

# OptiMax<sup>®</sup>-STAT ELISA Automation Platform

High-Performance, Low-Cost ELISA Automation Solution

## ✓ Key Metrics

### ✓ Low-Cost Single Plate ELISA Processor

- Automated liquid handler only < \$5,000
- With fluorescence reader < \$12,500
- Labware: 96-well microfluidic Optimiser™ microplate or 6 strip well plates (8 wells/strip) + 2 source plate positions

### ✓ Plug 'n' Play Automation

- One click operation for all assay liquid handling steps (ready to read)

### ✓ Throughput up to 80 tests/hour

- Single analyte, microplate format (~45 min liquid handling)
- 16 samples/hour with 4 analytes/sample

### ✓ Broad Test Menu (Open Platform)

- Compatible with all microplate based ELISA tests (sandwich, competitive, indirect ELISA)
- Multi-analyte testing (Multiplexing) with “on-the-fly” capture antibody coating or with pre-coated strips
- Compatible with serum, plasma, urine, CSF samples. Whole blood with 3-fold dilution and separate hematocrit measurement.
- Assay CV <10% for singlets (assay dependent)
- High sensitivity using proven repeat load method

## ✓ Target Applications

- **By focusing on core functionality for automated liquid transfer and minimizing add-on features (sample transfer to sample source plate completed externally, operator transfers assay plate to reader) – OptiMax<sup>®</sup>-STAT offers unique low-cost ELISA automation benefits for:**

### ✓ Emerging Markets

- Small size and low-power. Potential for DC power source (12V automobile battery).
- Minimal system wash liquid requirements (1 Liter bottle for full day operation)
- Integrated biohazard waste (contained within absorbent pad in Optimiser™ plate)

### ✓ Low-volume Specialty Test Labs

- Compact footprint minimizes use of valuable bench space
- Automated liquid handling to maximize operator efficiency with rapid test results; approximately 1 hour for liquid handling and read
- Low sample volume (30 µL for single analyte to only 45 µL for 4 analytes) allows for multiple test from single specimen

### ✓ Users of Manual Diagnostic ELISA Kits

- One click operation for entire assay sequence – reduced operator errors
- Cost/test similar to manual kit – added convenience without added costs

### ✓ Development/Research Labs

- Rapid results allow for faster sequential development steps
- Plug 'n' Play automation – focus on assay development and not on running assays

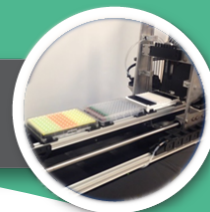
✓ Contact [busdev@siloambio.com](mailto:busdev@siloambio.com) for more information!

### Siloam Biosciences, Inc.

413 Northland Blvd,  
Cincinnati, OH 45240, USA  
Website: [www.siloambio.com](http://www.siloambio.com)

Tel: 1-513-429-2976  
Fax: 1-513-429-2946  
Email: [busdev@siloambio.com](mailto:busdev@siloambio.com)



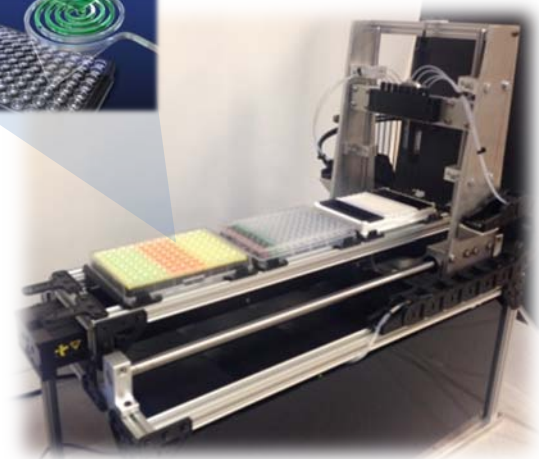
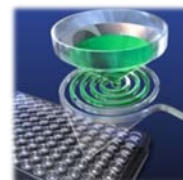


# OptiMax<sup>®</sup>-STAT ELISA Automation Platform

Upgrade your ELISA kits to full automation with OptiMax<sup>®</sup>-STAT

## Technology

- At the heart of the OptiMax<sup>®</sup>-STAT system is the novel Optimiser™ microplate. Existing assay reagents can be easily adapted to Optimiser™ microplate format.



Optimiser™ plate	Source plate (strip well)	Reagent trough (9 pos.)	Test time
Duplicate std. curve* + 80 singlet samples	80 samples + calibrators/controls	Detection Ab., substrate, wash buffer	45min liquid handling + 15min incubation/read
Singlet std. curve (4 analytes) + 16 samples	16 samples + calibrators/controls	Detection Ab. (1-4), substrate, wash buffer	
Singlet std. curve + 1 duplicate sample**	Not used	Calibrator/sample strip, detection Ab., substrate, wash buffer	Rapid test: 20 min liquid handling + 15 min incubation/read

\* Unless specified; std. curve is 7 pt. std. curve (including NC) and PC

\*\* Strip well format (5 pt. std. curve + PC)

## Technical Specifications

<b>Automation</b>	<ul style="list-style-type: none"> <li>Fully-automated walk-away system for ELISA liquid handling steps</li> <li>Optional model with fluorescence reader module (user transfers plate to reader)</li> </ul>
<b>Cost</b>	<ul style="list-style-type: none"> <li>Less than \$5,000 (liquid handling module)</li> <li>Less than \$12,500 (with added reader module)</li> </ul>
<b>Labware</b>	<ul style="list-style-type: none"> <li>1 Optimiser™ assay plate (96-well) or 6 strip well plates (8 wells each)</li> </ul>
<b>Total Assay Time</b>	<ul style="list-style-type: none"> <li>Approximately 60 minutes including read (~ 45 min liquid handling duration) – full plate</li> <li>Approximately 35 min in rapid test mode (limited samples)</li> </ul>
<b>Throughput</b>	<ul style="list-style-type: none"> <li>80 tests/hour – full plate, singlet samples</li> <li>16 tests/hour – up to 4 analytes</li> </ul>
<b>Test Menu</b>	<ul style="list-style-type: none"> <li>Broad test menu possible – ANY established ELISA</li> <li>All ELISA formats possible – sandwich, competitive, direct</li> <li>Quantitative and Qualitative format</li> </ul>
<b>Test Format</b>	<ul style="list-style-type: none"> <li>Precoated Optimiser™ plates (or Optimiser™ strip well plates)</li> <li>Possible to coat capture “on-the-fly” for extended test menu (adds to duration).</li> </ul>
<b>Precision</b>	<ul style="list-style-type: none"> <li>less than 10% CV for singlets (analyte dependent)</li> </ul>
<b>Sensitivity</b>	<ul style="list-style-type: none"> <li>High-sensitivity tests (up to 10x more sensitive than conventional ELISA) possible using the proven repeat load method (adds to assay duration)</li> </ul>

<b>Assay Migration</b>	<ul style="list-style-type: none"> <li>Assay reagents from conventional ELISA can be used for Optimiser™-based assays (proven with multiple tests)</li> </ul>
<b>Samples</b>	<ul style="list-style-type: none"> <li>Serum, plasma, urine, CSF. Whole blood with 3-fold dilution and offline hematocrit measurement.</li> </ul>
<b>Sample Volume</b>	<ul style="list-style-type: none"> <li>30 µL for single analyte to 45 µL for 4 analytes (using standard V-bottom source plates)</li> <li>May be potentially reduced by 1/2 with low-vol source plates</li> </ul>
<b>Reagent Volume</b>	<ul style="list-style-type: none"> <li>At least 5x (up to 20x) reduction in assay reagents and buffers compared to conventional techniques</li> </ul>
<b>Biohazard Waste</b>	<ul style="list-style-type: none"> <li>Contained within assay plate/strip; solid waste only.</li> </ul>
<b>Software</b>	<ul style="list-style-type: none"> <li>USB interface and PC based protocol programming and execution (low-cost laptop)</li> <li>Potential for iPad based app driven GUI</li> </ul>
<b>Electrical</b>	<ul style="list-style-type: none"> <li>Compatible with 100 to 240 V ±10% @50~60 Hz</li> <li>Potential to convert to DC power supply (including 12V automobile battery)</li> </ul>
<b>Dimensions</b>	<ul style="list-style-type: none"> <li>10”W x 24”D x 20”H</li> </ul>
<b>Weight</b>	<ul style="list-style-type: none"> <li>Less than 20 lbs. (automated liquid handling module)</li> </ul>
<b>Manifold</b>	<ul style="list-style-type: none"> <li>One 8-tube manifold</li> <li>1x8 fixed-tips</li> </ul>
<b>Volume Range</b>	<ul style="list-style-type: none"> <li>5 µL and 30 µL for dispensing; 80 µL max for aspiration (&lt;5% CV for liquid handling)</li> </ul>
<b>Tip Washing</b>	<ul style="list-style-type: none"> <li>1 Liter bottle for full day operation (~ 7 plates). Tip wash liquid can be decontaminated for drain disposal.</li> </ul>
<b>Carryover</b>	<ul style="list-style-type: none"> <li>Less than 10 ppm</li> </ul>

## In Collaboration with MicroDigital Co., Ltd.

### Siloam Biosciences, Inc.

413 Northland Blvd,  
Cincinnati, OH 45240, USA  
Website: [www.siloambio.com](http://www.siloambio.com)

Tel: 1-513-429-2976  
Fax: 1-513-429-2946  
Email: [busdev@siloambio.com](mailto:busdev@siloambio.com)

