

# CCD影像光學測長機

CCD OPTICAL IMAGE MEASURING & SCANNING MACHINE

## 超精密測量掃描雙用型

(超高精密型) WC-ML400CNG-DXF  
CNC Automatic Vision Measurement System  
(Sp High Accuracy Scanning)



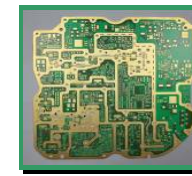
創造完美精確測量掃描效率

Achieving high efficiency and precise accuracy in measuring and scanning

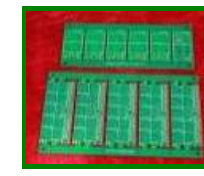
### 主要應用 Main Application :

太陽能矽晶電池廠、電子 PCB 電路板、線路成型、底片網板、各種金屬雷射加工件等  
Apply to: Solar cell, PCB, silk screen and other work piece.

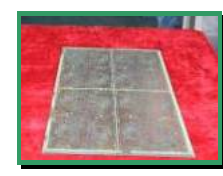
PCB 電路板  
PCB Printed Circuit Board



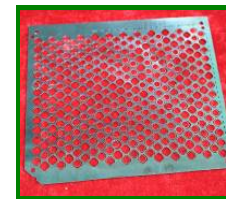
電路板成型測量  
Metal terminals



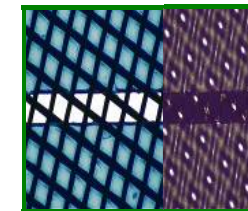
電路板線內外層  
Multi-layers



金屬雷射加工件  
Metal work piece



大太陽能網版內外線測量  
Silk Screen



軟性電路板  
FPC Printed Circuit



矽晶太陽能電池  
Solar Cell



銘板類  
Nameplate



電子零件  
Electronic components



### 主要特點 Main Features :

|  |   |  |   |
|--|---|--|---|
| <p>建立程式撰寫檔名<br/>Measuring route programming system</p>     | <p>跨視野 APT 影像自動對位<br/>搜尋功能<br/>APT image auto positioning/ searching function</p> | <p>網版 CNC 跨視野斷線搜尋功能<br/>CNC cross field of view connections blob search function</p> | <p>網版直網線比對掃描<br/>Scanning comparison of vertical lines of silk screen</p>                                 |
|  |   |  |   |
| <p>矽晶太陽能全自動量測<br/>Solar Cell CNC automatic measurement</p> | <p>美國 CNC 搖桿<br/>USA CNC joystick</p>   | <p>德國無牙螺桿<br/>Thread less Bolt</p>   | <p>影像玻璃校正片<br/>Calibration gauge</p>  |
|  |   |  |   |
| <p>美國 ZOOM 光學鏡頭<br/>USA optical Zoom lens</p>              | <p>矽晶太陽能電池吸氣治具<br/>Vacuum suction device (optional)選配</p>                         | <p>玻璃框自由高度壓平裝置<br/>(選購)<br/>Anti-collision device (optional)</p>                     | <p>測量標準美國國家標準玻璃光罩校正機台。<br/>The machine is calibrated with the glass mask that meet N.I.S.T. standard.</p> |
|  |   |  |   |

- 針對太陽能矽晶板及精密太陽能矽晶網版、精密線寬量測最大網框 450x450mm。  
Precise measuring of line width of Solar Cell and its silk screen. Max size: 450x450mm
- 程式教導設定料號對位點、測量材料工件等、靠邊放置抬面後、  
The program could set part number and register mark to measure work piece. Image indentifying system would find the register mark and proceed measurement after the work piece placed on the working table.
- CNC 控制系統、程式編輯、程式教導後、自動變化倍率、自動對焦、自動量測。  
CNC controlling system. Magnification, focus and measurement could be proceeded automatically after editing the program.
- 採用歐洲精密光學尺。Equipped with European precise linear scale.
- 照片四合一、2D 多張圖片接合。
- Image composite function that could composite 2D photos.
- 採用精密花崗岩基座及無牙螺桿傳動、高精度永久性穩定。  
Precise granite base and threadless bolt transmission offer high accuracy and permanent stability.
- CNC 視覺量測軟體、量測迅速、自動判定、自動取點、線、圓、弧之量測。  
Auto pattern identifying and measuring of point, line, circle and arc proceeded by CNC measuring software.
- 量測數據可輸出至 EXCEL 或內建兩種報表格式轉印 PDF、方便編輯製輸出報表。  
Measured data could converted into excel or other report formats and save as PDF file.



## 軟體主要功能 Main Software functions

具備完整 2 合一量測和最新掃描功能。  
Complete geometry measuring functions(New & Scanning system)

具備精確影像自動尋邊功能及快速自動對焦、使量測更精確。  
With precise images automatically find the edge function and Auto Focus function

APT 影像辨識自動對位量測。  
APT image recognition, using for automatic Coordinate alignment

提供點、線、圓、弧、影像自動尋邊工具。  
Point, line, circle, arc, image automatic boundary detection tool

掃描 D X F 檔案輸出。  
Measuring results & Scanning output with DXF file format.

量測數據可輸出至 EXCEL 或內建兩種報表格式轉印 PDF、方便編輯製輸出報表。  
The measured data can be exported to EXCEL or built-in report format Transfer PDF to facilitate the

## 規格表 Specifications

| MODEL   | WC -ML400CNG-DXF  |  |
|---|---|--|
| 系統 system   | C N C 自動影像量測&掃描系統 D X F 檔案輸出。<br>(超高精密型)CNC automatic vision measurement & Scanning system<br>Scanning output with DXF file format.   |  |
| 可放置最大尺寸<br>Max dimension of work piece  | 寬 X 軸 600 深 Y 軸 460mm 高 Z 軸 150mm<br>最大網框 450x450mm 矽晶片 5"125x125mm /6"156x156mm  |  |
| 有效量測範圍<br>Measuring Rang  | X 軸 370 Y 軸 270mm Z 軸 150mm<br>X axis 370mm Y axis 270mm Z axis 150mm   |  |
| XY 軸線性精度<br>XY Axis Accuracy  | 2+L/150(um)<br>重覆性精度 2um (玻璃光罩標準圓) Calibration glass mask   |  |
| 最小單位 Minimum readout  | Resolution 0.1um  |  |
| CCD Camera  | 彩色高解析 CCD CAMERA /1/2" Color  |  |
| 標準配置<br>美國 OPTEM 光學同軸光組電動鏡頭 Zoom70XL<br>USA OPTEM Optical Lens Motor,with Encoder<br>光學倍率 0.75X~5.25X | 標準 Standard   | 光學倍率 Optical Mag. 0.75X~5.25X  |
|   | TV Tube 1.0X  | 影像倍率 Image Mag. 26X~156X<br>視野 FOV 6.3x8.5~0.91x1.2mm 工作距離<br>Working distance 89mm  |
|   | 標準 Standard   | 光學倍率 Optical Mag. 1.5X ~10.5X  |
|   | 2X 物鏡 2.0x<br>Auxiliary Lens 2X   | 影像倍率 Image Mag. 60X~300X<br>視野 FOV 3.1x4.2~0.45x0.61mm 工作距離<br>Working distance 32mm |
| 自動對焦<br>Auto focus  | 影像自動調整對焦<br>Image Auto focus  |  |
| 光學尺<br>Linear scales Resolution   | 解析度 0.1um   |  |
| 選配裝置<br>(optional)  | 玻璃框自由高度壓平裝置 (選購) Anti-collision device (optional)   |  |
|   | 矽晶太陽能電池吸氣治具(選購) Vacuum suction device (optional)  |  |
| 傳動控制<br>Transmission  | CNC 控制伺服馬達搭配德國無牙螺桿<br>CNC servo motor with threadless blot  |  |
| 光源 Illumination   | 反射白色環形 LED (4 分區切換可選購)<br>透射可調光 LED 冷光源, 同軸光可調光亮雷射位置座標燈<br>LED ring reflection light (Quad model is optional) LED transmission light Adjustable coaxial light Laser<br>position point light |  |
| 標準環境 Environment  | 溫度 22°C±2°C ; 濕度 55%RH ±10% Temperature: 22°C±2°C ; humidity: 55%RH ±10%  |  |
| 工業級電腦 Computer  | INTEL Core i5-CPU 記憶體:4GB HD 500GB DVD-ROM WINDOWS 7  |  |
| 螢幕 Monitor  | 22" LCD   |  |
| 軟體 Measuring Software   | 2.5D 量測掃描軟體<br>2.5D Measuring Software & Scanning system  |  |
| SPC Software  | EXCEL   |  |
| 電壓 Power  | 220V Single Phase 50/60HZ/6A  |  |
| 外觀尺寸 Dimension  | 寬 74cm 深 78cm 高 162cm(含電腦桌寬度+Table:W148cm)  |  |
| 重量 New Weight   | 300kgs  |  |

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