

## VHX-7000 – Keyence

### INTRODUCTION

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The Lumetics LINK™ software platform scans network locations for new measurement data files, copies data directly to a centralized database, and provides a powerful user interface for rapid multi-measurement multi-technique data aggregation, visualization, analysis, and reporting. LINK employs a client/server-based architecture where the LINK server hardware is provided by the end user and resides on the end user's network. The LINK client is a portable web-based application that may be placed on any computer with network connectivity to the LINK server. For successful import, the LINK webserver requires read access to the folders where user data resides.

Keyence VHX is a 4K Ultra-High Accuracy Microscope with a large depth-of-field and advanced measurement capabilities for inspection and failure analysis. High-definition capturing makes it possible to observe subtle contours and uneven surfaces or stains that were previously impossible to view, with a push of a button.

### DETAILS

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LINK requires a CSV import of Keyence VHX data. The data files are generated automatically.

The following raw curve data may be imported, in addition to all available instrument/analysis settings and parameters calculated by the instrument software:

- Particle count/concentration vs. particle diameter
- Particle count/concentration vs. area
- Particle count/concentration vs. circularity
- Particle count/concentration vs. perimeter
- Particle count y-axis only

Particle count/concentration for each supported morphological parameter occurs at a pre-defined bin spacing and measurement range as per the table in the Users Manual located in the software help menu (section 4.19).

Import Method options can be defined and calculated each measurement during import if it is first created/defined and then requested within an Import Method.

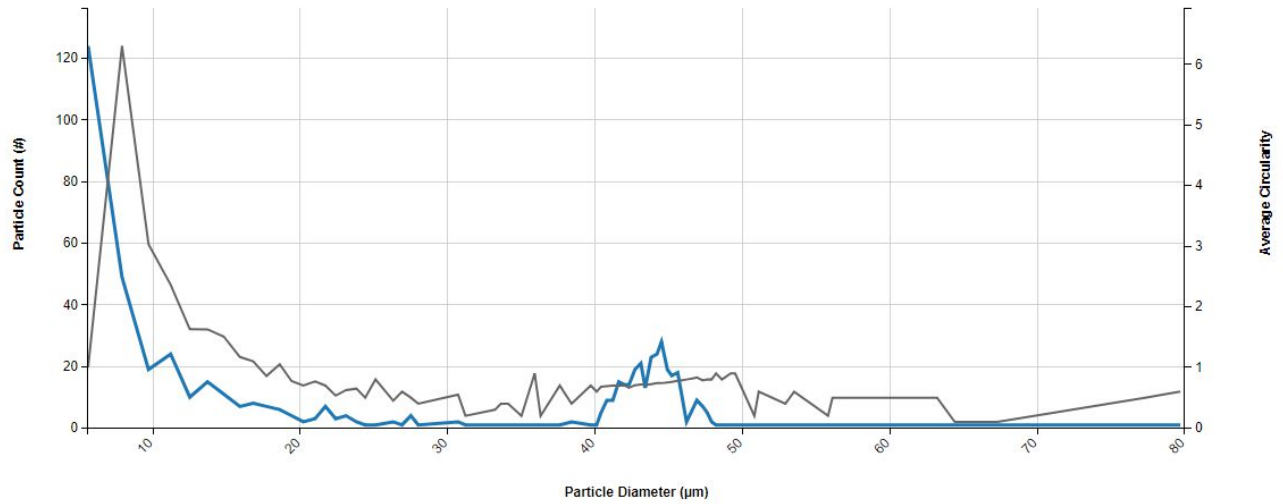
- Custom Particle Parameters can be defined and be generated for each measurement during import (e.g. calculate particle mass assuming a density and volume) if it is first created/defined and then requested within an Import Method.
- In addition to the total particle population data set, Sub-Populations based morphological parameter filters may be generated at the point of measurement import. An unlimited number of sub-populations may be specified for each measurement.

## EXAMPLES

Included below are example dashboards from Keyence VHX measurement files:

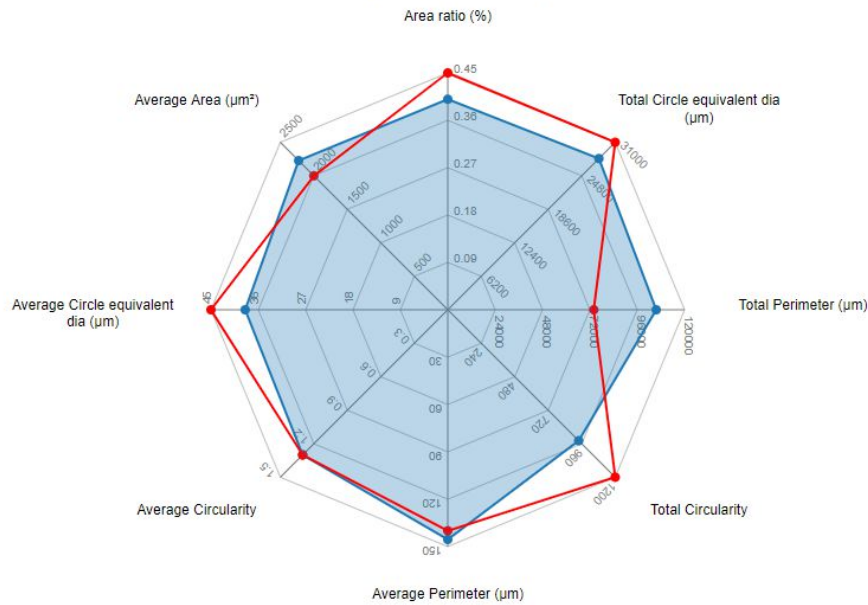
### 1. Line Chart plotting raw data curves for Particle Count and Average Circularity vs. Diameter

**Particle Count & Average Circularity vs. Particle Diameter**



### 2. Radar Chart for multiple acidic 10 parameters

**Keyence Parameters**



**Keyence VHX, Total Population**

### 3. Tabular Summary examples

#### Measurement Summary Table – Measurement Results

LINK Record ID #	Sample Name	Analysis Date	Total Circularity - AVG	Total Area ( $\mu\text{m}^2$ ) - AVG	Standard Deviation Perimeter ( $\mu\text{m}$ ) - AVG	Standard Deviation Circularity - AVG	Standard Deviation Circle equivalent dia ( $\mu\text{m}$ ) - AVG	Standard Deviation Area ( $\mu\text{m}^2$ ) - AVG	Count (pcs) - AVG	Average Perimeter ( $\mu\text{m}$ ) - AVG	Average Circularity - AVG	Area ratio (%) - AVG	Average Area ( $\mu\text{m}^2$ ) - AVG
1	Output file	2019-06-20...	938.30	1616654.80	169.10	1.40	36.70	5003.50	726	145.50	1.30	0.40	2226.80

#### DASHBOARD DOWNLOADS

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Included below is a link to downloadable dashboards for Keyence VHX measurement files:

<http://lumetics.com/dashboards/Keyence/Keyence.zip>

#### CONTACT LUMETICS

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For direct assistance, please contact Lumetics LINK™ Support:

**E-mail:** [support@lumetics.com](mailto:support@lumetics.com)

**Phone:** 1.613.614.874

**Website:** <http://lumetics.com/>