SCANTECH™

Industrial 3D Measurement Solution

KSCAN-Magic Composite 3D Scanner

Website: www.3d-scantech.com | E-mail: info@sikantech.com | Tel: 0086 13386086936

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KSCAN Magic 3D Scanner Technical Proposal

1. Company Introduction

SCANTECH (HANGZHOU) CO., LTD is a high-tech enterprise specialized in developing, manufacturing and selling of intelligent visual inspection equipment. As one of the most professional 3D digital equipment suppliers, ScanTech has been granted and assigned numbers of technological patents.

R&D team developed series of 3D digital equipment with self-owned intellectual properties such as composite 3D scanner, handheld 3D laser scanner, global 3D scanner, color 3D scanner, tracking 3D scanner and global photogrammetry system.

2. Product Introduction

2.1 Overview

KSCAN-Magic series composite 3D scanner open up the first introduction of infrared laser + blue laser technology with five standard working modes: global initiative infrared laser large area scanning, blue laser crosses fast scanning, blue parallel laser fine scanning, single blue laser deep hole scanning, built-in photogrammetry system.

KSCAN-Magic series have a revolutionary breakthrough in performance. Its unparalleled scanning speed, accuracy, detail, scanning area, and depth of field greatly optimize the 3D measurement workflows and accelerate the product time-to-market. To obtain data on hard-to-reach or complex surfaces, KSCAN-Magic series can be equipped with portable CMM K-Probe, providing a comprehensive 3D digital solution for precision measurement.

2.2 Operation Principles

1) Two sets of cameras in scanner can respectively obtain the projection laser from the object. The laser will deform when scanner moving on the object surface, then we can calculate the linear 3D information from the laser as the distance between two cameras is accurately calibrated in advance.

2) Scanner identifies the spatial position according to the visual markers on the object surface when scanning, which is used for spatial position conversion.

3) The 3D position information where the laser goes through can be acquired by utilizing the linear 3D information and relative spatial position when scanner moves, thus form the continuous 3D information.

2.3 Features

Innovative Infrared Laser

- Global innovative infrared laser scanning technology
- Scanning area reaches 1440 mm × 860 mm

Effortless Efficiency

- 41 laser lines; 1,350,000 measurements/s

- Various scanning modes, greatly improving working efficiency

Extreme-clear Details

- Accurately obtain complete data on the surface of complex objects under hyperfine scanning mode

- Easily capturing every detail with resolution of 0.010 mm

Single Laser Line Scanning

- Precisely and quickly captures 3D data of deep holes and dead angle positions

Metrology-grade NDT Measuring

- 0.020 mm of scanning accuracy and 0.03 mm/m of volume accuracy

- Deliver ultra-high precision NDT for the aerospace industry.

No Fear of Harshness

- Super-high work adaptability in harsh environment

- Realistically restores the precise 3D data of reflective and black surface

Personalized Adjustment

- Due to 925 mm depth of field, users can freely adjust the working distance based on the performance of details, efficiency and scanning area

2.4 Parameter

Chart 1 KSCAN-Magic Technical Parameter

Type		KSCAN-Magic
Scan mode	Ultra-fast scanning	11 blue laser crosses
	Hyperfine scanning	7 blue parallel laser lines
	Large area scanning	11 parallel infrared laser lines
	Deep hole scanning	1 extra blue laser line
Laser lines in total		41
Accuracy		0.020 mm
Scanning rate		1,350,000 measurements/s
Scanning area		1440 mm × 860 mm
Photogrammetry system	Standard configuration	Built-in
	Scanning area	3760 mm × 3150 mm
	Depth of field	2500 mm
Laser class		CLASS II (eye-safe)
Resolution		0.010 mm
Volume accuracy	Work alone	Up to 0.010 mm + 0.030 mm/m
	Work with 1m reference bar	Up to 0.010 mm + 0.020 mm/m
	Work with MSCAN-L15	Up to 0.010 mm + 0.015 mm/m
Stand-off distance		300 mm
Depth of field		925 mm
sPortable CMM K-Probe	Optional	Support
	Single point repeatability	0.030 mm
	Tracking frequency	60 hz
Intelligent edge inspection module	Optional	Support
	Edge accuracy	0.030 mm
Pipe inspection module	Optional	Support
	Output formats	YBC / LRA / compensation value
Output formats		.stl, .ply, .obj, .igs, .stp, .wrl, .xyz, .dae, .fbx, .ma, .asc or customized
Operating temperature range		-10~40°C
Interface mode		USB 3.0
Patents		CN204902790U, CN206905709U, CN107202554, CN204902785U, CN106403845, WO2018049843, CN106500627, WO2018072434, CN106500628 , WO2018072433, CN206132003U, CN104501740，US10309770B2

2.5 Applications

- Automobile manufacturing
- Aerospace
- Power generation
- Mold manufacturing
- Casting inspection
- Construction machinery
- Design inspection
- Architecture sculpture
- Academic research

3. Configuration

ScanTech has the capacity of producing KSCAN-Magic series nearly 300 ~ 400 sets and adequate accessories per year, which can deal with emergency circumstances.

Chart 2 KSCAN-Magic Standard Configuration

Component	Quantity
3D scanner	1
Calibration target	1
Cable	1
Power adapter	1
12mm reflective markers	1000
6mm reflective markers	4000
3mm reflective markers	1000
Coding point	168
USB	1
Encryption lock	1
Waterproof case	1
ScanViewer software	1

4 Customer Support

4.1 Training

Our goal is to develop skills by providing flexible training according to participants' level of knowledge.

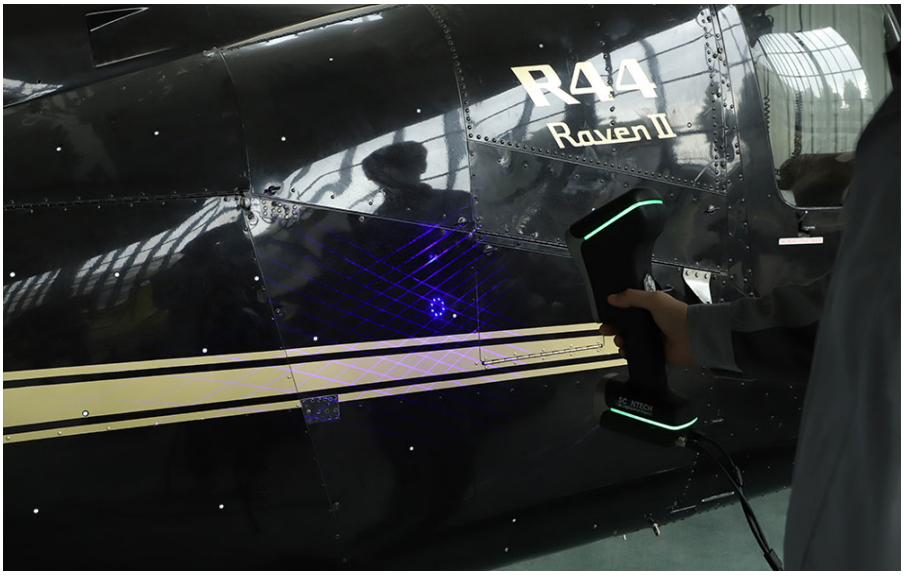
To ensure training effect and consistency, our professional trainers combine training plans with other tools to clearly explain training objectives, introduce the theory, guide hands-on experience and evaluate trainees.

4.2 Maintenance

ScanTech offers efficient service and support to ensure satisfactory solution.

We promise a one-year warranty after sale. Taking advantage of worry-free maintenance and repair coverage for all of your hardware and software, we will have a plan suited to your needs while your device is under warranty.

5. Application Cases


R44
Raven II