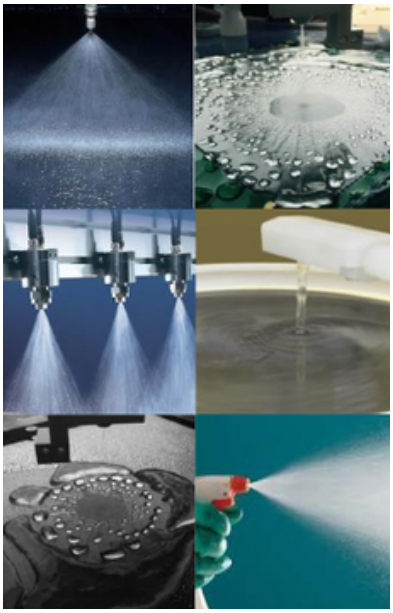


Spray Sensors

High Performance, Waterproof Sensors for Measuring Spray Pressure or Pattern Distribution

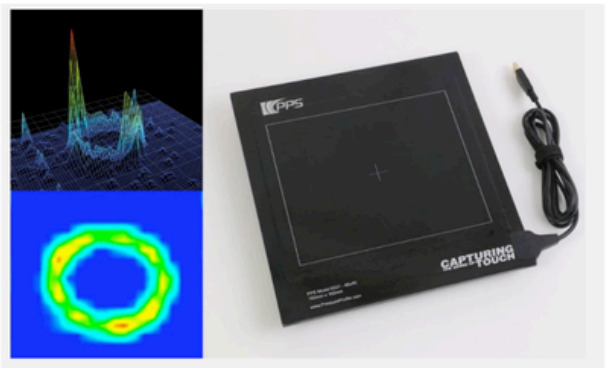
INTRODUCTION AND PRODUCT OVERVIEW

The PPS Spray Sensor System is a cutting-edge solution for capturing and analyzing spray pressure and distribution with unmatched precision. Featuring a waterproof capacitive tactile sensor array and integrated with the Chameleon Visualization Software, it provides product developers, engineers, and researchers with real-time, actionable insights to optimize spray processes and enhance performance.



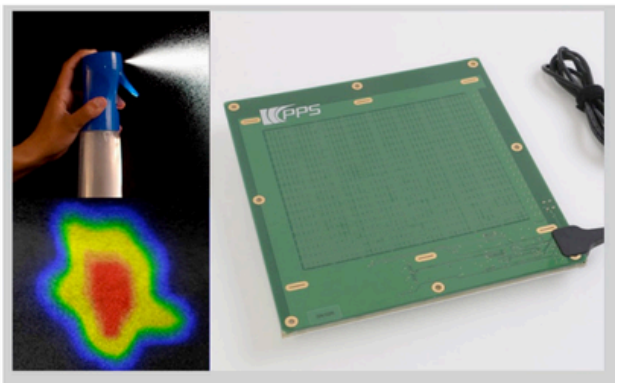
Widely utilized in semiconductor manufacturing, the system enhances wafer cleaning sprays by refining spray power to minimize wafer damage while maintaining effective cleaning. Its ultra-low-pressure sensitivity ensures accurate testing of cleaning sprays, aerosol nozzles, and other low-pressure applications. With high-speed sampling capturing every detail and an IPX4-rated durable construction, the system performs exceptionally in challenging environments, making it a versatile and reliable tool for precision applications.

Available in two variants, the **Spray Pressure Sensor** measures a wide range of spray pressures, while the **Spray Pattern Sensor** specializes in visualizing and quantifying fluid deposition and distribution patterns. Both variants ensure exceptional sensitivity and accuracy for diverse spray sensing needs.



Spray Pressure Sensor

- Visualize spray impact pressures
- Detect pressures as low as 10 Pa



Spray Pattern Sensor

- Capture material properties of sprays
- Image amount of fluid deposited

APPLICATIONS

The Spray Measurement Sensors, available in Pressure and Pattern variants, provide precise insights into spray processes by capturing both pressure and distribution data. Both variants feature a dense array of 1,920 sensing elements for accurate and detailed patterns. The Spray Pressure Sensor optimizes pressure jets, and uniform impact in semiconductor cleaning, while the Spray Pattern Sensor visualizes fine mist fluid deposition and mist dispersion in various applications.

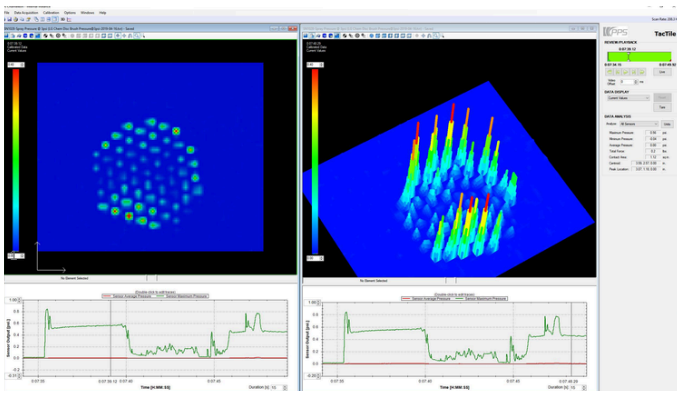
Built for demanding environments, these sensors deliver high spatial resolution, ultra-low pressure sensitivity, and real-time sampling at 200 Hz. They empower industries like consumer products, cosmetics, semiconductors, automotive, and pharmaceuticals to improve designs, reduce waste, and enhance efficiency.

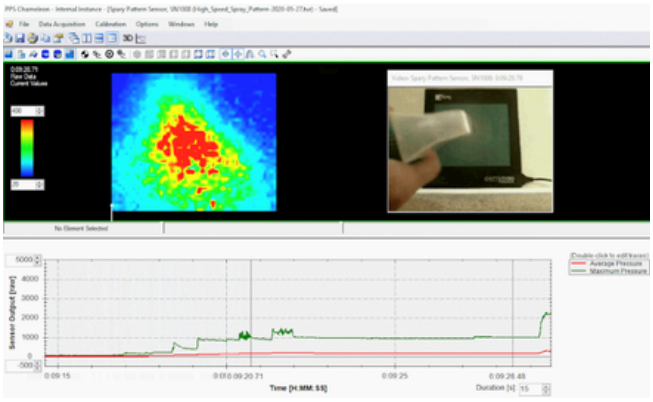
Spray Pressure Applications:

- **Industrial Washing:** Optimizes water impact pressures from various spray jets.
- **Industrial Processes:** Measures impact of air spray cleaning machines and guns.
- **Automotive Fuel Injectors:** Analyzes spray pressures for precision fuel injector systems.
- **Showering Comfort:** Evaluates and adjusts domestic shower spray pressures.
- **Product Process Improvements:** Assesses pressure from high-efficiency dishwasher nozzles.

Spray Pattern Applications:

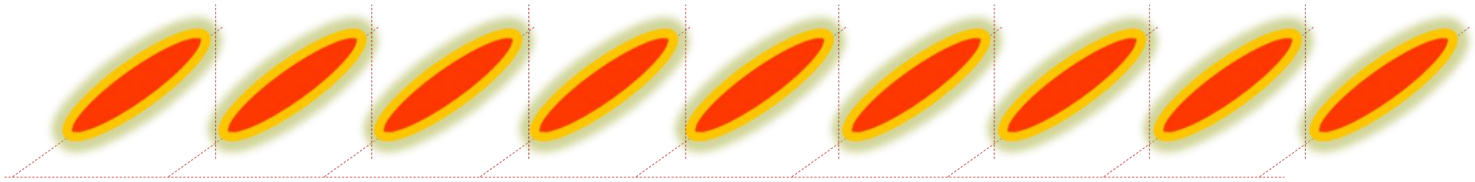
- **Consumer Products:** Optimize spray nozzles for household cleaning hand sprayers.
- **Cosmetics & Personal Care:** Visualizes spray patterns for atomizers and aerosols to ensure consistent distribution.
- **Automotive Windscreen Washers:** Map spray patterns for windscreen washers to optimize coverage
- **Pharmaceuticals:** Analyse mist patterns for accurate medical inhaler dosing



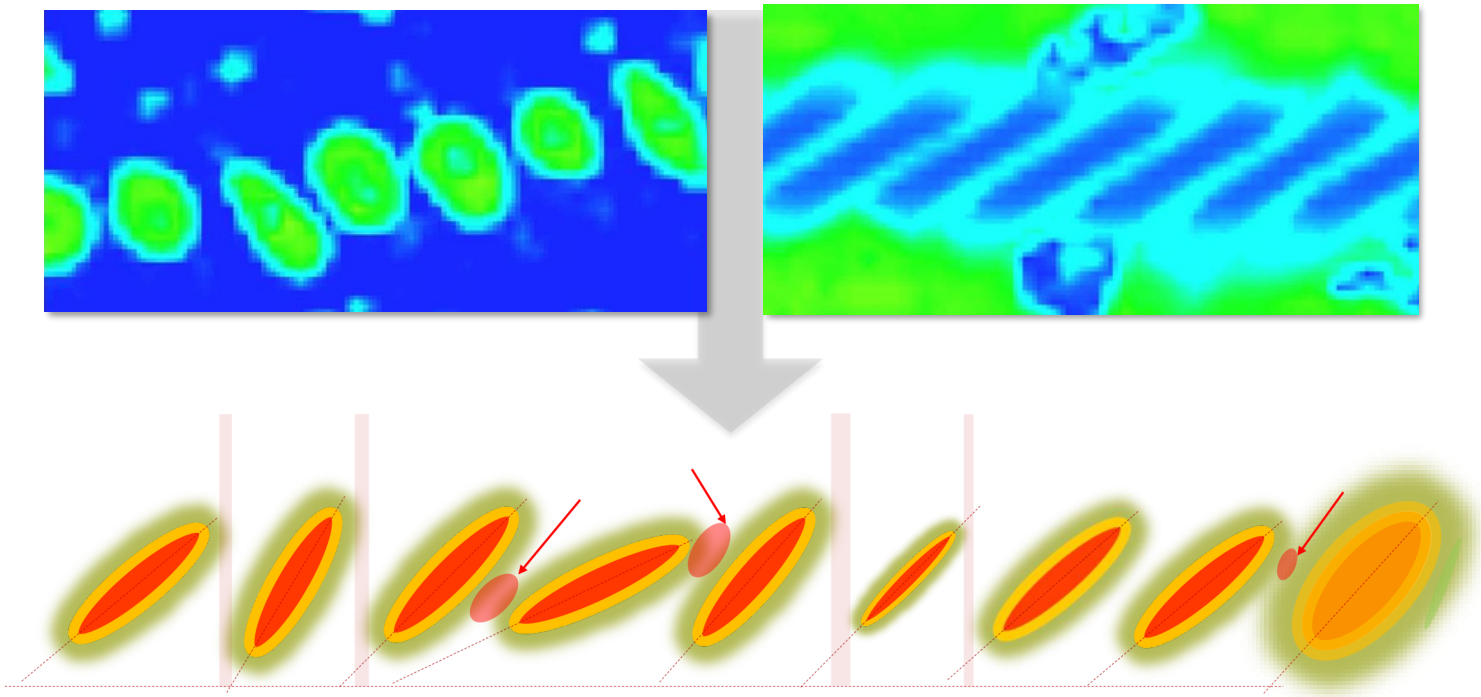


CASE STUDY APPLICATION

A customer could successfully detect each spray's misalignment and obtain valuable data on particle cleaning performance and spray pattern shapes. In the end, the customer could significantly improve cleaning performance more consistently and at a lower cost.



Ideal spray pattern and alignments



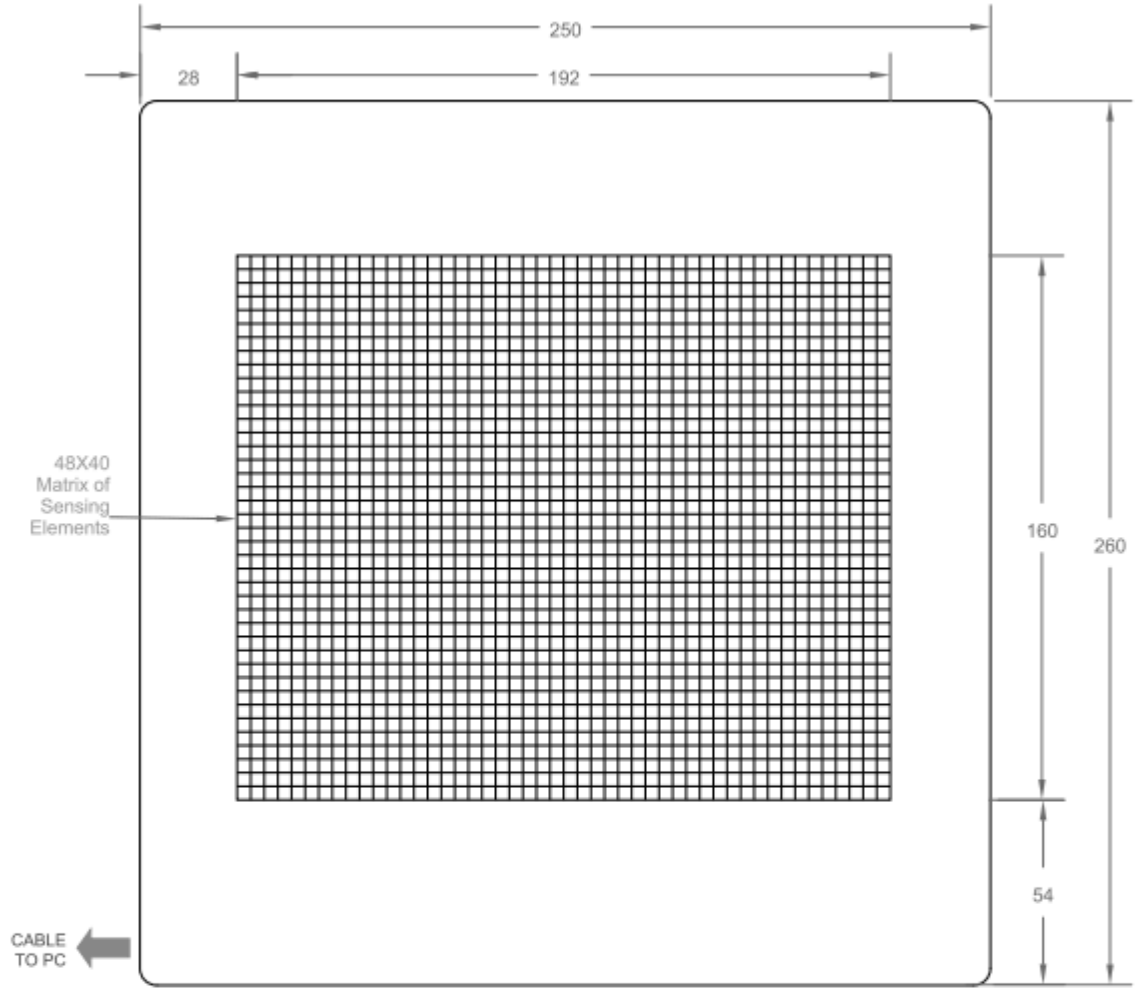
Observations

Comparison

FEATURE	SPRAY PRESSURE SENSOR	SPRAY PATTERN SENSOR
Primary Function	Accurately measures spray pressures across a wide range, from ultra-fine mists at 10 Pa (0.00145 psi) to high-impact jets past 20 psi	Visualizes and quantifies spray distribution, deposition patterns, and fluid flow dynamics.
Applications	Optimizing pressure jets, industrial coatings, automotive impact sprays, and quality checks for clogged nozzles.	Refining nozzle designs, analyzing mist patterns, and ensuring spray coverage.
Key Benefit	Ensures precise pressure readings for optimal performance in high-pressure applications.	Enables accurate visualization of spray patterns for improving nozzle efficiency and alignment.
Measurement Focus	Captures spray pressure, including force and impact data.	Maps spray distribution, identifying landing location and misalignments.
Sensitivity	Detect spray pressures of fine mists, pressure jets, and everything in between with accurate pressure measurement from 10 pa upwards	Ability to measure fluid deposition even for applications in which pressure is infinitesimal
Top Layer Material	Teflon Film: Durable, waterproof, and chemical-resistant, optimized for pressure measurement.	Sensitive layer optimized for fluid deposition and pattern visualization.

SPRAY PRESSURE SENSOR MODEL & METRICS

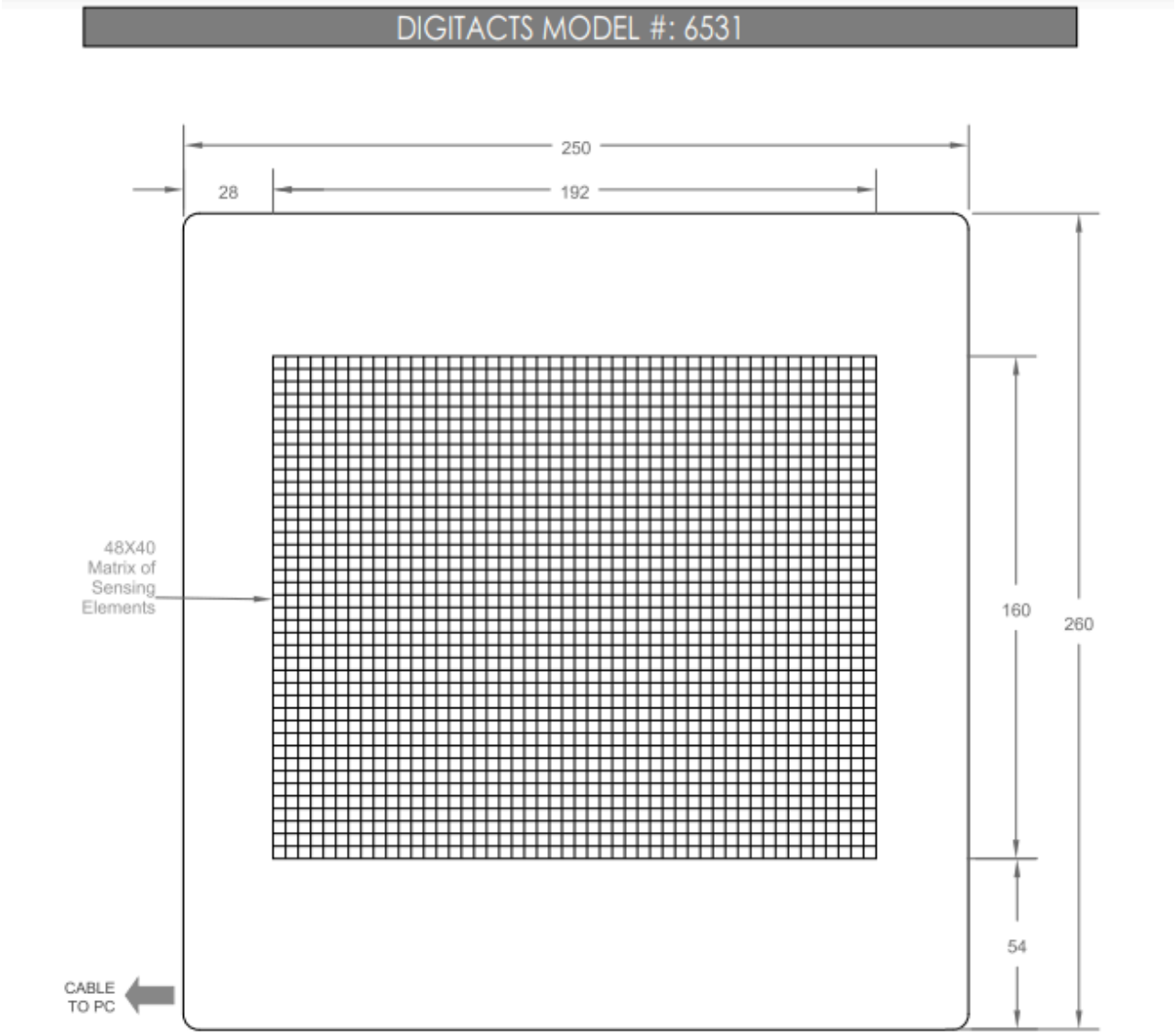
DIGITACTS MODEL #: 5491



DIMENSIONS IN mm

DIGITACTS SPECIFICATIONS	
ARRAY SIZE	48 x 40
ELEMENT SIZE	4mm x 4mm (0.16in. x 0.16in.)
ACTIVE AREA SIZE	192mm x 160mm (7.56in. x 6.3in.)
ACTIVE AREA THICKNESS	3.0mm (0.12in.)
MAX SCAN RATE	200Hz
I/O PROTOCOL	USB
INPUT VOLTAGE	5V
CABLE CONFIGURATION	1.5m (59in.) USB Cable

SPRAY PATTERN SENSOR MODEL & METRICS

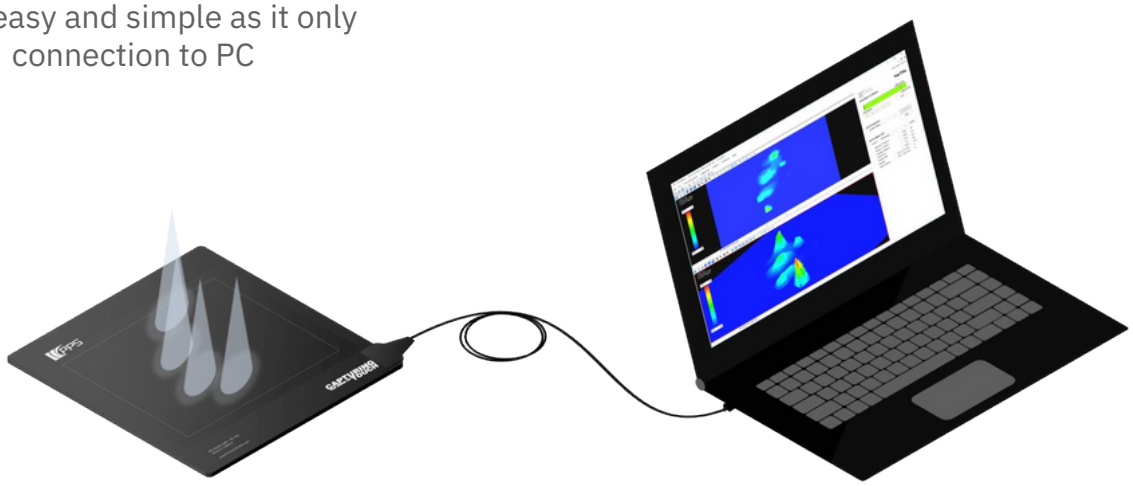


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SIMPLE AND EASY SYSTEM PREPARATION

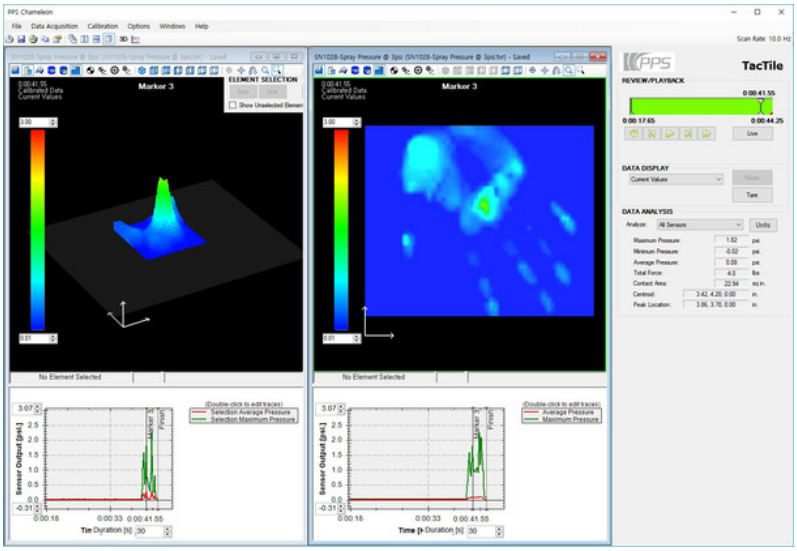
Operation is easy and simple as it only requires USB connection to PC



SOFTWARE

The Chameleon Tactile Visualization and Recording (TVR) software, included with every Spray Measurement System, enables real-time analysis and recording of spray pressure and distribution.

It provides both numeric and visual data, with features for export, replay, save, and analysis, ensuring seamless data management and actionable insights for spray sensing applications.



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