axiVEND microarrays

MICROARRAY IMAGING SYSTEMS

axiREADER

Compact imaging platform

C Colorimetric
F Fluorescence
CL Chemiluminescence

Image and analyze arrays

A compact, portable microarray imaging platform available in colorimetric and fluorescence versions — for 96-well plates, 12×8 strip wells, 25×75 mm slides, and custom substrates such as iRiS chips. Built for multiplex ELISA, genotyping, diagnostics, and biochemical analysis, with AI-assisted spot finding and fullreport export built in.

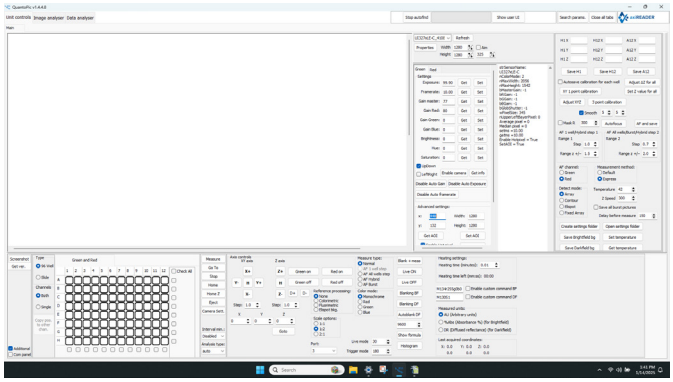
AI-assisted spot finding

Plates, slides chips, strips

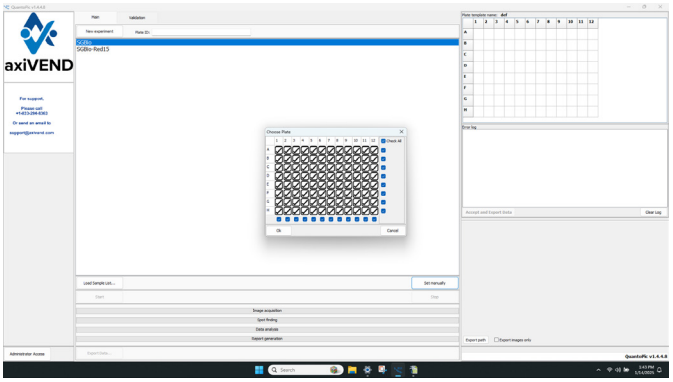
Full report export

Three readers. One workflow.

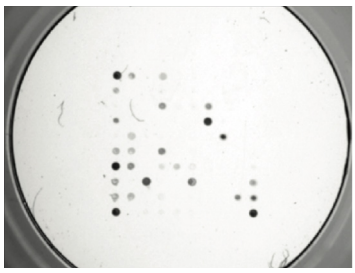
axiREADER C, F, and CL are complementary instruments built on a common operating platform: choose the detection mode that matches your assay chemistry, then keep the same setup, imaging, spot-detection, and reporting workflow for both.

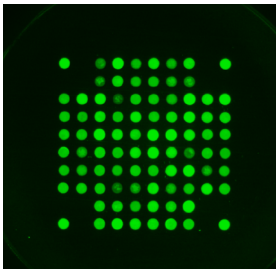


The first step consists of setting up image acquisition parameters. Focus and camera settings are adjusted here. Plate position calibration for XY and auto-focus mode selection is usually done by an administrator. One can also manually select samples to be read, useful during assay development.

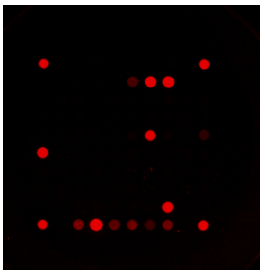


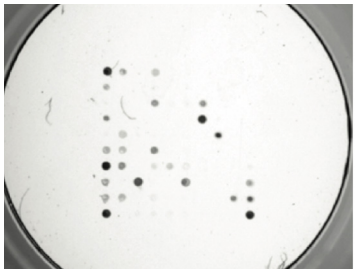
Once an 'assay' is defined, the end-user can use this simple interface as the only screen. Select 'assay', select wells to read, and click 'start'. All steps defined by the assay are then executed, including image acquisition spot finding, area calculation, analysis, reporting, including images / data exports.



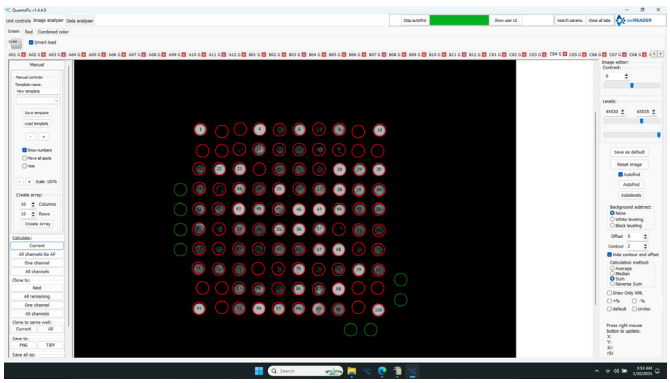


With adjusted camera settings, well / array images are then acquired. For multichannel fluorescence readers, one can specify the capture of several images per well location, using different settings, without moving the stage.

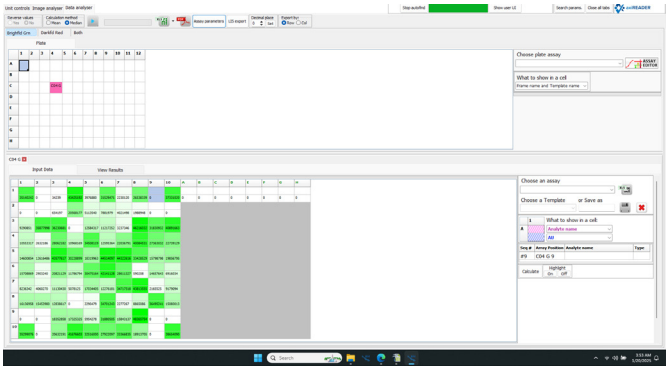




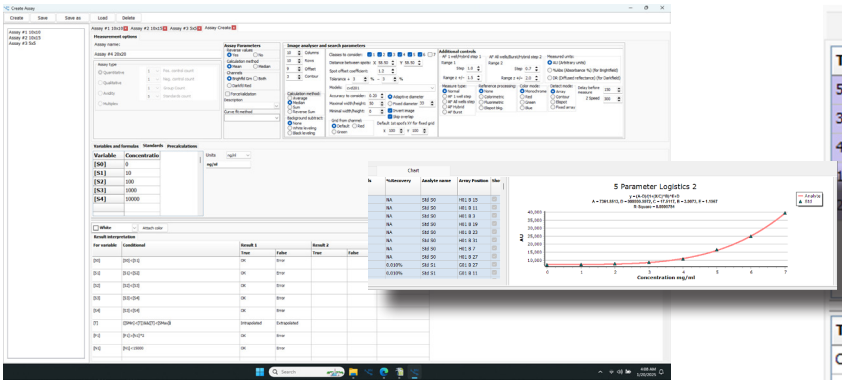
Up to 4 excitation wavelenghts can be used, and a total of 4 emission filters can be included during the assembly of the reader. The standard 2 channel configuration uses red/green channels.



Spot finding uses a template of your array and a powerful AI model. The model is trained based on sample images from your assay. This results in robust spot finding performance.



Once the spots are found, a calculation is performed to quatify spot intensities, such as average, median, and sum of all pixels within, with associated statistics. Spot matching to array components is performed with the import of a GAL file, or manually.



Results | Simplified | Diagnosis

Test name	Result1	Result2
5Nucleocapside	Positive	54922.5
3SpikeNTD	Negative	19578.7
4Spike1	Negative	20750.6
1SpikeRBD	Negative	21082.0
2Spike2	Positive	40274.3

Test Diagnosis	Result1	Result2
Covidiad 1.2 beta2.1 avg	Positive	

With the calculated spot intensities, as AUC, one can then perform a thorough and accurate analysis. Spots can be defined as positive or negative controls, as well as calibrators. Algorithms can use intra-array spot values, as well as inter-array values (from different wells) to perfom results calculations. Calibration curves using data from different wells can be generated. This suite of powerful features enables the generation of interpreted results in a consise diagnostics report.

COLORIMETRIC IMAGER & ANALYZER

axiREADER C

Top-down imaging with white LED illumination for chromogenic and reflectance-style array readout — ideal after visible staining such as TMB substrates.

- Camera above, imaging downward
- Brightfield and darkfield illumination modes
- Reads opaque or transparent plates, strip wells, and slides
- Certified OD 0.1–2.0 (brightfield); diffused reflectance 2–99 (darkfield)

FLUOROMETRIC IMAGER & ANALYZER

axiREADER F

Bottom-illuminated laser imaging for tagged fluorescence assays and multiplex fluorescent arrays, using two or more channels.

- Camera below, imaging upward
- Cy3/Cy5 channels standard; 3- or 4-channel configurations available
- Requires clear-bottom plates or inverted slide/chip formats
- Exposure controllable up to 30 seconds per well

Standard 2ch: for Cy3 and Cy5
Available custom 3ch and 4ch

nm	FWHM	Application
435	48	—
438	28	—
440	46	Sirius Emission
447	65	DAPI Emission / BFP & GFP Emission
448	25	—
452	51	—
466	45	—
472	35	—
475	56	—
482.5	36	CFP Emission
494	25	—
500	29	—
510	25	Cy2 Emission
510	89	FURA2 Emission
512	30	Fluorescein Emission
520	41	GFP Emission
520	77	Alexa Fluor® 488 Emission / GFP Emission
525	18	Qdot® 525 Emission
525	51	GPF/FITC Emission
527	22	SpectrumGreen™ Emission
530	62	Thiazole Orange Emission
534	25	—
534.5	48	FITC Emission
540	56	FITC Emission
543	27	YFP Emission
549	21	Alexa Fluor® 532 Emission
550	100	Broadband Green Fluorescence
560	32	—

nm	FWHM	Application
561	21	—
562	46	—
572	33	SpectrumGold™ Emission
575	35	—
578	22	Cy3.5 Emission
585	40	—
586	26	SpectrumOrange™ Emission
591.5	49	Cy3 Emission / TRITC Emission
605	22	Qdot® 605 Emission
607	42	GFP Emission / RFP Emission
615	26	Alexa Fluor® 594 Emission / Cy3 Emission
620	60	—
623	30	Texas Red® Emission
624	46	Texas Red Emission
625	25	Qdot® 625 Emission
628	38	SpectrumRed™ Emission
631	28	—
640	20	—
640.5	81	mCherry Emission
648	20	FITC Emission
655	24	Qdot® 655 Emission
655	47	—
661	26	TO-PRO®-3 Iodide Emission
676	36	Cy5 Emission
692	47	Cy5 Emission
697	91	Alexa Fluor® 680 Emission / Cy5.5™ Emission
716	47	Cy5 Emission
785	71	Superbright780

Powerful analysis software

Every axiREADER ships with instrument-control and analysis software: automated spot finding, qualitative and quantitative assay templates (up to 20 standards), 4PL/5PL/linear/log/spline curve fitting with automatic best-fit selection, and one-click export to PDF, Excel, CSV, and image formats.

MICROARRAY IMAGING SYSTEMS

SPECIFICATIONS IN COMMON	
Vessels	96-well plate, 12×8 well strip, 4 microscope slides — more via custom inserts
Camera	CMOS, 3 MP
Resolution	6 µm / pixel
Magnification	> 10×
Focus	Manual or automatic (controllable)
Measurement range	0 – 65,535 (arbitrary units)
Imaging speed	2–3 min per 96-well plate (focus-mode dependent)
Software	Instrument control, image processing, and data analysis included
Sample import	GAL or Excel
Export data formats	Excel, CSV, PDF, Word
Export image formats	PNG, TIFF, BMP, JPG (16-bit)
PC requirements	Intel i7 or equivalent, 8 GB RAM, 256 GB SSD, Windows 10/11 (64-bit), NVIDIA GeForce 10/16/20 series
PC interface	1× USB 2.0 and 1× USB 3.0 SuperSpeed
Unit dimensions	330 × 345 × 150 mm (13.0 × 13.6 × 6.7 in) · 6 kg (15 lb)
Power	20 V, 2.5 A, 50 W — battery-operable
Power supply	Input 100–240 VAC 50/60 Hz · Output 20–24 VDC, 2.5 A

axiREADER C — COLORIMETRIC	
Light source	White LED
Illumination	Brightfield & darkfield (top/bottom)
Source lifetime	> 10,000 hours
OD range (brightfield)	0.1 – 2.0, certified
Reflectance (darkfield)	2 – 99, certified

axiREADER F — FLUOROMETRIC	
Light source	Laser (custom optional)
Illumination	Bottom-only (clear substrate)
Source lifetime	> 10,000 hours
Fluorescence channels	Cy3/Cy5 std. (3-4 ch optional)
Exposure	Up to 30 sec/well, adjustable

axiVEND microarrays LLC
350 E Crown Point Rd, Suite 1020
Winter Garden, FL 34787
United States

axivend.com
info@axivend.com
+1 833 294 8363

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