

Laser Welding Products



THE POWER OF HOT LIGHT™

2012.2

**Manufacturer of Advanced
Laser Sources and Systems**



Innovative Ideas

LaserStar's R&D lab is focused on inventing new technologies that change markets and create business opportunities.

Successful Designs

LaserStar products deliver exceptional value while earning the respect and loyalty of their customers.

Superior Quality & Performance

Trained in world-class Lean manufacturing principles, LaserStar's team of experts constantly strive to improve manufacturing and business processes.

Our Mission

LaserStar Technologies Corporation is a Lean, laser manufacturing company. Our goal is to enhance the quality, performance and innovation of our products, programs and services on a continuing basis. We invite our customers, employees and friends to be an active participant in this mission.

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Our Brands



MANUAL WELDERS - HERE'S HOW IT WORKS



LASER is an acronym for “**L**ight **A**mplification by the **S**timulated **E**mission of **R**adiation” which produces a sharp, focused light beam that melts a very small area of metal. The benefit of this technology is that very little heat is generated at the weld point, allowing users to easily weld 0,05mm (.002”) away from the most complicated and intricate component parts without damaging heat sensitive materials.

Operators hold parts in their hands while viewing the application through a stereo-microscope in the welding chamber. An internal cross-hair allows the operator to easily align and weld the parts at the correct location.

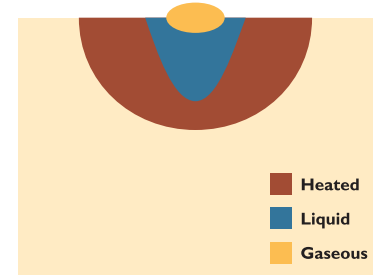
The Power of Hot Light

LaserStar Technologies’ development of the “free-moving” concept enable users to eliminate costly fixturing devices, benefit from pin-point accuracy, increase the range of assembly and repair applications and minimize the potential hazards of heat damage. The resulting weld is considerably stronger than a traditional solder joint.

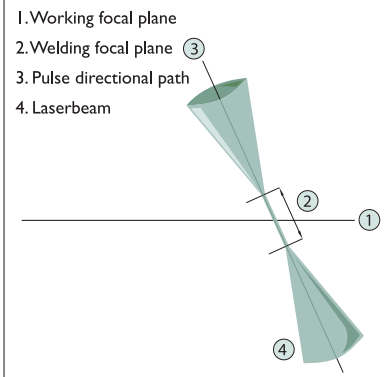
- ☆ *Easy To Use...*
- ☆ *Simple to Maintain...*
- ☆ *Incredibly Powerful!*

Bombardment Zone

Shows the zone affected by heat after laser bombardment



Depth of Focal Field



Manual Laser Welding Systems are ideal for the smallest workshop to large industrial manufacturers. Common industry applications include:

- micro industrial-medical device spot and seam welding assemblies
- electronically compatible voltage sensitive applications
- jewelry design, production and repair
- dental laboratory partial, crown & bridge, and implant fabrication and repair
- optical eyewear fabrication and repair

MANUAL LASER WELDING APPLICATION EXAMPLES

JEWELRY - DESIGN - MANUFACTURING - REPAIR



One of a Kind Custom Laser Assembly



Three Stone Ring Repair



Tennis Bracelet Clasp Repair

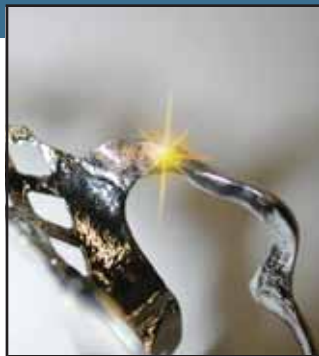


100% Laser Welded Custom Design

DENTAL LABORATORY - DESIGN - MANUFACTURING - REPAIR



Laser Welds Complete on Master Model



Laser Welded Clasp Repair



Molar has been Laser-Attached to Bridge

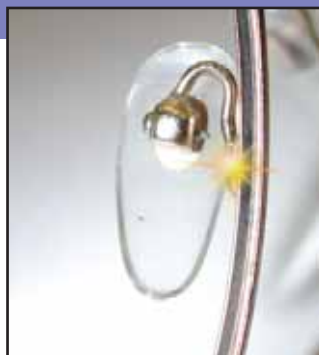


Ceramic Copings Laser Welded with Parent Metal

EYEWEAR - OPTICAL REPAIR



Eyewear Nose Pad Repair



Pad Arm Repair



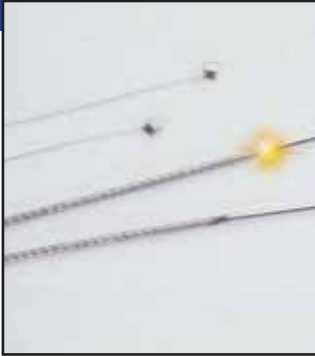
Hinge Repair Weld



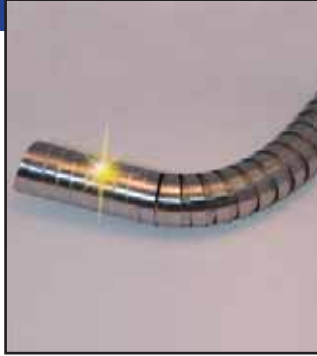
Frame Repair - Front to End Piece



MEDICAL DEVICE - DESIGN - MANUFACTURING - REPAIR



Medical Device Small Guide Wire Welds



Surgical Instrument Assembly and Repair

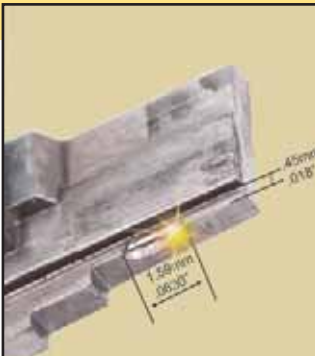


Medical Assembly Welds

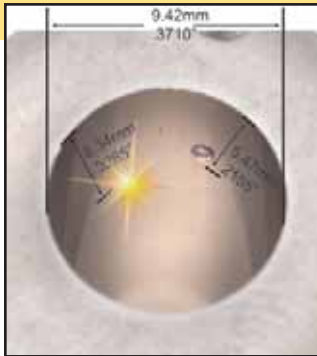


Fine Wire Lead Used in Medical Implants - 330µm Platinum Wire

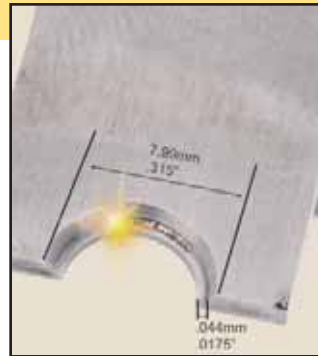
TOOL & DIE - MOLD MAINTENANCE - REPAIR



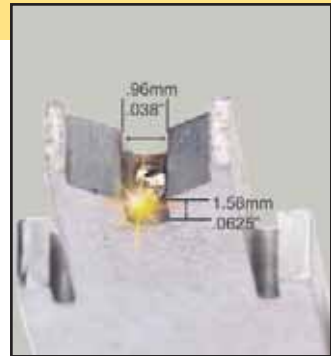
Mold Insert Repair with Filler Wire



Cylinder Inside Diameter Repair



Mold Insert Repair



Mold Insert Repair

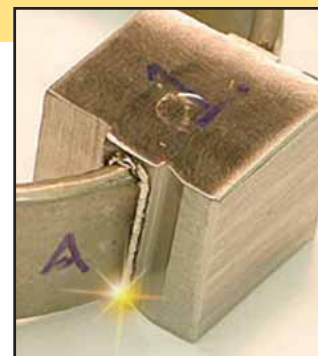
INDUSTRIAL - DESIGN - MANUFACTURING - REPAIR



Titanium Casting Porosity Repair



Thin to Thick Section Weld



Mechanical Assembly Weld



Automated Tube-Base Weld

ADVANCED WELDING APPLICATION EXAMPLES



Laser Spot Weld of Tool Holder



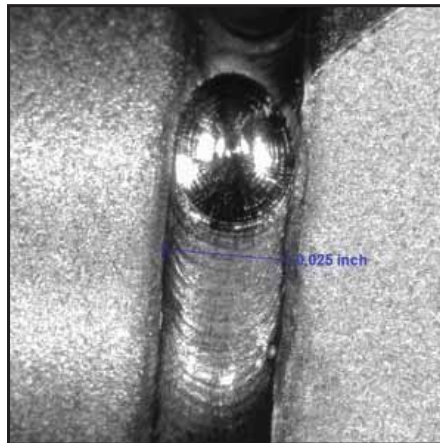
Laser Seam Weld of Pressure Cap



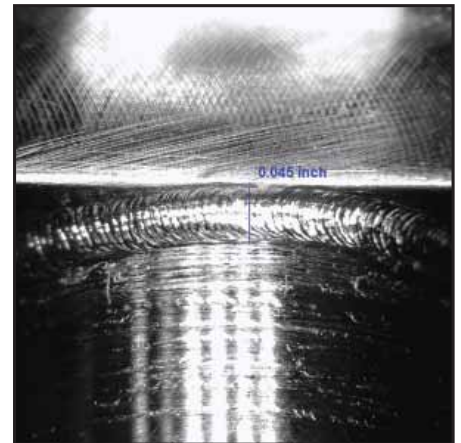
Laser Seam Weld of Dispenser



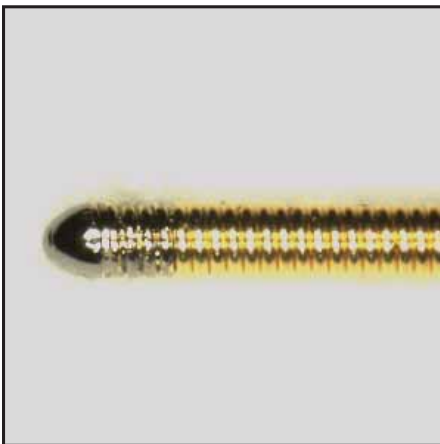
Laser Spot Weld of a Wire Bundle



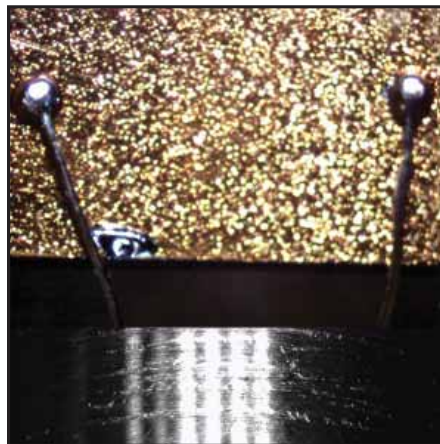
Laser Seam Weld of Tooling



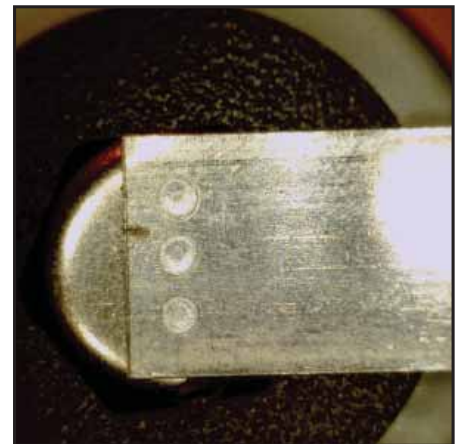
Laser Fill-it Weld of Tooling



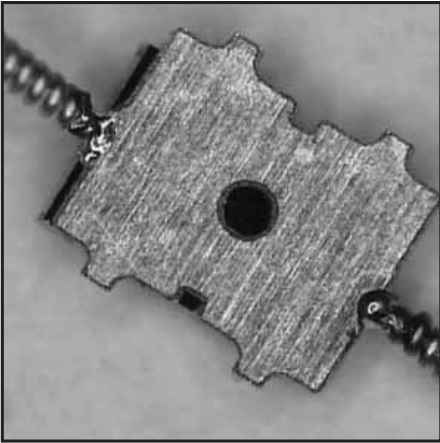
Laser Spot Weld of NiTi Wire to Tungsten Coil



Laser Spot Weld for Solder Reflow Coil



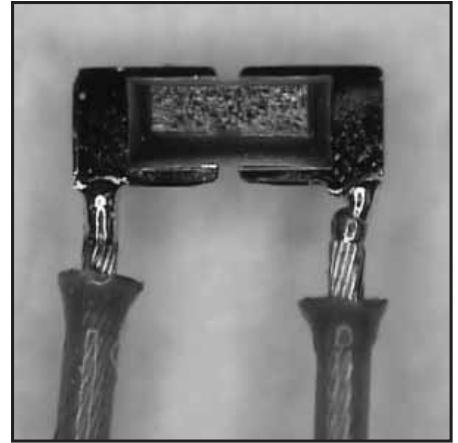
Laser Spot Weld of Tab to Battery



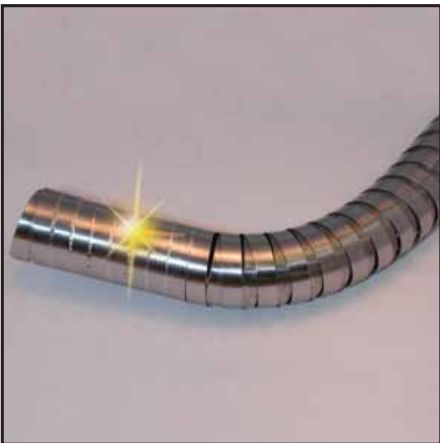
.003" Wire Welded to .003" Platinum



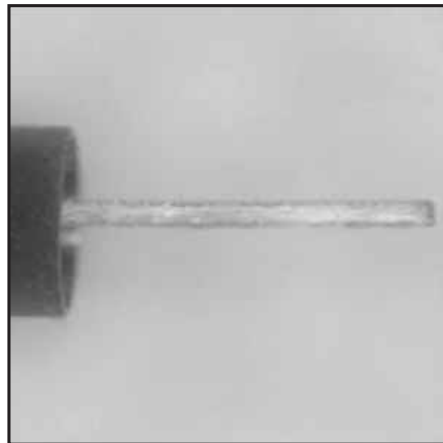
Set Screw Housing Structural Seam Weld



.0045" Cable Welded to a Ribbon



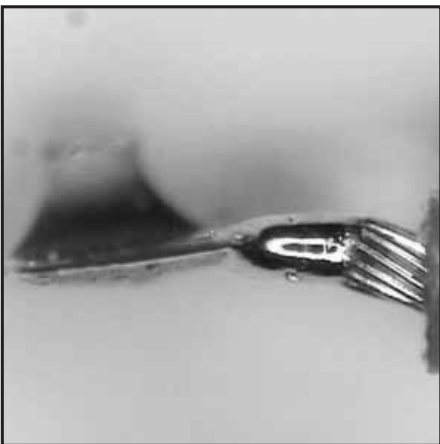
Medical Component Weld



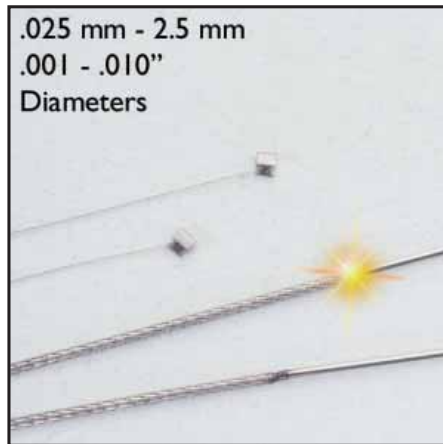
.003" Ribbon Welded to Ring Electrode



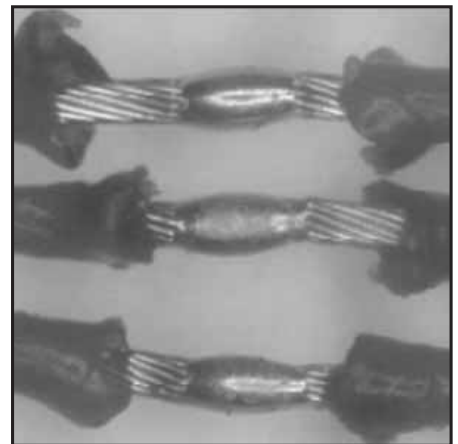
.003" Wire Welded to .003" Platinum



Cable Welded to .002" Platinum



Medical Device Small Guide Wire Welds



Cables Joining

980/990 Series

Easy to use, simple to maintain and incredibly powerful, the iWeld fits neatly into any work environment. iWeld is the highest peak powered machine in its class. This machine welds SILVER along with other complex alloys.

The iWeld is ideal for a wide range of metal joining and repair applications. The system's compact, portable, space-saving design, coupled with LaserStar's well-known reputation for high quality, efficient laser sources, make the iWeld an excellent value.

Operators benefit from pin-point accuracy, increase the range of assembly and repair applications, and minimize the potential hazards of heat damage. The resulting weld is considerably stronger than a traditional solder joint. The comfortable, ergonomic design, with conveniently located operator controls and display, ensure optimal utilization with minimal operator fatigue.

LaserStar's commitment to electrical design efficiency ensures the highest level of hot-light energy transfer from the laser source through the welding chamber while providing many hours of continuous operation without overheating. As always, the iWeld is available in the domestic USA marketplace in 120 Volts or 230 Volts.

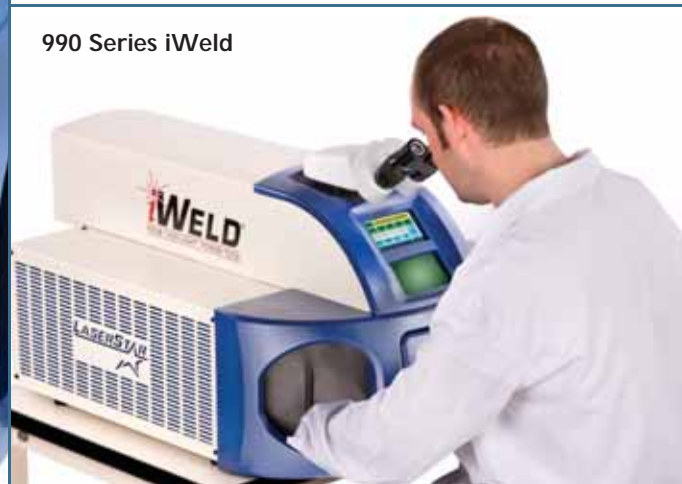
iWeld lasers offer an excellent value for today's industry professionals looking to unleash the power of hot-light, benefit from a comfortable, compact, ergonomic design and ensure optimal platform technology.

■ HIGHLIGHTS

Accurate, Powerful
Compact, Portable
Easy Set-Up, 40-100 Joule
120V-230V, 35 & 60 Watt

Four Models Available:

- 40 Joule, 5.5 kW, 35 Watt, 30 Hz
- 60 Joule, 10.0 kW, 60 Watt, 30 Hz
- 80 Joule, 10.0 kW, 60 Watt, 30 Hz
- 100 Joule, 10.0 kW, 60 Watt, 30 Hz



PERFORMANCE FEATURES AND BENEFITS

(The following advanced features are available on select 980/990 Series **iWELD** Systems)



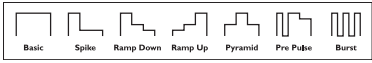
Custom Color Options



Sapphire Blue/Pearl White Titanium/Pearl White Ruby Red/Pearl White Pearl White



- Soft Beam™ Profile Enhancement Resonator Technology (Optional)



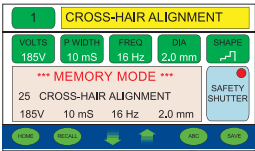
- Custom Pulse Profiling
- Pulse Suppression Software

Multiple Viewing Systems



ClearView Binocular Microscope EasyView Binocular Microscope Leica Binocular Microscope Lynx Stereo Projection Microscope

Digital Messaging Display



- Automatic Energy Save Mode
- Integrated Preventative Maintenance Alerts
- Multi-Language System Display
- 99 Memory Settings
- Pre-Programmed Application Parameters

Side Entry Service Panels ("Easy Access" to Maintenance Tasks)

120V or 208-240V Single Phase Supply Circuit



More Efficient Power Supply Technology



Interior Chamber Design



- Larger Welding Chamber
- Tri-Access Chamber
- LED Natural Lighting
- Inert Gas Delivery System

Large Viewing Window

Removable Door

Ergonomically Designed Forearm Entry Ports

MADE IN THE USA

Worldwide Safety Certification
FDA(CDRH), UL, CSA, CE



Technical specifications are provided on page 21



960/970 Series

Easy to use, simple to maintain and incredibly powerful, the iWeld Professional fits neatly into any work environment. iWeld Professional is the highest peak powered machine in its class. This machine welds SILVER along with other complex alloys.

The iWeld Professional is ideal for a wide range of metal joining and repair applications. The system's compact, portable, space-saving design, coupled with LaserStar's well-known reputation for high quality, efficient laser sources, make the iWeld Professional an excellent value.

Operators benefit from pin-point accuracy, increase the range of assembly and repair applications, and minimize the potential hazards of heat damage. The resulting weld is considerably stronger than a traditional solder joint. The comfortable, ergonomic design, with conveniently located operator controls and display, ensure optimal utilization with minimal operator fatigue.

LaserStar's commitment to electrical design efficiency ensures the highest level of hot-light energy transfer from the laser source through the welding chamber while providing many hours of continuous operation without overheating. As always, the iWeld Professional is available in the domestic USA marketplace in 120 Volts or 230 Volts.

iWeld Professional lasers offer an excellent value for today's industry professionals looking to unleash the power of hot-light, benefit from a comfortable, compact, ergonomic design and ensure optimal platform technology.

Four Models Available:

- 60 Joule, 10.0 kW, 60 Watt, 30 Hz
- 80 Joule, 10.0 kW, 60 Watt, 30 Hz
- 100 Joule, 10.0 kW, 60 Watt, 30 Hz
- 150 Joule, 10.0 kW, 60 Watt, 30 Hz

HIGHLIGHTS

Accurate, Powerful
 Portable Pedestal
 Easy Set-Up, 60-150 Joule
 120V-230V, 35 & 60 Watt

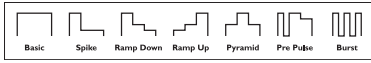
970 Series iWeld Professional



960 Series iWeld with Removable Chamber

PERFORMANCE FEATURES AND BENEFITS

(The following advanced features are available on select 960/970 Series **iWELD** Professional Systems)



Custom Color Options



Sapphire Blue/Pearl White Titanium/Pearl White Ruby Red/Pearl White Pearl White



Multiple Viewing Systems

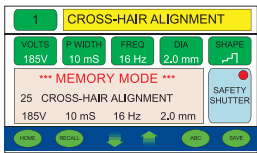


ClearView Binocular Microscope EasyView Binocular Microscope Leica Binocular Microscope Lynx Stereo Projection Microscope

- Custom Pulse Profiling
- Pulse Suppression Software

- Soft Beam™ Profile Enhancement Resonator Technology (Optional)

Digital Messaging Display



- Automatic Energy Save Mode
- Integrated Preventative Maintenance Alerts
- Multi-Language System Display
- 99 Memory Settings
- Pre-Programmed Application Parameters

Side Entry Service Panels ("Easy Access" to Maintenance Tasks)



120V or 208-240V
Single Phase Supply Circuit

More Efficient Power Supply Technology

Large Viewing Window

Removable Door

Ergonomically Designed Forearm Entry Ports

Interior Chamber Design



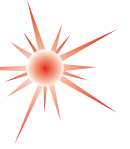
- Larger Welding Chamber
- Tri-Access Chamber
- LED Natural Lighting
- Inert Gas Delivery System



Worldwide Safety Certification
FDA(CDRH), UL, CSA, CE



Technical specifications are provided on page 21



7000 Series

The 7000 Series LaserStar Workstation offers a significant competitive advantage for today's operators looking to unleash the power of hot light, benefit from a comfortable, ergonomic design and ensure optimal platform technology.

Operators can benefit from pin-point accuracy, increase the range of assembly and repair applications and minimize potential hazards of heat damage. The resulting weld is considerably stronger than a traditional bonded joint.

HIGHLIGHTS

- Ergonomic Design
- Excellent Pulse Stability
- Portable Workstation
- 80-150 J, 60 & 80W Models

LaserStar workstations offer "space-saving" versatility while incorporating a state-of-the-art compact cooling system. The result - a significant pulse energy advantage while maintaining minimum water cooling temperatures and 24-hour operational performance. Our commitment to electrical design efficiency ensures the highest level of hot-light energy transfer from the LaserStar source through the welding chamber.

7000 Series LaserStar manual welding systems are available in 110V and 220V line voltage while offering up to an industry leading three year warranty.

Custom configurations are available upon request.

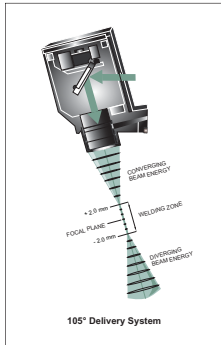


Lynx Stereo
Microscope Shown



PERFORMANCE FEATURES AND BENEFITS

(The following advanced features are available on select 7000 Series LaserStar Welding Systems)



Multiple Viewing Systems

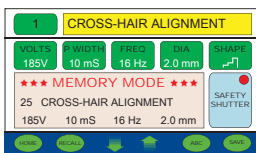


Custom Color Options



- Soft Beam™ Profile Enhancement Resonator Technology (Optional)

Digital Messaging Display



- Automatic Energy Save Mode
- Integrated Preventative Maintenance Alerts
- Multi-Language System Display
- 99 Memory Settings
- Pre-Programmed Application

Tri-Door Chamber Design



- Side Door Entry (12" x 6.75" / 30,5cm x 17cm)
- Front Door Entry (9" x 6.25" / 22,85cm x 15,85cm)
- Chamber Capacity (1,113 cubic inches - 2,826 cubic cm)

Large Viewing Window

22.5 square inches - 145 square cm

Interior Chamber Design



- LED Natural Lighting (Quad)
- Dual Inert Gas Delivery System
- Dual Operating Logic

Ergonomically Designed Forearm Entry Ports

Automation Opportunities



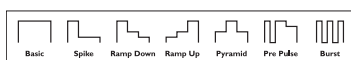
- Integrated Motion Systems
- Multi-Depth Chamber Inserts

Side Entry Service Panels

(Provides "easy access" to maintenance tasks)

120V or 208-240V
Single Phase Supply Circuit

EZ-LINK™ Software



MADE IN THE USA

Worldwide Safety Certification
(FDA(CDRH), UL, CSA, CE)

Technical specifications are provided on page 22



1900 Series (Standard Body)

LaserStar's 1900 Series Industrial Workstations are ideal for a wide range of metal joining, complex assembly, automation and repair applications for the industrial marketplace. A compact, portable design, coupled with LaserStar's well-known reputation for high quality, efficient laser sources, make the 1900 Series an excellent value.

Removable welding chambers are designed to be custom configured for the widest range of applications. High precision motion devices (see page 42) are engineered to integrate into the welding chamber. Five chamber platforms are available: open workspace, open workspace with adjustable shelf, standard, deluxe and automation chamber.

■ HIGHLIGHTS

Flexible Platforms
Motion Device Ready
Excellent Pulse Stability
60 & 80 Watt Models

LaserStar Industrial Standard Body Workstations are available in 60 and 80 watt models and integrate a variety of viewing systems to meet the specific needs of our customer's applications.

Our commitment to electrical design efficiency ensures the highest level of hot-light energy transfer from the LaserStar source through the welding chamber. The result - a significant pulse energy advantage while offering end-users a custom configuration to meet their specific application requirements.

LaserStar Workstations are ideal for a wide range of complex alloys and applications including:

- Medical Device Components
- Aerospace and Electronics
- Automotive and Micro Components
- 300 Series Stainless Steel
- Nitinol, Titanium, Platinum
- Many Complex Alloys

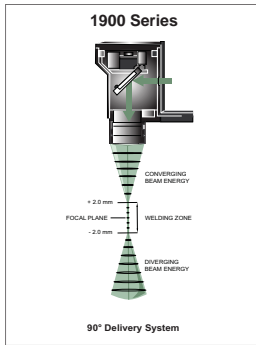


1900 Series
Standard Body
(Shown with Adjustable
Work Table)



PERFORMANCE FEATURES AND BENEFITS

(The following advanced features are available on select 1900 Series LaserStar Welding Systems)



Multiple Viewing Systems

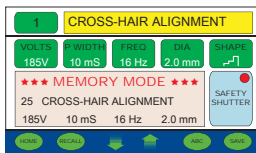


Custom Color Options



Soft Beam™ Profile Enhancement Resonator Technology (Optional)

Digital Messaging Display



- Automatic Energy Save Mode
- Integrated Preventative Maintenance Alerts
- Multi-Language System Display
- 99 Memory Settings
- Pre-Programmed Application

Large Viewing Window
14.4 square inches - 32.6 square cm

Interior Chamber Design



- LED Natural Lighting (Quad)
- Dual Inert Gas Delivery System
- Dual Operating Logic

Extension Accessories



- Extension Tube - 3, 6 or 9 inch

Removable Chamber with Three Access Panels



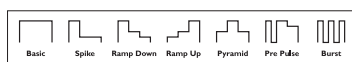
120V or 208-240V
Single Phase Supply Circuit

Automation Opportunities



5-Axis Rotation Module Shown

Side Entry Service Panels
(Provides "easy access" to maintenance tasks)



MADE IN THE USA

Worldwide Safety Certification
FDA(CDRH), UL, CSA, CE

Technical specifications are provided on page 23



1900 Series (XL Body)

LaserStar's 1900 XL Series Industrial Workstations are ideal for a wide range of metal joining, complex assembly, automation and repair applications for the worldwide marketplace. The XL body style provides an oversize welding workspace design coupled with high wattage output which is ideal for many different welding applications.

A removable welding chamber is designed to be custom configured for a wide range of applications. High precision motion devices (see page 42) are engineered to integrate into the welding chamber and enhance the systems production capabilities.

LaserStar Industrial XL Workstations are available in 60, 80, 100, 150 and 200 watt models and integrate a variety of viewing systems to meet the specific needs of our customer's applications.

Our commitment to electrical design efficiency ensures the highest level of hot-light energy transfer from the LaserStar source through the welding chamber. The result - a significant pulse energy advantage while offering end-users a custom configuration to meet their specific application requirements.

LaserStar Workstations are ideal for a wide range of complex alloys and applications including:

- Medical Device Components
- Aerospace and Electronics
- Automotive and Micro Components
- 300 Series Stainless Steel
- Nitinol, Titanium, Platinum
- Many Complex Alloys

HIGHLIGHTS

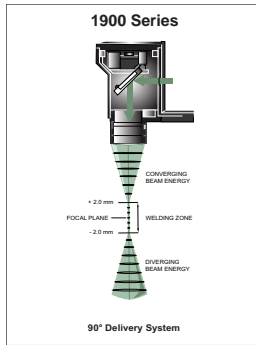
Flexible Platforms
Motion Device Ready
Excellent Pulse Stability
60 - 200 Watt Models

1900 Series (XL Body Style)
Open Workstation
(Shown with Adjustable Work Table)



PERFORMANCE FEATURES AND BENEFITS

(The following advanced features are available on select 1900 XL Series LaserStar Welding Systems)



Multiple Viewing Systems

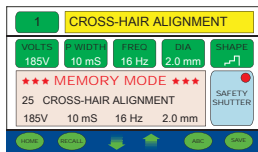


Custom Color Options



Soft Beam™ Profile Enhancement Resonator Technology (Optional)

Digital Messaging Display



- Automatic Energy Save Mode
- Integrated Preventative Maintenance Alerts
- Multi-Language System Display
- 99 Memory Settings
- Pre-Programmed Application

Large Viewing Window
14.4 square inches - 32.6 square cm

Interior Chamber Design



- LED Natural Lighting (Quad)
- Dual Inert Gas Delivery System
- Dual Operating Logic

Automation Opportunities

Extension Accessories



- Extension Tube - 3, 6 or 9 inch

Removable Chamber with Three Access Panels

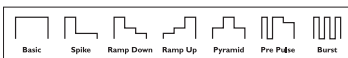


120V or 208-240V,
Single or Three Phase
Supply Circuit



X-Y-Z-Theta Motion Device

Side Entry Service Panels
(Provides "easy access" to maintenance tasks)



MADE IN THE USA

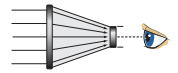
Worldwide Safety Certification
FDA(CDRH), UL, CSA, CE

Technical specifications are provided on page 23



ClearView Binocular Microscope

This binocular stereo-microscope offers the traditional (15x) total viewing magnification with a high-level of optical clarity for the experienced microscope user.

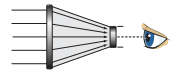


15-20mm Viewing Distance



EasyView Binocular Microscope

This binocular stereo-microscope offers the traditional (15x or 40x) total viewing magnification along with a 5-25 degree adjustable wedge. A high-level of optical clarity is achieved with this hardware for the experienced microscope user.

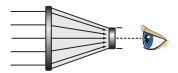


15-20mm Viewing Distance



Leica Binocular Microscope

This binocular stereo-microscope offers the traditional (15x or 40x) total viewing magnification first introduced on LaserStar Welding Systems. A high-level of optical clarity is achieved with

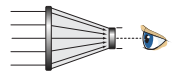


15-20mm Viewing Distance



ClearView Trinocular Microscope with Camera Tube

This binocular stereo-microscope offers the traditional (15x) total magnification with a high level of optical clarity while incorporating a third tube for video capture/inspection applications. Camera sold separately.

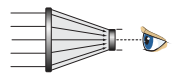


15-20mm Viewing Distance



Leica Trinocular Microscope with Camera Tube

This binocular stereo-microscope offers the traditional (15x or 40x) total magnification with a high level of optical clarity while incorporating a third tube for video capture/inspection applications. Camera sold separately.

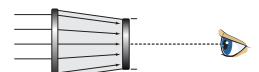


15-20mm Viewing Distance



Lynx Stereo Projection Microscope

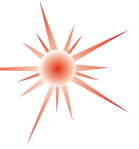
The EZ-VIEW Lynx System offers enlarged, movable eyepieces, allowing expanded ray bundles to be projected to the operator's pupils. This increases the viewing distance between the eye and eyepiece, allowing the operator to work in a more upright position without eye, neck, and back fatigue normally experienced with traditional binocular microscopes.



52mm Viewing Distance

NOTE: Custom microscope configurations are available upon request. For additional microscope accessories, please go to Page 56 and 57. In the interest of technical progress, we reserve the right to change microscope body design without notice.

PULSE PERFORMANCE PROFILE TECHNOLOGY



About P3 Technology

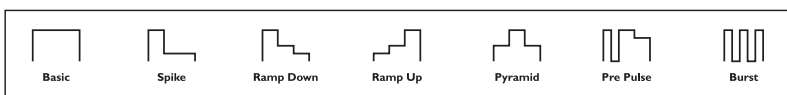
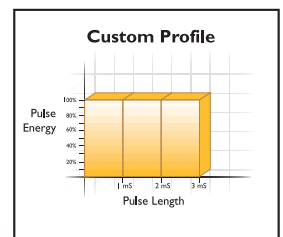
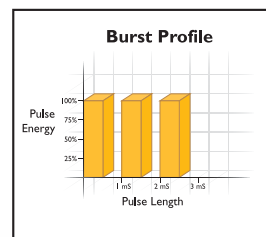
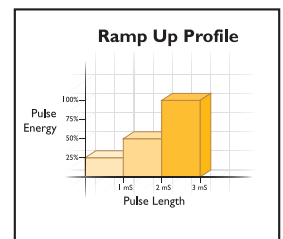
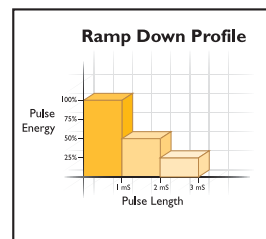
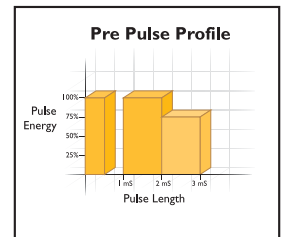
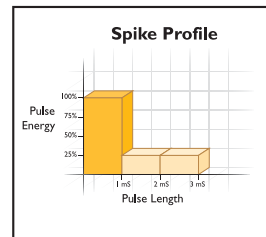
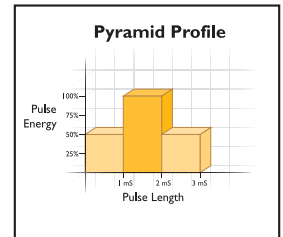
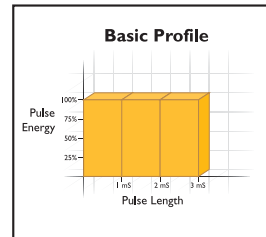
Profiling a LaserStar pulse is simply selecting the percentage of pulse energy that is released for each half millisecond (.5mS) section. Each individual section is defined at 25%, 50%, 75% or 100% of total pulse energy output. To benefit from pulse profiling, a minimum of a three millisecond (3mS) pulse duration must be employed to achieve noticeable results.

The energies required for pulsed laser welding can vary depending upon the pulse profiles selected.

If certain profiles are chosen for slower cooling or surface cleaning, then the energy is not always being used to increase penetration. Instead, it may be directed at vaporization of contaminants or bulk heating. When this is the case, the energy required (parameter selections: Voltage and Pulse-length) will increase to achieve the same weld penetration before a custom profile was applied. The parameter adjustments may reduce lamp life, reduce process speeds, and/or increase cycle times. However, it is a small price to pay and almost always worth the weld quality improvements.

Conversely, if the initial spike is increased to improve energy coupling or duty cycle, Burst Profiles are used, then the process can become much more efficient. Less energy per pulse is used with pulse profiling for the same task.

When in doubt about which pulse profile may be most beneficial, first set up a process with a Basic Profile and note the energy used (parameter selections) for a particular application. Next, select a recommended pulse profile for the same application and compare the energy used (parameter selections). Finally, compare the two different process results and choose a profile that meets your quality and process speed requirements.



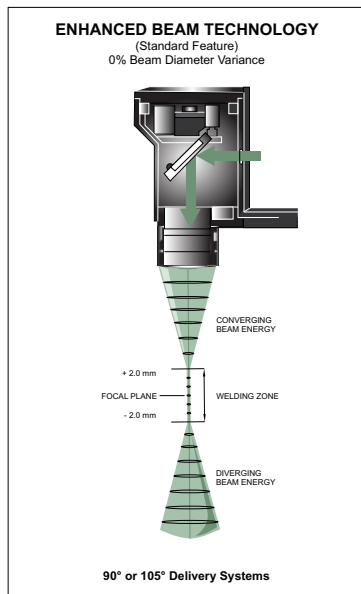
Soft-Touch™ Resonator Technology

For many years, LaserStar welding systems have provided users with a sharp, focused light beam that melts a very small area of metal. The benefit of this technology is that very little heat is generated at the weld point, allowing users to easily weld 0.05mm (.002") away from the most complicated and intricate component parts without damaging heat sensitive materials.



As the range of complex laser welding applications increases, LaserStar's research and development laboratory has continued its focus on accomplishing four major goals:

- ◆ Design the highest quality laser resonator cavity
- ◆ Produce a stable, clean, high-quality laser beam profile
- ◆ Accomplish consistent, pulse-to-pulse stability
- ◆ Optimize the laser beam shape to lower sensitivity to *thermal lensing*



High quality laser components (laser crystals, resonator reflectors, lens, lamps, etc.) continue to accomplish our goals. Nevertheless, *thermal lensing* still exists due to the nature and design of Nd:YAG laser systems.

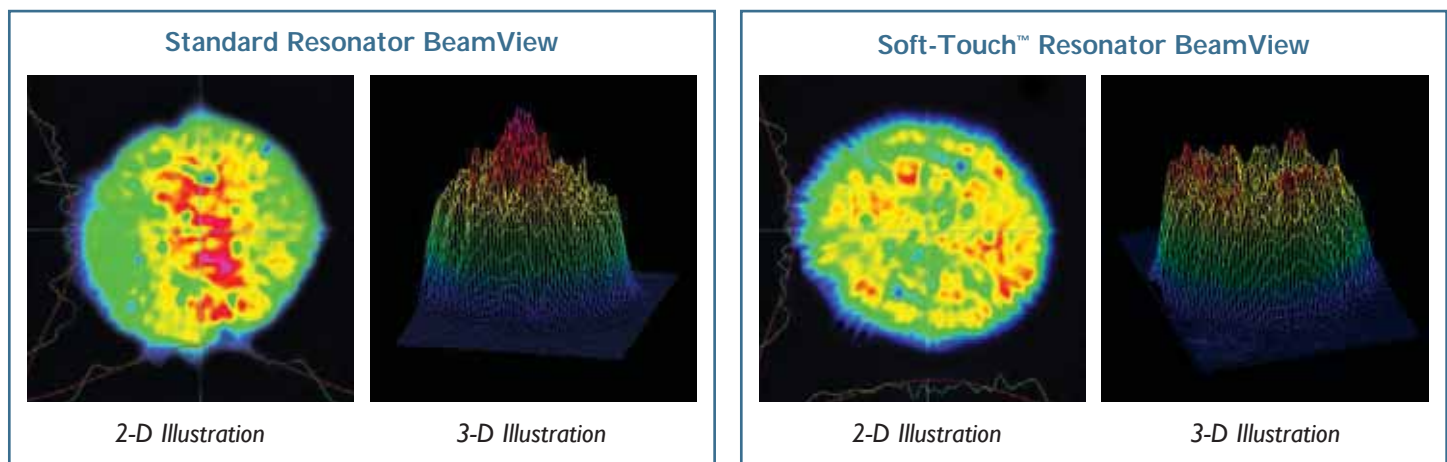
Thermal lensing is common in high-power laser systems. The heating of the gain medium (peak energy) is hotter on the beam axis compared to the outer regions. Consequently, *thermal lensing* can often cause inconsistent results when applied to small, micro-welding applications.

LaserStar's Soft-Touch™ Beam Enhancement Resonator Technology minimizes the impact of *thermal lensing* and greatly reduces the effects on the beam axis, producing an improved beam shape that can be focused to very small spot sizes while enhancing the overall weld quality.

The following BeamView Analyzer illustrations demonstrate the benefits of Soft-Touch™ Technology.

Complex Micro-Welding Energy Setting

(micro porosity, hollow parts, micro wire assembly, complex micro welding repairs, heat sensitive materials, etc.)



One can see from the Soft-Touch™ Technology image that a softer beam profile is generated, therefore greatly reducing the effects of the peak energy on the beam axis which often can splash metal, blow holes or damage heat-sensitive materials.

Soft-Touch™ Technology, combined with LaserStar's other state-of-the-art features and benefits allow today's operators to unleash the power of hot light, benefit from a comfortable, ergonomic design and ensure optimal platform technology.

Please review your specific application with a LaserStar Specialist to determine if the benefit of Soft-Touch™ Technology is appropriate for your LaserStar welding system.

Soft-Touch™ Technology is an optional feature.

EZ-LINK™ Software

LaserStar's EZ-LINK™ Software provides direct access to your LaserStar welding system's internal operating system via a personal computer. This feature offers many advanced communication features allowing owners to perform a wide range of tasks.

Key Features of LaserStar's EZ-LINK™ Software

- ◆ Connect and Control Your LaserStar - Remotely or On-site
- ◆ Create / Edit / Save Memory Parameter Settings
- ◆ Back-Up Memory Cells (Parameters and Descriptions)
- ◆ Monitor Daily System Performance
- ◆ Download System Updates
- ◆ Create Usage History Reports
- ◆ Perform Troubleshooting
- ◆ Run System Diagnostics



How to use the EZ-LINK™ Software

Most new LaserStar welding systems have the machine's operating system configured to accept the EZ-LINK™ software connection. Existing LaserStar owners can upgrade their machine with the latest hardware requirements for a nominal fee.

Simply load the EZ-LINK™ software onto a personal computer.¹ Once the program is installed, connect the PC to the LaserStar welding system with the provided connection cable as described in the installation instructions.

Once connected, you can manage your LaserStar welding system's valuable parameter combinations, share and download settings received from LaserStar Application Specialists, monitor system performance, and most importantly have peace of mind that your system is backed up in case an unexpected memory failure occurs.

Benefits of EZ-LINK™ Software

EZ-LINK™ software allows our Technical Support Department to perform real-time LaserStar system troubleshooting and maintenance. Remote access, direct connect features empower LaserStar technicians to "view and control" your machine from a remote location.²

Ideal for the worldwide marketplace, LaserStar Technologie's EZ-LINK™ Software provides remote access solutions that connect users directly with the manufacturer.



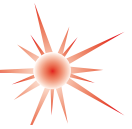
¹ Personal computer is to be supplied by the LaserStar owner. ²Some restrictions apply. Internet connection type and speed will influence remote access capabilities as well as operating system of personal computer.



Power Monitor / Energy Sampling

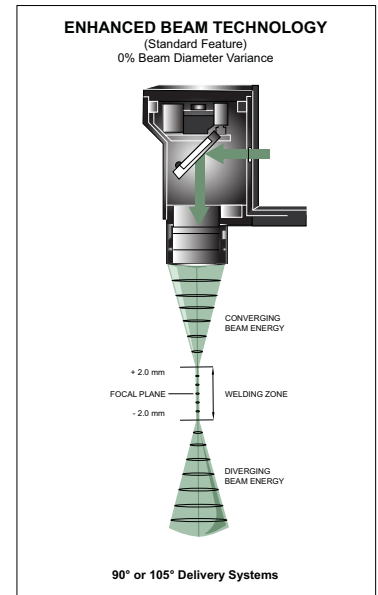
Energy Sampling is available on all LaserStar manual welding systems. This feature allows the user to measure the system's pulse energy output, validate pulse-to-pulse stability and gather statistical information for reporting purposes. The versatile power/energy display also offers many on-board features including laser tuning, data logging, graphing, normalizing, power or energy density units, attenuation scaling, max. and min. limits. All displays offer digital or analog needle screen selection.

ADDITIONAL FEATURES & BENEFITS



Enhanced Beam Technology

All manual welding devices are designed to the highest standards of laser resonator quality; produce a stable, clean, high quality beam profile; accomplish consistent pulse-to-pulse stability; and optimize the laser beam shape. An excellent welding zone range is present on all manual welding devices.



First Pulse Suppression (FPS) Technology

FPS technology minimizes the impact of thermal lensing and greatly reduces the effects on the beam axis, producing an improved beam shape that can result in excellent pulse-to-pulse stability and overall weld quality.

Speed Welding

Allows the operator to select the optimal pulse rate (voltage, milliseconds, and hertz) for the application while optimizing the laser system energy values to provide maximum average power output.

Burst Mode

Allows the operator to select a predefined number of laser pulses for each foot pedal activated discharge cycle.

Energy Saver / Sleep Mode

Optimizing the best electronic practices for saving energy, Sleep Mode promptly powers down your laser device during periods of non use. With the press of a button, your laser system will automatically switch back to full power. This feature not only reduces energy consumption but will also enhance flashlamp life.



Preventative Maintenance Alerts

Benefit from active display maintenance alerts to ensure your laser welding system is in peak performance at all times.

EZ-View® Optical Alignment

Benefit from the highest level of optical alignment with our EZ-View® optical bracket / stereo microscope alignment systems.



Whisper Series Internal Cooling Systems

Quiet, efficient cooling systems provide a significant pulse energy advantage while ensuring the highest level of hot-light energy transfer from the resonator source through the welding chamber.



LED Natural Lighting

All manual welding systems benefit from the highest quality LED natural lighting technology.

Flexible Platforms

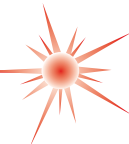
All models are available in a removable welding chamber design configured for the widest range of applications. A complete line of high precision motion devices are engineered to integrate into many of the welding chamber designs to enhance the systems production capabilities.

Options & Accessories

A wide range of beam expanders, apertures, optics, lens, and software settings are available to customize your manual welding system to ensure optimal platform performance.

(The above advanced features are available on select iWeld, LaserStar, and FiberStar Manual Welding Systems)

TECHNICAL SPECIFICATIONS



iWeld Laser Systems (980/990 Series)	
System Platform	Benchtop
Welding Chamber Safety Certification	Class I
iWeld Lasing System	Class 4
Wavelength	1,064 μ m
Output Pulse Energy	0.5 - 100 Joules
Maximum Peak Power	up to 10.0 kW [†]
Internal Power Supply	400 Volt
Average Power	35 Watts / 60 Watts
Pulse Length	0.5 - 30 Milli-seconds
Pulse Frequency	0.5 - 30 Hz
Burst / Speed Welding	Optimized to Energy Values
Beam Diameter ¹	0,05mm - 2,00mm
Cooling System	Internal Water-To-Air
Supply Circuit	120V (+/-10%), 50/60Hz 15 Amp, Single Phase 208V (+/-5%), 60Hz 20 Amp, Single Phase 230V (+/-10%), 50/60Hz 20 Amp, Single Phase
Binocular Microscope	15x (optional 25x, 40x)
Chamber Illumination System	LED Natural Lighting (Dual)
Soft-Touch™ Resonator Technology	Optional
Pulse Performance Profile Technology ²	Exclusive Integrated Software
Automatic Sleep Mode	Exclusive Integrated Software
Programming Memory	99 text cells
Program Application Settings	Yes
Parameter Adjustment Features	External Touchscreen Internal Joystick
Preventative Maintenance Alert Software	Yes
User "Direct Connect" Software	EZ-LINK™
Language Display Options ³ <i>(Additional Languages Available Upon Request)</i>	Yes
Motorized Beam Expander	Yes
Shield Gas Supply	Integrated "Soft Flow" Nozzle
Inert Gas Welding Chamber Adjust Valve	Yes
Welding Chamber Dimensions	10"L x 20"W x 9"H 254mm x 508mm x 229mm
"Footprint" Dimensions	33"L x 21"W x 16"H 839mm x 534mm x 406mm
Weight (Unpackaged)	125 lbs / 50 Kg
Warranty Coverage (Parts & Labor)	2 Years
Laser Safety Certification Compliance	FDA(CDRH), UL, CSA, CE
Country of Origin (Parts & Assembly)	Made In USA



iWeld Professional Laser Systems (960/970 Series)	
System Platform	Pedestal
Welding Chamber Safety Certification	Class I
iWeld Lasing System	Class 4
Wavelength	1,064 μ m
Output Pulse Energy	0.5 - 150 Joules
Maximum Peak Power	10.0 kW
Internal Power Supply	400 Volt
Average Power	60 Watts
Pulse Length	0.5 - 50 Milli-seconds
Pulse Frequency	0.5 - 30 Hz
Burst / Speed Welding	Optimized to Energy Values
Beam Diameter ¹	0,05mm - 2,00mm
Cooling System	Internal Water-To-Air
Supply Circuit	120V (+/-10%), 50/60Hz 15 Amp, Single Phase 208V (+/-5%), 60Hz 20 Amp, Single Phase 230V (+/-10%), 50/60Hz 20 Amp, Single Phase
Binocular Microscope	15x (optional 25x, 40x)
Chamber Illumination System	LED Natural Lighting (Dual)
Soft-Touch™ Resonator Technology	Optional
Pulse Performance Profile Technology ²	Exclusive Integrated Software
Automatic Sleep Mode	Exclusive Integrated Software
Programming Memory	99 text cells
Program Application Settings	Yes
Parameter Adjustment Features	External Touchscreen Internal Joystick
Preventative Maintenance Alert Software	Yes
User "Direct Connect" Software	EZ-LINK™
Language Display Options ³ <i>(Additional Languages Available Upon Request)</i>	Yes
Motorized Beam Expander	Yes
Shield Gas Supply	Integrated "Soft Flow" Nozzle
Inert Gas Welding Chamber Adjust Valve	Yes
Welding Chamber Dimensions	10"L x 20"W x 9"H 254mm x 508mm x 229mm
"Footprint" Dimensions	33"L x 21"W x 43"H 839mm x 534mm x 1093mm
Weight (Unpackaged)	180 lbs / 82 Kg
Warranty Coverage (Parts & Labor)	2 Years
Laser Safety Certification Compliance	FDA(CDRH), UL, CSA, CE
Country of Origin (Parts & Assembly)	Made In USA



¹0,05mm Spot Size will require Aperture Assembly. ²Pulse Performance Profile Technology[®] (P²) is an imbedded software feature to shape the wave profile for each laser pulse discharge. ³Additional languages available upon request. English language is default software. [†]40 Joule platform provides 5.5 kW peak power.

TECHNICAL SPECIFICATIONS



Technical Support

Regardless of the model or style of laser welding machine you have purchased, our highly-skilled engineering and sales staff are always available to review new applications, share technical expertise and provide service and support for all LaserStar's laser welding products.

To review specific technical matters when using any of LaserStar's laser welding machines, please do not hesitate to contact us.

Customer Support Help Desk

Enjoy all the convenience and reliable service you expect from LaserStar Technologies. Our customer support help desk is available to assist with spare parts orders, review recommended preventative maintenance procedures and provide answers to the most frequently asked questions.

Visit the eStore - Order Online

LaserStar Technologies is pleased to announce the opportunity to purchase spare parts, consumables and welding wire online at your convenience!



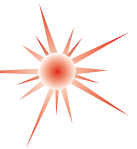
Lower prices may be available when you purchase items online. Vist www.laserstar.net today to learn more!



7000 Series LaserStar Advanced Workstations

System Platform	Pedestal
Welding Chamber Safety Certification	Class I
LaserStar Lasing System	Class 4
Wavelength	1,064µm
Output Pulse Energy	0.5 - 150 Joules
Maximum Peak Power	10.0 kW
Internal Power Supply	400 Volt
Average Power	60 Watts / 80 Watts
Pulse Length	0.5 - 50 Milli-seconds
Pulse Frequency	0.5 - 30 Hz
Burst / Speed Welding ¹	Energy Dependant (Max. 100W)
Beam Diameter ¹	0.05mm - 2,00mm
Cooling System	Internal Water-To-Air
Cooling Capacity-Run Time	24 hour / Continuous
Supply Circuit	120V (+/-10%), 50/60Hz 15 Amp, Single Phase 208V (+/-5%), 60Hz 20 Amp, Single Phase 230V (+/-10%), 50/60Hz 20 Amp, Single Phase
Binocular Microscope	15x (optional 25x, 40x)
Lynx Stereo Microscope	Optional
Chamber Illumination System	LED Natural Lighting (Quad)
EZ-LINK™ Software	Exclusive Integrated Feature
Soft-Touch™ Resonator Technology	Optional
Pulse Performance Profile Technology ² (P ²)	Exclusive Integrated Software
Automatic Sleep Mode	Exclusive Integrated Software
Parameter Adjustment Features	External Touchscreen Internal Joysticks
Programming Memory	99 text cells
Language Display Options ³ (Additional Languages Available Upon Request)	Yes
Program Application Settings	Yes
Preventative Maintenance Alert Software	Yes
User "Direct Connect" Software	EZ-LINK™
Motorized Beam Expander	Yes (multiple configurations available)
Motion Device Compatible	Limited
Shield Gas Supply	Integrated "Soft Flow" Nozzle
Inert Gas Welding Chamber Adjust Valve	Dual - Integrated
Welding Chamber Dimensions	13.3"L x 13.6"W x 7.5"H 337mm x 346mm x 190mm
Pedestal Workstation "Footprint" Dimensions	37.5"L x 15.8"W x 44"H 952mm x 401mm x 1117mm
Weight (Unpackaged)	200 lbs / 90 Kg
Warranty Coverage (Parts & Labor)	2 Years
Extended Warranty Coverage	Upgrade to 3 Years
Laser Safety Certification Compliance	FDA(CDRH), UL, CSA, CE
Country of Origin (Parts & Assembly)	Made In USA





1900 Series LaserStar Industrial Workstations

System Platform	Pedestal
Welding Chamber Safety Certification	Class I
LaserStar Lasing System	Class 4
Wavelength	1,064µm
Output Pulse Energy	0,5 - 150 Joules
Maximum Peak Power	10,0 kW
Internal Power Supply	400 Volt
Average Power	60 Watts / 80 Watts
Pulse Length	0,5 - 50 Milli-seconds
Pulse Frequency	0,5 - 30 Hz
Burst / Speed Welding [†]	Energy Dependant (Max. 100W)
Beam Diameter ¹	0,05mm - 2,00mm
Cooling System	Internal Water-To-Air
Cooling Capacity-Run Time	24 hour / Continuous
Supply Circuit	120V (+/-10%), 50/60Hz 15 Amp, Single Phase 208V (+/-5%), 60Hz 20 Amp, Single Phase 230V (+/-10%), 50/60Hz 20 Amp, Single Phase
Binocular Microscope	15x (optional 25x, 40x)
Lynx Stereo Microscope	Optional
Chamber Illumination System	LED Natural Lighting (Quad)
EZ-LINK™ Software	Exclusive Integrated Feature
Soft-Touch™ Resonator Technology	Optional
Pulse Performance Profile Technology ² (P ²)	Exclusive Integrated Feature
Automatic Sleep Mode	Exclusive Integrated Software
Parameter Adjustment Features	External Touchscreen Internal Chamber Joystick
Programming Memory	99 text cells
Language Display Options ³ (Additional Languages Available Upon Request)	Yes
Program Application Settings	Available upon request
Preventative Maintenance Alert Software	Yes
Motorized Beam Expander	Yes (multiple configurations available)
Motion Device Compatible	Yes
Shield Gas Supply	Integrated "Soft Flow" Nozzle
Inert Gas Welding Chamber Adjust Valve	Dual - Integrated
Automation Chamber Dimensions (Custom Sizes Available)	20"L x 15"W x 14"H 527mm x 398mm x 355mm
Pedestal Workstation "Footprint" Dimensions	37.5"L x 15.8"W x 44"H 952mm x 401mm x 1117mm
Weight (Unpackaged)	200 lbs / 90Kg
Warranty Coverage (Parts & Labor)	2 Years
Extended Warranty Coverage	Upgrade to 3 Years
Laser Safety Certification Compliance	FDA(CDRH), UL, CSA, CE
Country of Origin (Parts & Assembly)	Made In USA



1900 XL Series LaserStar Industrial Workstations

System Platform	Pedestal	
Welding Chamber Safety Certification	Class I	
LaserStar Lasing System	Class 4	
Wavelength	1,064µm	
Output Pulse Energy	0,5 - 150 Joules	
Maximum Peak Power	10,0 kW	
Internal Power Supply	400 Volt	
Average Power	60-200 Watts	
Pulse Length	0,5 - 50 Milli-seconds	
Pulse Frequency	0,5 - 30 Hz	
Burst / Speed Welding [†]	Energy Dependant (Max. 200W)	
Beam Diameter ¹	0,05mm - 2,00mm	
Cooling System	Internal / Chiller Ready	
Cooling Capacity-Run Time	24 hour / Continuous	
Supply Circuit	60 & 80 Watt 100, 150 & 200 Watt	208V (+/-5%), 60Hz 20 Amp, Single Phase 230V, (+/- 10%), 50/60 Hz 30 Amp, 3 Phase
Binocular Microscope	15x (optional 25x, 40x)	
Lynx Stereo Microscope	Optional	
Chamber Illumination System	LED Natural Lighting (Quad)	
EZ-LINK™ Software	Exclusive Integrated Feature	
Soft-Touch™ Resonator Technology	Optional	
Pulse Performance Profile Technology ² (P ²)	Exclusive Integrated Feature	
Automatic Sleep Mode	Exclusive Integrated Software	
Parameter Adjustment Features	External Touchscreen, O.I.T. Internal Chamber Joystick	
Programming Memory	99 text cells	
Language Display Options ³ (Additional Languages Available Upon Request)	Yes	
Program Application Settings	Available upon request	
Preventative Maintenance Alert Software	Yes	
Motorized Beam Expander	Yes (multiple configurations available)	
Motion Device Compatible	Yes	
Shield Gas Supply	Integrated "Soft Flow" Nozzle	
Inert Gas Welding Chamber Adjust Valve	Dual - Integrated	
Automation Chamber Dimensions (Custom Sizes Available)	28"L x 19"W x 12.9"H 720mm x 500mm x 328mm	
Pedestal Workstation "Footprint" Dimensions	45.5"L x 24"W x 42"H 1155mm x 609mm x 1060mm	
Weight (Unpackaged)	250 lbs / 90Kg	
Warranty Coverage (Parts & Labor)	2 Years	
Extended Warranty Coverage	Upgrade to 3 Years	
Laser Safety Certification Compliance	FDA(CDRH), UL, CSA, CE	
Country of Origin (Parts & Assembly)	Made In USA	



¹0,05mm Spot Size will require Aperture Assembly. ²Pulse Performance Profile Technology² (P²) is an imbedded software feature to shape the wave profile for each laser pulse discharge. ³Additional languages available upon request. English language is default software. [†]Speed welding enables the operator to optimize the maximum power (watts) output based on the energy values (parameters) selected for short bursts of laser energy.



7500 Series

FiberStar Workstations offer a significant competitive advantage for today's aerospace, electronics, medical device and micro component assembly marketplace subject to stringent quality requirements.

Fiber laser technology produces a sharp, focused light beam that consistently melts a very small area of metal. The benefit of the technology is that very little heat is generated at the weld point allowing users to easily weld > 0.025mm from complex, heat sensitive, intricate parts while providing unparalleled parameter flexibility from 0 – 100% duty cycle.

Designed to the highest standards of reliability, repeatability, and user safety, all FiberStar manual welding systems offer a factory sealed, maintenance-free laser source.

FiberStar Workstations are ideal for a wide range of complex alloys and applications including:

- Medical Device Components
- Aerospace and Electronics
- Automotive and Micro Components
- 300 Series Stainless Steel
- Nitinol, Titanium, Platinum
- Many Complex Alloys

HIGHLIGHTS

- Pulse Stability Less Than $\pm 1\%$
- Maintenance Free Source
- Motion Device Ready
- 100 - 400 Watt Models

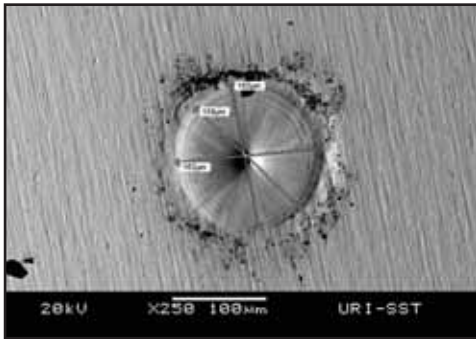
7500 Series
FiberStar Workstation
(Shown with Automation Chamber)



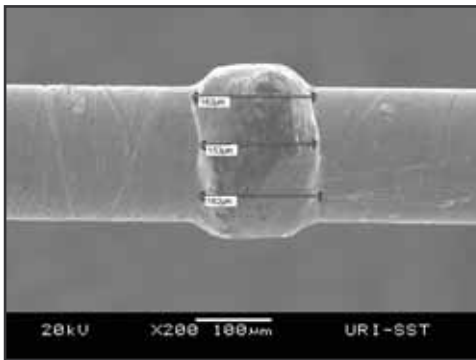
**STABLE, RELIABLE, REPEATABLE
PULSE AFTER PULSE**

ENERGY (J)	# SHOTS	DURATION	STD. DEV. (mJ)
.150	50	150 SEC.	0.90
.500	50	150 SEC.	1.29
2.00	50	150 SEC.	6.50

7500 Series FiberStar (100 Watt) - Statistical sampling subject to change based on operating conditions and environment.



250X magnification demonstrates the high level of spot size dimensional accuracy provided by the FiberStar Workstation.



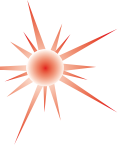
200X magnification demonstrates the uniform butt weld accomplished with .007" (.18mm) diameter Nitinol wire.



Medical devices, such as this catheter kit, can benefit from the micro welding and micro cutting abilities of the fiber laser equipped FiberStar workstation.

7500 Series FiberStar Workstations (90°)

System Platform	Pedestal
Welding Chamber Safety Certification	Class I
FiberStar Lasing System	Class 4
Beam Delivery Presentation	90 degree
Wavelength	1,070µm
Operating Mode	Pulse or Continuous Wave (CW)
Output Power	100-400 Watt (Pulse or CW)
Polarization	Random
Output Power Stability	< 2%
Closed Loop Pulse Control	Integrated Circuit / Software
M ²	1.1 nominal, < 1.2 maximum
Pulse Length	0,5 - 250 Milli-seconds
Pulse Frequency	0,5 - 20 Hz
Burst (Count) Mode	1 - 25 pulses
Beam Diameter (1/e ²)	.025 - 2.0 mm
Cooling System	Internal Forced Air (100 & 200 Watt) Close-Loop Water Cooled (300 & 400 Watt)
Cooling Capacity-Run Time	24 Hour / Continuous
Supply Circuit	120V (+/-10%), 50/60Hz 15 Amp, Single Phase 208V (+/-5%) or 230V (+/-10%) 50/60Hz, 20 Amp, Single Phase
Binocular Microscope (3 versions)	15x (optional 25x, 40x)
Chamber Illumination System	LED Natural Lighting (Quad)
Parameter Adjustment Features	External Touchscreen Internal Chamber Joysticks
Pulse Performance Profile Technology	Exclusive Integrated Software
Programming Memory	99 Text Cells
Language Display Options	English
Motorized Beam Expander	Yes
Shield Gas Supply	Integrated "Soft Flow" Nozzle
Inert Gas Welding Chamber Adjust Valve	Dual - Integrated
Welding Chamber Dimensions	13.3"L x 13.6"W x 7.5"H 337mm x 346mm x 178mm
Pedestal Workstation "Footprint" Dimensions	37.5"L x 15.8"W x 44"H 952mm x 401mm x 1117mm
Weight (Unpackaged)	265 lbs / 120 Kg
Warranty Coverage (Parts & Labor)	2 Years
Laser Safety Certification Compliance	FDA(CDRH), UL, CSA, CE
Country of Origin	Made in USA



7600 Series

FiberStar Workstations offer a significant competitive advantage for today's aerospace, electronics, medical device and micro/macro component assembly marketplace subject to stringent quality requirements.

Fiber laser technology produces a sharp, focused light beam that consistently melts a very small area of metal. The benefit of the technology is that very little heat is generated at the weld point allowing users to easily weld > 0.025mm from complex, heat sensitive, intricate parts while providing unparalleled parameter flexibility from 0 – 100% duty cycle.

Designed to the highest standards of reliability, repeatability, and user safety, all FiberStar manual welding systems offer a factory sealed, maintenance-free laser source.

FiberStar Workstations are ideal for a wide range of complex alloys and applications including:

- Medical Device Components
- Aerospace and Electronics
- Automotive and Micro Components
- Many Complex Alloys
- 300 Series Stainless Steel
- Nitinol, Titanium, Platinum
- Industrial Components
- Tool & Die Components

HIGHLIGHTS

Pulse Stability $\pm 1\%$
Maintenance Free Source
Motion Device Ready
Portable Workstation

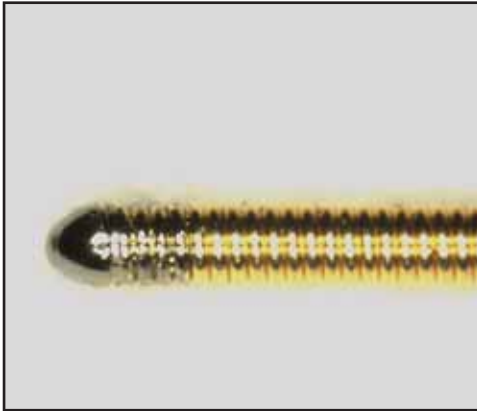
7600 Series
FiberStar Workstation
(Shown with Automation Chamber)



**STABLE, RELIABLE, REPEATABLE
PULSE AFTER PULSE**

ENERGY (J)	# SHOTS	DURATION	STD. DEV. (mJ)
.150	50	150 SEC.	0.90
.500	50	150 SEC.	1.29
2.00	50	150 SEC.	6.50

7600 Series FiberStar (100 Watt) - Statistical sampling subject to change based on operating conditions and environment.



Laser Spot Weld of NiTi Wire to Tungsten Coil



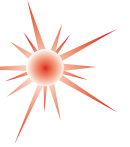
Laser Spot Weld for Solder Reflow



Laser Seam Weld of Pressure Cap

7600 Series FiberStar Workstations (90°)

System Platform	Pedestal
Welding Chamber Safety Certification	Class I
FiberStar Lasing System	Class 4
Beam Delivery Presentation	90 degree
Wavelength	1,070µm
Operating Mode	Pulse or Continuous Wave (CW)
Output Power (Average)	135 Watt (Pulse) / 225 Watt (CW)
Polarization	Random
Output Power Stability	+/-1%
Maximum Peak Power	1.35kW
M²	2.0 - 15.0
Pulse Length	0,5 - 250 Milli-seconds
Pulse Frequency	0,5 - 20 Hz
Burst (Count) Mode	1 - 25 pulses
Beam Diameter	> 25 micron
Cooling System	Internal Forced Air
Cooling Capacity-Run Time	24 Hour / Continuous
Supply Circuit	120V (+/-10%), 50/60Hz 15 Amp, Single Phase 208V (+/-5%) or 230V (+/-10%) 50/60Hz, 15 Amp, Single Phase
Binocular Microscope (3 versions)	15x (optional 25x, 40x)
Chamber Illumination System	LED Natural Lighting (Quad)
Parameter Adjustment Features	External Touchscreen Internal Chamber Joysticks
Pulse Performance Profile Technology	Exclusive Integrated Software
Programming Memory	99 Text Cells
Language Display Options	English
Motorized Beam Expander	Yes
Shield Gas Supply	Integrated "Soft Flow" Nozzle
Inert Gas Welding Chamber Adjust Valve	Dual - Integrated
Welding Chamber Dimensions	13.3"L x 13.6"W x 7.5"H 337mm x 346mm x 178mm
Pedestal WorkStation "Footprint" Dimensions	37.5"L x 15.8"W x 44"H 952mm x 401mm x 1117mm
Weight (Unpackaged)	220 lbs / 100 Kg
Warranty Coverage (Parts & Labor)	2 Years
Laser Safety Certification Compliance	FDA(CDRH), UL, CSA, CE
Country of Origin	Made in USA



Universal Jig & 7700 Series

Today's mold repair micro-welding laser industry is characterized by rapidly changing, ever-evolving customer demands and intense competition. Innovative ideas, successful designs and a strong commitment to superior quality and performance are the fundamentals of LaserStar Technologies Corporation.

LaserStar's Universal Jig offers a significant, competitive advantage for today's operators looking to unleash the power of hot light, benefit from a comfortable, ergonomic design and ensure optimal platform flexibility for the widest range of on-site repair applications.

■ HIGHLIGHTS

Open Workspace Design
Portable Precision Table
Ideal for Large Parts
Motorized X / Y / Z Axis

Our commitment to electrical design efficiency ensures the highest level of hot-light energy transfer from the LaserStar source through the welding zone. The result is a significant pulse energy advantage while maintaining minimum water cooling temperatures and 24-hour operational performance.



LaserStar welding systems are ideal for a wide range of large plastic injection mold, tool & die maintenance and repair applications.

- Lay a bead from .0025" / 0.40mm
- Repair slots, pockets, radius contours and angles
- Repair polished, textured and engraved surfaces
- Repair thin walls with little or no warping
- Repair parting line edges and heat sensitive areas
- Alloys include tool steel, aluminum, copper, titanium and powdered metals

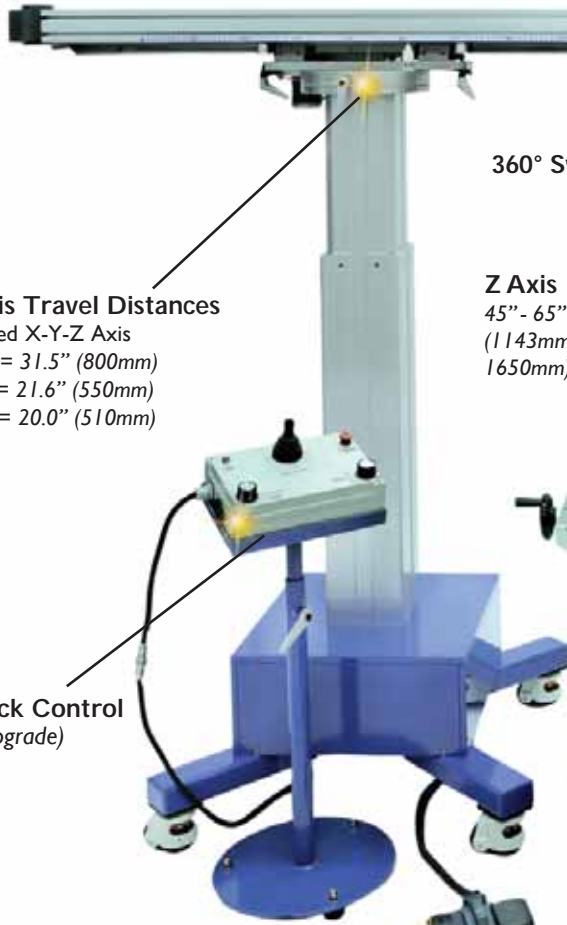
The LaserStar produces a high quality result, reduces the amount of handwork required before polishing and practically eliminates sink lines.

UNIVERSAL JIG WITH LASER WELDING SYSTEM



- Soft Beam™ Profile Enhancement Resonator Technology (Optional)

X Axis
46" (1168mm)



360° Swivel

Z Axis
45" - 65"
(1143mm - 1650mm)

Adjusts to Any Angle

- Theta X & Y: +/-45°
- Head Pivot: 180°
- Illuminated Work Area with Argon Flow Nozzle

Operator Interface Terminal (OIT)



Magnetic Holder for Small Parts

8150 Series LaserStar Welder

Multi Axis Travel Distances

- Motorized X-Y-Z Axis
 - X Axis = 31.5" (800mm)
 - Y Axis = 21.6" (550mm)
 - Z Axis = 20.0" (510mm)

X/Y Joystick Control
(Optional Upgrade)

Foot Pedal for Z Axis Control

3 Axis Precision Table

- Mechanical X = 8.0" (204mm)
- Mechanical Y = 8.5" (215mm)
- Motorized Z = 4.0" (102mm)

Base Measurements:
27.5" x 28.5" (698mm x 724mm)

System Weight:
365 lbs.

Benefits

Motorized X / Y / Z Axis • Rotates and Tilts in Almost Any Direction • Rigid Yet Mobile Frame • Complete Turnkey Solution

In the interest of technological progress, we reserve the right to make technical changes without notice.

Performance features of 7700 Series provided on page 30 & 31

LASERSTAR DUAL COMPONENT WELDERS



7700 Series

LaserStar's 7700 Series dual component manual laser welding systems are ideal for a wide range of unique and custom integration applications to meet the various demands of metal joining, complex assembly, and repair applications for the industrial marketplace.

Solution providers can benefit from a compact, portable, dual component design, making integration quick and easy for many Class I and Class 4 configurations.

Operators hold parts in their hands while viewing the application through a stereo-microscope in the welding area. An internal cross-hair allows the operator to easily align and weld the parts at the correct location.

Many materials can be laser welded including 300 and some 400 series stainless steel, mild steels, nickel and nickel alloys, aluminum and aluminum alloys, titanium, precious metal alloys (gold, silver, and platinum), etc.

LaserStar offers three levels of power (100 Watt, 150 Watt, 200 Watt) to meet a wide variety of integration and application requirements. Complete integration assistance can be provided by LaserStar's Application and Engineering departments.

■ HIGHLIGHTS

Dual Component Design
Compact, Portable Design
100-200 Watt Models
Integration Ready



Dual Component
150 Watt Welding
System Shown



Example of Integration Solution

7700 Series LaserStar Dual Component Welders

Technical Profile	100 Watt	150 Watt	200 Watt
LaserStar Lasing System	Class 4	Class 4	Class 4
Wavelength	1,064µm	1,064µm	1,064µm
Output Pulse Energy	0,5 - 150 Joules	0,5 - 150 Joules	0,5 - 150 Joules
Maximum Peak Power	10.0 kW	10.0 kW	10.0 kW
Average Power	100 Watts	150 Watts	200 Watts
Pulse Length	0,5 - 50 Milli-seconds	0,5 - 50 Milli-seconds	0,5 - 50 Milli-seconds
Pulse Frequency	0,5 - 20 Hz	0,5 - 20 Hz	0,5 - 20 Hz
Beam Diameter	0,05mm - 2,00 mm	0,05mm - 2,00 mm	0,05mm - 2,00 mm
Cooling System	Internal / Chiller Ready	Internal / Chiller Ready	External Chiller Required
Cooling Capacity-Run Time	24 hour/Continuous	24 hour/Continuous	24 hour/Continuous
Supply Circuit	230V (+/-10%),50/60Hz 30 Amp, Single or Three Phase	230V (+/-10%),50/60Hz 30 Amp, Single or Three Phase	230V (+/-10%),50/60Hz 30 Amp, Single or Three Phase
Binocular Microscope	15x (optional 25x, 40x)	15x (optional 25x, 40x)	15x (optional 25x, 40x)
Illumination System	LED Natural Lighting	LED Natural Lighting	LED Natural Lighting
Pulse Performance Profile Technology (P3)	Exclusive Integrated Software	Exclusive Integrated Software	Exclusive Integrated Software
Programming Memory	99 text cells	99 text cells	99 text cells
Automatic Sleep Mode	Exclusive Integrated Software	Exclusive Integrated Software	Exclusive Integrated Software
Parameter Adjustment Features	External Touchscreen Operator Interface Terminal	External Touchscreen Operator Interface Terminal	External Touchscreen Operator Interface Terminal
Preventative Maintenance Alert Software	Yes	Yes	Yes
Motorized Beam Expander	Yes	Yes	Yes
Shield Gas Supply	Dual Nozzles	Dual Nozzles	Dual Nozzles
Pedestal Power Supply Unit "Footprint" Dimensions	30"H x 24"W x 35"L 762mm x 610mm x 890mm	30"H x 24"W x 35"L 762mm x 610mm x 890mm	30"H x 24"W x 35"L 762mm x 610mm x 890mm
Weight (Unpackaged)	250 lbs / 114 Kg	250 lbs / 114 Kg	250 lbs / 114 Kg
Warranty Coverage (Parts & Labor)	Two years	Two years	Two years
Laser Safety Certification Compliance	FDA(CDRH), UL, CSA, CE	FDA(CDRH), UL, CSA, CE	FDA(CDRH), UL, CSA, CE
Country of Origin	Made In USA	Made In USA	Made In USA

NOTE: Fatigue test data can be provided upon request.

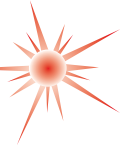


Operator Interface Terminal (OIT)



Dual Component Rail Assembly
(Shown with Binocular Microscope)

LASERSTAR FIBER-COUPLED WELDING SYSTEMS



8000 Series

LaserStar 8000 Series welding systems are fast, efficient, portable, Nd:YAG pulse laser systems with fiber coupled optical attachment for high-speed welding applications. Ideal for non-contact welding processes which join two similar or certain dissimilar metals together. LaserStar welding systems can produce both spot welds (single pulse) and seam welds (multi-pulse overlapping spots), including hermetically sound seams.

The 8000 Series offers users the ability to easily integrate the fiber optic beam delivery into high-speed assembly operations and/or motion systems to minimize or eliminate human contact with component parts.

Many materials can be laser welded including 300 and some 400 series stainless steel, mild steels, nickel and nickel alloys, aluminum and aluminum alloys, titanium, precious metal alloys (gold, silver, and platinum), etc.

HIGHLIGHTS

- 50 - 200W Nd:YAG Laser
- Compact - Portable Device
- Excellent Pulse Stability
- Integration Ready

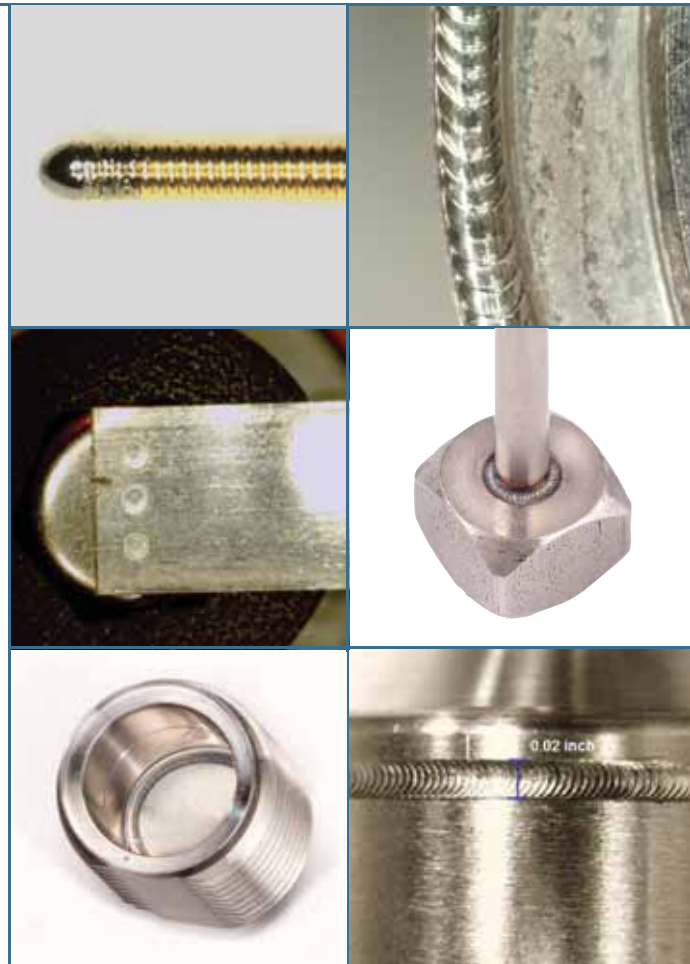
- Implantable Medical Devices
- Computer and Disk Drive Components
- Medical Components and Devices
- Automotive and Aerospace Electronics
- Microelectronic Assemblies
- Batteries (Seam and Tab Welds)
- Sensors and Controls
- Jewelry Chain Welding

8000 Series Micro-Welding Systems



80 Watt Model

200 Watt Model



8000 Series LaserStar Fiber-Coupled Welding Systems

Technical Profile	LaserStar 50 Watt	LaserStar 80 Watt	LaserStar 100 Watt	LaserStar 150 Watt	LaserStar 200 Watt
Laser Type	Nd:YAG	Nd:YAG	Nd:YAG	Nd:YAG	Nd:YAG
Wavelength	1.064µm	1.064µm	1.064µm	1.064µm	1.064µm
Average Power @ Ambient:	50 Watts @ 35° Celsius	80 Watts @ 30° Celsius	100 Watts @ 30° Celsius	150 Watts @ 30° Celsius	200 Watts @ 30° Celsius
Peak Power (kW)	10,0kW	10,0kW	10,0kW	10,0kW	10,0kW
Output Pulse Energy	0,5 - 100 Joules	0,5 - 100 Joules	0,5 - 100 Joules	0,5 - 100 Joules	0,5 - 100 Joules
Pulse Length (mS)	0,5 - 30mS	0,5 - 30mS	0,5 - 30mS	0,5 - 30mS	0,5 - 30mS
Pulse Frequency (Hz)	40Hz (2400 rpm)	40Hz (2400 rpm)	40Hz (2400 rpm)	40Hz (2400 rpm)	40Hz (2400 rpm)
Supply Circuit	208-240V (+/-5%) 12A, 50 - 60Hz/Single	208-240V (+/-5%) 30A, 50 - 60Hz/Single	208-240V (+/-5%) 30A, 50 - 60Hz/3 Phase	208-240V (+/-5%) 30A, 50 - 60Hz/3 Phase	208-240V (+/-5%) 30A, 50 - 60Hz/3 Phase
Pulse Shaping (P3)	Yes	Yes	Yes	Yes	Yes
Target Finder	Red Diode Laser Class IIIa	Red Diode Laser Class IIIa	Red Diode Laser Class IIIa	Red Diode Laser Class IIIa	Red Diode Laser Class IIIa
Fiber Optic Cables	Multi-mode / Step Index	Multi-mode / Step Index	Multi-mode / Step Index	Multi-mode / Step Index	Multi-mode / Step Index
Beam Diameter	175 - 1000µm	175 - 1000µm	175 - 1000µm	175 - 1000µm	175 - 1000µm
Memory Storage Cells	99 Cells	99 Cells	99 Cells	99 Cells	99 Cells
Diagnostic Audible Alert	Yes	Yes	Yes	Yes	Yes
Diagnostic Visual Alert	Optional	Optional	Optional	Optional	Optional
Cooling System	Air-Internal Closed Loop	Air-Internal Closed Loop	Air-Internal Closed Loop Optional Chiller	Air-Internal Closed Loop Optional Chiller	External Chiller Required
Dimensions	35"H x 10"W x 28"L 890mm x 255mm x 712mm	35"H x 24"W x 30"L 890mm x 610mm x 762mm	39"H x 24"W x 30"L 990mm x 610mm x 762mm	39"H x 24"W x 30"L 990mm x 610mm x 762mm	39"H x 24"W x 30"L 990mm x 610mm x 762mm
Weight	125lbs /56Kg	250lbs /110Kg	250lbs /110Kg	250lbs /110Kg	250lbs /110Kg
Warranty	Two Years	Two Years	Two Years	Two Years	Two Years
Certification	FDA(CDRH), UL, CSA, CE	FDA(CDRH), UL, CSA, CE	FDA(CDRH), UL, CSA, CE	FDA(CDRH), UL, CSA, CE	FDA(CDRH), UL, CSA, CE
Country of Origin	Made In USA	Made In USA	Made In USA	Made In USA	Made In USA

Chain Making Machine Integration

Chain Machine Compatible	Various Makes and Models
Cable, Focus Head and Trigger Compatible	Various Makes and Models



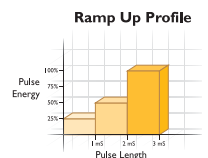
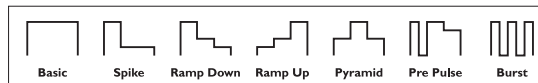
Optional Operator Interface Terminal (OIT)

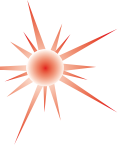
Pulse Performance Profile Technology (P³)



Pulse Performance Profile Technology®

Advanced Pulse Performance Profile Technology® will provide measurable results on the quality and consistency of laser welded materials. Profiling a LaserStar® pulse is simply selecting the percentage of pulse energy that is released for each half millisecond (.5 mS) section. Each individual section is defined at 25%, 50%, 75% or 100% of total pulse energy output.





8500/8600 Series

FiberStar 8500/600 Series systems are fast, efficient, portable, fiber laser engines with fiber optic attachment for high-speed welding and cutting applications. Ideal for non-contact welding processes which join two similar or certain dissimilar metals together. FiberStar systems can produce both spot welds (single pulse) and seam welds (multi-pulse overlapping spots including hermetically sound seams), and continuous wave (CW) output.

The FiberStar Series offers users the ability to easily integrate the fiber optic beam delivery into high-speed assembly operations and/or motion systems to minimize or eliminate human contact with component parts.

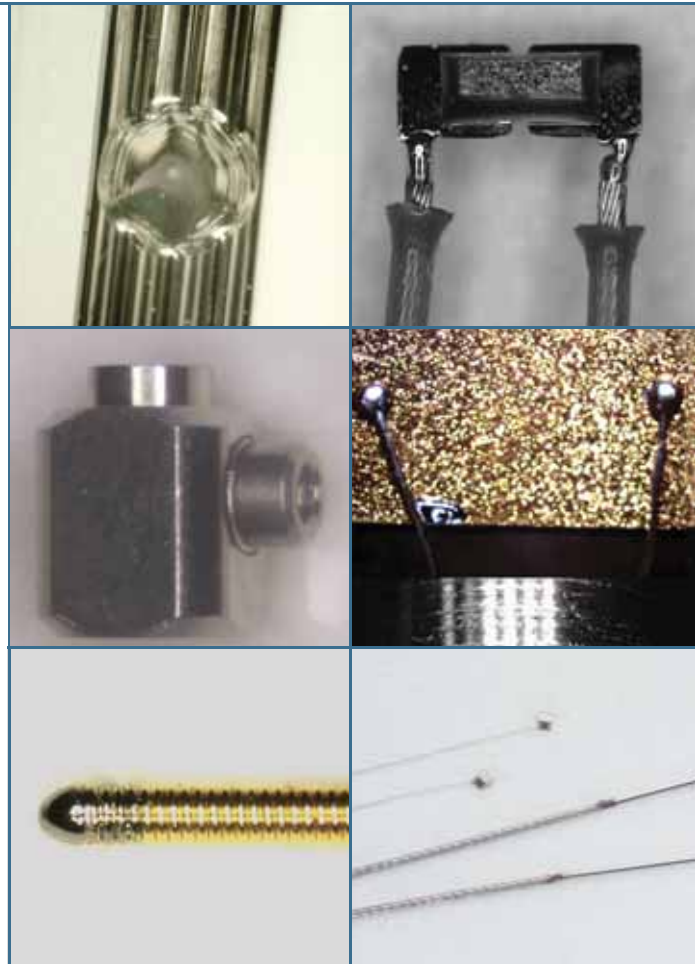
Designed to the highest standards of reliability, repeatability, and user safety, all FiberStar Series systems offer a factory sealed, maintenance-free laser source. Typical applications include:

HIGHLIGHTS

Pulse Stability $\pm 1\%$
Maintenance Free
Integration Ready
Portable Workstation

- Implantable Medical Devices
- Medical Components and Devices
- Microelectronic Assemblies
- Sensors and Controls
- Industrial Components
- Computer and Disk Drive Components
- Automotive and Aerospace Electronics
- Batteries (Seam and Tab Welds)
- Solar & Solar Cell Applications

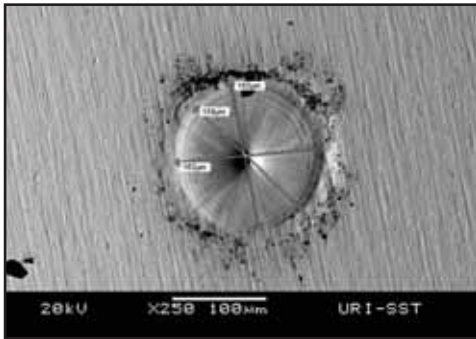
8600 Series FiberStar
Welding System



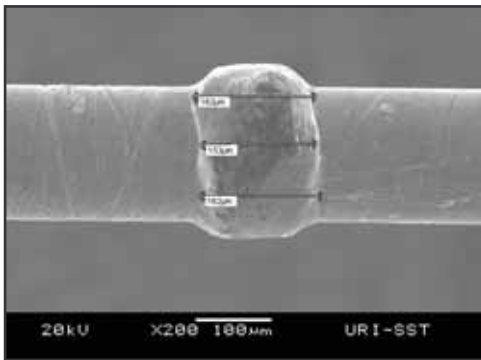
**STABLE, RELIABLE, REPEATABLE
PULSE AFTER PULSE**

ENERGY (J)	# SHOTS	DURATION	STD. DEV. (mJ)
.150	50	150 SEC.	0.90
.500	50	150 SEC.	1.29
2.00	50	150 SEC.	6.50

8600 Series FiberStar (100 Watt) - Statistical sampling subject to change based on operating conditions and environment.



250X magnification demonstrates the high level of spot size dimensional accuracy provided by the FiberStar Micro-Welding System.



200X magnification demonstrates the uniform butt weld accomplished with .007" (.18mm) diameter Nitinol wire.



Medical devices, such as this catheter kit, can benefit from the micro welding and micro cutting abilities of the fiber laser equipped FiberStar Micro-Welding System.

8500/8600 Series FiberStar Welding Systems

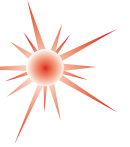
System Platform	Pedestal
FiberStar Lasing System	Class 4
Beam Delivery Presentation	Fiber
Wavelength	1,070µm
Operating Mode	Pulse or Continuous Wave (CW)
Output Power (Average)	Custom Configurations Available
Polarization	Random
Output Power Stability	+/- 1%
Maximum Peak Power	1.35kW
M ²	2.0-15.0
Pulse Length	0,5 - 250 Milli-seconds
Pulse Frequency	0,5 - 20 Hz
Burst (Count) Mode	1 - 25 pulses
Beam Diameter	> 25 micron
Cooling System	Internal Forced Air / Optional External Chiller
Cooling Capacity-Run Time	24 Hour / Continuous
Supply Circuit	120V (+/-10%), 50/60Hz 15 Amp, Single Phase 208V (+/-5%) or 230V (+/-10%) 50/60Hz, 15 Amp, Single Phase
Parameter Adjustment Features	External Touchscreen
Pulse Performance Profile Technology	Exclusive Integrated Software
Programming Memory	99 Text Cells
Language Display Options	English
Shield Gas Supply	Outlet
Inert Gas Welding Adjust Valve	Dual - Integrated
Pedestal WorkStation "Footprint" Dimensions	39"H x 24"W x 30"L 990mm x 610mm x 762mm
Weight (Unpackaged)	250 lbs / 110 Kg
Warranty Coverage (Parts & Labor)	2 Years
Laser Safety Certification Compliance	FDA(CDRH), UL, CSA, CE
Country of Origin	Made in USA

**Optional Operator
Interface Terminal (OIT)**



Cutting Head

FOCUS HEADS, CABLES & METERS

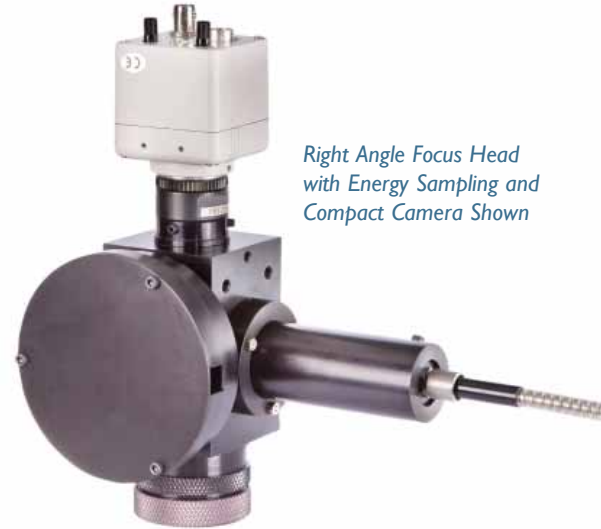


LaserStar Focus Heads provide exceptional beam quality while efficiently transferring the laser beam from the fiber cable to the focus head. Benefits include minimal spherical aberration, optimal beam spatial profile, and a precision beam diameter as small as 40 microns.

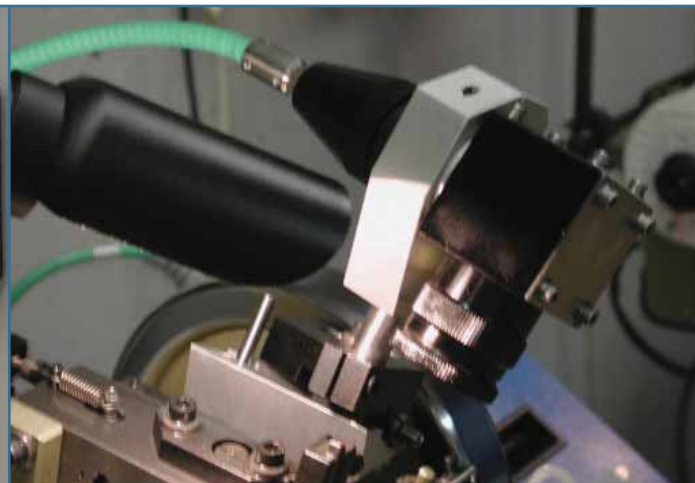
LaserStar offers a wide range of fiber diameters and focus heads to satisfy complex industrial applications. Straight, right angle (90°), power monitoring and CCTV Camera configurations, along with a wide range of focal lengths, ensure the proper solution for all precision laser welding requirements.

Features & Benefits

- Fiber Cable Diameters from 100 – 1000 microns
- Standard and Custom Fiber Cable Lengths
- Wide Range of Working Distances
- Ideal for Low and High Power Applications
- Industrial Mounting Bracket – Gantry Compatible
- CCTV Camera “Thru-the-Lens” Viewing
- Custom Optic and Focus Head Body Designs
- Cross-Hair Generator for Accurate Target Acquisition
- Power Monitor / Energy Sampling
- High Resolution Monitors Available



Right Angle Focus Head with Energy Sampling and Compact Camera Shown

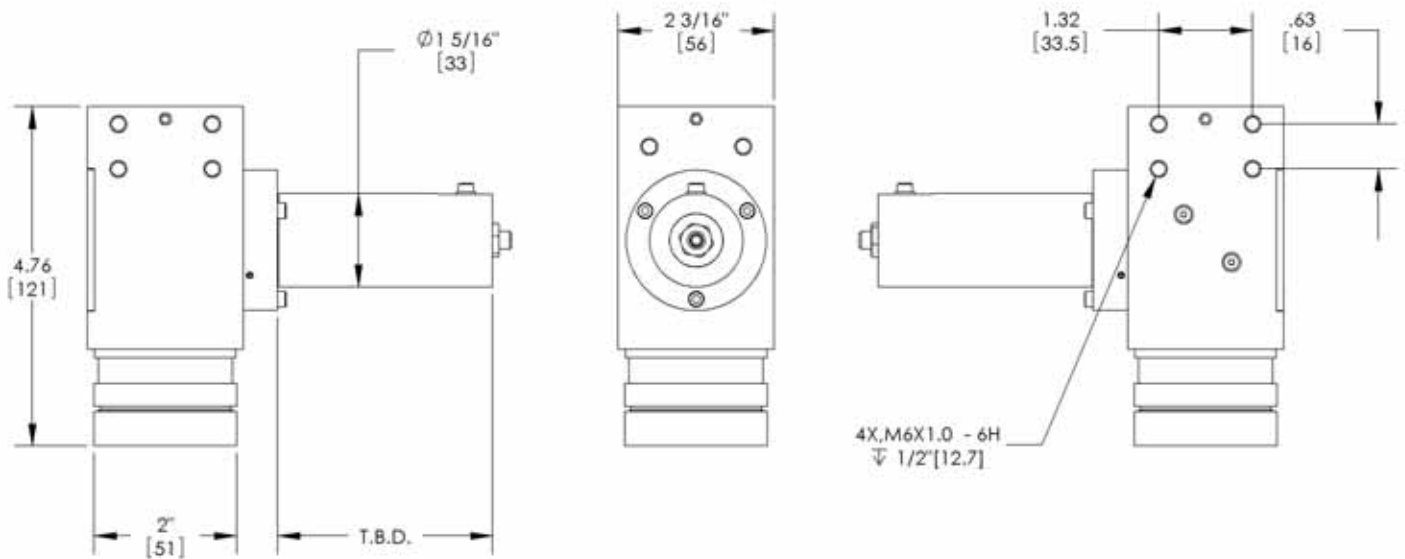


Model 3930 Spot Size Reference Chart Focus Head - Fiber Cable



Right Angle Focus Head Part #	Working Distance mm	Spot Diameter						
		Fiber Core Diameter (microns)						
		100µm	200µm	300µm	400µm	600µm	800µm	1000µm
607-3930-01	25	66	132	199	265	397	529	660
607-3930-02	25	53	107	160	213	320	426	426
607-3930-03	25	40	80	121	161	241	322	400
607-3930-04	35	83	166	249	332	498	664	830
607-3930-05	35	67	134	200	267	401	534	670
607-3930-06	35	51	101	151	202	302	403	505
607-3930-07	65	124	248	372	496	744	992	1240
607-3930-08	65	100	200	300	400	600	800	1000
607-3930-09	85	165	330	495	660	990	1320	1650
607-3930-10	85	134	267	400	533	800	1066	1335
607-3930-11	105	198	395	594	792	1188	1584	1980
607-3930-12	105	160	320	480	640	959	1279	1600

NOTES: Final Configuration Selection (Focus Head & Fiber Core Size) subject to review by LaserStar Applications Lab and Engineering.
Working Distance from the end Final Focus Lens-Tolerance +/- 2mm. Custom focus head dimensions available upon request.

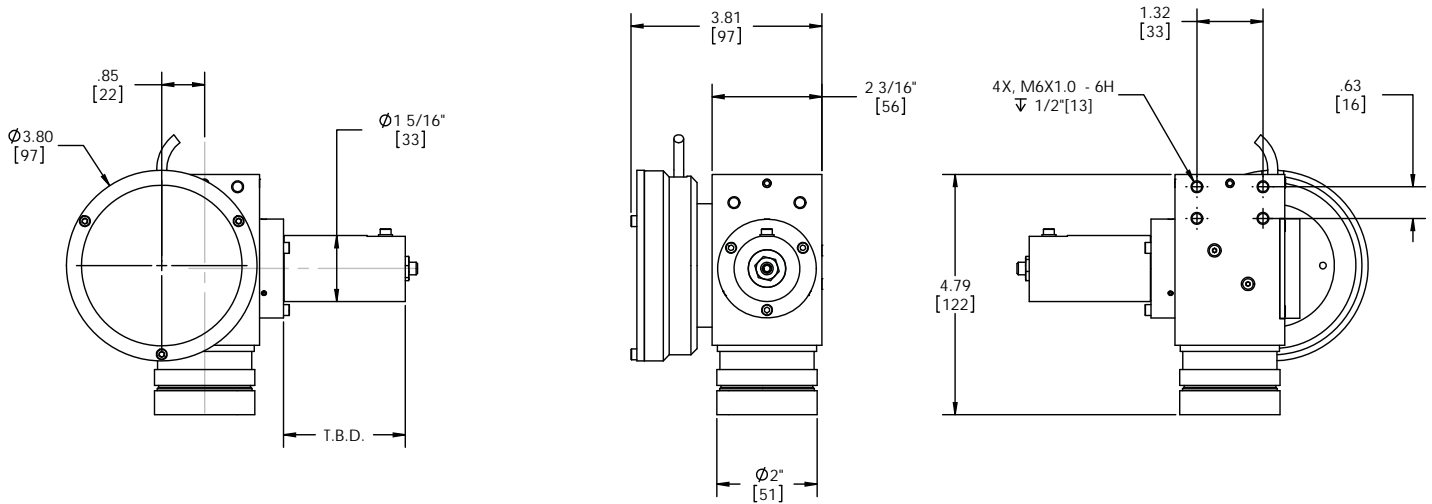




Model 3931 Spot Size Reference Chart Focus Head - Fiber Cable

Right Angle Focus Head Part #	Working Distance mm	Spot Diameter						
		Fiber Core Diameter (microns)						
		100µm	200µm	300µm	400µm	600µm	800µm	1000µm
607-3931-01	25	66	132	199	265	397	529	660
607-3931-02	25	53	107	160	213	320	426	426
607-3931-03	25	40	80	121	161	241	322	400
607-3931-04	35	83	166	249	332	498	664	830
607-3931-05	35	67	134	200	267	401	534	670
607-3931-06	35	51	101	151	202	302	403	505
607-3931-07	65	124	248	372	496	744	992	1240
607-3931-08	65	100	200	300	400	600	800	1000
607-3931-09	85	165	330	495	660	990	1320	1650
607-3931-10	85	134	267	400	533	800	1066	1335
607-3931-11	105	198	395	594	792	1188	1584	1980
607-3931-12	105	160	320	480	640	959	1279	1600

NOTES: Final Configuration Selection (Focus Head & Fiber Core Size) subject to review by LaserStar Applications Lab and Engineering.
Working Distance from the end Final Focus Lens-Tolerance +/- 2mm. Custom Focus Head dimensions available upon request.
Energy Meter Head position available as 90° offset (shown below) or in-line.



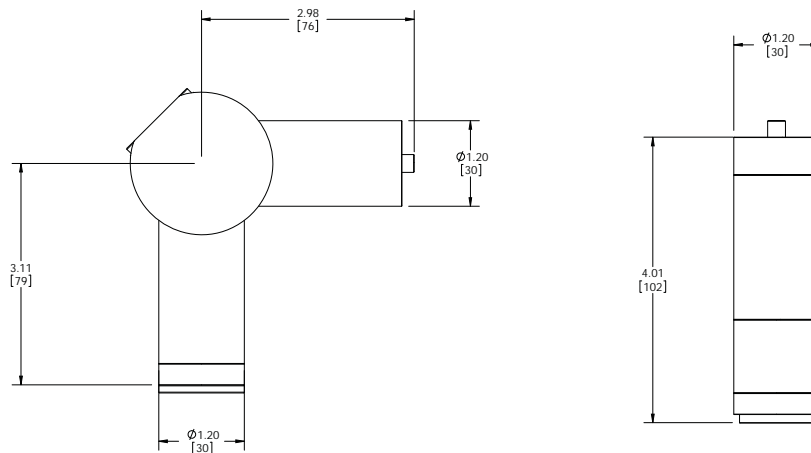


Model 30XX & 35XX Spot Size Reference Chart Basic Focus Head - Fiber Cable



Straight & Right Angle Basic Focus Head Part #	Working Distance mm	Spot Diameter						
		Fiber Core Diameter (microns)						
		100µm	200µm	300µm	400µm	600µm	800µm	1000µm
STRAIGHT								
607-3045	45	100	200	300	400	600	800	1000
607-3060	60	100	200	300	400	600	800	1000
607-3070	70	100	200	300	400	600	800	1000
RIGHT ANGLE								
607-3540	40	100	200	300	400	600	800	1000
607-3550	50	167	334	501	668	1002	1336	1670

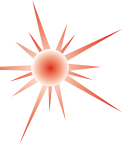
NOTES: Final Configuration Selection (Focus Head & Fiber Core Size) subject to review by LaserStar Applications Lab and Engineering.
Working Distance from the end Final Focus Lens-Tolerance +/- 2mm. Custom Focus Head dimensions available upon request.



Power Monitor / Energy Sampling Kit



Energy Sampling is available on all LaserStar Model 3931 right-angle focus heads. This feature allows the user to measure the system's pulse energy output, validate pulse-to-pulse stability and gather statistical information for reporting purposes. The versatile power/energy display also offers many on-board features including laser tuning, data logging, graphing, normalizing, power or energy density units, attenuation scaling, max. and min. limits. All displays offer digital or analog needle screen selection.



Integrated Turnkey Solutions

LaserStar Technologies offers a wide range of standard and custom welding workstations to meet a variety of precision spot and seam laser welding applications.

Multi-Purpose Workstations are Class I Enclosures that easily integrate with a variety of laser processing technologies and motion systems while providing full featured HMI (Human Machine Interface) capabilities for total process management. Workstation features include multi-axis motion devices, custom process controls, vision system alignment and inspection, atmospheric control, while offering the speed, reliability and flexibility required for meeting stringent quality control and process certification standards.

INDUSTRIES

Aerospace, Automotive
Medical Device, Implants
Electronic Components
Sensors & Controls, etc.

As a turnkey solution provider, LaserStar's Applications Specialists will evaluate your welding requirements, define the application goals and objectives, specify and verify the correct welding technology, and define a complete system configuration to accomplish the desired results.

- Spot and Seam Welding
- Nd:YAG and Fiber Compatible
- High Speed Motion Solutions
- Class I Eye Safe Enclosure
- Stable, Ergonomic Platform
- Space Saving Footprint

617-403-10 Turnkey Welding Workstation
(Shown with 517-8080 LaserStar Welding System
and Optional Sony Video System and Table)



Interior View of 617-402-10 Turnkey Welding System Shown with Horizontal Gantry, 4 Axis Motion Device, Focus Head and Camera Viewing System. This is one example of many different system configurations available.

Multi-Purpose Enclosure, Table Top - Class 1	
Model Number:	617-402, 617-403 (Basic Platform) 617-402-10, 617-403-10 (HMI Platform)
Supply Circuit:	120V, 50/60 Hz, 15 Amp, Single Phase 208 - 240V, 50/60 Hz, 15 Amp, Single Phase
Exterior Dimensions:	
617-402, 617-402-10	31"L x 28"W x 29"H 787mm x 715mm x 737mm
617-403, 617-403-10	41"L x 28"W x 29"H 1041mm x 715mm x 737mm
Interior Dimensions:	
617-402, 617-402-10	21"L x 27"W x 26"H 533mm x 691mm x 677mm
617-403, 617-403-10	31"L x 27"W x 26"H 787mm x 691mm x 677mm
Features:	HMI Controller (Human Machine Interface) Interior Grid Insert Plate Dual Argon Delivery System (Diffuser/Gas Lens) Interior Atmosphere Exhaust Port (Exhaust Unit not included) Interior Halogen Lights (Adjustable) Mechanical Front Door (Open-Close) Front Door Safety Interlock Front Door Laser Safety Glass Viewing Window Cable(s) Chamber Entry Port
Functions:	Argon Delivery - Adjustment Valves Fire Line to Laser Start/Stop Control Jog and Speed Adjustment Control End of Cycle Sensor Confirmation of Laser Pulse (Firing) Interior Light Adjustable Control Proximity Switch
System Compatible:	8000 Series LaserStar Welders 8500/8600 Series FiberStar Welders Motion Device Software
Software Communication:	Integrates with 8000/8500/8600 Series Control Software
Accessory Compatible:	Video Imaging Output Video Monitor Output Cross Hair Generator

*NOTE: Custom Multi-Purpose Welding Workstation dimensions are available upon request.
System available without HMI Controller.*

LaserStar's full featured HMI (Human Machine Interface) Controller offers programmer's the ability to control multiple system functions for total process management. Capabilities include a multi-level touch screen, X-Y-Z and rotary jog controls (Fig. 1), application specific storage cells (Fig. 2), rapid recall of weld schedules and laser system management (Fig. 3). A user-friendly design, coupled with process flexibility ensures proper interface between the laser and the motion device systems.



Fig. 1



Fig. 2



Fig. 3

NOTE: In the interest of technical progress, we reserve the right to make technical changes without notice.

MOTION DEVICES - WELDING SYSTEMS

HI-PRECISION ROTARY MODULE



LINEAR MOTION DEVICE WITH ROTARY



LINEAR MOTION DEVICE



LINEAR MOTION DEVICE WITH ROTARY



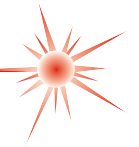
X-Y MOTION WITH MECHANICAL Z AXIS



X-Y MOTION WITH ROTARY (MECHANICAL Z AXIS)



In the interest of technical progress, we reserve the right to make technical changes without notice. Other Motion Device configurations are available upon request. Not all configurations are displayed. Motion device performance specifications can be found at www.laserstar.net.



**X-Y MOTION WITH ROTARY
(MECHANICAL Z AXIS)**



X-Y-Z MOTION WITH STAGE



X-Y-Z MOTION WITH ROTARY



**X-Y MOTION DEVICE
(HEAVY DUTY)**



**X-Y-Z MOTION DEVICE
(HEAVY DUTY)**



**X-Y-Z MOTION WITH ROTARY
(HEAVY DUTY)**



In the interest of technical progress, we reserve the right to make technical changes without notice. Other Motion Device configurations are available upon request. Not all configurations are displayed. Motion device performance specifications can be found at www.laserstar.net.

MOTION DEVICE CONTROLLER

Manage up to 4 Axis' - PID compensation with velocity and acceleration feed forward, synchronizing motion, point-to-point positioning, jogging, linear and circular interpolation, contouring. Ethernet 10 Base-T Port; (1) RS232 Port; 8 TTL Inputs and 8 Outputs.

***TECHNICAL REQUIREMENTS FOR MOTION DEVICES REQUIRING A COMPUTER:** Customer to provide suitable PC or Laptop with the following minimum specifications: Pentium/Celeron 300MHz CPU, 128 MB RAM, 1.5GB Hard Disc Space, Super VGA (800 x 600) Graphics, CD-ROM or DVD Drive, RS232 Port (or USB to RS232 Converter), Keyboard and Mouse.

OPTIONS AND ACCESSORIES



Argon Regulator Kit



Power Monitor Kit



Extension Tubes for Laser Welding



High Resolution Camera



Cross Hair Generator



Chamber Color Video Camera



Bar Code Scanner

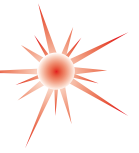


Fume Exhaust System



Safety Glasses

Above is a sampling of our more popular Options and Accessories.



Adjustable Wedge



Fixed Wedge



Aperture Kit



Lab Jack Stand



Magnetic Stand



Black Stage (5 Axis)



Adjustable Table



iWeld Compact Stand



Saddle Stool



LaserStar's Application Specialists are experienced in all facets of microscopic joint design, process development, materials handling, lean manufacturing, and turnkey solutions that are subject to stringent quality requirements.

Our Applications Laboratory is a valuable resource to test and verify a laser's "fitness for the application" for many welding and marking opportunities.

Take advantage of this resource by requesting a Complimentary Application Evaluation. LaserStar's Application Specialists will discuss your specific requirements, test your application, generate a Sample Evaluation Report, and recommend the proper system configuration.



LaserStar has years of experience in welding and marking a wide range of materials, including:

Nitinol • Monel • Titanium • Stainless Steel • Steel Alloys • Nickel Alloys • Aluminum
Gold • Platinum • Silver • Kovar • Beryllium • Niobium • Iridium
Inconel • Tungsten Carbide

Benefits of Laser Technology

- *NON-CONTACT PROCESS*
- *MINIMAL DISTORTION*
- *EXCELLENT REPEATABILITY*
- *NO TOOLING WEAR*
- *SUPERIOR QUALITY RESULTS*
- *SMALL HEAT-AFFECTED ZONE*
- *HIGH PROCESS SPEEDS*
- *JOINING VARIABLE PART THICKNESSES*
- *LOW NOISE LEVELS*
- *INTEGRATION – AUTOMATION READY*



LaserStar is Your Partner for Success!

At LaserStar Technologies, we have a passion for better ideas. Whether pushing the limits of technology and design or bringing LaserStar users together to share new and innovative application concepts, we work to approach every challenge with ingenuity and care.

Our education courses are designed to provide you with a solid foundation of fundamental laser welding and marking skill sets to immediately gain a revenue impact with your new or existing iWeld, LaserStar, FiberStar or FiberCube System.

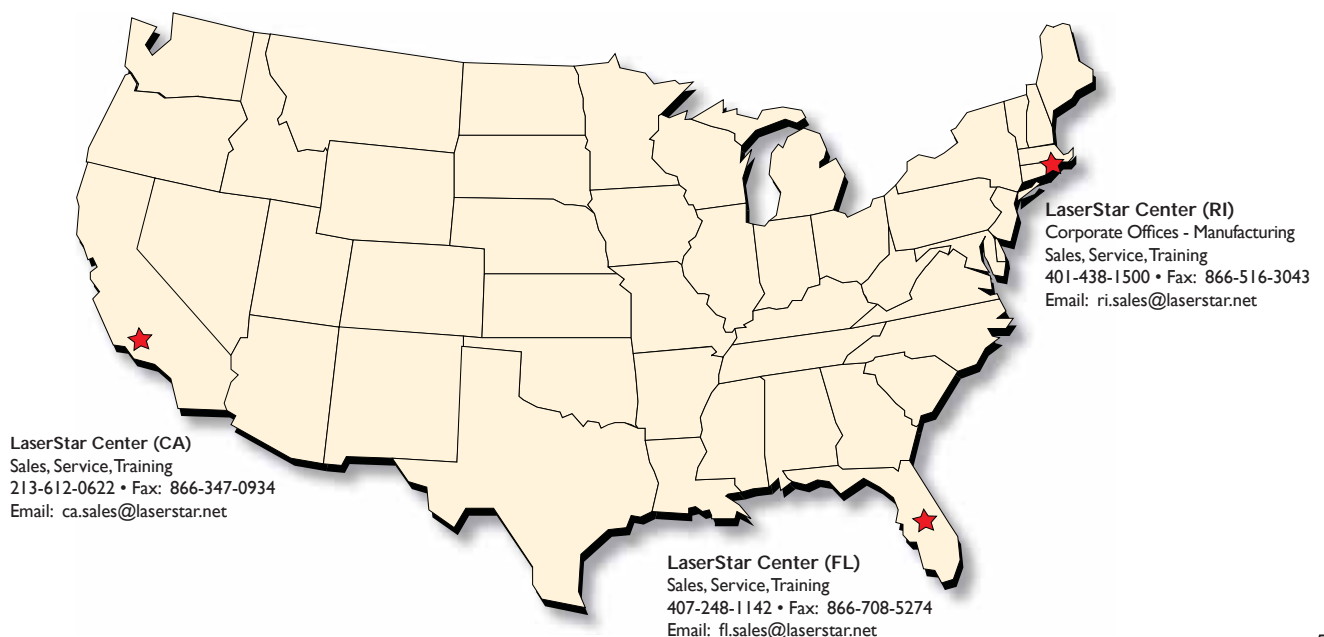
LaserStar's Application Specialists are highly-trained, seasoned professionals with more than 60 years combined experience in welding and marking applications. Our experts will demonstrate techniques and share real examples of how LaserStar's technology will impact your business in regard to time, money and artistic approach.



"We utilize the training and skill sets everyday. We cannot express enough our pleasure with the LaserStar and our overwhelming satisfaction with LaserStar's training and support staff."

– Christine Psaledakis, N. Conway, NH

LaserStar Learning Center Locations



New! iWeld Professional



Laser Marking Systems



Welding Workstations



Multi-Access Motion Devices



**Manufacturer of
Advanced Laser
Sources and Systems**

Education & Training



Service & Support



LASERSTAR
TECHNOLOGIES



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