TLC Explorer

Documentation System

Simplify TLC Analysis with Smart Technology

SCIENTISTS' CHOICE AWARDS® 26
WINNER

MilliporeSigma is the U.S. and Canada Life Science business of Merck KGaA, Darmstadt, Germany.

Supelco®
Analytical Products

TLC Explorer
Documentation System

Our new TLC Explorer Documentation System offers a superior instrumental solution for reliable TLC plate analysis and digitalized documentation system.

Shutter slider
controls the opening to reveal different parts of the baseplate to reduce stray light

Inspection Window
for quick and safe visual check of chromatogram

PATENTED DESIGN

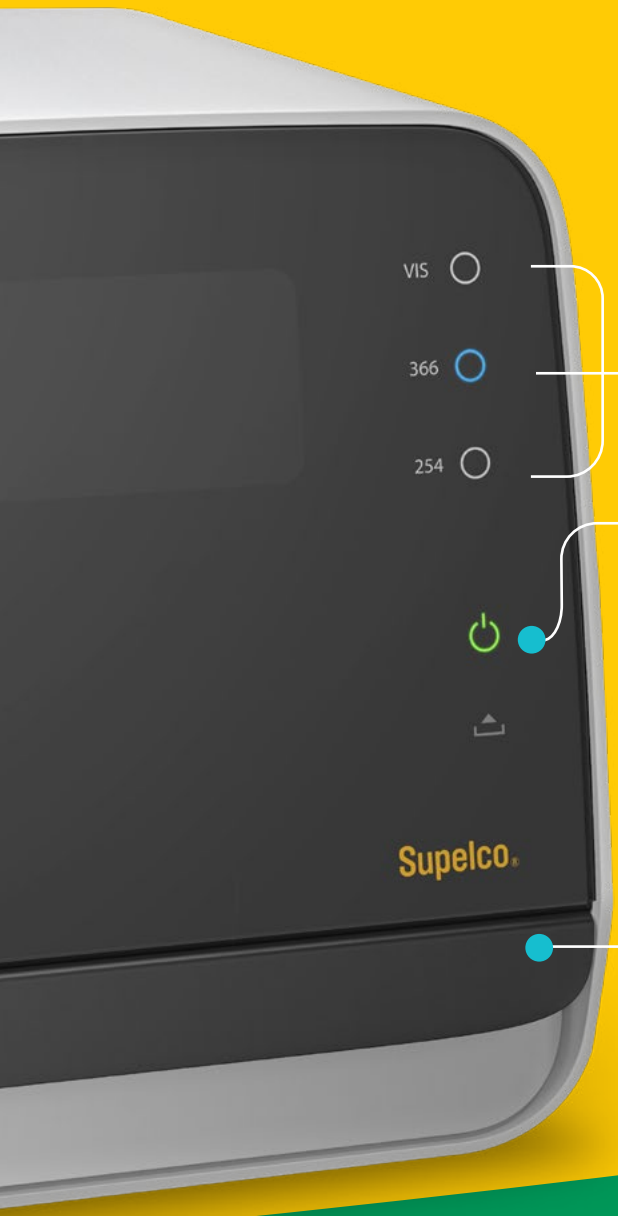
Remote Use

Possible with power bank *(ordered separately)*

Portable/Ergonomic

- User-friendly design
- Lightweight (10kg)
- Compact
- Rounded edges

User-friendly design for easy operation in typical laboratory settings



Plug-and-play operation with easy installation, built-in camera, PC unit, WiFi antenna, and USB-C power connection

Three illumination settings for simple operation while wearing nitrile gloves:

VIS (visible light), 366 nm, and 254 nm

Power on/off button

LED light sources are more sustainable and mercury-free

Safety drawer

- Guards against UV exposure
- Accommodates single or multiple TLC plates
- Removable baseplate facilitates loading and cleaning

Open Drawer Unit

Baseplate is placed on Drawer Unit. An alignment pin underneath the plate area helps the user to orient and align the baseplate correctly on the drawer.

Baseplate

For convenient insertion of multiple plates

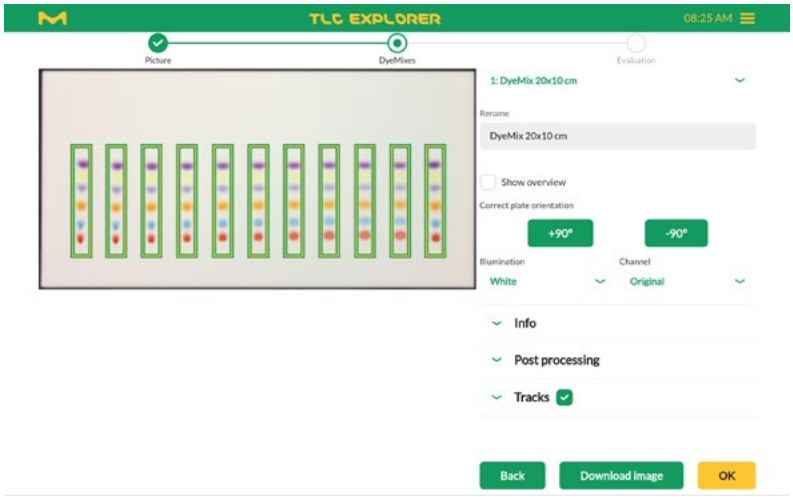
Digital TLC:
accurate, reproducible, efficient

Ready to transform your TLC process with cutting-edge digital precision?
Say good-bye to inconsistent TLC results and manual, time-consuming analysis.

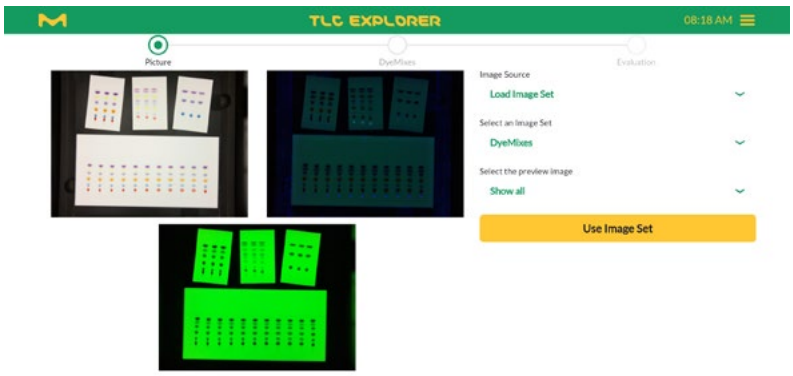
Say hello to streamlined, reliable chromatography workflows with the TLC Explorer. Trust in the precision of digital imaging and automated spot detection for quantitative analysis and consistent data interpretation.

- Fast measurement of tracks under 3 light settings: 254 nm, 365 nm, and visible
- Simultaneous analysis of multiple plates (TLC, HPTLC, PLC) up to 20 x 20 cm
- Automated track recognition and retention factor (Rf) calculation
- Automated crop and rotation function
- Automatic correction of background signals and inhomogeneous illumination
- Special imaging algorithm enabling picture quality comparable to high-end devices
- Quantification tool included
- Easy data export via USB

Automatic track finding



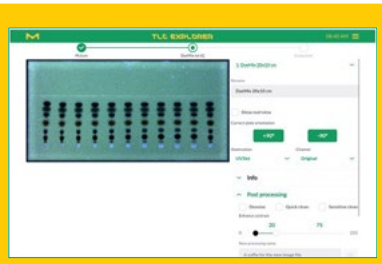
Multiple plate analysis



Find more information in the Instruction Manual.

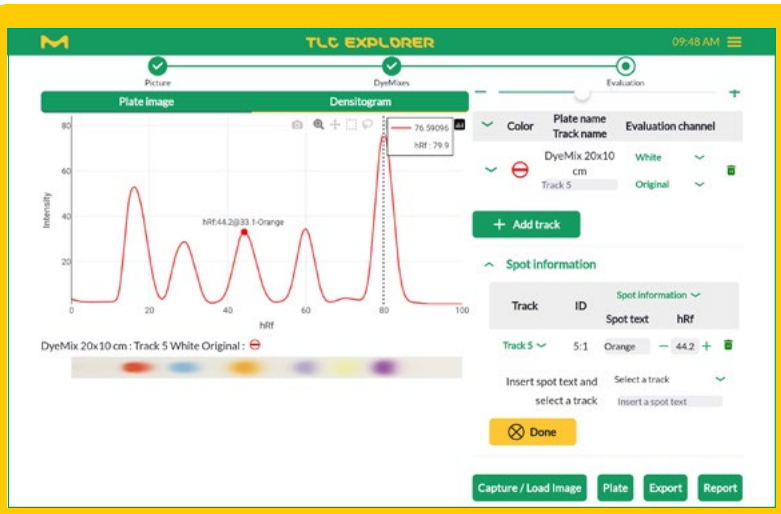
Digitalize your TLC analysis in 3 easy steps

Image — Plate — Evaluation



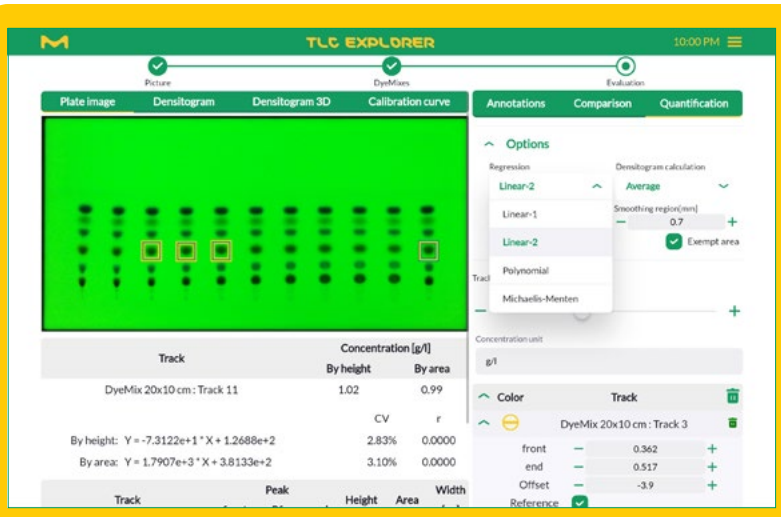
Capture images

Automatically or manually set exposure conditions for selected illumination types. Plate images can also be edited to reduce image noise or enhance contrast.



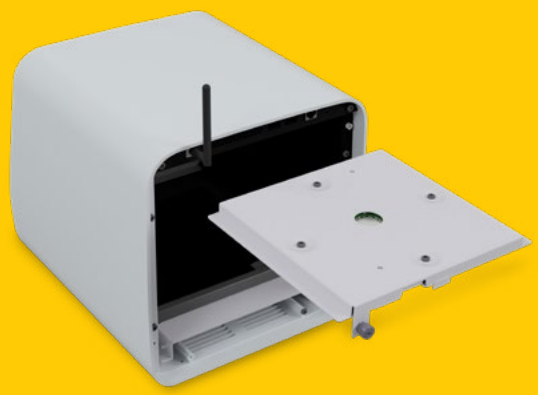
Plot and edit densitogram calculation and display

Evaluation process is based on video densitometric measurement performed on electronic images.



Quantitative analysis

To estimate the concentration of a substance, the spot it builds on a track is compared with the corresponding spots of one or more reference tracks.



Easy Maintenance and Lamp Change

The exterior of the TLC device is easy to clean with common solvents. To change the illumination unit, simply unscrew and remove the back cover, pull out entire lamp unit and replace with new one.

Device Measurements & Specifications

Weight	Approx. 10.4 kg
Dimensions	374 x 312 x 290 mm length x width x height
(External) Power supply	USB-C Power Supply Unit / 65 W
Power supply	External power supply unit (HA65NM170) is provided with separate power supply cord(s) (1.8 m long) fitting type B, G, N, I, D, E/F plugs (the plug must comply with local regulations)
Power requirements	100 V – 240 V, 50 – 60 Hz for the External Power Supply Unit
Power consumption	Standard working condition: 18.8 W; standby mode: 0.83 W
Wavelength range	• Visible light (VIS) • UV-C - WL: 254 nm • UV-A – WL: 366 nm
Camera	• RGB sensor with 3280 × 2464 active pixel • One pixel captures an area of approx. 85 × 85 µm on TLC plate
Measuring technology	Documentation system for TLC plates by using video densitometric measurement
TLC/HPTLC plates sizes	20 cm x 20 cm and smaller
Communication interfaces	• USB: 2 × USB-A (for directly connecting to an USB Stick) • Ethernet: LAN • WLAN IEEE 802.11 b/g/n (2.4 GHz)
Protection (IP) class	IP2X (for the main enclosure)
Ambient Condition: Temperature	• Operating temperature: 15 °C to 40 °C • Storage and transportation temperature: 5 °C to 40 °C.
Ambient Condition: Relative Humidity	• Operating humidity range: 20%RH to 80%RH • Storage and transportation humidity range: 15%RH to 95%RH • Ensure non-condensing conditions
Ambient Condition: Altitude	< 2000 m

TLC Device & Accessories

Article No.	Name	Description
1.52610.0001	TLC Explorer	TLC Digital Documentation System
1.52613.0001	Illumination unit	Replacement part which is only needed in case a light source in your TLC Explorer has broken. The unit houses LEDs and optics for all illumination types, i.e. visible light as well as UV light, and can only be exchanged as a whole.
1.52612.0001	Baseplate	An additional Baseplate can simplify and speed up the workflow, since one Baseplate can be prepared while a second one is recorded in the TLC Explorer.
1.52611.0001	Power bank	Powers the TLC Explorer independent of a power grid – e.g. remote use
1.52618.0001	Dust cover	Replacement cover to protect your TLC Explorer against dust
1.52630.0001	IQ/OQ Kit for TLC Explorer	The IQ/OQ kit contains two validated test sheets paper allowing a semi-automated device qualification.

New! IQ/OQ Kit for TLC Explorer

The IQ/OQ kit for TLC Explorer helps laboratories in regulated environments perform reliable equipment validation by supporting Installation Qualification (IQ) and Operational Qualification (OQ) of the TLC Explorer system. IQ and OQ are essential validation steps for analytical instruments in regulated industries. The IQ/OQ kit includes all required components to support convenient and straightforward device qualification.

Kit components

- **Installation Qualification (IQ) Documentation**: Enables a quick verification of the physical setup.
- **Operational Qualification (OQ) Documentation**: Focuses on functional performance. It involves semi-automated testing of the TLC Explorer under different operating conditions to verify that all subsystems perform as designed.
- **Validated testsheet A**: For homogeneity control
- **Validation testsheet B**: For camera (sharpness) control
- **Software feature**: Available for free download at SigmaAldrich/TLCservice to perform the OQ testing

For additional information or support with service, maintenance, test adjustments, or Installation and Operational Qualification, please contact our TechService team or submit your request through the webform available **here**.

Application Fields

Screening, day-to-day analysis, matrix-rich samples, method development for HPLC or flash chromatography, in-process control, basic research

Pharma, Biopharma & Phytopharma

- API stability testing
- API candidate screening
- Herbal medicine screening
- Impurity analysis

Clinical Research and Diagnostic Labs

- Metabolite testing
- Biomarker analysis

Chemical Industry (e.g. Cosmetics)

- In-process control
- Screening of cosmetic compounds
- Impurity cosmetic analysis

Academia

- Basic research
- Compound development

Food & Beverage

- Quality control
- Stability testing
- Food additive analysis
- Food contaminant analysis

Forensic

- Screening for drugs and toxic compounds
- Detection of explosives

Environmental

- Water, soil, waste water analysis
- Contaminant analysis (e.g. pesticides, hormones)

For assistance or technical support, please contact your local TechService or visit our customer support website: **SigmaAldrich.com/TLCservice**

To learn more about our complete TLC portfolio, visit: **SigmaAldrich.com/TLC**

We have built a unique collection of life science brands with unrivalled experience in supporting your scientific advancements.

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