



**SEIKOWAVE**

**Brochure  
2024**

## Seikowave Company Overview

We live in a four-dimensional world of length, width, height and time. Our ability to make accurate measurements of these dimensions is critical to a wide variety of applications as diverse as measuring parts for automobiles, inspecting the back of semiconductor wafers, and designing dental implants. Seikowave was founded both in Japan and the United States in April 2010 in order to commercialize new technologies that can make high speed 3D measurements at an affordable price for diverse markets, and providing 3D scanners since the beginning. In October 2023, due to the merger of the US corporation with another company, Seikowave is now only a Japanese corporation, but we will continue to develop and sell 3D scanners and analysis software that can be used for close-up visual inspection, as well as measurement and analysis service.

The main applications are measurement and analysis of corrosion thinning of production equipment (pipes, pressure vessels such as reaction towers) in oil refining and petrochemical complexes, aging deterioration inspections of social infrastructure structures (bridge inspections, etc.), and flat structures. 3D measurement allows you to understand the surface shape of the object to be measured in 3D, and numerically capture changes over time, leading to more efficient equipment management. In addition, by color mapping and quantifying surface conditions such as damage, objective evaluations that do not depend on the level of experience of the person conducting the inspection become possible.

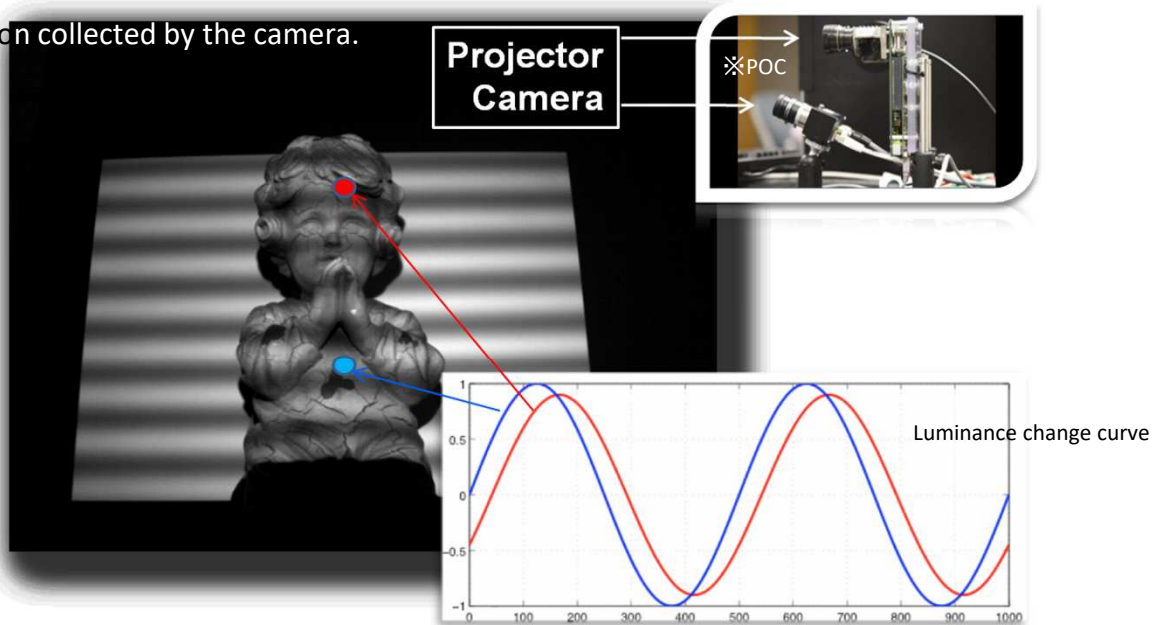
The analysis software provided by our company allows you to numerically understand corrosion depth and display a color map with simple operations.



Tachikawa headquarters office building (2<sup>nd</sup> floor)

## Seikowave Company Overview (3D Scanner Hardware)

3D measurement algorithms and optical systems are used in our 3D measurement systems. The fundamental measurement approach is a form of triangulation referred to as structured light. In a structured light measurement system, a series of patterns are projected onto an object. The patterns vary spatially in intensity in a sinusoidal manner; the spatial wavelength of the pattern is often referred to as the pattern pitch. The patterns are distorted by the three dimensional shape of the object under test. A camera is used to detect these distortions. The shape of the object is then calculated from the pixel information collected by the camera.



3D scanner 『3DSL-ScanProHD』

There are two types of software that utilize 3D data: Shape analysis software and FFS(Fitness-For-Service) evaluation software.

The shape analysis software "POLYGONALmeister (Seikowave edition)" was jointly developed with UEL Corporation, and is based on the function to easily edit and modify data acquired from a 3D scanner, and can express various surface features in a color map. The product is available as a set with a 3D scanner or as a stand-alone product.

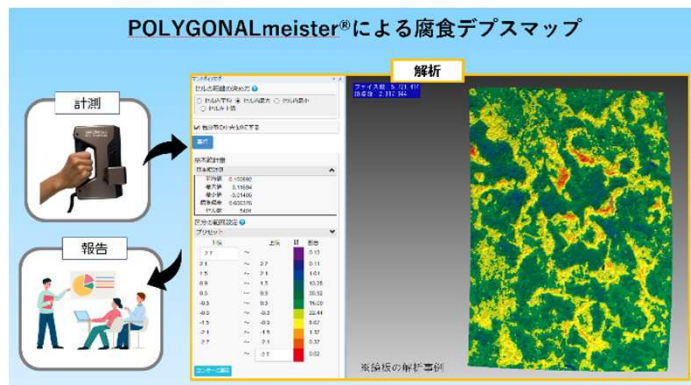


Image of "POLYGONALmeister (Seikowave edition)"

The Fitness-For-Service evaluation software is provided by "uni-Fitness" of IMC Co., Ltd. It conforms to the standards of the Japan Welding Engineering Society (ASME FFS-2/API-570, WES2820) and determines whether facilities such as refineries and chemical plants can be safely put into service even if they have corrosion thinning.

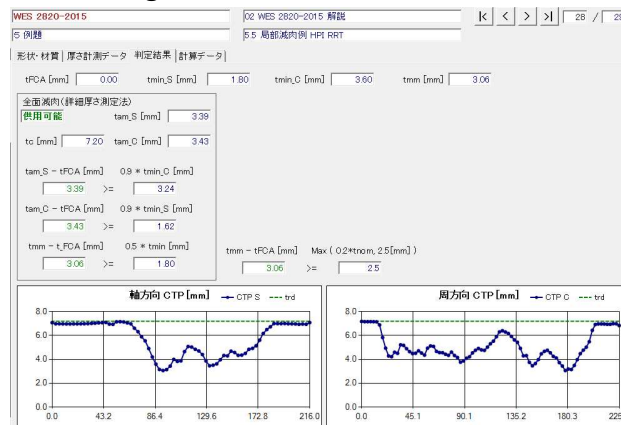


Image of Pass/Fail Decision of "uni-Fitness"

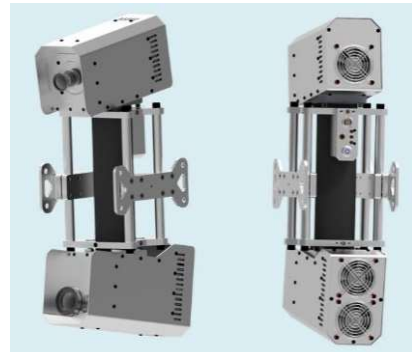
After measurement with the 3D scanner, analysis could be performed with "POLYGONALmeister" and the resulting data could be evaluated with "uni-Fitness".

# Seikowave Company Overview ( Previous 3D scanner development products )

3D scanners developed to date (in part.)



“Dental scanner” (First prototype)



“Puma2” (Customized products)  
Measuring range 1m × 1m



“LCG” (First generation mass-produced product)



“Hippo” (For underwater structure inspection)  
10 ATM water resistant



“Puma”  
(For runway surface crack inspection)



“Rhino” (Second generation mass-produced product)

For more information on how we can help you see what you’ve been missing, contact us.

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