

# automated non-contact liquid level detection

BioMicroLab

# VC384

## applications

- Low or high sample volume detection in uncapped consumables
- Sample library inventory management
- Assay plate quality control
- QC/QA for assay development and DNA processing
- Detect sample volume for incoming plate samples
- Volume verification for plates before and after liquid handling operations

## features

- Scans a 384 well plate in 30 seconds in Fast Scan Mode and 2-3 minutes in Standard Mode (depends on system settings)
- Scans a 96 well plate in one minute
- Collects and outputs sample volume data for each well position
- Works with common lab solutions such as water, alcohol, buffer, DMSO and more
- Ideal for integration with liquid handlers

## software

- Graphically displays the well plate volumes in columns and rows
- User interface designed for quality control applications
- Project-based software for multiple types of applications and labware
- Select rows or columns to scan for efficient throughput
- Includes plate data calibration table utility
- Easy-to-use Windows based software
- ActiveX toolkit available for integration projects
- Prints plate reports

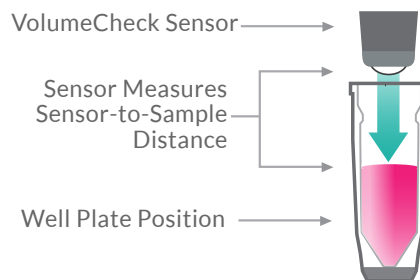
## labware compatibility

- BioMicroLab racks and well plates
- Compatible with the widest variety of consumables such as 24, 48, 96 and 384 well ANSI/SLAS racks, PCR plates, deep well blocks and assay plates labware from all major manufacturers
- Vials or tubes up to 92 mm height
- No consumables – works with your racks and plates
- No rack adapters needed

# how it works

VolumeCheck measures sensor-to-sample distance of known sample volumes to create a reference table. The sensor-to-sample distance decreases as larger amounts of sample are added to the well. Using a reference table specific to each well plate or tube rack, the VolumeCheck instrument returns the volume of sample or compound in each well position.

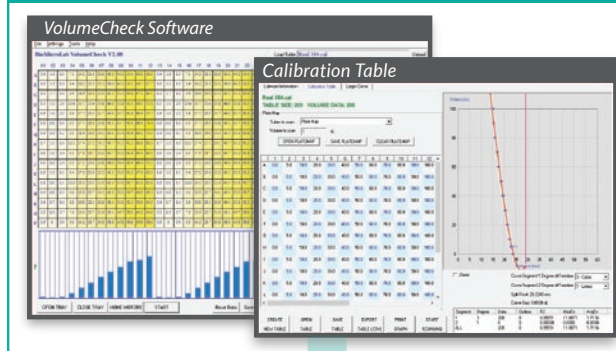
## Ultrasonic Sensor Detects Meniscus



## VC384™ calibration table

A sensor distance-to-volume calibration plot is generated by scanning known sample volumes in specific well plates or tube racks. The VolumeCheck software provides a utility to efficiently generate the data to establish the distance-to-volume calibration tables. The volumes of unknown samples are scanned and extrapolated from a reference curve.

## VolumeCheck Processes Plates Based On Calibration Table



## system resolution and accuracy

The VolumeCheck system is a general purpose volume detection system for a wide variety of labware. The VolumeCheck 384 liquid level sensor is capable of sensing changes in sample volume in the sub 2-3  $\mu$ L range.

## Output Data File Created (.csv)

| A   | B    | C       | D      | E        | F        | G        | H        | I         | J      | K      | L      | M         | N         | O       | P |
|---|------|---------|--------|----------|----------|----------|----------|-----------|--------|--------|--------|-----------|-----------|---------|---|
| 1 Date & Time of scan = 10 June 2014 09:57:32                     |      |         |        |          |          |          |          |           |        |        |        |           |           |         |   |
| 2 File Name = C:\Users\Lisa\Desktop\VC Output\New Folder\2005 CSV |      |         |        |          |          |          |          |           |        |        |        |           |           |         |   |
| 3 Rack Identifier = 2005  |      |         |        |          |          |          |          |           |        |        |        |           |           |         |   |
| RACKID  | TUBE | SAMPLES | STATUS | VOLUMED  | VOLAVG   | VOLMIN   | VOLMAX   | VOLSTDDEV | DISVAG | DISMIN | DISMAX | DISSTDDEV | DATE      | TIME    |   |
| 2005 A01  | 1    | 1       | 1      | 1.6676   | 1.6676   | 1.6676   | 1.6676   | 0         | 57.432 | 57.432 | 57.432 | 0         | 6/10/2014 | 9:56:16 |   |
| 2005 B01  | 1    | 1       | 1      | 0        | 0        | 0        | 0        | 0         | 57.548 | 57.548 | 57.548 | 0         | 6/10/2014 | 9:56:20 |   |
| 2005 C01  | 1    | 1       | 1      | 0.5220   | 0.5220   | 0.5220   | 0.5220   | 0         | 57.409 | 57.409 | 57.409 | 0         | 6/10/2014 | 9:56:25 |   |
| 2005 D01  | 1    | 1       | 1      | 0        | 0        | 0        | 0        | 0         | 57.611 | 57.611 | 57.611 | 0         | 6/10/2014 | 9:56:33 |   |
| 2005 E01  | 1    | 1       | 1      | 0        | 0        | 0        | 0        | 0         | 57.722 | 57.722 | 57.722 | 0         | 6/10/2014 | 9:56:36 |   |
| 2005 F01  | 1    | 1       | 1      | 0        | 0        | 0        | 0        | 0         | 57.889 | 57.889 | 57.889 | 0         | 6/10/2014 | 9:56:40 |   |
| 2005 G01  | 1    | 1       | 1      | 0        | 0        | 0        | 0        | 0         | 57.819 | 57.819 | 57.819 | 0         | 6/10/2014 | 9:56:46 |   |
| 2005 H01  | 1    | 1       | 1      | 0        | 0        | 0        | 0        | 0         | 57.755 | 57.755 | 57.755 | 0         | 6/10/2014 | 9:56:55 |   |
| 2005 A02  | 1    | 1       | 1      | 96.3459  | 96.3459  | 96.3459  | 96.3459  | 0         | 51.673 | 51.673 | 51.673 | 0         | 6/10/2014 | 9:56:17 |   |
| 2005 B02  | 1    | 1       | 1      | 100.65   | 100.65   | 100.65   | 100.65   | 0         | 51.4   | 51.4   | 51.4   | 0         | 6/10/2014 | 9:56:25 |   |
| 2005 C02  | 1    | 1       | 1      | 97.277   | 97.277   | 97.277   | 97.277   | 0         | 51.614 | 51.614 | 51.614 | 0         | 6/10/2014 | 9:56:27 |   |
| 2005 D02  | 1    | 1       | 1      | 99.2327  | 99.2327  | 99.2327  | 99.2327  | 0         | 51.49  | 51.49  | 51.49  | 0         | 6/10/2014 | 9:56:35 |   |
| 2005 E02  | 1    | 1       | 1      | 93.6569  | 93.6569  | 93.6569  | 93.6569  | 0         | 51.843 | 51.843 | 51.843 | 0         | 6/10/2014 | 9:56:36 |   |
| 2005 F02  | 1    | 1       | 1      | 96.3769  | 96.3769  | 96.3769  | 96.3769  | 0         | 51.671 | 51.671 | 51.671 | 0         | 6/10/2014 | 9:56:40 |   |
| 2005 G02  | 1    | 1       | 1      | 96.5191  | 96.5191  | 96.5191  | 96.5191  | 0         | 51.662 | 51.662 | 51.662 | 0         | 6/10/2014 | 9:56:46 |   |
| 2005 H02  | 1    | 1       | 1      | 90.3098  | 90.3098  | 90.3098  | 90.3098  | 0         | 52.054 | 52.054 | 52.054 | 0         | 6/10/2014 | 9:56:54 |   |
| 2005 A03  | 1    | 1       | 1      | 197.3615 | 197.3615 | 197.3615 | 197.3615 | 0         | 48.204 | 48.204 | 48.204 | 0         | 6/10/2014 | 9:56:17 |   |
| 2005 B03  | 1    | 1       | 1      | 195.257  | 195.257  | 195.257  | 195.257  | 0         | 48.274 | 48.274 | 48.274 | 0         | 6/10/2014 | 9:56:25 |   |
| 2005 C03  | 1    | 1       | 1      | 199.5574 | 199.5574 | 199.5574 | 199.5574 | 0         | 48.131 | 48.131 | 48.131 | 0         | 6/10/2014 | 9:56:27 |   |
| 2005 D03  | 1    | 1       | 1      | 206.9645 | 206.9645 | 206.9645 | 206.9645 | 0         | 47.907 | 47.907 | 47.907 | 0         | 6/10/2014 | 9:56:34 |   |
| 2005 E03  | 1    | 1       | 1      | 210.88   | 210.88   | 210.88   | 210.88   | 0         | 47.757 | 47.757 | 47.757 | 0         | 6/10/2014 | 9:56:37 |   |
| 2005 F03  | 1    | 1       | 1      | 204.3152 | 204.3152 | 204.3152 | 204.3152 | 0         | 47.973 | 47.973 | 47.973 | 0         | 6/10/2014 | 9:56:44 |   |
| 2005 G03  | 1    | 1       | 1      | 191.082  | 191.082  | 191.082  | 191.082  | 0         | 48.413 | 48.413 | 48.413 | 0         | 6/10/2014 | 9:56:46 |   |
| 2005 H03  | 1    | 1       | 1      | 183.8403 | 183.8403 | 183.8403 | 183.8403 | 0         | 48.387 | 48.387 | 48.387 | 0         | 6/10/2014 | 9:56:54 |   |

## VC384™ system resolution can be maximized by:

- Centrifuging sample plates to provide a consistent sample level
- Ensuring the calibration table is optimized to the consumables and type of sample
- Reducing dimensional variation in labware.

| specifications    | models                 | throughput speed   | labware supported | 48 and 24 well | 96 well | 384 well |
|-------------------|------------------------|--|-------------------|----------------|---------|----------|
|                   | BioMicroLab VC100      | one minute per plate   | up to 52mm High   | yes            | yes     | no       |
| BioMicroLab VC384 | 30 sec-3 min per plate | up to 92mm High  | yes               | yes            | yes     |          |
|                   | Dimensions:            | 28cm x 68cm x 32cm (11"W x 26.5"D x 12.5"H)                      |                   |                |         |          |
|                   | Weight:                | 15 kg (33.25 lbs.)   |                   |                |         |          |
|                   | Electrical:            | 110-220 VAC 50/60Hz  |                   |                |         |          |
|                   | System Requirements:   | Windows 10, 8, 7 • 512MB RAM • One USB port                      |                   |                |         |          |
|                   | IQ/OQ:                 | Installation Qualification / Operational Qualification Available |                   |                |         |          |