SLR PRO SERIES

Handheld Portable Laser Welders

Providing revolutionary production efficiency through cutting edge technology and innovation.

Introduction to Laser Technology in welding

Commercial laser technology has been around since the 1960's, and laser welding machines entered the market over 20 years ago.

The early laser welding machines (and many still offered in the market today) were either water cooled or air-cooled lasers.

The initial air-cooled units, while slightly more portable than water-cooled versions, provided very low duty cycles and welding times, which limited their effectiveness in providing increased productivity vs traditional TIG or MIG technologies.

Then in the early 2000's the launch of water-cooled laser technology provided increased duty cycles and welding times. At the same time, the size and complexity of the controllers on the laser power source and welding torches increased significantly.

This water-cooled technology also meant that the complexity of set up, lack of portability, and size of torch and machine vs traditional welding methods significantly limited the benefits of having laser welding machines mainstream in the welding industry.

STRATA, as an innovator and leader in the welding industry recognised the need for a laser welding machine that provided exceptional portability, simple and intuitive setup, and had very high duty cycle capability for serious production requirements.

Thus, the Strata SLR Pro Series was born!

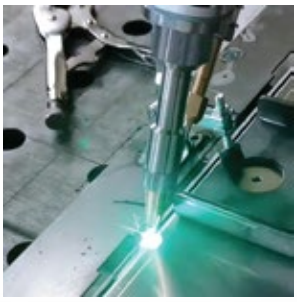
Ultra compact - size comparison vs 14'' cutoff saw.

CONTENTS

What can I weld with the Strata SLR Laser Welder?

Lasers can weld most different types of materials together. Some examples of materials where laser welding provides great speed and productivity efficiencies for are:

- Stainless steel
- Aluminium
- Titanium
- Carbon steel
- Galvanised Steel
- Nickel
- Molybdenum
- Inconel
- Copper
- Phosphor Bronze
- + much more



The STRATA SLR Series machines provide welding capability in most metals from thicknesses of 0.2mm up to 9.0mm.

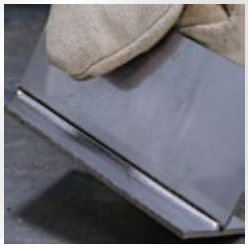
Laser Welding provides exceptional speed efficiencies (up to 10X faster than tig) and weld appearance and strength gains, especially in sheet metals between 0.2mm and 3.0mm.

After 3.0mm thickness, while weld appearance is superior in some applications with laser, traditional mig/mag and tig processes become closer to laser welding speed and performance. Where weld appearance is highly visible and is crucial, laser has a very significant advantage in visuals and consistency.

The efficiency gained with laser welding can also depend on the workpiece's complexity, but the STRATA SLR Series is simple to set up for varying material thicknesses and welding positions. Our expert team can provide you with test weld examples for your exact material and production requirements.

Some typical use cases that have proven amazing cost savings, productivity and weld reliability gains with laser are:

- *Mailboxes/lockers/sheet metal production*
- *Stainless steel tank production*
- *Aluminium fabrication*
- *Jewellery/Sculpture industry*
- *HVAC Industry/Ducting Production*
- *Signage Production*
- *Automated Parts Welding*
- *Trailer Fabrication*
- *Medical equipment production*
- *Dimpled/embossed sheets*



Another area where laser welding can provide great solutions is for joining dissimilar metals in sections.

The Key Benefits of Laser Welding

The development of laser welding technologies and affordability and portability have led to one of the more significant “productivity quantum leaps” in the industry in recent decades.

The key areas where laser welding offers significant advantages vs traditional technologies are:

- **Excellent Weld Appearance**
  Because of the precise, focused and very consistent welding power that the SLR laser Series provides, the finished weld appearance is extremely clean, uniform and visually appealing. There is usually no need for secondary processing like weld cleaning, deburring, grinding or buffing with work pieces that have been welded, saving significant time and cost.

- **Very Low HAZ (Heat Affected Zone)**
  Again, due to the fast, precise and high power welding capability of the SLR laser, perfect strong welds can be achieved with very low or often zero heat spreading beyond the weld bead area. This means that there is very little discoloration of materials and no "defensing" or warping caused by heat, which is often a major challenge with traditional welding methods and thin materials.

- **Less Expensive Gas Usage**
  Due to the precise, high penetration weld characteristics of the SLR Laser’s, argon gas flow requirements for shielding the weld from impurities can be reduced to significantly lower levels than traditional welding methods, saving significant cost in production situations.

- **Extremely Fast Weld Speed**
  SLR Laser Welding Speeds, particularly in thinner materials can offer 6-10 times faster speeds than traditional welding methods, which gives large productivity gains.

- **Laser Emissions/Welding Fumes**
  SLR Laser welding technologies offer excellent improvements on welding fume emissions, saving the environment as well as helping to protect the operator from the effects of harmful fumes in the workplace.

- **Better/Stronger Welds**
  Due to the ability to offer significant penetration from a single side of a workpiece, without spreading unnecessary heat around the job, the SLR Laser can provide very strong, superior welds, even while performing the work at much higher speeds.

Laser Welding vs TIG Welding – what are the key advantages?

To highlight the key productivity gains you can enjoy from utilising the STRATA SLR Laser Welder, we have compiled the chart below.

	SLR PRO SERIES LASER	OTHER LASER	TIG WELDING
Weld Visuals	Beautiful/Perfect Appearance, even with low skilled operator	Very good appearance, with good technical operator	Good appearance with skilled operator
Heat input into the workpiece	Very Low	Low	Medium
Bond strength to base metal	Exceptional	Very good	Good
Secondary workpiece treatment required	No Need	Rarely needed	Pickling/Cleaning of workpiece required
Welding speed	6-10 times faster than TIG on thinner matierals	6-10 times faster than TIG on thinner matierals	Average
Consumable usage per m of weld	Low consumable usage	Less consumables than TIG	Average consumable usage
Operational Difficulty	Very easy even for untrained welder	Needs significant skill in digital setup and fine tuning	Needs skilled and experienced welder to provide good results
Operator Safety	High	Okay	Ok
Environmental Impact/Protection	Very Good - Power saving technology, lower emissions, gas savings	Ok - Lower emisisons than TIG	Average
Adjustable Auto Welding Wobble /Swing	Yes	No	No
Ease of Maintenance /After Sales Service for machine operator	Good	Poor (highly technical, required trained technicians)	Poor (highly technical, requires trained/specialist technician

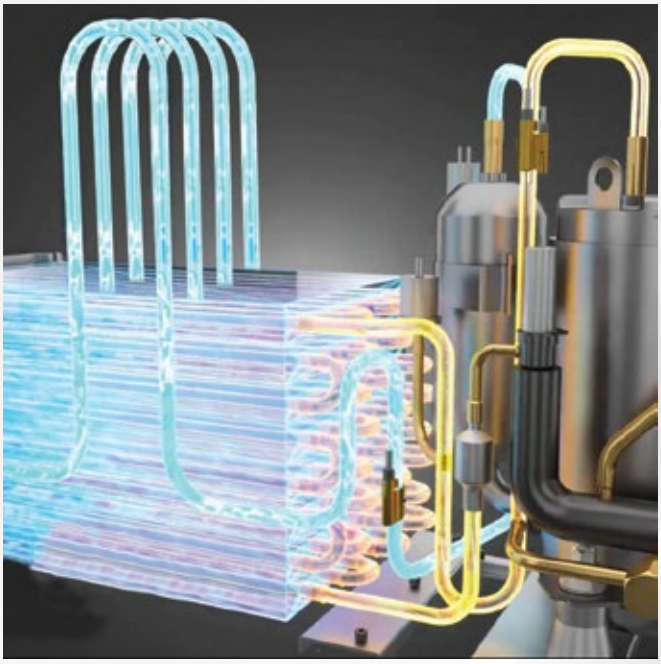
What makes the STRATA SLR Pro Series Laser welding machines different from traditional laser welding machines?

To master a technology, and make it simple, efficient and reliable to use in 'real life industrial applications' a manufacturer needs to know their game intimately. Through rigorous field testing in Australian/ NZ Market conditions and the toughest environments, STRATA have been able to innovate and manufacture compact laser welding machines that are revolutionising industry.

Here are some of the key reasons why:

Best In Class Duty Cycles

Designed for production applications through using patented "Quad Core" refrigerant direct cooling system,the SLR Series offers exceptional 100% duty cycle, plus power sources that are up to 50% lighter and smaller than other machines. This new inverter compressor powered technology also allows operation of the machine in temperatures ranging from –20c to 60c, with no warmup time and zero effect on duty cycles, unlike other machines in their market.



Best In Class Efficiency

Through utilising the latest patented technologies, the SLR Series offers up to 40% increased laser power outputs vs other machines from the same 230V input power! Save on power and take care of the environment!

Simple Setup and Operation

Strata has spent significant development time to ensure that the setup of the SLR series is super simple and intuitive. This is directly opposite to most laser welding machines on the market, many of which almost require a degree in computer programming to try and set up. Our aim in providing revolutionary laser welding technology is to ensure any welder can quickly apply their core skills and have their STRATA Laser machine set up and increase efficiencies in minutes, regardless of the complexity of the job at hand!

Ultra Compact Welding Torch

The proprietary welding torch on the SLR Series machines have been engineered with both extreme durability, plus user comfort and experience in mind. Traditional laser machines utilise standardised, bulky and cumbersome torches which hinders the usability of the laser, especially in tricky production setups. The SLR series torches are up to 40% lighter and offer the operator similar experience to TIG/MIG usage and enable very quick and easy adoption of the laser advantages. The compact, ergonomic torch also protects against operator fatigue in long run production scenarios.

SLR Laser Torch

MB36 Mig Torch

Faster Welding Speeds

Due to utilising cutting edge high-efficiency multi-core fibre laser technology (similar technology to fibre optic cable) the STRATA SLR Series offers best in class welding speeds, as well as superior performance across a wide range of material types and thicknesses. Traditional water-cooled laser welding machines normally utilise a single core laser, which are good for very thin materials, but do not offer the width of operation or ease of focus and setup of the latest multicore technology.

Built In Safety Protection

STRATA Machines have 8 separate built in safety checks, protecting both the operator and also guaranteeing the integrity of the weld.

(1) Closed loop Welding Safety Protection
The laser machine will only show the green light (ready to weld) and operate when the torch is in contact with the work and the safety circuit is closed. This prevents accidental laser emission.

(2) Emission On Warning Protection
The welding gun and machine clearly indicate "Laser Emission On" status and warnings

(3) Gas Pressure Protection
Laser emission/welding is only allowed when the correct gas pressure is sensed by the machine.

(4) Welding Gun Temperature Protection
The welding gun is temperature monitored and the machine will stop operation should the temperature exceed safety limits.

(5) Inadvertent Gun Activation Protection
The design of the welding gun and trigger placement prevents laser activation from being inadvertently activated.

(6) Protection Glass Safety
The Laser will only activate if the protection glass is correctly installed and operational.

(7) External Interlocking Protection Feed
The machine power source has an external interlock provision that can be connected to emergency stop or welding safety barrier switches to ensure safety controls for all personnel in the vicinity.

(8) Emergency Stop Override
The emergency stop button is on the top of the power source for immediate shutdown if required.

Superior Worksite Protections

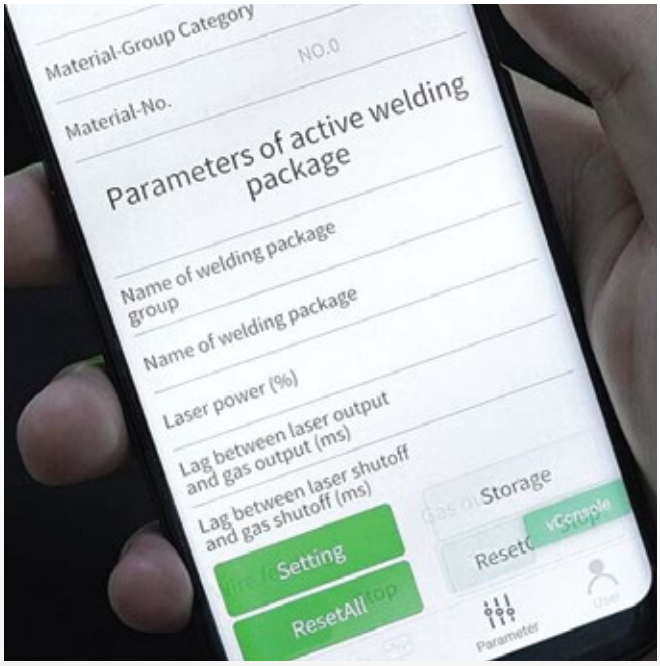
The STRATA SLR Series has been designed with exceptional dust and rain protection, to ensure perfect reliability on all job sites. The SLR Series has passed IPX3 rain protection and IP4 Dust/Dirt proof standards

Quieter Operation

The Strata SLR Series operates at a super quiet 50db and below, making the operators environment very pleasant vs traditional methods.

App Adjustment and Control

STRATA SLR Series machines have a simple Bluetooth phone app so that the operator can see and adjust all the welding parameters from his phone. The app also provides troubleshooting/set up tips and parameters making setup super easy.

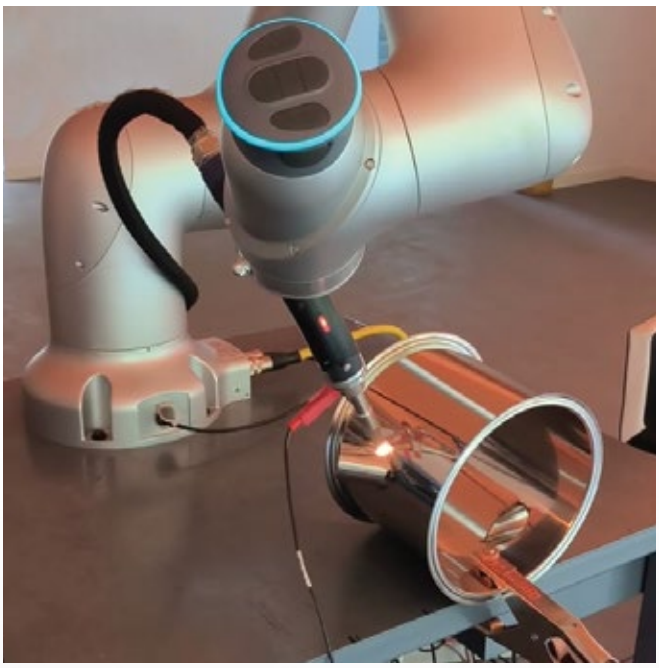


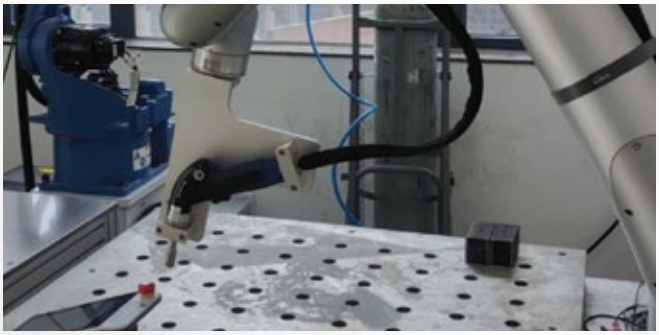
Laser Cleaning & Cutting Function

While the primary purpose and key functionality of the SLR Series Laser is increasing productivity in welding applications, the SLR Series also has laser cutting and laser cleaning functionality built in as standard.

Cobot/Robotics Ready

All STRATA SLR Machines are set up to be able to be paired with robotic setups for repetitive production requirements.





The Patented Strata SLR Laser Welding Torch

With the comfort of operators in mind, especially in long production shifts where laser welders come into their own, STRATA have completely redesigned and innovated the welding torch on teh SLR Series Welders. The results provide an exceptionally lightweight (only 600g!), very ergonomic and easy to use torch, vs the other options on the market which are heavy, bulky and difficult to set up and use. Here are some of the key benefits you will enjoy:

Lightweight & Compact – Only 595 grams!

The new SLR Series laser welding torch weighs in at less than half the weight of competitors welding torches and is designed so that a welding operator can very simply transition from traditional processes to laser.

Ergonomic

The new SLR Series torch is designed with a comfortable grip and 120 handle angle that allows perfect operator biomechanics while welding long shifts.

Built In Auto Adjustable Wobble Welding

The new SLR torch features a built-in twin motor wobble function (adjustable via the Bluetooth app as well as on the machine dial), which allows the operator to adjust to a weld width of up to 5.0mm. The wobble frequency can also be adjusted, to allow welding of welding parts with poor fit up or large joints with ease.

Shielded Laser Cables

The new SLR torch cable is fully shielded to protect the torch from damage in industrial workplace environments.

Safety Protections

The new SLR Torch includes many unique safety protections, to protect the operator and the machine in all environments. These include:

- *Welding Temperature Protection*
- *Inadvertent gun activation protection*
- *“Emission On” warning light – status indicator*
- *Closed Loop welding protection*

Quick Change Consumables System

The new SLR Series Torch is extremely simple and takes only seconds to change consumables.

Laser Adjusted via APP

The new SLR Series Laser Torch is designed to be able to quickly set up and optimise the laser performance via the APP, even after torch drops/impacts that can occur through touch industrial environments. Things like re-centering the laser after a drop is as simple as a ‘drag and drop’ of an icon into the centre of a circle on the app and our technology does the rest, and you are back to perfect welds!

Twin Wire Feeder

The Strata Twin Wire Feed Laser Welding System combines next-generation laser technology with dual wire feeding capability, delivering high-efficiency welding for a wide range of industrial applications — from high-speed sheet metal joins to thick plate fabrication.

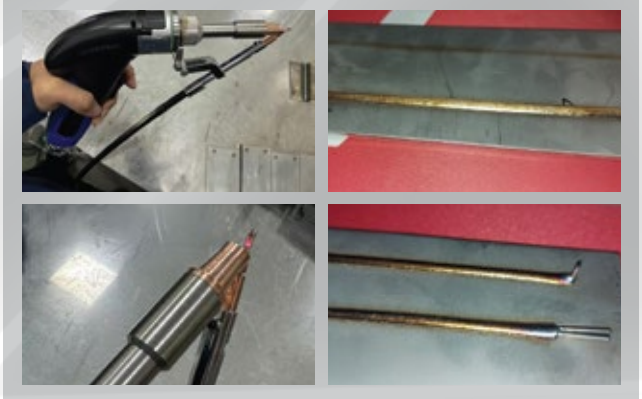
With independently controlled twin wire feeders, this system allows simultaneous feeding and melting of two wires into a single weld pool. The result is extremely high welding speed, greater deposition rates, and a unique ability to fill wider gaps — ideal for industries where speed, precision, and consistency are critical.

Key Features:

- **Dual Wire Feeding Technology** Two independently controlled wire feeders provide maximum flexibility — ideal for switching between materials or combining different wire types.
- **High Gap Bridging Capability** Fills gaps up to 3–4 mm wide using 2 x 1.6 mm wires, outperforming single-feed systems limited to ~1.5–1.8 mm.
- **Exceptional Travel Speed** Operates at 250+ cm/min on thin gauge sheet metal — perfect for automotive, tank, and general sheet fabrication.
- **Increased Deposition Rate** Achieves 30–80% higher deposition compared to single-wire laser welding, with reduced heat input and improved productivity.
- **Wider Weld Seam Coverage** The dual feed system supports multi-pass layering and wider seam welding, enhancing mechanical strength and weld quality.
- **Suitable for Thin and Thick Materials** Offers seamless performance across a broad material thickness range, from precision sheet work to structural plate welding.
- **Reduced Distortion and Better Heat Control** Lower energy input per wire helps reduce distortion, inter-pass temperature, and warping on larger components.
- **Cost Efficiency & Fast Material Changeovers** With separate feeders, operators can preload different wires (e.g. stainless steel & aluminium) to reduce downtime between jobs.
- **X-Ray Quality Welds** Produces clean, strong, and reliable welds suitable for high-specification applications requiring minimal post-weld finishing.
- **Multi-Layer Capable** Supports complex weld builds with multiple passes, ideal for demanding fabrication environments.

Applications:

- *High-speed sheet metal production*
- *Heavy plate and structural welding*
- *Automotive, aerospace, and general fabrication*
- *Industries requiring high gap tolerance*
- *Fabricators needing faster throughput without compromising quality*



Laser Safety Overview

Laser radiation and laser welding power can do serious and permanent damage and STRATA take your safety very seriously.

With this aim, we provide a wide range of personal protection equipment as well as customised options for wider areas and safety cells/curtains in production environments.

Part Number: 40529

PPE Laser Goggles

Laser goggles, welding gloves and leather welding jacket are the minimum requirements for protection.

Part Number: 40395

Laser Welding Helmet

Laser Welding Helmets are particularly recommended with aluminium welding, where reflective glare can cause burning of exposed skin.

Designated Laser welding areas should be allocated in your production area, and this should ideally be screened off/protected to ensure the safety of other personnel in the work place.

What Does My SLR Laser Machine Come With?

The SLR Series comes supplied with everything ready to plug in and weld, including a comprehensive spare parts/consumables kit with a wide range of consumables for any job at hand. There are also options available for extending interconnect cable and torch length for special requirements.

Below is the list of components/specifications for the range.

ITEM	QTY	NOTES
Handheld laser welder powersource	1PCS	✓
Operation manual	1PCS	✓
Laser Torch Cable	1PCS	5m
Workpiece Clamp Lead	1PCS	10m
Wire feeder unit	1PCS	✓
Protection glass	5PCS	SLR3000: 2PCS in spare parts box, 1PCS in welding gun SLR4000/5000: 4PCS in spare parts box, 1PCS in welding gun
Nozzle	3PCS	0.8-1mm wire feed tip, 1.2-1.6mm wire feed tip, Flat welding wire feed tip
Protective spectacles	1PCS	✓
Welding Gloves	1PCS	✓

Optional Accessories	SLR3000		SLR5000	
	Standard	Optional	Standard	Optional
Length of Torch Cable:	5m	10m/15m/20m	5m	10m/15m
	Feeder Cable: 5m	10m	Feeder Cable: 5m	10m
Factory Accessories:	Fast Pad	Caster	Caster	-
	-	Wire Feeder	-	Wire Feeder

Wire Feeder Specifications

ITEM	PARAMETERS
Wire Feed Delivery Length	5m
Control Interface	Control cable (shipped with the welder)
Diameter of compatible welding wire	0.8mm – 1mm – 1.2mm – 1.6mm
Weight of welding wire reel	5kg – 7.5kg – 15kg
Compatible wire materials	Stainless steel, carbon steel, aluminium
Power supply requirements	230V/50Hz
Weight of wire feeder	8kg
Dimensions of wire feeder	550mm x 220mm x 422mm
Dimensions of wire feeder (excluding handle and rubber pad)	550mm x 220mm x 350mm

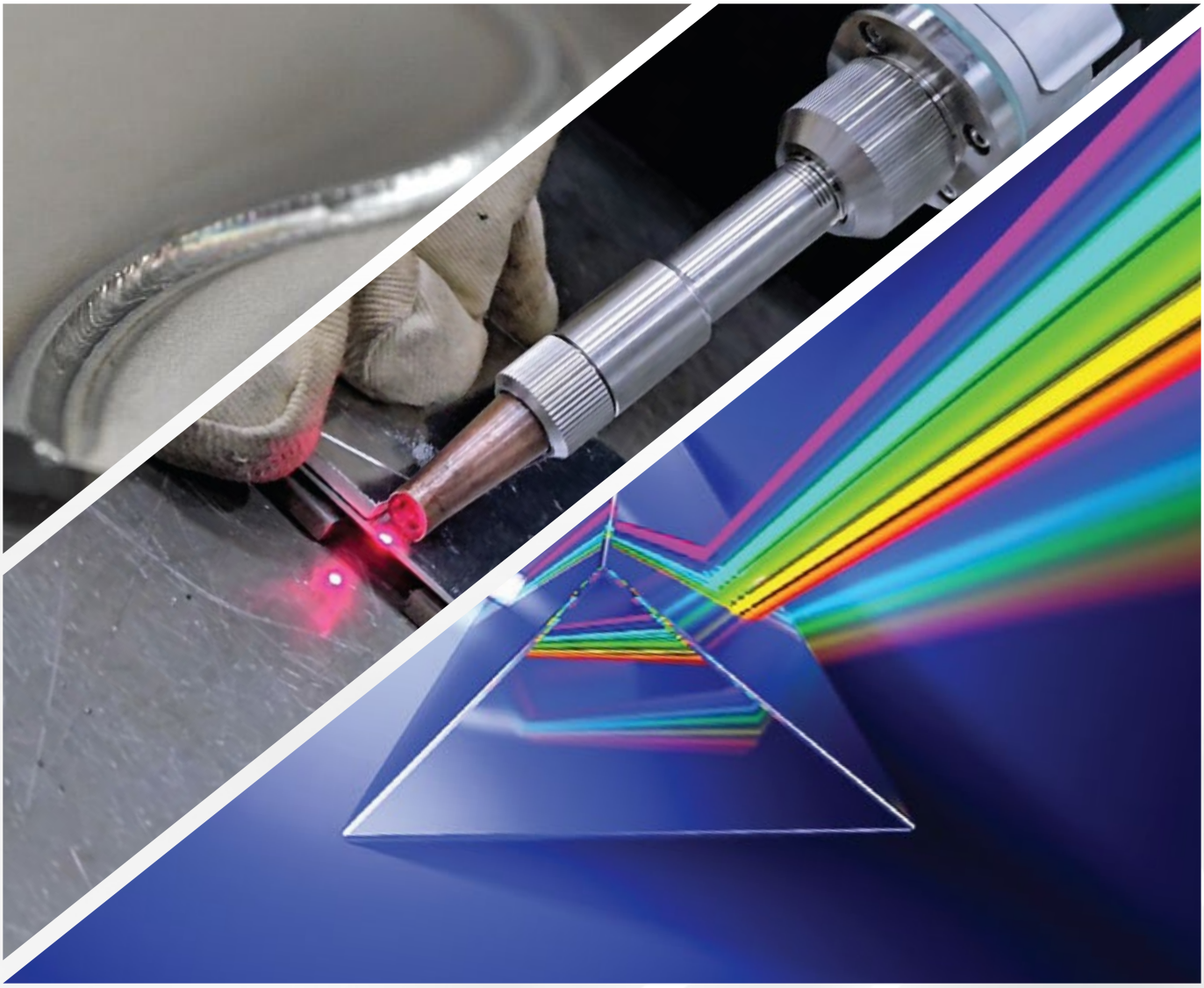
	SLR3000	SLR5000
Weight (kg)	43	45
Laser Power (W)	1500	2500
Max Input Power (W)	3800	5400
Voltage	230V/50HZ	230V/50HZ
Welding Speed (cm/min)	20-160	20-160
Dimensions (mm) lenghth*width*height	670x430x310	670x456x310
Welding Wire Diameter (mm)	0.8/1/1.2/1.4/1.6	0.8/1/1.2/1.4/1.6
Torch Wobble Width	0 - 5mm	0 - 5mm
Working Temperature (C°)	-20~60	-20~60
Working Humidity	<90%	<90%
Output Mode	Integrated amored cable + torch	Integrated amored cable + torch
Working Duration	100% Duty Cycle/24Hr continous welding	100% Duty Cycle/24Hr continous welding

Dial A Demo

We have demonstration machines available and our knowledgeable team are more than happy to show you/send you an example of your material/ workpiece welded with the precision SLR Pro Series machine.

Dial a Demo

Ph: 0800 387 678



We are looking forward to showing you the significant production efficiencies and weld quality advances that this revolutionary technology can offer in your business.

www.strata.co.nz I 0800 387 678

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