

3D OPTICAL PROFILER MODEL 7503

Chroma 7503 uses the technology of white light interference to measure and analyze the surface profile of micro-nano structures with sophisticated scanning system and innovative algorithms. It can work with monochrome camera as required for microscope measurements.

The latest modular design of Chroma 7503 has flexible configurations that can comply with diversified test applications. When equipped with electric nose gear, maximum 5 types of lens can be mounted and switched directly for use without changing manually. In addition, the equipped electrical adjustment mobile platform is able to adjust and position the sample automatically. The large scanning range of vertical and horizontal axis is applicable for various auto measurements. Nondestructive and rapid surface texture measurement as well as analysis can be done on the sample without any preprocessing that is most suitable for R&D, production, process improvement and academic research.

Chroma 7503 can achieve 60mm when Z vertical axis is used to measure the scanning stroke. Also the horizontal axis is able to reach sub-micro resolution when a PC is used to control the mobile platform as demand. The fast calibration procedure and algorithm theory enables the system calibration result to be traced to NIST standard. Combined with several innovative, robust and reliable algorithms, Chroma 7503 has the quality of high precision and large scale measurement.

The commercial white light interference analyzers frequently use the centroid algorithm to calculate the surface height. Since the light diffraction causes incorrect height calculation of some positions and

results wrong profiling data, Chroma 7503 applies the most advanced 3D Profiler Master software along with the interference signal process algorithm of Chroma to analyze the spectrum of white light interference and prevent the boundary error problem.

The system has dark point process function to filter out and correct the data that is incapable of creating interference to reduce the error in measurement. Since the dark point process runs while the data is retrieving, the dark point filter function can be executed effectively; meanwhile the correction is made by referencing the surrounding data that makes the measurement more robust and reliable.

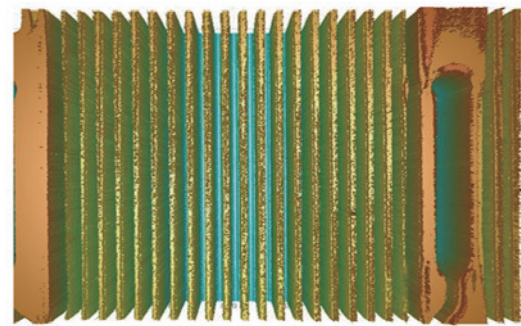
Master software analyzes and corrects the data of surface texture, also provides complete profiles in icon. It has more than 150 lines or surfaces profiling parameters including roughness, ripple, flatness, apex and valley. The high pass filter, low pass filter, fast Fourier transformation and cusp removal space filter tools allow the user to filter out the high/low/ bandpass signals. The software has polynomial fitting, region growth, the entire surface and multiple area leveling tools that can be used for data processing and analysis flexibly.

Chroma 7503 has 3D measurements with fast switch of ratio and large area map interlinking function that can cope with various applications' needs. Furthermore, the flexible modular design allows customization for practical use to gain the balance between price and performance. Chroma 7503 is the best choice for improving efficiency and saving cost.

MODEL 7503

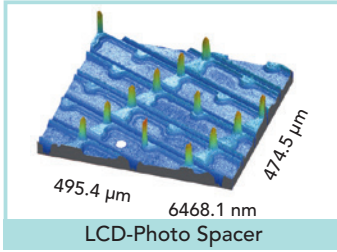
KEY FEATURES

- Use white light interference measurement technique to do nondestructive and rapid surface texture measurement and analysis
- Modularized design to select parts based on test demands or budget concerns
Equipped with LED light source for long time using
- Provide various surface measurement parameters, such as sectional difference, included angle, area, dimension, roughness, waviness, film thickness and flatness
- Equipped with dark point and boundary error correction algorithms
- Friendly user interface with simple graphical control system and 3D graphics display
- Exchangeable file format to save and read various 3D profile file formats
- Provide Chinese/English user interface for switch
- Provide measurement script for auto test

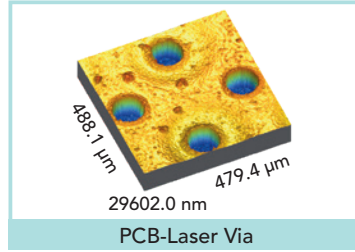


Chroma

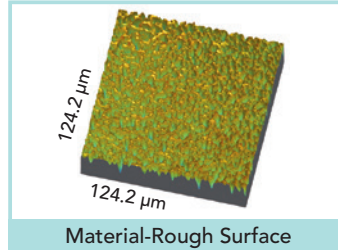
APPLICATIONS



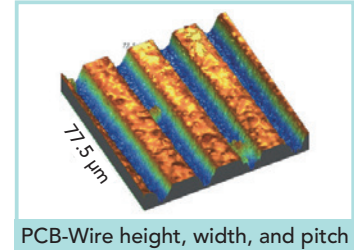
LCD-Photo Spacer



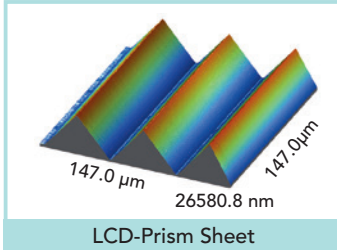
PCB-Laser Via



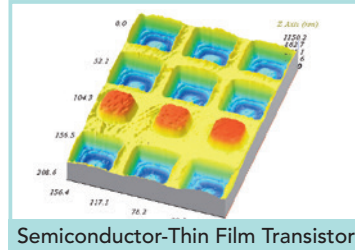
Material-Rough Surface



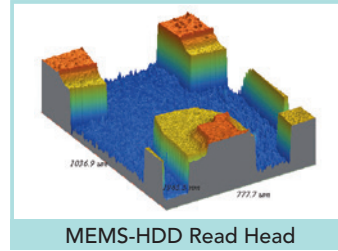
PCB-Wire height, width, and pitch



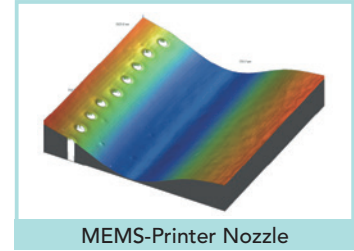
LCD-Prism Sheet



Semiconductor-Thin Film Transistor



MEMS-HDD Read Head



MEMS-Printer Nozzle

SPECIFICATIONS

Model		7503
Measurement		Noncontact 3D measurements
Imaging System (CCD Camera)		1280 x 1024 pixels (Mono)
Interference Objective Lens	Manual	10X, 20X, 50X, 100X
	Auto	5X, 10X, 20X, 50X, 100X
Nosepiece	Manual	None (single hole)
	Auto	Motorized rotary (5 holes)
Supported Tube Lens Ratio		1X
Light Source		White light LED
Measurement Mode		VSI ^{*1} ; PSI ^{*2}
XY Mobile Platform	Manual	150mm x 150mm
	Auto	250mm x 200mm; 100mm x 100mm
Z axis Platform	Manual	60 mm
	Auto	50 mm
Level Adjustment Platform		X ± 8°; Y ± 6°
Vertical Direction	Accuracy	≤ 9nm @ 8.0 μm Standard Step Height ^{*3}
	Repeatability	≤ 0.05nm @ 1σ 44 nm Standard Step Height ^{*3}
	Scan Speed	48 μm/sec ^{*4}
Operating System		Microsoft Windows® 64bits Chinese & English
IPC		High-performance PC
Monitor		24 inch LCD
Operating Environment		Noise: ≤ 60 dB; Environment Vibration: VC-C or above
Input Voltage Range		90~120 VAC, 220~240 VAC
Operating Temperature/Humidity		15~35°C (47°F to 67°F); less than 75% relative humidity (non condensing)
Vibration		Tabletop Vibration Isolation Platform
Dimension (H x W x D)		782mm x 316mm x 555mm ^{*5}
Weight		Approx. 180KG ^{*5}

Note*1: VSI: Vertical Scanning Interferometry

Note*2: PSI: Phase Shift Interferometry

Note*3: Based on Chroma Testing Conditions

Note*4: Based on Chroma Testing Conditions @1280x1024 pixels

Note*5: Will be different according to optional items

*All specifications are subject to change without notice.

ORDERING INFORMATION

7503 : 3D Optical Profiler

Interference Objective Lens : 2.5X, 5X, 10X, 20X, 50X, 100X

XY Platform : Auto 250mm x 200mm / 100mm x 100mm ; Manual 150mm x 150mm

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Search Keyword

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HEADQUARTERS
CHROMA ATE INC.
88 Wenmao Rd.,
Guishan Dist.,
Taoyuan City
333001, Taiwan
T +886-3-327-9999
F +886-3-327-8898
www.chromaate.com
info@chromaate.com

U.S.A.
CHROMA ATE, INC.
(U.S.A.)
7 Chrysler, Irvine,
CA 92618
T +1-949-421-0355
F +1-949-421-0353
Toll Free +1-800-478-2026
www.chroma.us.com
info@chromaus.com

EUROPE
CHROMA ATE EUROPE B.V.
Morsestraat 32,
6716 AH Ede,
The Netherlands
T +31-318-648282
F +31-318-648288
www.chroma.eu.com
salesnl@chromaeu.com

CHROMA GERMANY GMBH
Südtiroler Str. 9, 86165,
Augsburg, Germany
T +49-821-790967-0
F +49-821-790967-600
www.chroma.eu.com
salesde@chromaeu.com

JAPAN
CHROMA JAPAN
CORP.
888 Nippa-cho,
Kouhoku-ku,
Yokohama-shi,
Kanagawa,
223-0057 Japan
T +81-45-542-1118
F +81-45-542-1080
www.chroma.co.jp
info@chroma.co.jp

KOREA
CHROMA ATE
KOREA BRANCH
3F Richtogether
Center, 14,
Pangyoeyeok-ro 192,
Bundang-gu,
Seongnam-si,
Gyeonggi-do
13524, Korea
T +82-31-781-1025
F +82-31-8017-6614
www.chromaate.co.kr
info@chromaate.com

CHINA
CHROMA ELECTRONICS
(SHENZHEN) CO., LTD.
8F, No.4, Nanyou Tian
An Industrial Estate,
Shenzhen, China
T +86-755-2664-4598
F +86-755-2641-9620
www.chroma.com.cn
info@chromaate.com

SOUTHEAST ASIA
QUANTEL PTE LTD.
(A company of Chroma Group)
25 Kallang Avenue #05-02
Singapore 339416
T +65-6745-3200
F +65-6745-9764
www.quantel-global.com
sales@quantel-global.com