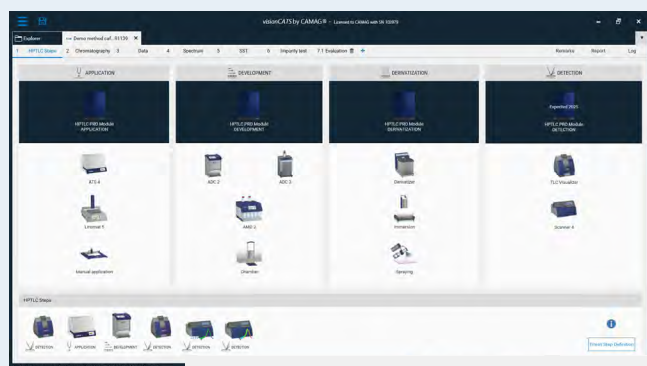
REDEFINING HPTLC ANALYSIS

visionCATS is designed for simplicity and intuitive operation, bringing the entire HPTLC workflow together by controlling HPTLC PRO Modules and HPTLC instruments while keeping data organized in one place.

With its user-friendly interface, *visionCATS* guides users through every chromatographic step. From sample setup to final report: select a default method, fill in the track assignment table, choose your developing solvent and derivatization reagent, adjust detection parameters as needed. And you are ready to go.

Creating custom methods is just as easy. Select the steps you need, and use the sample-oriented design to build virtual plates by combining tracks from multiple plates (comparison viewer), ideal for batch-to-batch comparisons or long-term stability studies.

Finding past samples is quick thanks to a powerful search tool. Search by text, date, sample, method, or analysis file, with extended preview options and customizable filters for even faster navigation.



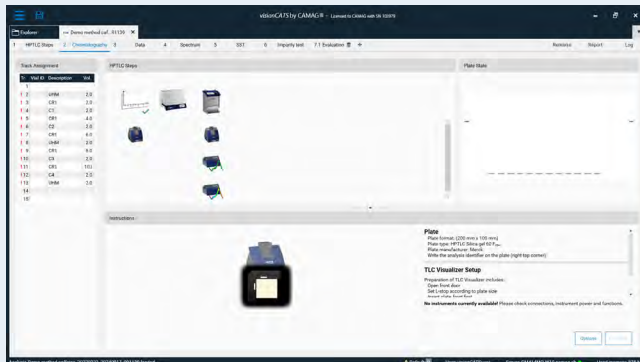
QUICK METHOD SETUP

Select and configure methods in minutes.

DESIGNED FOR EASY OPERATION

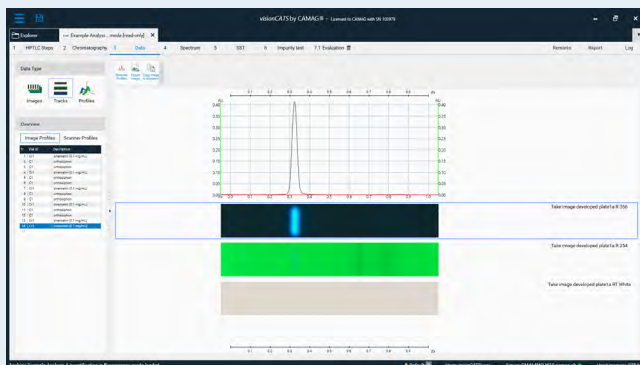
INTERACTIVE WORKFLOW GUIDANCE

visionCATS guides users step-by-step.



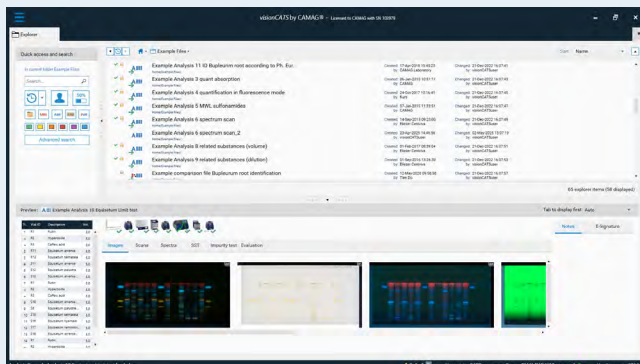
SAMPLE VIEW

All available data related to the sample are displayed.



DATA PREVIEW

Review steps and samples of an analysis or method.



CROSS-ANALYSIS COMPARISON

Assess profiles across different analysis runs.



HIGH-END HPTLC IMAGING

visionCATS controls the TLC Visualizer* to capture high-dynamic-range, low-noise images (HDRI) under 366 nm illumination, ensuring exceptional clarity for HPTLC analysis. These images can be automatically split into individual tracks, each representing an individual sample.

With the Comparison Viewer, you can directly compare any sample – from the plate, a previous run or a different detection mode. Samples can be rearranged, matched with references and even viewed as 3D image profiles for deeper insights.

In the Data View powerful Image Enhancement Tools bring out the full quality of your images. Smart illumination control and method-based settings ensure optimal capture, while advanced algorithms reveal even very faint zones.

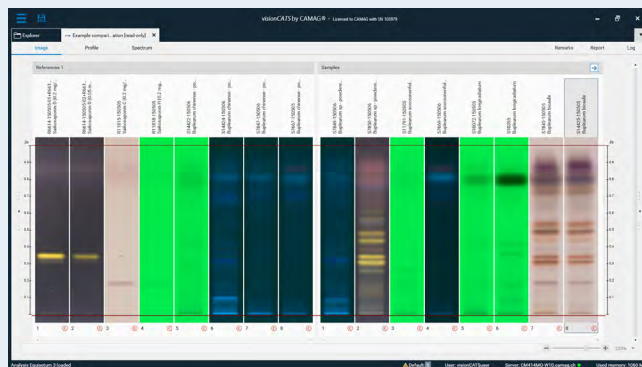
Additional features include:

- Multiple illumination modes for flexible visualization
- The R_f Tool for displaying R_f values directly on images
- Zoom tools for detailed inspection

With *visionCATS*, HPTLC becomes smarter, more visual, and more powerful.

COMPARISON VIEWER

Visualize tracks side by side, whether from the same plate, different plates, or various detection modes – for quick and effective comparison.



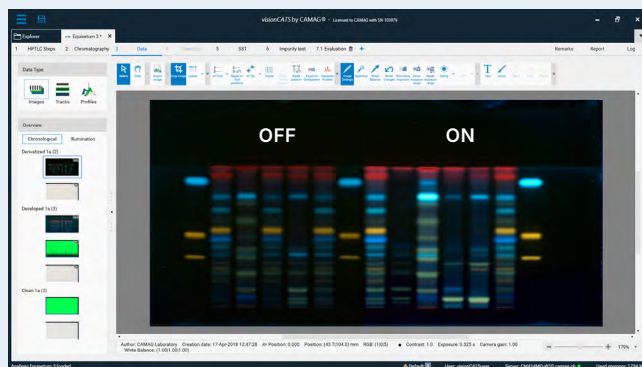
DATA VIEW

Easily access, review, and process all data generated from the chromatographic workflow in one centralized interface.



SPOT AMP

Enhance visibility of even the smallest fractions on the plate by adjusting zone contrast – making localization faster and more precise.



* TLC Visualizer 2 and TLC Visualizer 3

ADVANCED QUANTITATIVE HPTLC ANALYSIS

visionCATS seamlessly controls the TLC Scanner 4 to deliver precise quantitative results. With a spectral range from 190 to 900 nm, users can choose wavelengths that best match each analyte for high specificity and sensitivity.

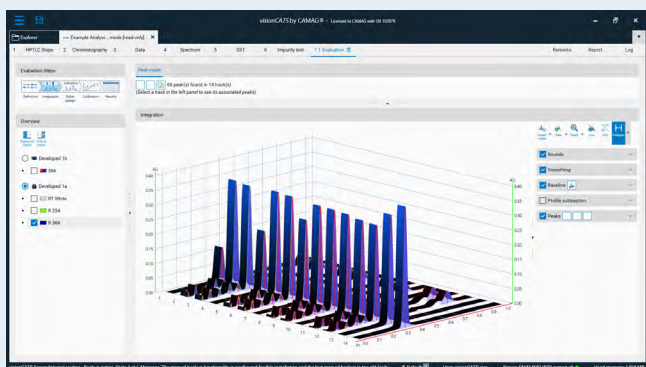
visionCATS offers exceptional flexibility in scanning:

- Run multiple scans at different workflow stages (e.g., before and after derivatization)
- Combine up to 31 multi-wavelength scans using various light sources (deuterium, mercury, tungsten lamps)
- Switch easily between absorbance and fluorescence detection

Quantitative evaluation is straightforward with intuitive peak integration and substance assignment tools. Users can quantify by peak height or area, while the software automatically selects the best calibration model – whether single-level or multi-level, linear, polynomial, or Michaelis-Menten regression.

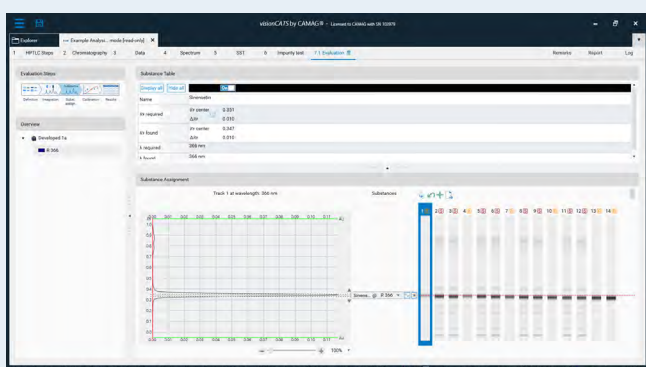
visionCATS also supports UV spectral scanning, automatically detecting peak positions and recording spectra from 190–900 nm. Spectra can be viewed individually or overlaid, and with the Comparison Viewer, data from different plates can be aligned and compared side by side.

visionCATS brings clarity, flexibility, and precision to every step of your HPTLC workflow.



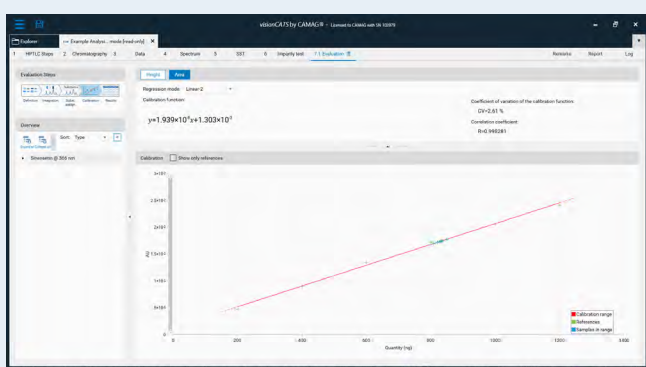
3D VIEW AND PEAK INTEGRATION

Densitograms are displayed in 3D, top or front views. Various settings for peak integration and baseline correction are available.



SUBSTANCE ASSIGNMENT

The separated peaks are assigned. For quantification, data from the multi-wavelength scan at the optimal wavelength for each compound is used.



CALIBRATION CURVE

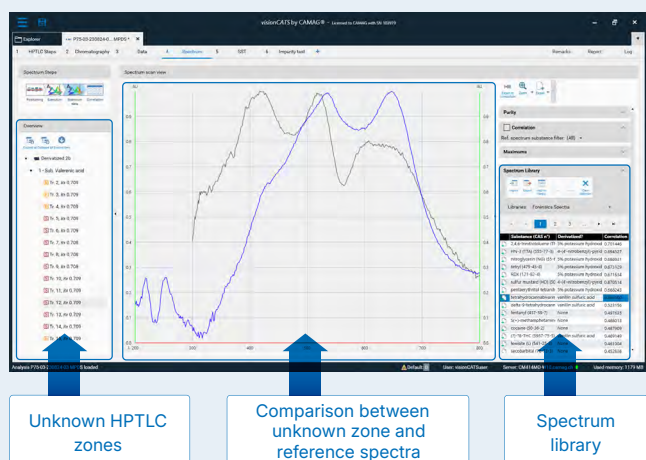
For evaluation the best fitting calibration model is used. Quantification can be done via peak height or area.

SPECTRUM LIBRARY OPTION

visionCATS includes the Spectrum Library, along with specialized libraries, offering significant benefits for HPTLC users in pharmacognosy, forensic science, and pharmaceutical quality control. This feature enables users to compare UV spectra obtained from the TLC Scanner 4 with a carefully curated library, improving analysis accuracy and efficiency.

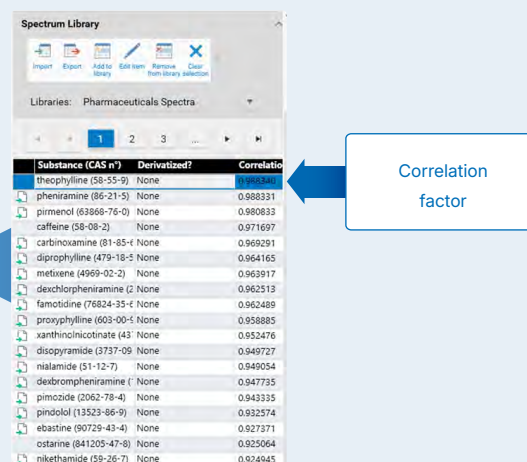
FASTER AND MORE ACCURATE IDENTIFICATION

Quickly compare unknown samples with reference spectra for precise compound identification. A well-maintained spectrum library streamlines this process, reducing analysis time and enhancing reliability.



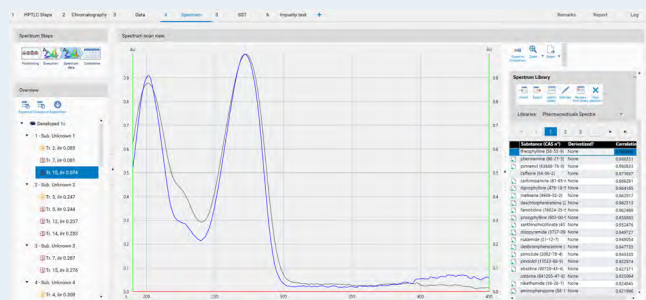
EFFICIENT DATA INTERPRETATION

Eliminate the need for manual spectrum analysis. With the help of Pearson correlation-based comparison, analysts can rapidly interpret results, making HPTLC analysis more efficient than ever.



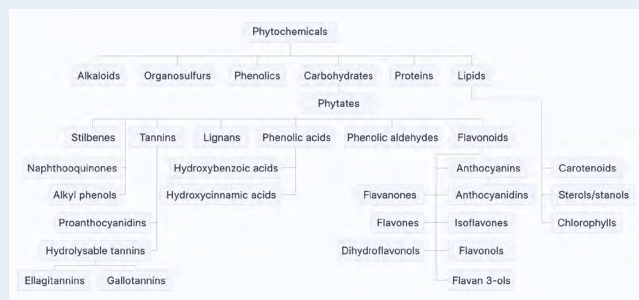
RELIABLE DETECTION OF ADULTERATION AND CONTAMINANTS

Easily identify counterfeit drugs, adulterated herbal products, or impurities in pharmaceutical and dietary supplements. For example, the Pharmaceuticals Library can detect synthetic drugs in supplements – such as spotting theophylline with a correlation factor of 0.988.



ACCELERATED RESEARCH AND DEVELOPMENT

Researchers can leverage a comprehensive reference database to identify active compounds in medicinal plants or develop new formulations. The Phytochemicals Library further simplifies classification by helping users determine the phytochemical class of an unknown zone.





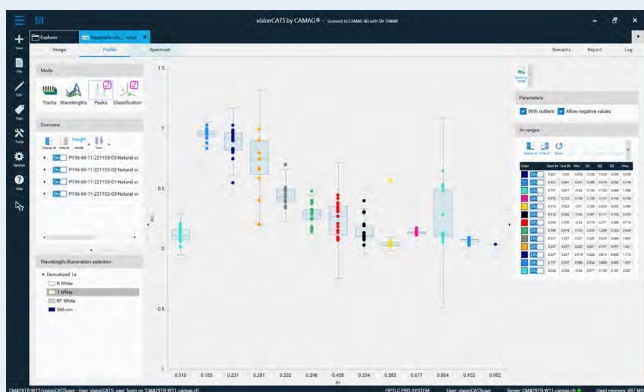
INTELLIGENT DATA INTERPRETATION FOR MODERN LABS

The AI Tools Option brings a new level of intelligence to *visionCATS*. Instead of manually interpreting complex patterns or checking peak consistency one by one, the system helps you understand your data more quickly and confidently.

It includes two main tools that work like an analytical assistant:

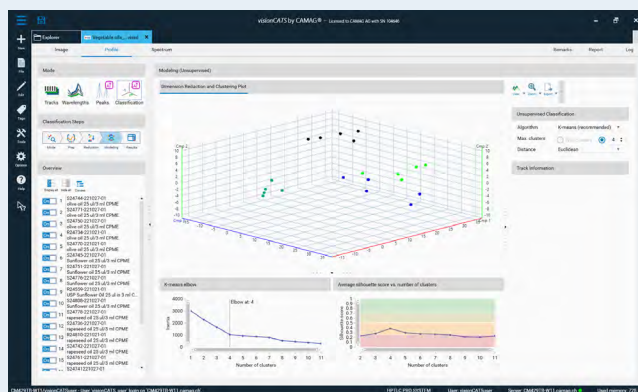
PEAKS ACCEPTANCE CRITERIA

visionCATS automatically calculates reliable acceptance limits for peak height and area. It highlights unusual patterns, removes outliers when needed, and visualizes the results clearly using scatter plots or box plots. This makes it easier to ensure batch consistency, detect dilution, substitution, or adulteration, and verify overall sample quality.



CLASSIFICATION

This tool uses machine learning to recognize patterns, group samples, and help identify species or origins. Whether you have labeled reference samples or completely unlabeled data, *visionCATS* can create meaningful clusters, reduce noise with methods like PCA or t-SNE, and present everything in easy-to-understand 2D or 3D visuals.



These AI Tools help transform raw chromatographic information into insights, speeding up interpretation, reducing subjective judgment and making quality assessment more reliable. The option will grow over time, giving laboratories advanced analytical capabilities that evolve with their needs.

Together, *visionCATS* and the new AI Tools Option bring clarity, confidence and intelligence to every stage of the HPTLC workflow.

METHOD LIBRARY

For anyone using HPTLC to identify herbal drugs or analyze food samples, the *visionCATS* Method Library offers ready to use support. Licensed users can get *visionCATS* methods for free and import them directly into their *visionCATS* database.

Each method includes three components:

METHOD DOCUMENT

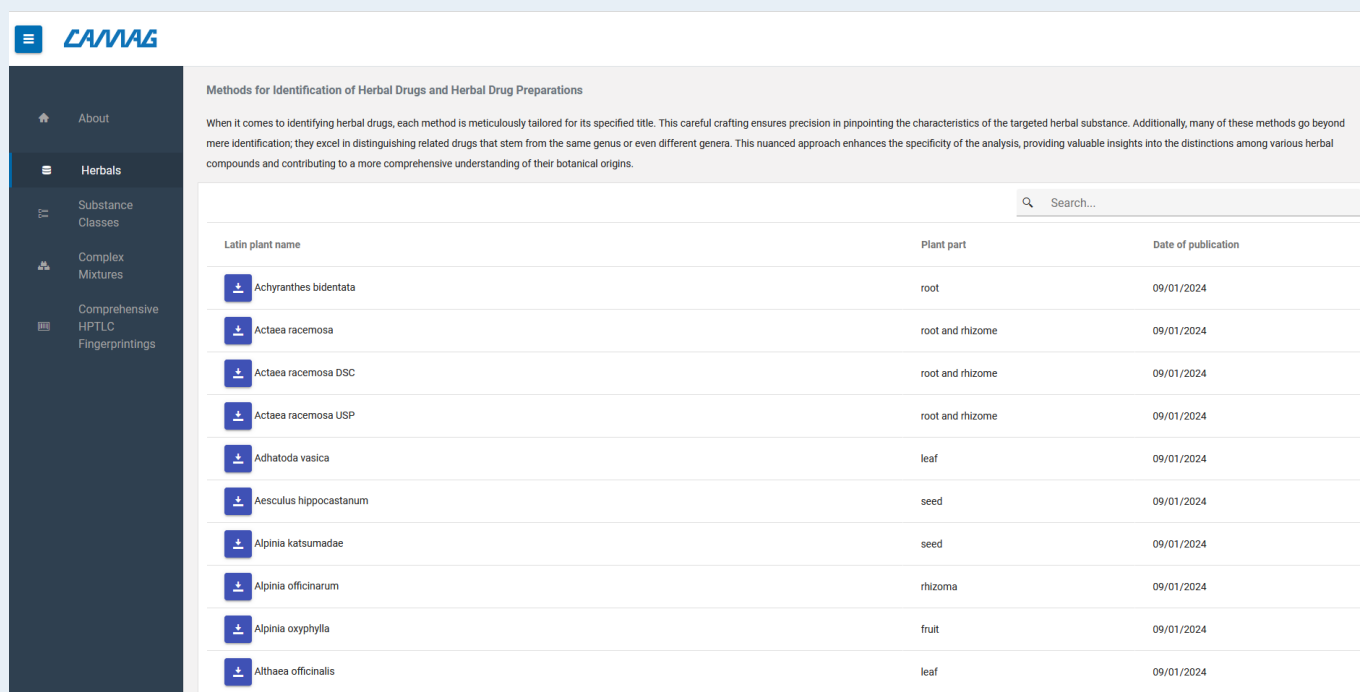
A method document (e.g., DOCX) that can serve as an SOP. It outlines the full procedure, includes a System Suitability Test (SST), and defines acceptance criteria for compliant herbal drugs.

INSTRUMENT METHOD

A preconfigured instrument method that is ready to run in *visionCATS*. All key parameters – reference substances, plate layout, solvents, and more – are pre-set. Simply enter the vial ID and rack position to start analysis.

COMPARISON VIEWER FILE

A Comparison Viewer file with reference images, allowing quick visual comparison of your samples against the defined acceptance criteria. Reports can be generated with a single click.



The screenshot displays the 'visionCATS' Method Library interface. On the left is a dark sidebar with navigation options: 'About', 'Herbals', 'Substance Classes', 'Complex Mixtures', and 'Comprehensive HPTLC Fingerprints'. The main content area is titled 'Methods for Identification of Herbal Drugs and Herbal Drug Preparations'. Below the title is a paragraph explaining the precision and specificity of the methods. A search bar is located at the top right of the table area. The table lists various methods with columns for 'Latin plant name', 'Plant part', and 'Date of publication'. Each row includes a download icon.

Latin plant name	Plant part	Date of publication
Achyranthes bidentata	root	09/01/2024
Actaea racemosa	root and rhizome	09/01/2024
Actaea racemosa DSC	root and rhizome	09/01/2024
Actaea racemosa USP	root and rhizome	09/01/2024
Adhatoda vasica	leaf	09/01/2024
Aesculus hippocastanum	seed	09/01/2024
Alpinia katsumadae	seed	09/01/2024
Alpinia officinarum	rhizoma	09/01/2024
Alpinia oxyphylla	fruit	09/01/2024
Althaea officinalis	leaf	09/01/2024

The HPTLC Method Library features methods from the USP Dietary Supplement Compendium, the HPTLC Association, and many identification methods from the European Pharmacopoeia.

New methods are added regularly to the library.

REGULATORY COMPLIANCE AND DATA INTEGRITY

21 CFR PART 11 COMPLIANCE

visionCATS supports full FDA 21 CFR Part 11 compliance with secure electronic signatures, data security control and detailed audit trails covering systems, methods, analyses, and backups - ensuring full traceability and data integrity.

SYSTEM SUITABILITY TESTING (SST)

Built-in SST tools verify that methods meet defined acceptance criteria before results are used. Only data from SST-qualified plates can be compared – important in regulated environments and method transfer workflows.

DATA BACKUP AND RECOVERY

The Backup Assistant automates secure data archiving, while the Schedule Assistant sets up regular backups. The Restore Assistant makes retrieving archived data easy – ensuring business continuity and long-term data protection.

QUALIFICATION SERVICES (IQ/OQ)

To meet cGMP and cGLP requirements, CAMAG provides Installation Qualification (IQ) and Operational Qualification (OQ). These standardized services confirm that *visionCATS* and all connected instruments are properly installed and functioning as intended.

DATA SECURITY

A configurable User Management System ensures secure access. Roles and permissions can be customized and integrated with Active Directory, and all analytical data is stored in a protected database to prevent unauthorized changes or accidental loss.

RECOMMENDED SYSTEM REQUIREMENTS

CPU	12th gen (alder lake) Intel Core i5 (i5-12xxx) or equivalent
RAM	16 GB
Data storage	1 TB (frequent user)
GPU	DirectX 11 (or above) compatible graphic card (Nvidia RTX 3060, AMD Radeon RX 6600-XT or equivalent)
OS	Windows 11 Pro or Enterprise 64-bit (for server only installation: Windows Server 2025 Standard)
Network	Gigabit Ethernet or more
Display	True color 32-bit, Full HD (or higher) monitor resolution with Windows Aero theme enabled

To download a 60-day trial version of *visionCATS*, visit www.camag.com/visionCATS.

COMPATIBLE INSTRUMENTS

Linomat 5

ATS 4

ADC 2

ADC 3

AMD 2

TLC Visualizer 2

TLC Visualizer 3

TLC Scanner 4 (w/o mercury lamp support)

HPTLC PRO Modules (APPLICATION, DERIVATIZATION, DEVELOPMENT and PLATE STORAGE)

The compatibility of CAMAG HPTLC instruments may change as *visionCATS* evolves.

ORDERING INFORMATION

- 028.0000 CAMAG® HPTLC Software *visionCATS*: Basic Version**
including access and control of all instruments – 1 server, 1 client Instrument Diagnostics, analytical reports – access to method library. Needs to be purchased separately and is not included in any Ultimate Package.
- 028.1000 CAMAG® HPTLC Software *visionCATS*: *visionCATS* Ultimate**
combining: Visualizer Ultimate Package (028.2000), Scanner Ultimate Package (028.3000); CAMAG HPTLC Software *visionCATS* Basic Version (028.0000) needs to be purchased separately.
- 028.2000 CAMAG® HPTLC Software *visionCATS*: Visualizer Ultimate Package**
combining all CAMAG Visualizer Packages, including: Visualizer Qualitative Package (028.2010), Visualizer Enhanced Evaluation Package (028.2020); CAMAG HPTLC Software *visionCATS* Basic Version (028.0000) needs to be purchased separately.
- 028.2010 CAMAG® HPTLC Software *visionCATS*: Visualizer Qualitative Package**
- 028.2020 CAMAG® HPTLC Software *visionCATS*: Visualizer Enhanced Evaluation Package**
- 028.3000 CAMAG® HPTLC Software *visionCATS*: Scanner Ultimate Package**
Multi Wavelength Scan, Spectrum Scan and Quantification; CAMAG HPTLC Software *visionCATS* Basic Version (028.0000) needs to be purchased separately.
- 028.4000** CAMAG® HPTLC Software *visionCATS*: Option "21 CFR Part 11"
- 028.4200** *visionCATS* Option "Spectrum Library" for the use with CAMAG® TLC SCANNER 4
- 028.4300** *visionCATS* Option "AI Tools"
- 028.5000** *visionCATS* license for a second client
- 028.5100** *visionCATS* license for a third, fourth and fifth client, each
- 028.5200** *visionCATS* license for a sixth and all subsequent clients, each
- 028.7000** "Forensics Spectra" for *visionCATS* Option Spectrum Library
- 028.7100** "Phytochemicals Spectra" for *visionCATS* Option Spectrum Library
- 028.7200** "Pharmaceuticals Spectra" for *visionCATS* Option Spectrum Library

CAMAG (Switzerland) | Sonnenmattstrasse 11 | 4132 Muttenz
Phone: +41 61 467 34 34 | E-Mail: info@camag.com

CAMAG (Germany) | Bismarckstrasse 27-29 | 12169 Berlin
Phone: +49 30 516 555 0 | E-Mail: infoberlin@camag.com

CAMAG Scientific (USA) | 515 Cornelius Harnett Drive | Wilmington, NC 28401
Phone: (800) 334 3909 | E-Mail: tlc@camag.com

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