**Specifications Comparison Table of Mistubishi Laser Drilling System**

| Subject | | | ML605GTF (2-head,4-beam) | ML605GTF3 (2-head,4-beam) |
|---|---|---|---|---|
| 設備基本介紹<br>Basic Introduction | 用途/功能<br>Function | | 三菱CO2電路板雷射鑽孔機，使用三菱電機獨家的技術，達到封裝基板業界的頂級生產性，加工品質方面，加工較難加工的填料環氧樹脂也可有高品質、高精度的小孔徑加工成果。<br>Mitsubishi CO2 Laser Drilling System for PCB, using specific technology from Mitsubishi, can reach top productivity in panel sealing industry.<br>As for the quality of manufacturing, even for more difficult manufacturing of epoxy resin can have high quality, high precision of small drilling holes effect. | 三菱CO2電路板雷射鑽孔機，使用三菱電機獨家的技術，達到封裝基板業界的頂級生產性，加工品質方面，加工較難加工的填料環氧樹脂也可有高品質、高精度的小孔徑加工成果。<br>Mitsubishi CO2 Laser Drilling System for PCB, using specific technology from Mitsubishi, can reach top productivity in panel sealing industry.<br>As for the quality of manufacturing, even for more difficult manufacturing of epoxy resin can have high quality, high precision of small drilling holes effect. |
| 加工機<br>Laser machine | Table的大小<br>Table size | mm | 745x575 | 745x575 |
| | 加工範圍<br>Processing Workpiece dimension | mm | 620x560(包含固定式自動Galvano補正領域,Fθ鏡片掃描範圍,能量測定領域)<br>620x560(including fix auto Galvano compensation area, F θ lens scanned area, and power measurement area) | 620x560(包含固定式自動Galvano補正領域,Fθ鏡片掃描範圍,能量測定領域)<br>620x560(including fix auto Galvano compensation area, F θ lens scanned area, and power measurement area) |
| | Alignment Mark檢出範圍<br>Alignment Mark Detecting range | mm | 620x560 | 620x560 |
| | 行程<br>stroke | mm | 900x700x70 | 900x700x100 |
| | Table移送速度<br>Max. feed rate | m/min | 50 | 50 |
| | XYZ移動最小設定單位<br>Min. Movement of XYZ axis | mm | 0.001 | 0.001 |
| | 決定Table位置精度<br>Positioning accuracy | mm | 0.005/900(X)0.005/700(Y) | 0.005/900(X)0.005/700(Y) |
| | Galvano掃描速度<br>Scanning frequency | point / sec | 1450 | 2400 |
| | Galvano最大掃描範圍<br>Scan area(MAX) | mm | 25x25( High convergency fθ ) | 30x30( Wide-High focusing fθ lens) |
| | 決定Galvano位置精度<br>Positioning accuracy | mm | ±0.015 | ±0.015 |
| 發振器<br>Oscillator<br>(CO2 laser) | 雷射型號<br>Model | | 5150U | 5350UM |
| | 雷射方式<br>Excitation | | CO2三軸直交<br>CO2 3-axis cross-flow | CO2三軸直交<br>CO2 3-axis cross-flow |
| | 雷射波長<br>Wavelength | nm | 9300 | 9300 |
| | 雷射定格出力<br>Rated power output | W | 150 | 210 |
| | 雷射脈衝周波數<br>Frequency setting range | Hz | 10~10000 | 10~10000 |
| | 雷射脈衝幅<br>Width of pulse setting range | μS | 4、16 | 16~25(中玻) |
| 控制裝置<br>Control function | NC裝置CPU<br>NC-control CPU | | 64bit | 64bit |
| | 畫像處理裝置<br>Image processing unit | | 內藏型<br>Buil-in | 內藏型<br>Buil-in |
| | 操作面板<br>Simplified operation screen | | 觸控式面板<br>Touch panel | 17吋觸控面板式TFT<br>17"Touch panel |
| 加工方式<br>Processing Method | 適合種類<br>Processing Type | | direct | direct |
| 加工材料<br>Material | 適合材料<br>Material Type | | ABF材料 | ABF材料 |
| 加工孔徑<br>Via diameter | 盲孔孔徑<br>Blind via diameter | direct | 50um以上 | 50um以上 |
| | laser gas 交換時間<br>Time of exchange laser gas | | 48hr | 96hr |
| | 電極<br>Electrodes | | 標準電極 | 陶瓷電極 |
| | 妨礙氣體sensor | | 無<br>N/A | 標準 |
| | 安全性軟體 | | 無<br>N/A | 標準 |