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Thick Film Chip Component Trim System

LT3200 & LT4200

ChipR Trim™

High performance Chip Trim System designed specifically for Thick Film Components down to the latest 01005 products.

L-TRIS INSTRUMENTS

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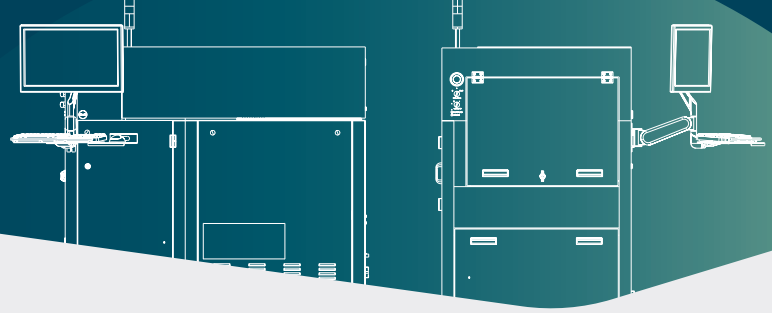

ChipR Trim™ LT3200 & LT4200

Specifications

Optical System

- **Beam positioner type** | High Speed closed loop galvanometer
- **Spot Size**[1] | 30 µm
  | 20 µm (optional)
- **Field size** | 75 x 10 mm
  | 65 x 10 mm (20 µm spot)
- **Depth of Focus** | 305 µm
  | 135 µm (20 µm spot)
- **Positioning Accuracy** | ± 25 µm
- **Repeatability** | ≤ 12.6 µm
- **Resolution** | 1.1 µm

[1] Minimum spot size. Maximum = 1.5X minimum.

Laser System

- **Type** | Diode pumped Q-switched YAG
- **Wavelength** | 1064 nm
- **Output Power / Pulse Width** | 6 W / 70 ns
  | 6 W / 30 ns (optional)

X/Y/Z Part Positioning

- **Closed loop servo controlled stepper**
  - X / Y Travel | 100 mm x 200 mm
  - X / Y Resolution | 1 µm
- **Probing**
  - Z force | 10 lbs (4.5 kg)
- **Part Stage**
  - Choice of edge or center snugging
  - Venturi generated vacuum hold down
  - ± 3.0° stage rotation with 0.001° resolution

Part Viewing

- **Dual CCD camera system for High and Low Mag viewing**
- **30 µm IR (nominal factory settings)**
  - High Mag Viewing Field | 1.7 x 1.2 mm
  - Low Mag Viewing Field | 11.0 x 8.0 mm
- **20 µm IR (nominal factory settings)**
  - High Mag Viewing Field | 1.7 x 1.2 mm
  - Low Mag Viewing Field | 8.0 x 6.0 mm
- **Vision Processing Choices**
  Pattern recognition with Edge Detection or Edge Detection.

Measurement System

- **Type** | High Speed, Force V, current nulling bridge
- **Range** | 0.1 Ω – 1000 MΩ
- **Resistance measurement accuracy (full Kelvin)**
  - Low Range (< 50 Ω) | ± 0.02 % ± (1.0 % / R)
  - Mid Range | ± 0.02 % of value
  - High Range (> 160 K) | ± 0.02 % ± 0.02 % per MΩ
- **Active Guard Measurement**
  200 mA guard driver
- **DC Voltage Measurement Accuracy**

Range	Accuracy (% FSR)
100 mV – 400 mV	± 0.10 %, ± 1 mV
1 V – 16 V	± 0.05 %, ± 1 mV
10 V – 160 V	± 0.05 %, ± 5 mV

- **Voltage Source**

Range	Resolution	Accuracy (%FSR)
± 4 V	31 µV	± 0.008 %
± 16 V	125 µV	± 0.005 %
± 32 V	250 µV	± 0.005 %

Handler Subsystem

- **Substrates** | 50 mm x 60 mm
  | 60 mm x 70 mm (optional)
- **Stacks** | 2 input, 1 output (Capacity dependent on substrate thickness)
- **Stack Height** | 75, 145, 275 mm (selectable)
- **Pick & Place** | Adjustable mini-suction cups
- **Snugger** | Edge Snugger
  | Center snugger (optional)

Software

- **ChipTrim** | standard software
  | Multi-lot, multi-job processing
- **VersiTrim** | Laser trim language library
  | Microsoft® C / C++ Compiler
- **Windows™ 10 Operating System**

Utility Requirements

- **Power** | 100 / 120 / 230 / 240 VAC ± 10 % 50 / 60 Hz, single phase 20 A max
- **Air** | 80 psi @ 4 SCFM (113 l / m) filtered to 5 µm and free of contaminants

Optional Equipment

- **Low-ohm option (5 mΩ – 1 Ω)**
  - Uses standard 4 T probe cards

Range	Accuracy
0.005 Ω – 0.1 Ω	± 0.50 %
0.1 Ω – 1 Ω	± 0.25 %

- **Additional matrix**
- **GPIB interface**
- **GPIB instrumentation package**
- **Arc lamp, water cooled laser**

Benefits

- Spot size down to 20 microns
- Diode-pumped laser technology for minimum maintenance, long term stability and high reliability
- Patented beam calibration and vision system for automatic alignment and precise laser positioning
- High Speed handler manages thin substrates used with the latest generation small geometry chip resistors
- Wide range measurement system
  - 5 milli-Ohms to 1 Gig Ohm
  - Traceable measurement certification
- ChipTrim™ Software
  - Graphical user environment dedicated to chip trimming
  - Globalized language support

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