

# SIENNA<sup>™</sup> 200 series

Entry-level dual beam laser wire stripping systems for small gauge wires used in electronics applications.



#### Dual beam laser wire strippers

The SIENNA 200 series is the entry-level range of CO2 infra-red laser wire stripping systems designed and manufactured by Spectrum Technologies.

SIENNA 200 series systems are compact, bench-top systems suitable for processing the majority of wire types and insulation materials used in electronics manufacture, specifically consumer electronics, medical and telecommunications applications.

The systems have laser beam focusing heads at the top and bottom of the tooling fixture and the beam alternates between the two to process above and below the wire.

The systems come in three configurations: single axis where the laser head has only one direction of movement; dual axis where there are two axes of movement; and fixed beam, where the laser head is fixed in one place.

The fixed beam version is usually set up with a moving external stage allowing the cables and/or assemblies to be moved around freely beneath the laser beam. This offers more processing flexibility.

Speed and laser power are easily adjusted using the integrated control keypad on the single axis and fixed beam versions; the dual axis version can also be programmed and controlled by PC.

#### Benefits of the SIENNA 200 series

- High quality and damage-free the laser is reflected off the conductor, plating, or other metallic surfaces
- Accurate
- Repeatable
- One machine for all wire configurations single wire, twisted pairs, coaxial and ribbon cables
- · Processes multiple wires or cables simultaneously
- Laser strips high temperature, hard or soft insulation materials effectively
- End strips, window strips and other patterns easily performed in one operation
- Increased job storage on dual axis versions due to PC software

To comply with health and safety requirements, air exhaust must be provided when using any laser wire stripper. If this is not available in your factory, Spectrum's ACS-5 systems remove all smoke, odors, particles and fumes from the laser stripping area and return clean air to the room.



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#### www.spectrumtech.com

#### **Summary Specification**

Model	SIENNA 210S	SIENNA 210D	SIENNA 225FB	
Laser		10 Watt air cooled CO2 Class 1		
Configuration	Single axis	Dual axis	Fixed beam	
Control	Microprocessor with keypad	Microprocessor with keypad or PC	Microprocessor with keypad	
Wire Types	Single core wire Twin leads Twisted pairs Multi-conductor & ribbon cables			
Wire Sizes	<6mm (0.24") OD Or ribbon cable <100mm (4") wide			
Accuracy	+/- 0.2 mm (0.008")			
Process Area	100mm in X or Y direction	100 mm x 100 mm (4" x 4")	N/A	
Strip patterns	End strips only	End strips, longitudinal strips, window strips, simple patterns	N/A	
Insulation types (non-exhaustive)	PTFE / Teflon® Tefzel® PVC Polyurethane Silicon Kapton® Polyimide Polyesterimide			
Power Requirements	110 - 120 Vac, 50/60 Hz 3 Amp. 1 phase 220 - 240 Vac, 50/60 Hz 1.5 Amp. 1 phase			
Operating Conditions	<ul> <li>Ambient temperature 15°C to 30°C (60°F to 86°F) as standard</li> <li>Relative humidity 20% to 80% (non condensing)</li> </ul>			
Dimensions L x W x H	1085 x 410 x 510 mm         1085 x 410 x 510 mm           (43" x 16" x 20")         (43" x 16" x 20")		980 x 410 x 510 mm (38.5" x 16" x 20")	
Weight	45kg (99 lbs.)	40kg (88 lbs.)		
Options	• ACS5			

#### Examples of cable and strip patterns that can be processed

Flat ribbon cable, 18 mm (0.71") wide, end stripped by a dual axis SIENNA system



S200US-140220

3mm (0.1") OD coaxial cable, end stripped and window stripped using a SIENNA 210D



- 5mm OD high temperature shielded 3 core cable; end strip & window strip performed by a SIENNA 210D
- All SIENNA systems are Class 1 laser products for use on open shop floor, unless otherwise stated
- Complies to CAT 3 electrical safety category and all CE marking and FDA regulations
- 12 month return to base warranty on all new systems
- Worldwide customer support from a dedicated team of Field Service Engineers or by fully trained Service Agents
- Technical helpline operating across the global clock
- Operational training for Production and Technical personnel carried out at installation
- Maintenance contracts available to keep systems operating at optimum performance

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## SIENNA<sup>™</sup> 300 series

High power dual beam laser wire stripping systems for stripping thicker and tougher insulation materials



#### High power dual beam laser wire strippers

The SIENNA 300 series is the higher power version of the SIENNA 200 CO2 infra-red laser wire stripping systems designed and manufactured by Spectrum Technologies.

SIENNA 300 series systems are bench-top systems suitable for processing wire and cable with tougher, higher resistance insulation materials, as well as the more standard wire and cable used in electronics manufacture.

The systems have laser beam focussing heads at the top and bottom of the tooling fixture allowing the beam to alternate between the two, to process above and below the wire.

The systems are available in two laser powers: 25 or 50 Watt, and in two configurations : single axis where the laser head has only one direction of movement; or dual axis where there are two axes of movement.

Speed and laser power are easily adjusted using the integrated control keypad on the single axis and fixed beam versions; the dual axis version can also be programmed and controlled by PC.

#### Benefits of the SIENNA 300 series

- High quality and damage-free the laser is reflected off the conductor, plating, or other metallic surfaces
- Easy and clean stripping of tough insulation materials
- Accurate
- Repeatable
- One machine for all wire configurations single wire, twisted pairs, coaxial and ribbon cables
- · Processes multiple wires or cables simultaneously
- Laser strips high temperature, hard or soft insulation materials
   effectively
- End strips, window strips and other patterns easily performed in one operation
- · Increased job storage on dual axis versions with to PC software
- Higher power laser options

To comply with health and safety requirements, air exhaust must be provided when using any laser wire stripper. If this is not available in your factory, Spectrum's ACS-5 systems remove all smoke, odours, particles and fumes from the laser stripping area and return clean air to the room.



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#### **Summary Specification**

Model	SIENNA 325S	SIENNA 325D	SIENNA 350S	SIENNA 350D
Laser		25 Watt air cooled CO2 Class 1		cooled CO2 is 1
Configuration	Single axis	Dual axis	Single axis	Dual axis
Control	Microprocessor with keypad	Microprocessor with keypad or PC	Microprocessor with keypad	Microprocessor with keypad or PC
Wire Types	Single core wire Twin leads Twisted pairs Multi-conductor & ribbon cables			
Wire Sizes	<6mm (0.24") OD Or ribbon cable <100mm (4") wide			
Accuracy		+/- 0.2 mm	n (0.008")	
Process Area	100mm (4") in X or Y direction	100 x 100 mm (4" x 4")	100mm (4") in X or Y direction	100 x 100 mm (4" x 4")
Strip Patterns	End strips only	End strips, longitudinal strips, window strips, simple patterns	End strips only	End strips, longitudinal strips, window strips, simple patterns
Insulation types (non-exhaustive)	PTFE / Teflon® Tefzel® PVC Polyurethane Silicon Kapton® Polyimide Polyester Fibreglass Polyethylene Nvlon			
Power Requirements	110 - 120 Vac, 50/60 Hz 3 Amp. 1 phase 220 - 240 Vac, 50/60 Hz 1.5 Amp. 1 phase			
Operating Conditions	<ul> <li>Ambient temperature 15°C to 30°C (60°F to 86°F) as standard</li> <li>Relative humidity 20% to 80% (non condensing)</li> </ul>			
Dimensions L x W x H	1045 x 605 x 510 mm (41" x 24" x 20")			
Weight	65kg (143 lbs) 65kg (143 lbs)			
Options	• ACS5			

Examples of cable and strip patterns that can be processed

16 mm ribbon cable, end stripped and partially removed by a single axis SIENNA 325 system



£7;

- 4 x 2 Infiniband cable, outer jacket, mylar layer and inner polymer insulation stripped with SIENNA 300 system
  - All SIENNA systems are Class 1 laser products for use on open shop floor, unless otherwise stated
- Complies to CAT 3 electrical safety category and all CE marking and FDA regulations
- 12 month return to base warranty on all new systems
- Worldwide customer support from a dedicated team of Field Service Engineers or by fully trained Service Agents
- Technical helpline operating across the global clock
- Operational training for Production and Technical personnel carried out at installation
- Maintenance contracts available to keep systems operating at optimum performance

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# SIENNA<sup>™</sup> 500 series

High power rotary laser wire stripping systems for complete and accurate stripping around the circumference of large gauge wire and cable



#### **Rotary laser wire strippers**

The SIENNA 500 series utilises Spectrum Technologies' patented rotary laser beam delivery technology to move the beam 360 degrees around the wire ,as well as along the wire.

This patented beam delivery method makes the SIENNA 500 series particularly well suited for stripping larger gauge wires and cables up to 22 mm (0.88") in diameter.

With two axes of movement, radially and longitudinally, cross-cuts and slits along the wire lengths are possible. End strips up to 200 mm (7.87") in length are possible as well as window strips for backshell termination purposes.

SIENNA 500 series systems are compact, bench-top systems with a 10 or 30 Watt laser making them suitable for processing a range of insulation types including thicker, tougher materials.

Speed and laser power are easily adjusted using the integrated control keypad however there is an option for PC control software for easier programming and increased job storage.

The SIENNA 500 series comes with a set of interchangeable wire guide tubes and collets depending on the diameter of the wire or cable to be stripped.

#### Benefits of the SIENNA 500 series

- Complete and clean stripping around the circumference of large gauge wire and cable
- High quality and damage-free the laser is reflected off the conductor, plating, or other metallic surfaces
- Easy and clean stripping of tough insulation materials
- Accurate
- Repeatable
- Laser strips high temperature, hard or soft insulation materials effectively
- End strips, cross cuts, window strips
- Increased job storage with PC software

To comply with health and safety requirements, air exhaust must be provided when using any laser wire stripper. If this is not available in your factory, Spectrum's ACS-5 systems remove all smoke, odours, particles and fumes from the laser stripping area and return clean air to the room.



To discuss any of your requirements please contact us at sales@spectrumtech.com or on +44 (0)1656 655 437.

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#### **Summary Specification**

Model	SIENNA 510	SIENNA 530	
Laser	10 Watt air cooled CO2	30 Watt air cooled CO2	
Configuration	Rotary axis	Rotary axis	
Control	Microprocessor with keypad	Microprocessor with keypad	
Wire Types	Single wires Jacketed, shielded multi-conductor cables	Single wires	
Wire Sizes	1 mm < 22mm OD	1 mm < 22mm OD	
Accuracy	+/- 0.2 mm (0.008")	+/- 0.2 mm (0.008")	
Process Area	Strip lengths <200 mm (7.8")	Strip lengths <200 mm (7.8")	
Rotation Speed	50mm/sec	50mm/sec	
Insulation types (non- exhaustive)	PTFE / Teflon® Tefzel® PVC Polyurethane Silicon Kapton® Polyimide Polyesterimide Polyester Fibreglass Polyethylene Nylon	PTFE / Teflon® Tefzel® PVC Polyurethane Silicon Kapton® Polyimide Polyesterimide Polyester Fibreglass Polyethylene Nylon	
Power Requirements	110 - 120 Vac, 50/60 Hz 6 Amp. 1 phase 220 - 240 Vac, 50/60 Hz 3 Amp. 1 phase	110 - 120 Vac, 50/60 Hz 6 Amp. 1 phase 220 - 240 Vac, 50/60 Hz 3 Amp. 1 phase	
Operating Conditions	<ul> <li>Ambient temperature 15°C to 30°C (60°F to 86°F) as standard</li> <li>Relative humidity 20% to 80% (non condensing)</li> </ul>	<ul> <li>Ambient temperature 15°C to 30°C (60 to 86°F) as standard</li> <li>Relative humidity 20% to 80% (non condensing)</li> </ul>	
Dimensions L x W x H	780 x 330 x 520 mm (31" x 13" x 20.5")	780 x 330 x 520 mm (31" x 13" x 20.5")	
Weight	45kg (99 lbs)	45kg (99 lbs)	
Options	<ul> <li>ACS5</li> <li>PC and control software</li> <li>Power calibration kit</li> </ul>	<ul> <li>ACS5</li> <li>PC and control software</li> <li>Power calibration kit</li> </ul>	

#### Examples of cable and strip patterns that can be processed

13mm (0.5") OD tape wrapped aerospace power lead with an end-strip and window strip performed by a SIENNA 530



12mm (0.47") OD power lead, end-stripped with a slit using a SIENNA 530

- All SIENNA systems are Class 1 laser products for use on open shop floor, unless otherwise stated
- Complies to CAT 3 electrical safety category and all CE marking and FDA regulations
- 12 month return to base warranty on all new systems
- Worldwide customer support from a dedicated team of Field Service Engineers or by fully trained Service Agents
- Technical helpline operating across the global clock
- Operational training for Production and Technical personnel carried out at installation
- Maintenance contracts available to keep systems operating at optimum performance

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## SIENNA<sup>™</sup> 600 series

High performance fixed-beam laser wire stripping systems with moving stage for high speed, high throughput applications



# Stripping

#### High performance fixed-beam laser wire strippers with fast moving stage

The SIENNA 600 series is a range of fixed-beam laser wire strippers with a high speed dual axis stage designed for high throughput applications.

The SIENNA 600 series has a large processing area of 390mm x 290mm (15.35" x 11.41") and is particularly suited to large volume batch processing of small micro-coaxial cables used in electronics and medical device applications.

It is a free-standing unit contained in a single cabinet with an access door for placing the items to be processed.

The system is PLC controlled with a touch screen Human-Machine Interface ("HMI") to make data input and programming much easier. A USB port allows simple upload and download of job files from an external PC or laptop.

The SIENNA 600 has been designed so that two different laser types can be integrated into the system depending on the application - standard insulation removal or scribing of metal shields.

Key features and benefits of the SIENNA 600 series include:

- Maximum process speed of 300mm/second (11.8"/second)
- High positioning accuracy levels: +/- 0.1mm (0.004")
- Large process area: 390mm x 290mm (15.35" x 11.41")
- Colour touch-screen HMI for fast programming
- USB port for job upload/download from laptop/PC
- Large job store on machine over 100 jobs
- Password protection access at different levels
- Simple to set-up and maintain
- Choice of laser type and power depending on application (contact Spectrum to discuss and check availability):
  - Standard stripping (25 Watt & 50 Watt)
  - Shield scribing (20 Watt and 30 Watt)

To comply with health and safety requirements, air exhaust must be provided when using any laser wire stripper. If this is not available in your factory, Spectrum's ACS-5 systems remove all smoke, odours, particles and fumes from the laser stripping area and return clean air to the room.



To discuss any of your requirements please contact us at sales@spectrumtech.com or on +44 (0)1656 655 437.



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Model

Control

Laser Power

Configuration

**Summary Specification** 

Wire Types	<ul> <li>Twin leads</li> <li>Twisted pairs</li> <li>Multi-conductor shielded cables</li> <li>Ribbon cables</li> </ul>	<ul> <li>Shielded wire</li> <li>Shielded ribbon cables</li> <li>Coax / Micro-coax</li> </ul>	
Wire Sizes	<6mm OD (0.24") Or <300mm (11.8") wide for ribbon cable	<1mm OD	
Processing Speed	Up to 300 mm/seco	ond (11.8"/second)	
Positioning Accuracy	+/- 0.1 mn	· · · /	
Strip Range	390 mm x 290 mm (15.35" x 11.41")		
Insulation types (non-exhaustive)	Kapton® PTFE ETFE / XLETFE PFA FEP XL-Polyalkene PVF2 / PVDF PVC Silicone XLP Formvar® Polyester Fibreglass PET Nylon®	Metal shields	
Power Requirements	230V-50Hz or 110V-60Hz		
Operating Conditions	<ul> <li>Ambient temperature 15°C to 30°C (60°F to 86°F) as standard</li> <li>Relative humidity 20% to 80% (non condensing)</li> </ul>		
Dimensions (L x W x H)	1200 mm x 1000 mm x 1500 mm (47.2" x 39.4" x 59.1")		
Weight	165 Kg		
Options	ACS-5 Air Cleaning System		

**SIENNA 600** 

Standard

25 or 50 Watt

Single core wire

Dual axis, high speed stage

PLC with touch screen HMI

- All SIENNA systems are Class 1 laser products for use on open shop floor, unless otherwise stated
- Complies to CAT 3 electrical safety category and all CE marking and FDA regulations
- 12 month return to base warranty on all new systems
- Worldwide customer support from a dedicated team of Field
- Service Engineers or by fully trained Service Agents
- Technical helpline operating across the global clock Operational training for Production and Technical personnel
- carried out at installation
- Maintenance contracts available to keep systems operating at optimum performance

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**SIENNA 600** 

SR

20 or 30 Watt



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# SIENNA<sup>™</sup> 700 series

High performance laser wire stripping systems for the fast, damage-free and high quality removal of wire insulation from complex fine wires and cable assemblies



#### High speed, high specification laser wire strippers

The SIENNA 700 series is an augmented version of the SIENNA 200 and 300 series machines. The 700 series offers high speed, high precision insulation removal for complex fine wire & cable assemblies.

The SIENNA 700 series is particularly suitable for use in the manufacture of critical medical device cable assemblies and other high-specification electrical items.

New features of the SIENNA 700 series are as follows:

- Faster processing More than 5 times faster than previous models
- Improved accuracy +/-0.01mm
- Touch screen interface for easier programming
- USB job upload/download from laptop/PC
- Larger job store over 100 jobs
- Password protection access at different levels
- Simple to set-up and maintain
- Optional bar code job selection
- Optional networking
- More customisable:
  - Laser power 25W or 50W CO2; 20W or 30W scriber
  - Dual axis (DA) or dual axis with automatic wire handling (AWH)

The 700 series is also available as a dual axis Scriber for cutting the metal shield on coaxial and micro-coaxial cables.

To comply with health and safety requirements, air exhaust <u>must</u> be provided when using any laser wire stripper. If this is not available in your factory, Spectrum's ACS-5 remove all smoke, odors, particles and fumes from the laser stripping area and return clean air to the room.

Other requirements can be accommodated, please contact us to discuss: <u>sales@spectrumtech.com</u> or on +1 817-232-2373.



Above: A SIENNA 700 set up for automated wire handling

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Model	SIENNA 725	SIENNA 750	SIENNA 720SRD
Laser	25 Watt CO2	50 Watt CO2	20 Watt Scriber
Configuration	Dual axis (D) or A	utomated (AWH)	Dual Axis (D)
Control	н	мі	HMI or PC
Wire Types	Single core wire Twin leads Twisted pairs Multi-conductor shielded cables Ribbon cables		Shielded wire Shielded ribbon cables Coax / Micro- coax
Wire Sizes	Up to 6mm	Up to 1.5mm OD (0.0625") & 100mm wide (4")	
Processing Speed	Up to 250 mm/s (10 inches/s)		
Strip Accuracy	+/- 0.1mm (0.004")		
Strip Range	100mm x 150mm (4" x 6")		100mm x 100mm (4" x 4")
Insulation types (non-exhaustive)	PTFE ETFE PVC Silicon Polyurethane Polyurethane Polyester Polyester Fiberglass Polyethylene Nvlon		Metal Shields
Options	<ul> <li>ACS-5 Air Cleaning System</li> <li>Measure and cut system (for AWH system)</li> <li>Dereeler (for AWH system)</li> <li>Barcode job selection</li> <li>Additional tooling jigs</li> </ul>		
Power Requirements	230V-50Hz 5 Amp, single phase 110V-60Hz 10 Amp, single phase		
Dimensions H x W x L	657mm x 559mm x 1251mm (62" x 22" x 49")		
Weight	102Kg (225 lb)		
Dimensions H x W x L Weight	657mm x 559mm x 1251mm (62" x 22" x 49")		

- All SIENNA systems are Class 1 laser products for use on open shop floor
- Complies to CAT 3 electrically safety category and all EU CE marking and FDA regulations
- 12 month return to base warranty on all new systems
- Worldwide customer support from a dedicated team of Field Service Engineers or by fully trained Service Agents
- Technical helpline operating across the global clock
   Operational training for Production and Technical personnel carried
- out at installation
- Maintenance contracts available to keep systems operating at optimum performance

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## SIENNA<sup>TM</sup> 800 SERIES



### HIGH PERFORMANCE SCANNING LASER WIRE STRIPPING SYSTEMS

For the high speed ablation of wire and cable insulation

## SIENNA<sup>TM</sup> 800 HIGH SPEED, SINGLE-SIDED, SCANNING LASER WIRE STRIPPERS

The SIENNA 800 series is a range of single-sided laser wire strippers with high speed scanning optics for the high speed ablation of wire and cable insulations.

This type of system is particularly suitable for insulations that are bonded to the conductor and/or are very difficult to remove by hand, such as those found on flexible flat cables (FFCs) and flat laminated cables (FLCs).

## HIGH PERFORMANCE SCANNING LASER WIRE STRIPPING SYSTEMS FOR THE HIGH SPEED ABLATION OF WIRE AND CABLE INSULATION

#### Key features and benefits of the SIENNA 800 series

Strip accuracy: +/- 0.2mm (0.008")

- PC controlled with colour touch-screen HMI for fast
- Password protection access at different levels
- Simple to set-up and maintain



To comply with health and safety requirements, air exhaust must be provided when using any laser wire stripper. If this is not available in your factory, Spectrum's ACS-5 systems remove all smoke, odours, particles and fumes from the laser stripping area and return clean air to the room.

Choice of laser type and power

Shield scribing

(FMWS)

Spectrum to discuss and to check

area for ACS5 and integrated power

Model	SIENNA 850	SIENNA 830 SR	SIENNA 800 FMWS	SIENNA 800 Duo
Control	Integrated PC and colour touch screen			
Wire Types	<ul> <li>Single core wire</li> <li>Twin leads</li> <li>Twisted pairs</li> <li>Multi-conductor shielded cables</li> <li>Ribbon cables</li> <li>FFC/FLCs</li> </ul>	<ul> <li>Shielded wire</li> <li>Shielded ribbon cables</li> <li>Coax / Micro-coax</li> </ul>	<ul> <li>Enamelled wires</li> <li>Copper or Aluminium</li> <li>Round, square, flat or solid</li> </ul>	<ul> <li>Single core wire</li> <li>Twin leads</li> <li>Twisted pairs</li> <li>Multi-conductor shielded cables</li> <li>Ribbon cables</li> <li>FFC/FLCs</li> <li>Shielded wire</li> <li>Shielded ribbon cables</li> <li>Coax / Micro-coax</li> <li>Enamelled wire</li> </ul>
Wire Sizes	<6mm (0.24") OD Or ribbon cable <110 mm (4.3") width	<1 mm (0.04") OD or coax ribbon <110 mm (4.3") width	30 AWG to ~50 AWG	As per SIENNA 850 & SIENNA 830SR and Enamelled wire >0.2 mm (0.008")
Accuracy	+/- 0.2mm (0.008")			
Process Area	110 x 110mm (4.33" x 4.33")			
Insulation types (non-exhaustive)	Kapton® PTFE ETFE / XLETFE PFA FEP XL-Polyalkene PVF2 / PVDF PVC Silicone XLP Formvar® Polyester Fibreglass PET Nylon®	Metal shields	PEI PAI Polyimide Other enamels and resins	All materials able to be processed by the SIENNA 850 & 830SR, plus various enamels and resins
Power Requirements	100-240VAC, 60/50 Hz	·	·	·
Operating Conditions	<ul> <li>Ambient temperature +15°C to +35°C (59°F to 95°F) as standard</li> <li>Relative humidity 20% to 80% (non condensing)</li> </ul>			
Dimensions L x W x H	1267 mm x 639 mm x 676 mm (50" x 25" x 27")			
Weight	113 kg (250 lbs) 126 kg (278 lbs)			
Options	<ul> <li>ACS-5 Air Cleaning System</li> <li>Rotating jig</li> <li>Bespoke stand with power c</li> </ul>			

The 800 series tooling offers a process area of up to 110 mm x 110 mm (4.33" x 4.33") and is easy to insert and remove for repeatable processing. The material to be stripped or ablated is processed from above and an optional rotating jig is available to turn the part around to process the underside.

The system has an integrated PC for simple control and colour touch-screen for easy data input and programming.

The SIENNA 800 has been designed so that one of three different laser types can be integrated into the system depending on the application – including standard insulation removal; marking onto metal, marking onto polymers; enamel ablation of magnet wire.

There is also a dual wavelength version for processing magnet wire greater than 28 AWG or 0.2mm (0.008") OD.

- All SIENNA systems are Class 1 laser products for use on open shop floor, unless otherwise stated
- Complies to CAT 3 electrical safety category and all CE marking and FDA regulations
- 12 month return to base warranty on all new systems
- Worldwide customer support from a dedicated team of Field Service Engineers or by fully trained Service Agents
- Technical helpline operating across the global clock
- Operational training for Production and Technical personnel carried out at installation
- Maintenance contracts available to keep systems operating at optimum performance



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