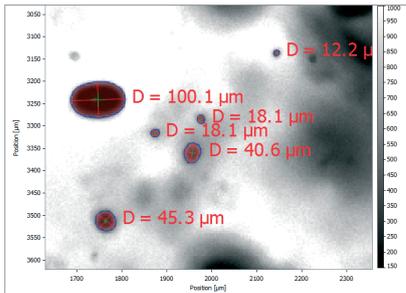
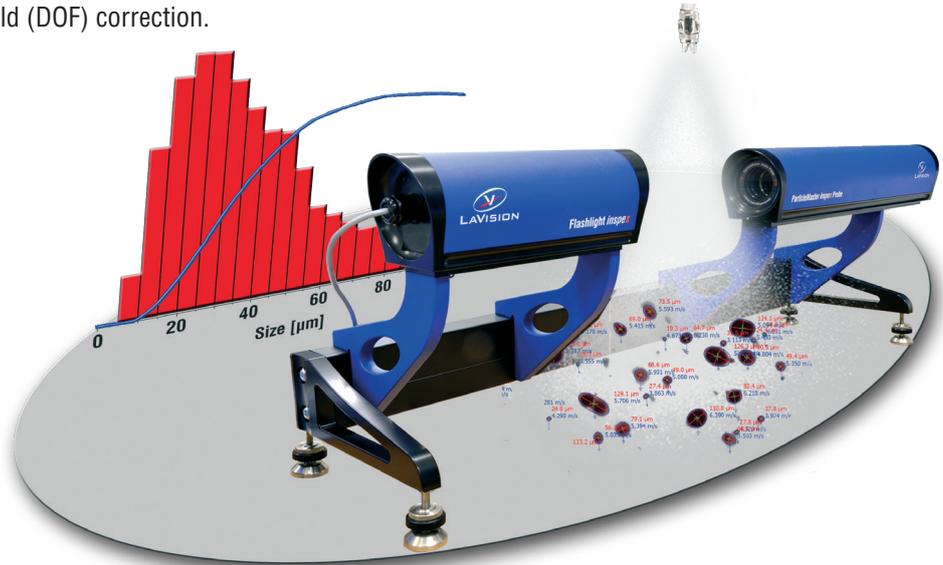


ParticleMaster *inspex*

In-situ droplet and particle
analysis

The **ParticleMaster *inspex*** is a new member of the **ParticleMaster** product family. It serves as a highly integrated laboratory and testing tool for measurement of size, shape and velocity of spray droplets, particles and granules. The systems deliver accurate Digital Image Analysis (DIA) of particle shadow images out of the box thanks to factory calibrated probes, featuring advanced Depth-Of-Field (DOF) correction.



- ▶ Size, shape, orientation, perimeter of individual particles and droplets
- ▶ Velocity and mass flux from dual frame images
- ▶ Cumulated statistics D10, D32, percentiles Dv10, Dv50, Dv90
- ▶ Size histogram, scatterplots

The **ParticleMaster *inspex*** combines the advantages of dynamic image analysis with an easy-to-use design.

Features

- ▶ In-situ measurement
- ▶ Compact self-contained probes and lights
- ▶ Fully factory aligned - no customer calibration required
- ▶ Includes size and depth-of-field calibration
- ▶ Splash proof (IP54) design
- ▶ Eye-safe LED operation without laser

Laboratory and testing

The compact and highly integrated design of the **ParticleMaster *inspex*** aims for daily laboratory use and Q.C. testing. The system is ready to use out-of-the-box. A well-defined mechanical interface allows the integration into existing test benches.

The **ParticleMaster *inspex*** probe contains a camera and a high-magnification lens. It captures the shadow images of droplets and particles illuminated with the **ParticleMaster *inspex*** LED flashlight. With the "flux" option, the motion of particles is captured from dual frame images.

The **ParticleMaster *inspex*** controller comprises the software, all necessary computing power and electronics to directly run the system without any setup or calibration procedure.

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Size and velocity probes



ParticleMaster inspex Probe

The probe is available for two different working distances: a model for a convenient 400 mm stand-off distance and a short-distance probe for maximum resolution down to 10 μm .

All probes are available with an option to measure particle velocity, achieved through ultra-fast shutter dual-frame image sensors.

The probes are splash proof (IP54) to be used in direct vicinity of sprays and dust.

| Model | PM inspex S10 | PM inspex F10 | PM inspex S25 | PM inspex F25 |
|------------------|----------------------------|---------------|-----------------------|---------------|
| Size Range | 10-1000 μm | | 25-2500 μm | |
| Working Distance | 150 mm | | 400 mm | |
| Velocity | x | ✓ | x | ✓ |
| Interface | 2x CoaXpress-12 | | | |
| Compliance | IP54 splash proof, CE mark | | | |
| Cable | 2x 5 meter HD BNC cable | | | |

Ultra-fast illumination



ParticleMaster inspex Flashlight

The backlight illumination is optimized for ultra-short exposure time to avoid any motion blur. The LED flashlight allows eye-safe operation without the use of a laser and supports an automatically activated high-power mode for pulses shorter than 10 μs .

| LED flashlight | |
|----------------------------|---|
| Optimized working distance | 150 mm - 400 mm |
| Min. exposure time | 100 ns |
| Double pulse | $\Delta t > 100$ ns for velocity measurements |
| High power mode | up to 10 μs |
| Max. frequency | 10 kHz single & double pulse |
| Compliance | IP54 splash proof, CE mark |

Integrated controller



ParticleMaster inspex Controller

The **ParticleMaster inspex** controller includes all computer and electronics components to run **ParticleMaster inspex** system.

- ▶ 32 GB RAM, 512 GB system SSD, 2 GB data SSD
- ▶ Robust, fast CoaXpress **ParticleMaster inspex** probe interface
- ▶ Compatible with generation 1 **ParticleMaster inspex** USB probes
- ▶ Dedicated controller for operating 1 **ParticleMaster inspex** probe only
- ▶ Internal timing unit for ultra-precise control and versatile triggering
- ▶ External triggering with 5V TTL (BNC connection)

Data provided by LaVision is believed to be true. However, no responsibility is assumed for possible inaccuracies or omissions. All data are subject to change without notice.

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The **ParticleMaster inspex** system works with DaVis software for data acquisition and the **ParticleMaster** software package for particle characterization.

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