Readers

Spot analysis reinvented

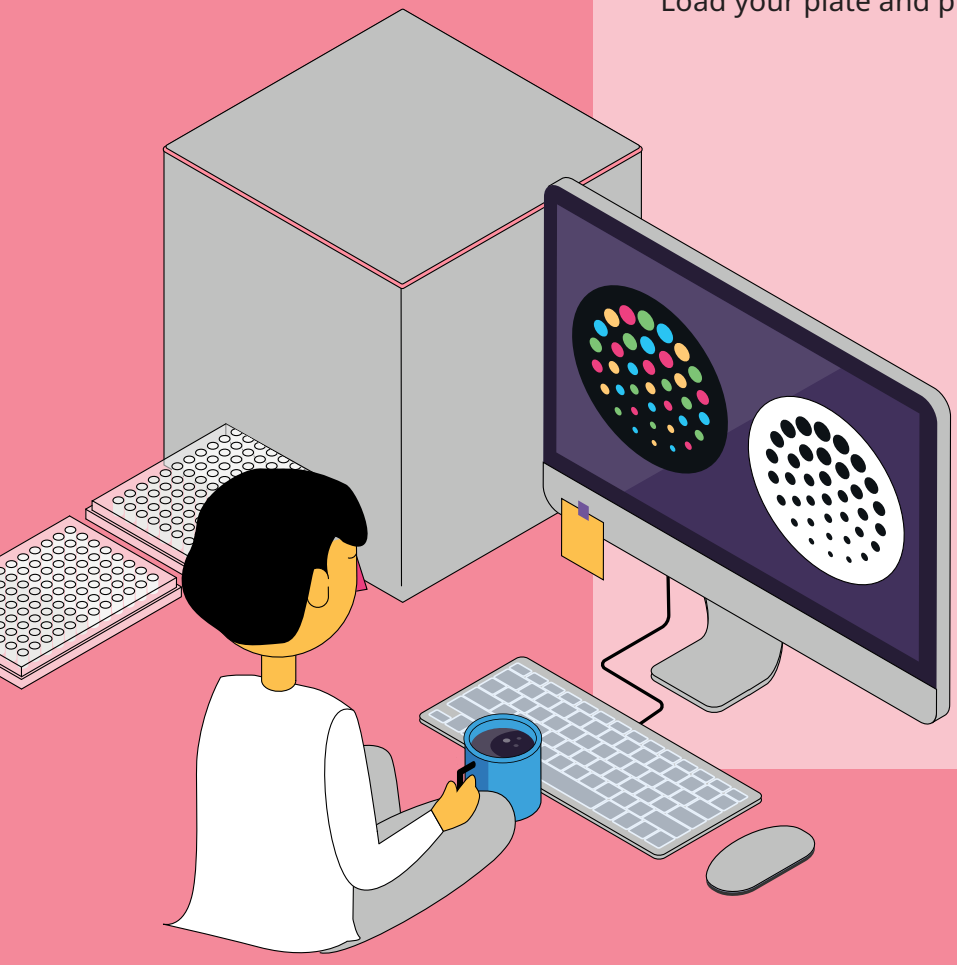
Game-changing readers for FluoroSpot, ELISpot, and FociSpot

Minimized variability

Automated settings ensure unbiased analysis

Anyone can play

Load your plate and press “Read” – it’s that simple



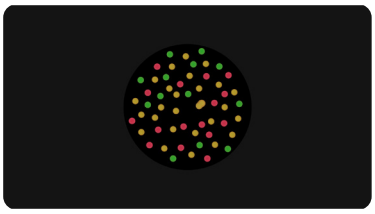
MABTECH

How do our readers work?

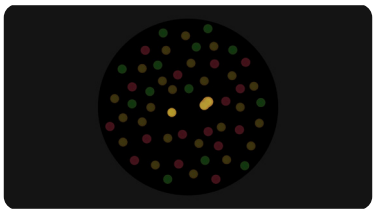
To make plate reading and spot analysis effortless and reliable, we developed the **Mabtech IRIS™ 2** and **Mabtech ASTOR™ 2**. Mabtech IRIS 2 supports FluoroSpot, ELISpot, and FociSpot analysis, while Mabtech ASTOR 2 is our ELISpot-only reader.

Our readers offer a revolutionary approach to spot analysis. Simply select the assay, load the plate, and press read. Our patented RAWspot™ algorithm ensures highly accurate spot center detection and counting. The software Mabtech Apex™ provides a **plug-and-play** system that is incredibly user-friendly. With IRIS 2 and ASTOR 2, users can enjoy an effortless and accurate spot analysis.

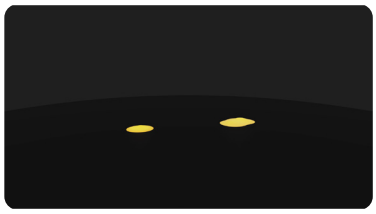
Precise spot center detection for accurate analysis



In FluoroSpot, it's crucial to distinguish single from dual analyte spots.

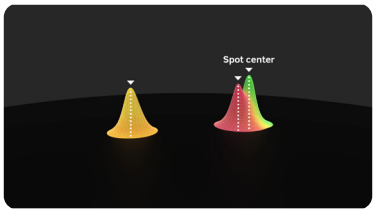


Competitor readers use image analysis where single analyte spots can be mistaken for dual.

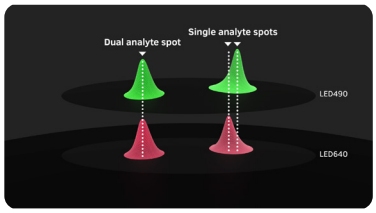


A standard 8-bit image is relatively flat.

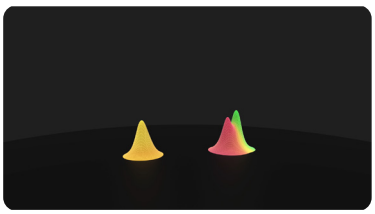
RAWspot uses the **wide dynamic range** of the image's RAW signal.



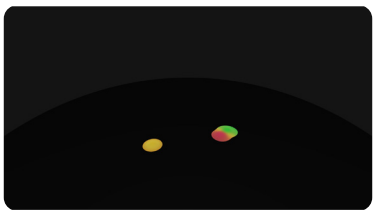
RAWspot finds **the spot center**.



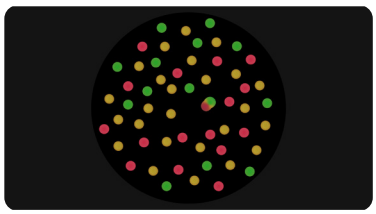
Overlapping spot centers indicate a dual analyte spot.



Every spot has a volume corresponding to the amount of secreted analyte.



Accurate spot centers ensure that **multiplexing is reliable**.



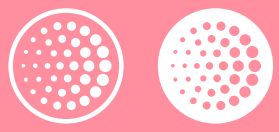
RAWspot technology: Scientific signal processing

The development of the patented RAWspot™ technology has resulted in several scientific publications in peer-reviewed journals.

What are the benefits?

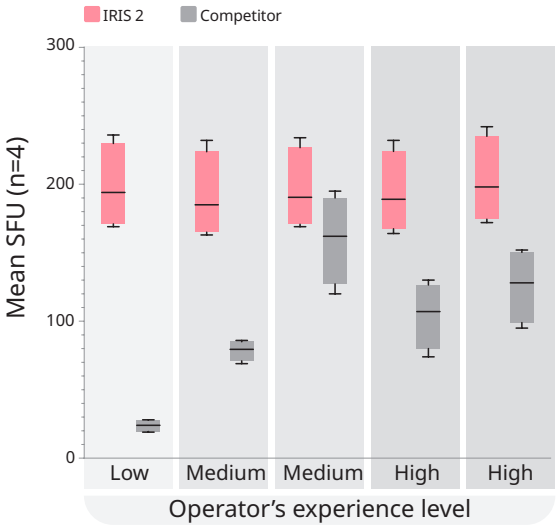
IRIS 2 is our premier reader for FluoroSpot, ELISpot, and FociSpot analysis. The reader can detect up to four analytes simultaneously with unparalleled accuracy and speed. ASTOR 2 is our workhorse, an ELISpot-only reader built to be fast and easy to use.

Fixed focus, optimized default reader settings, and self-calibrating XY table: We developed our readers to be as intuitive as possible, allowing you to get right to your data.



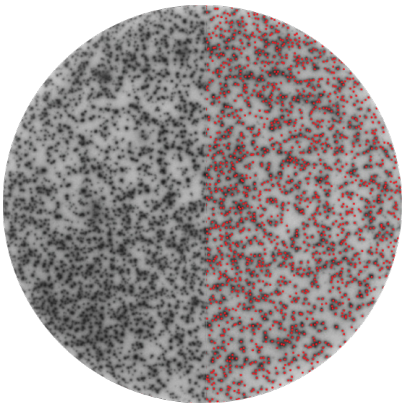
Minimize subjective analysis

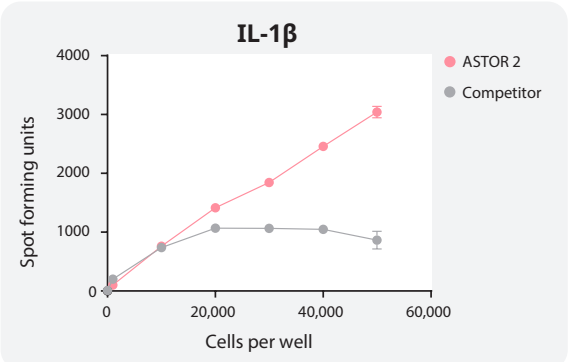
Automated reader configurations and default analysis settings minimize subjective input, reducing operator bias. Spot analysis has never been easier.

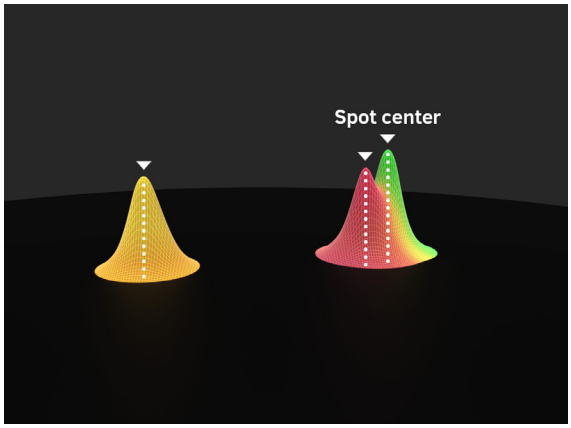


Detect every spot

Our readers identify distinct spots in a linear fashion without hitting a plateau. Based on signal processing, the algorithm provides objective results for immediate analysis. Every spot, no matter how small, big, faint, or distinct, is detected.







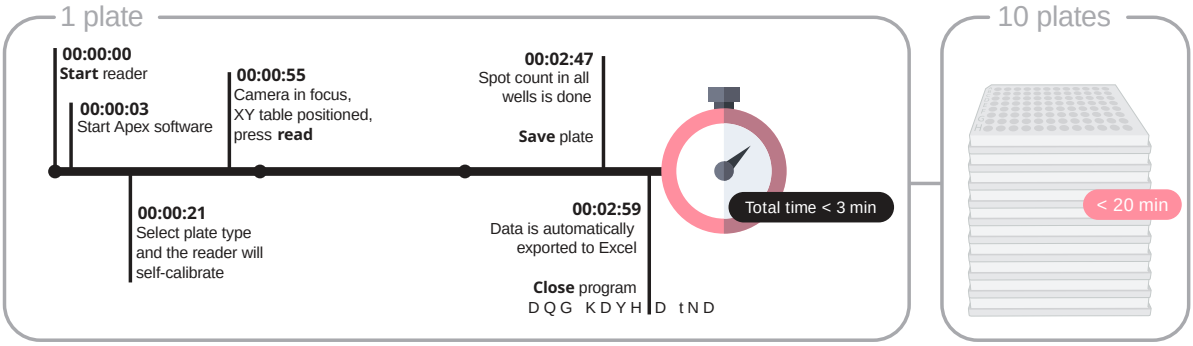
Secretory profile of every cell

Our RAWspot technology depicts the secretory profile of every cell to determine the exact spot center. This ensures reliable spot counts as well as accurate identification of multi-analyte secreting cells in FluoroSpot.

RAWspot technology's 3D model allows for a new type of data be generated in FluoroSpot and ELISpot: **relative spot volume**. Now you can measure the relative amount of secreted analyte per cell.

Quick data acquisition

An overlooked and time-consuming aspect of spot assays has been data analysis. With reliable data, a plug-and-play experience, and unprecedented export capabilities (Excel and GraphPad Prism), our readers reduce the time from data acquisition to final analysis, facilitating high-throughput and larger studies.



*Fika = Swedish coffee break

Read once, adjust later

After reading the plate, you are free to change count settings, the experimental layout, and the look of well images, all without affecting the original data. The entire signal from each spot is already recorded, so adjustments can be done post-reading and you'll never have to re-read a plate.

A new era of almost-too-easy

Ready for automation

Both readers are designed to make the analysis of larger projects as painless as possible. In addition to self-calibration, responsive software, and easy data handling, IRIS 2 and ASTOR 2 allow for robotic plate loading. Our readers can be part of an automated workflow with a robotic arm or be fully integrated into a larger automated setup. Each automation solution is unique, but we'll be here for you every step of the way.

Regulatory compliance

The EU and the US (FDA) have established guidelines for the life sciences industry, known as Annex 11 and CFR21 part 11, respectively. These guidelines outline the use of computerized systems in clinical investigations and specify that the quality of source data obtained through these systems must match that of traditional paper records.

Our software has been designed to comply with the following guidelines in § 11.10 Controls for closed system of CFR21 :

- Validation – Part 11.10 (a)
- Copies – Part 11.10 (b)
- Record protection – Part 11.10 (c)
- Access limitation, operational system checks and authority checks – Part 11.10 (d, f, g).
- Audit trails – Part 11.10 (e)
- Device checks (h)

Benefits at a glance

Exact spot center
Accurate spot count and multiplexing

Optimized settings
Pre-defined settings for plates and assays

New data dimension
Compare the amount of secreted analyte

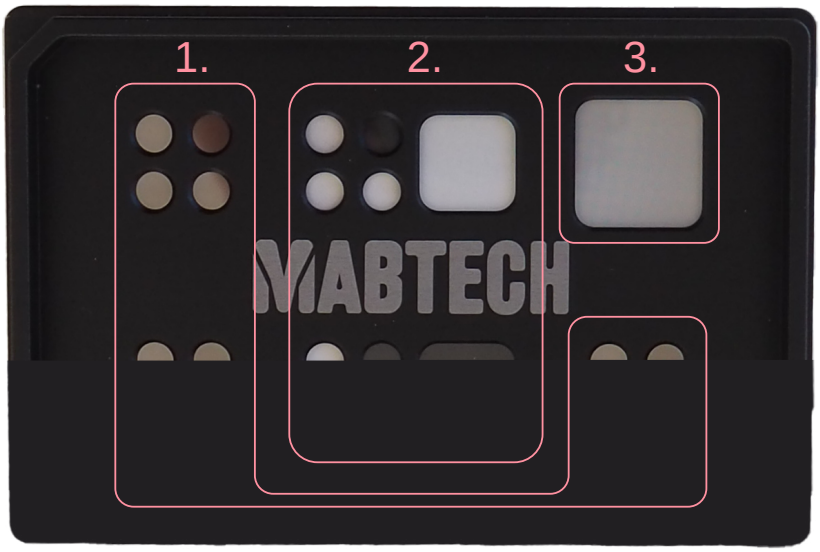
Scientific output
Export to Excel or GraphPad Prism

Plug-and-play
Insert plate, press read, and export

CFR21 part 11
Apex is ready-to-go

Performance qualification

Our readers are reliable tools that can be trusted to deliver accurate results over an extended period of use. However, it's essential to demonstrate that the readers maintain acceptable performance over time, especially when facing internal or external review for regulatory compliance. Mabtech's Performance Qualification (PQ) plates provide a solution for verifying that our instruments fulfill quality specifications and to ensure reproducibility. The PQ plates allow users to conduct a series of quantitative and qualitative tests making it easy to identify any incorrect or inconsistent operation of the reader. By using PQ plates, our instruments can be confidently validated providing peace of mind knowing that experiments are accurate and reliable.



Different sections of a PQ-plate:

1. Tests focus and RAWspot algorithm in FluoroSpot mode

2. Tests light intensity of LEDs used in FluoroSpot.

3. Tests focus, RAWspot algorithm, and light intensity in ELISpot mode.