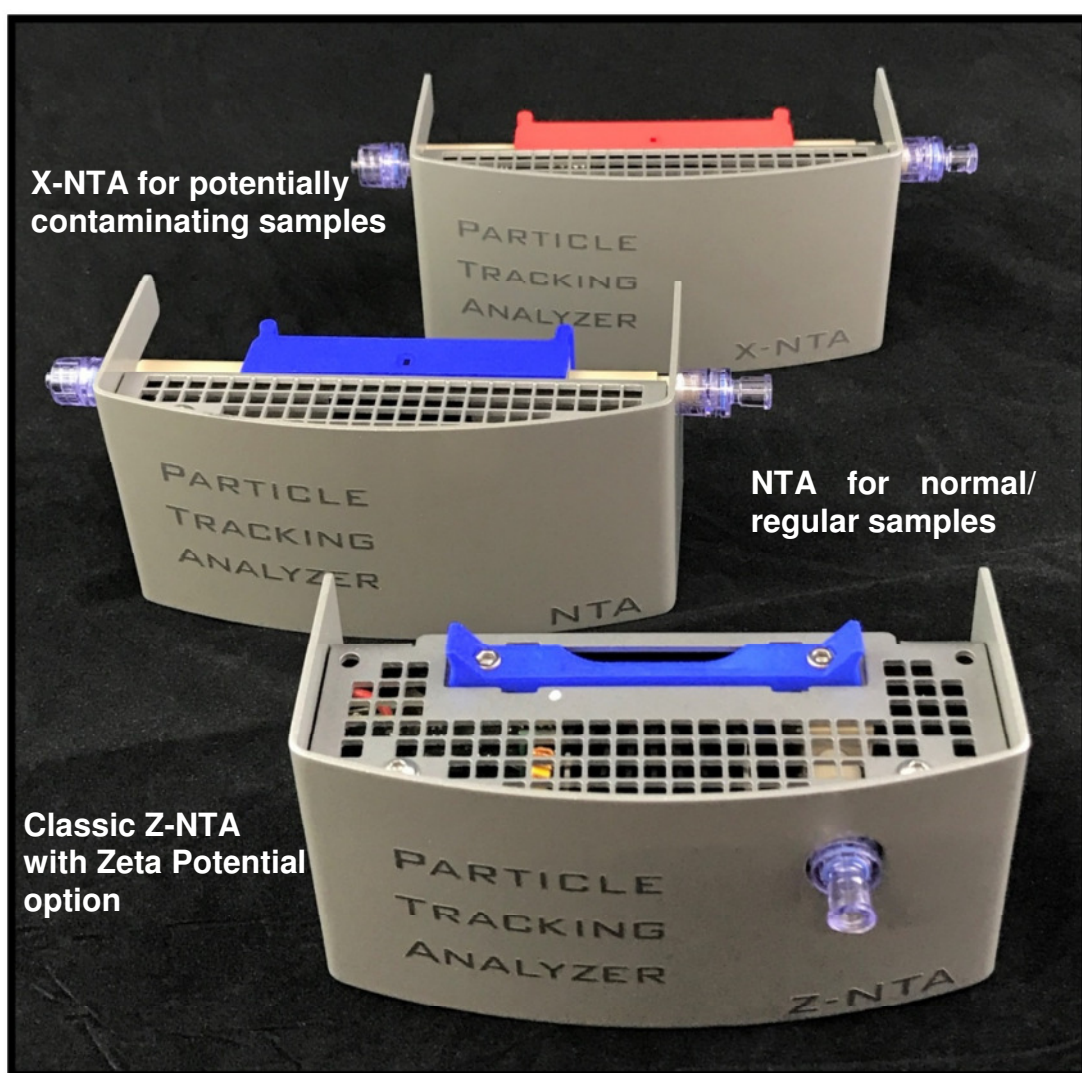


## Product Release

### The Scanning Nano Particle Tracking Analysis (NTA) ZetaView™ now for potentially hazardous samples

Particle Metrix now introduces two additional types of NTA Cell Assemblies: The new types are designed for concentration, size and fluorescence detection. When working in (bio-) safety level environment, X-NTA ensures secure handling for potentially contaminating samples. In addition, zeta potential option is featured with Z-NTA Cell Assemblies.



With all Cell Assemblies, size, concentration and sub-population measurements are possible, in scattering and fluorescent mode.

PARTICLE METRIX, November 2016

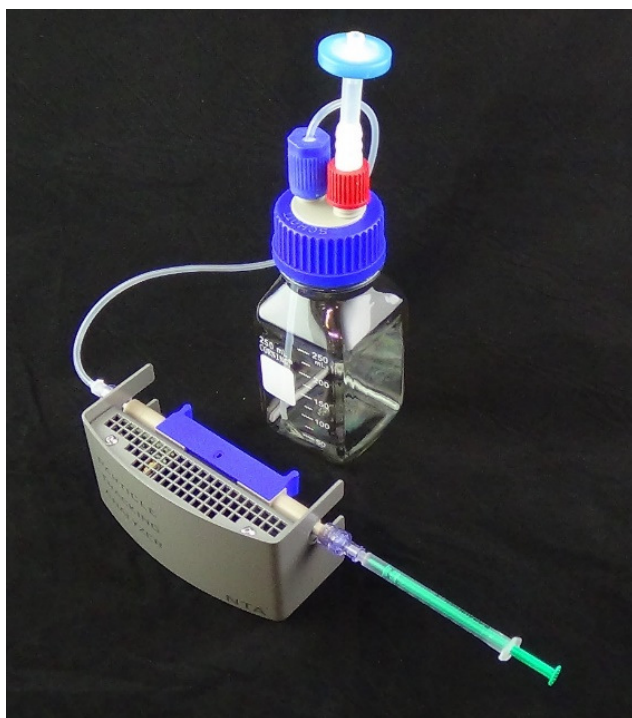
## Tech Note on new NTA and X-NTA Cell Assemblies for the ZetaView™

### Summary

The PARTICLE METRIX Scanning ZetaView™ can now be equipped with 3 different Cell Assemblies: **“Z NTA”** is the renamed classical multi-parameter Cell Assembly including electrophoresis zeta potential. The new innovation is the Cell Assembly for potentially contaminating samples, called **“X NTA”**, in which all analyses are possible with exception of zeta potential. The same capability is offered with the Standard “NTA” Cell Assembly, which can be used with standard non contaminating samples.

Table 1 lists the performance of all three Cell Assemblies:

Table 1 Cell Assembly name	Measurement Parameters			
	Concentration	Size	Fluorescence	Zeta Potential
<b>Z NTA (Classic)</b>	<b>X</b>	<b>X</b>	<b>X</b>	<b>X</b>
<b>NTA (Standard)</b>	<b>X</b>	<b>X</b>	<b>X</b>	<b>-</b>
<b>X NTA (marked)</b>	<b>X</b>	<b>X</b>	<b>X</b>	<b>-</b>



*Figure 1:  
Standard NTA Cell Assembly with blue cell holder, sample syringe and waste outlet.*

For the Z-NTA the classic cell arrangement remains unchanged but has a new name “Z-NTA” to differentiate it from the new Cell Assemblies. It has zeta potential capability as usual.

The new cell units consist of a reinforced quartz cell and its colored holder. The blue holder is designated for the standard (Fig. 1) and the red one for the X-NTA Assembly. Both new Cell Assemblies are designed for rapid routine use like concentration and size analysis experiments. Furthermore, fluorescence detection is possible.

The Cell Assemblies are designed against vibration and drift. Valves at both ends are disposable and ensure leaking free operation.

Other functions of the cell assemblies are listed in Table 2.

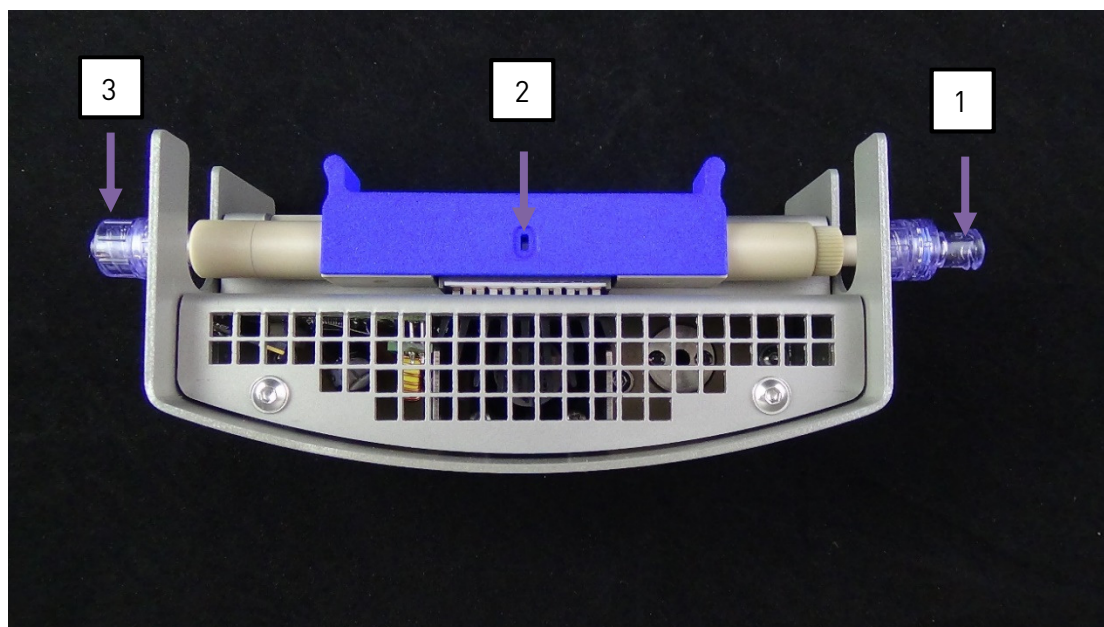
*Table 2: Functions of the Cell Assemblies*

Function	Z-NTA (classic)	NTA, X-NTA
Particle size distribution	YES	YES
Particle concentration	YES	YES
Fluorescence option	YES	YES
Zeta potential, profile and distribution	YES	NO
Conductivity	YES	NO
Temperature control 18 to 45 degrees (non-condensing)	YES	YES
Scanning sub-volumes (11 Positions)	YES	YES
Automatic rinsing and dosing	YES	Optional

The following functions of the ZetaView™ instrument are disabled when using NTA and X-NTA Cell Assemblies: Electrophoresis zeta potential, conductivity and automatic rinsing / dosing via the internal pumps.

## NTA Cell Assembly from the top

The Standard NTA (shown in Fig. 2) and the X-NTA Cell Assembly suit onto the standard ZetaView™ instrument Model PMX110.



*Figure 2: Top View of the Standard NTA Cell Assembly: (1) Valve of sample inlet. (2) Cell Unit is mounted at the center. (3) A check-valve at the sample outlet ensures leaking free operation, when the syringe is removed from port (1). The Unit (2) is red in case of the X-NTA Cell Assembly.*





Table 3 lists the materials in direct contact with the sample fluid.

*Table 3: Materials in direct contact with sample fluid:*

Material	Part
Polycarbonate	Check-Valves, Luer connector to the waste bottle, waste bottle
Silicone tubing	Waste line
PP and other	Syringe piston and plunger
PEEK	Adapter
Quartz	Measurement cell

## Color code

Standard NTA Cell Unit on blue holder	X-NTA Cell Unit on red holder
	
For regular samples. Here: disconnected from the Standard NTA Cell Assembly.	For potentially contaminating samples. Here: disconnected from the X-NTA Cell Assembly.

*Figure 3: Color code for the Cell Units; Standard NTA and X-NTA.*

## Replacement of the Cell Unit

The new quartz Cell Unit of the Standard NTA and X-NTA assembly is reinforced and therefore very robust. The Cell Unit normally stays in the Assembly, even for cleaning. However, the user may remove the Cell Unit from the Cell Assembly by removing one screw, which is done within seconds.

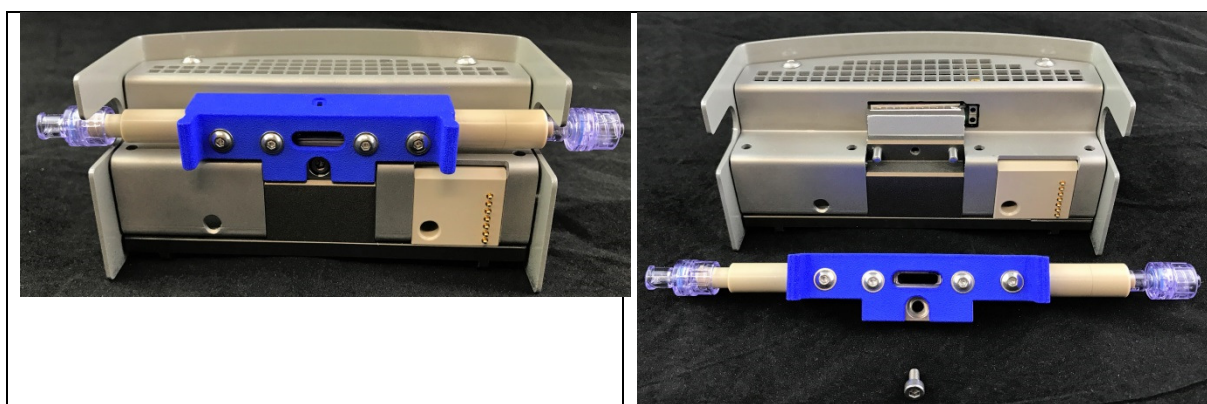


Figure 5: Cell Assembly with and without Cell Unit. Left: Cell Unit mounted to the cell cassette. Right: The Cell Unit has been removed from the Cell Assembly.

## Simple Cleaning procedure

Before cleaning, rinse with more than 5 mL of buffer or water, by using a syringe. Afterwards flush with water to remove any sample residues. Remove check valve on the injection side. Dilute cleaning detergent (e.g. 1 mL liquid soap in 50 mL) in water. Wet the pipe cleaner with the cleaning liquid. Insert pipe cleaner directly into the injection port **WITHOUT** check valve (Fig. 6 right). Fill at least 10 mL of clean water to remove the cleaning solution. The Cell Assembly can now be placed back onto the instrument and locked with a click.

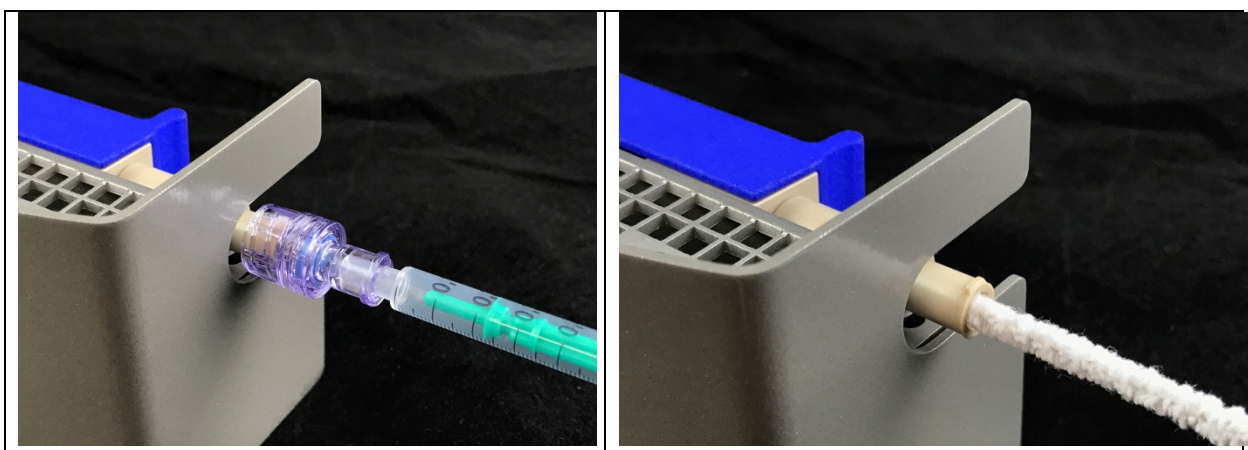


Figure 6: Rinsing with liquids (left). Before cleaning with pipe cleaner, remove check valve (right).

Particle Metrix GmbH is a company producing nanoparticle analyzers to measure size, concentration, zeta potential, fluorescence and pattern sub-populations. All instruments are complementary to each other in size and concentration range. Our design focusses on efficient and secure analysis.

For more information about our products visit our website at [www.particle-metrix.de](http://www.particle-metrix.de)

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