SISCO 3D Optical Profilometer

User Manual

Technical Parameters and Configuration

Equipment technical parameters			
Host	Main Unit	DSF-S100 Measurement Main Unit	
	Image Sensor	20MP High-Definition Digital Camera	
	Measurement Range	100mm×80mm	
	Display Units	0.0001mm	
	Measurement Accuracy	±(3.0+L/50mm) μm	
	Camera Interface	USB 3.0 Interface	
	Lens	Dual Telecentric Lens	
	Software Version	DISOFOo-S One-Click Dedicated Software	
	Illumination System	Bottom Light Transmission System	Telecentric light transmission (color: green)
		Low-angle Surface Light Source	Movable and programmable LED light source (color: white)
	Power Supply Voltage	AC 100~240V 50/60Hz	
	Camera Voltage	Output/Rated Load: DC24V 0.6A or less	
System software	Basic software	DISOFOO-S One-Click Dedicated Software	
		USB Dongle	

Software Function Introduction	
Basic Measurement Functions	Points, lines, circles, multi-point lines, multi-point circles, automatic circles, spline curves, arcs, multi-segment circles, automatic radius angles, contour scanning
Annotation Functions	Aligned annotations, vertical annotations, angular annotations, radius/diameter annotations, area annotations, thread pitch diameter
Geometric Tolerances	Straightness, roundness, symmetry, contour, etc.
Virtual Construction	Centerline, bisector, tangent point, circle tangent point, circle center, line center, highest point, lowest point
Parameter Settings	Font, color, recognition mode, tolerance size, operation permissions
Report Functions	SPC analysis reports (CPK, CA, PPK, CP, PP values, process capability analysis, X-chart, R-chart)
Software Customization	CAD import contour curve analysis, automated management links, APP management applications
Inspection Quantity	99 data points/second
Template Quantity	Unlimited
Drive Mode	Programmable motor

Configuration List	Model	Quantity
Product Name	SISCO-PM-DESS100	1
Main Unit	Stage	1
Main Components	Body Glass	1
Carrier	Programmable Digital Light Source System (Built-in)	1
Control Box	Computer + 22" LCD Monitor	1
Computer	Dual Telecentric Lenses	1
Lens	Hikvision 20MP Digital Camera	1
Camera	DISOFOO-S One-Touch Dedicated Software (Dongle)	1
Software	Optical Grid Glass	1
Other Configurations	User Manual (Electronic Version)	1
Upper Light Source	Ring Light Source	1
Lower Light Source	Parallel Telecentric Light Source	1

Technical Description

A. Main Unit:

The DSF-S100 one-button rapid measuring instrument is a highly cost-effective measuring instrument in its class. It fills the gap between traditional precision measuring instruments and measuring machines. It is particularly well-suited to meet the rapid measurement requirements of high-precision products in industrial production.

Key Features:

1) Automatic image registration function: No need for workpiece positioning or fixtures; products can be placed anywhere for automatic identification and measurement; can simultaneously identify and measure multiple workpieces and output results;

2) The image sensor uses a high-definition 20-megapixel industrial camera, paired with a USB 3.0 transmission interface (transmission rate: 500MB/s), resulting in clear and detailed images;

3) Employs dual-sided telecentric lenses, combined with parallel telecentric transmitted light (transmission system), programmable four-zone ring shadowless illumination lamp (illumination system), coaxial illumination light, and low-angle shadowless illumination light (optional light source), ensuring the authenticity, stability, and observability of the image of the measured product. This makes the measurement data very close to the true value, and the repeated measurement data is also very stable, preventing operators from doubting the measurement results due to large data differences. 4) The instrument controller, manufactured using DISOFOO technology (available in built-in and external models), can be directly integrated with DISOFOO intelligent software, making instrument lighting control, worktable

movement control, and camera exposure control extremely simple and easy to operate.

5) The internal frame and worktable are made of aviation-grade aluminum profiles to ensure instrument stability; the outer casing uses sheet metal processing with high-quality baked enamel paint, which is natural, non-toxic, and aesthetically pleasing.

6) It adopts DISOFOO-S professional-grade one-button measurement software, which is powerful and intuitive to operate. With testing and adjustments by domestic software engineers, the software operation is further enhanced to be user-friendly.

Performance Specifications

Travel Range (mm)			External Dimensions (mm)			Main unit weight	Maximum weight of the workpiece being measured
X	Y	Z	Lx	Ly	Lz		
100	80	80	300	530	760	35kg	3kg

Environment Specifications

Measurement Room Temperature Requirements:	
Room Temperature (Temperature-controlled Room)	20±5℃
Temperature Gradient (Time)	5℃/24h
Measurement Room Humidity Requirements:	
Relative Humidity of Air	25-75%
Power Supply Requirements:	
Voltage Frequency	AC100~240V 50/60Hz
Voltage Frequency	50/60 Hz
Vibration Requirements:	
The measurement machine should not be placed near heavy machine tools or on unstable ground.	

B. Software System

DISOFOO-S One-Click Measurement Software

1) The software uses surface compensation calibration, achieving a repeatability accuracy of 0.003mm for standard parts and <0.003mm for repeated product measurements;

2) Basic software settings (such as calibration data, camera parameter settings, light source settings, and scale parameters) are saved in the config file, allowing for direct use without requiring cumbersome pre-programming by the customer.

3) Programming is simple. After programming, it can be directly registered and saved as the product name. The path can be saved according to the customer's preference.

When calling the program, clicking the program name will display a photo of the corresponding product in the image area, making it easy for the customer to identify whether it is the desired program. A "search" function is also included; entering the program name in the search area will allow the software to find the corresponding program. Furthermore, saved programs will not become unusable due to software or computer changes. After changing computers or reinstalling the software, the previously programmed program can be opened and used without any further settings. 4) The software boasts powerful measurement functions. Besides basic line drawing, distance, angle, and radius/diameter measurements, it also includes functions for finding the highest point, intersection points, contour scanning, electronic calipers, area measurement, contour measurement, longest distance measurement, shortest distance measurement, and center distance measurement.

5) It adds the ability to program different areas of the same product separately. After programming the same product, six area names (e.g., top, left, right, etc.) can be saved in its subdirectory. A single program can be used to measure different areas of the same product. Furthermore, the same product can be arranged in different areas on the instrument's workbench, and the software can directly call the area program in the subdirectory to perform the corresponding measurements.

6) Programming and modification are simple. If a previously programmed program has problems or the product settings have changed, the program can be recalled, the "Edit" function key clicked to modify the program, and then "Save" clicked. 7) Powerful reporting functions: Allows setting product tolerances and automatic judgment of pass/fail status; supports CPK analysis; saves frequently used tables in the "Common Reports" section for easy retrieval; and imports customer-created Excel master tables, directly outputting measurement data to specified cells and generating analysis within the report. Report saving formats include: PDF, DOC, XLS, TXT, etc.

8) Multiple lighting sources are available, broadening the range of measurable products: In addition to the standard 100*100 flat panel light (currently a commonly used one-button transmitted light illumination on the market), the bottom light can be equipped with a parallel far-core light source; the top light, in addition to the standard 360° LED shadowless lamp, can also be equipped with coaxial light and low-angle light, comprehensively solving the lighting needs for measuring various products.