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

- [iWeld](#)
- [iWeld Professional](#)
- [FiberStar](#)
- [FiberCube](#)
- [LaserStar](#)
- [Pulse Performance Profile Technology](#)
- [Soft-Touch Resonator Technology and EZ-LINK](#)

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LASER is an acronym for “Light Amplification by the Stimulated Emission of Radiation” 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!

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
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
Pod 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

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Mold Insert Repair
Mold Insert Repair

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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

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

.025 mm - 2.5 mm .001 - .010" Diameters

Medical Device Small Guide Wire Welds

Cables Joining
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.

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

HIGHLIGHTS
- Accurate, Powerful
- Compact, Portable
- Easy Set-Up, 40-100 Joule
- 120V-230V, 35 & 60 Watt
PERFORMANCE FEATURES AND BENEFITS

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

- **Custom Pulse Profiling**
- **Pulse Suppression Software**

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

**Ergonomically Designed Forearm Entry Ports**

**Large Viewing Window**

**Removable Door**

**More Efficient Power Supply Technology**

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

**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

**Side Entry Service Panels**
(“Easy Access” to Maintenance Tasks)
- 120V or 208-240V Single Phase Supply Circuit

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

**TECHNOLOGY**
- Soft Beam™ Profile Enhancement Resonator Technology (Optional)
- Custom Color Options
- Custom Pulse Profiling
- Pulse Suppression Software
- Soft Beam™-Touch Technology
- Soft Beam™-Touch Technology
- Soft Beam™-Touch Technology

**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
PERFORMANCE FEATURES AND BENEFITS

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

- Custom Pulse Profiling
- Pulse Suppression Software

Digital Messaging Display

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

More Efficient Power Supply Technology

Large Viewing Window

Removable Door

Ergonomically Designed Forearm Entry Ports

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

Side Entry Service Panels

(“Easy Access” to Maintenance Tasks)

- Soft Beam® Profile Enhancement Resonator Technology (Optional)

120V or 208-240V Single Phase Supply Circuit

Interior Chamber Design

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

MADE IN THE USA

Worldwide Safety Certification

FDA(CDRH), UL, CSA, CE

Technical specifications are provided on page 21
LASERSTAR ADVANCED WORKSTATIONS

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.

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.

HIGHLIGHTS

- Ergonomic Design
- Excellent Pulse Stability
- Portable Workstation
- 80-150 J, 60 & 80W Models
**PERFORMANCE FEATURES AND BENEFITS**

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

### Multiple Viewing Systems
- ClearView Binocular Microscope
- EasyView Binocular Microscope
- Leica Binocular Microscope
- ClearView Trinocular Microscope with Camera
- Leica Trinocular Microscope with Camera
- Lynx Series Projection Microscope

### Custom Color Options
- Sapphire Blue/Pearl White
- Titanium/Pearl White
- Ruby Red/Pearl White
- Pearl White

### Digital Messaging Display
- Cross-Hair Alignment
- Memory Mode
- 25 CROSS-HAIR ALIGNMENT
- 180V 10 cm 15 cm 2 cm
- System Status
- System Error

### 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)

### Ergonomically Designed Forearm Entry Ports
- Side Entry Service Panels (Provides “easy access” to maintenance tasks)

### Automation Opportunities
- Integrated Motion Systems
- Multi-Depth Chamber Inserts

### EZ-LINK™ Software
- Soft Beam Profile Enhancement Resonator Technology (Optional)

### Interior Chamber Design
- LED Natural Lighting (Quad)
- Dual Inert Gas Delivery System
- Dual Operating Logic

### Large Viewing Window
- 22.5 square inches - 145 square cm

### Exterior Chamber Design
- 120V or 208-240V Single Phase Supply Circuit

### Safety
- Pulse Profile Technology

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**TECHNOLOGY**

- Soft Touch Technology
- MAV (Micro-Arc Voltage)
- Soft-Touch Technology™
- Resonator Technology (Optional)

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**MADE IN THE USA**

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Technical specifications are provided on page 22
LASERSTAR INDUSTRIAL WORKSTATIONS

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.

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
**Performance Features and Benefits**

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

**Interior Chamber Design**
- LED Natural Lighting (Quad)
- Dual Inert Gas Delivery System
- Dual Operating Logic

**Multiple Viewing Systems**

**Custom Color Options**
- Sapphire Blue/Pearl White
- Titanium/Pearl White
- Ruby Red/Pearl White
- Pearl White

**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

**Extension Accessories**
- Extension Tube - 3, 6 or 9 inch

**Removable Chamber with Three Access Panels**

**Automation Opportunities**

**Side Entry Service Panels**
(Provides “easy access” to maintenance tasks)

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

Technical specifications are provided on page 23
LASERSTAR INDUSTRIAL WORKSTATIONS

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
**Performance Features and Benefits**

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

- Multiple Viewing Systems
- Custom Color Options
- Digital Messaging Display
- Extension Accessories
- Removable Chamber with Three Access Panels
- Large Viewing Window
- Automated Energy Save Mode
- Integrated Preventative Maintenance Alerts
- Multi-Language System Display
- 99 Memory Settings
- Pre-Programmed Application
- LED Natural Lighting (Quad)
- Dual Inert Gas Delivery System
- Dual Operating Logic
- Pulse Performance Profile Technology®

**Custom Color Options**

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

**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

**Automation Opportunities**

**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.

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.

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

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.

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.

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.

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.
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. 2 Some 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.
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.

SpeedWelding
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)
### iWeld Laser Systems (980/990 Series)

**System Platform**: Benchtop

**Welding Chamber Safety Certification**: Class 1

**iWeld Lasing System**: Class 4

**Wavelength**: 1.064µm

**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**

- 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**

- 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**

- 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

---

1. 0.05mm Spot Size will require Aperture Assembly.
2. Pulse Performance Profile Technology® (P3) is an imbedded software feature to shape the wave profile for each laser pulse discharge.
3. Additional languages available upon request.
4. English language is default software.
5. †40 Joule platform provides 5.5 kW peak power.
**Technical Specifications**

**System Platform**
Pedestal

**Welding Chamber Safety Certification**
Class 1

**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**
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® (P3)**
Exclusive Integrated Software

**Automatic Sleep Mode**
Exclusive Integrated Software

**Parameter Adjustment Features**
External Touchscreen
Internal Joysticks

**Programming Memory**
99 text cells

**Language Display Options**
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

---

### 7000 Series LaserStar Advanced Workstations

### 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 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. Visit www.laserstar.net today to learn more!

---

*0.05mm Spot Size will require Aperture Assembly. *Pulse Performance Profile Technology® (P3) is an imbedded software feature to shape the wave profile for each laser pulse discharge. *Additional 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.
## 1900 Series LaserStar Industrial Workstations

<table>
<thead>
<tr>
<th>Feature</th>
<th>1900 Series</th>
<th>1900 XL Series</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>System Platform</strong></td>
<td>Pedestal</td>
<td>Pedestal</td>
</tr>
<tr>
<td><strong>Welding Chamber Safety Certification</strong></td>
<td>Class 1</td>
<td>Class 1</td>
</tr>
<tr>
<td><strong>LaserStar Lasing System</strong></td>
<td>Class 4</td>
<td>Class 4</td>
</tr>
<tr>
<td><strong>Wavelength</strong></td>
<td>1.064µm</td>
<td>1.064µm</td>
</tr>
<tr>
<td><strong>Output Pulse Energy</strong></td>
<td>0.5 - 150 Joules</td>
<td>0.5 - 150 Joules</td>
</tr>
<tr>
<td><strong>Maximum Peak Power</strong></td>
<td>100 kW</td>
<td>100 kW</td>
</tr>
<tr>
<td><strong>Internal Power Supply</strong></td>
<td>400 Volt</td>
<td>400 Volt</td>
</tr>
<tr>
<td><strong>Average Power</strong></td>
<td>60 Watts / 80 Watts</td>
<td>60 - 200 Watts</td>
</tr>
<tr>
<td><strong>Pulse Length</strong></td>
<td>0.5 - 50 Milli-seconds</td>
<td>0.5 - 50 Milli-seconds</td>
</tr>
<tr>
<td><strong>Pulse Frequency</strong></td>
<td>0.5 - 30 Hz</td>
<td>0.5 - 30 Hz</td>
</tr>
<tr>
<td><strong>Burst / Speed Welding</strong></td>
<td>Energy Dependant (Max. 100W)</td>
<td>Energy Dependant (Max. 200W)</td>
</tr>
<tr>
<td><strong>Beam Diameter</strong></td>
<td>0.05mm - 2.00mm</td>
<td>0.05mm - 2.00mm</td>
</tr>
<tr>
<td><strong>Cooling System</strong></td>
<td>Internal Water-To-Air</td>
<td>Internal Chiller Ready</td>
</tr>
<tr>
<td><strong>Cooling Capacity-Run Time</strong></td>
<td>24 hour / Continuous</td>
<td>24 hour / Continuous</td>
</tr>
<tr>
<td><strong>Supply Circuit</strong></td>
<td></td>
<td>60 &amp; 80 Watt</td>
</tr>
<tr>
<td></td>
<td></td>
<td>100, 150 &amp; 200 Watt</td>
</tr>
<tr>
<td><strong>Beam Diameter</strong></td>
<td></td>
<td>208V (+/-5%), 60Hz</td>
</tr>
<tr>
<td><strong>Average Power</strong></td>
<td></td>
<td>30 Amp, 3 Phase</td>
</tr>
<tr>
<td><strong>Pulse Length</strong></td>
<td></td>
<td>100, 150 &amp; 200 Watt</td>
</tr>
<tr>
<td><strong>Pulse Frequency</strong></td>
<td></td>
<td>30 Amp, 3 Phase</td>
</tr>
<tr>
<td><strong>Burst / Speed Welding</strong></td>
<td></td>
<td>60 &amp; 80 Watt</td>
</tr>
<tr>
<td><strong>Cooling System</strong></td>
<td></td>
<td>230V, (+/- 10%), 50/60 Hz</td>
</tr>
<tr>
<td><strong>Temperature Adjustment Features</strong></td>
<td></td>
<td>20 Amp, Single Phase</td>
</tr>
<tr>
<td><strong>Parameter Adjustment Features</strong></td>
<td></td>
<td>20 Amp, Single Phase</td>
</tr>
<tr>
<td><strong>Programming Memory</strong></td>
<td>99 text cells</td>
<td>99 text cells</td>
</tr>
<tr>
<td><strong>Language Display Options</strong></td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>(Additional Languages Available Upon Request)</td>
<td></td>
<td>(Optional 25x, 40x)</td>
</tr>
<tr>
<td><strong>Program Application Settings</strong></td>
<td>Available upon request</td>
<td>Available upon request</td>
</tr>
<tr>
<td><strong>Preventative Maintenance Alert Software</strong></td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td><strong>Motorized Beam Expander</strong></td>
<td>(multiple configurations available)</td>
<td>(multiple configurations available)</td>
</tr>
<tr>
<td><strong>Motion Device Compatible</strong></td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td><strong>Shield Gas Supply</strong></td>
<td>Integrated “Soft Flow” Nozzle</td>
<td>Integrated “Soft Flow” Nozzle</td>
</tr>
<tr>
<td><strong>Inert Gas Welding Chamber Adjust Valve</strong></td>
<td>Dual - Integrated</td>
<td>Dual - Integrated</td>
</tr>
<tr>
<td><strong>Automation Chamber Dimensions</strong></td>
<td>20”L x 15”W x 14”H</td>
<td>28”L x 19”W x 12.9”H</td>
</tr>
<tr>
<td>(Custom Sizes Available)</td>
<td>527mm x 398mm x 355mm</td>
<td>720mm x 500mm x 328mm</td>
</tr>
<tr>
<td><strong>Pedestal Workstation</strong></td>
<td>37.5”L x 15.8”W x 44”H</td>
<td>45.5”L x 24”W x 42”H</td>
</tr>
<tr>
<td>“Footprint” Dimensions</td>
<td>952mm x 401mm x 1117mm</td>
<td>1155mm x 609mm x 1060mm</td>
</tr>
<tr>
<td><strong>Weight (Unpackaged)</strong></td>
<td>200 lbs / 90Kg</td>
<td>250 lbs / 90Kg</td>
</tr>
<tr>
<td><strong>Warranty Coverage (Parts &amp; Labor)</strong></td>
<td>2 Years</td>
<td>2 Years</td>
</tr>
<tr>
<td><strong>Extended Warranty Coverage</strong></td>
<td>Upgrade to 3 Years</td>
<td>Upgrade to 3 Years</td>
</tr>
<tr>
<td><strong>Laser Safety Certification Compliance</strong></td>
<td>FDA(CDRH), UL, CSA, CE</td>
<td>FDA(CDRH), UL, CSA, CE</td>
</tr>
<tr>
<td><strong>Country of Origin (Parts &amp; Assembly)</strong></td>
<td>Made In USA</td>
<td>Made In USA</td>
</tr>
</tbody>
</table>

*0.05mm Spot Size will require Aperture Assembly. *Pulse Performance Profile Technology® (P3) is an embedded software feature to shape the wave profile for each laser pulse discharge. †Additional 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.
FiberStar Workstations

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
### STABLE, RELIABLE, REPEATABLE PULSE AFTER PULSE

<table>
<thead>
<tr>
<th>ENERGY (J)</th>
<th># SHOTS</th>
<th>DURATION</th>
<th>STD. DEV (mJ)</th>
</tr>
</thead>
<tbody>
<tr>
<td>.150</td>
<td>50</td>
<td>150 SEC.</td>
<td>0.90</td>
</tr>
<tr>
<td>.500</td>
<td>50</td>
<td>150 SEC.</td>
<td>1.29</td>
</tr>
<tr>
<td>2.00</td>
<td>50</td>
<td>150 SEC.</td>
<td>6.50</td>
</tr>
</tbody>
</table>

#### 7500 Series FiberStar Workstations (90°)

- **System Platform**: Pedestal
- **Welding Chamber Safety Certification**: Class 1
- **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<sub>2</sub>**: 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/e²)**: 0.025 - 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**:
  - “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

---

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 (100 Watt) - Statistical sampling subject to change based on operating conditions and environment.
FiberStar Workstations offer a significant competitive advantage for today’s aerospace, electronics, medical device and micro/macrop 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
**7600 Series FiberStar Workstations (90°)**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>System Platform</strong></td>
<td>Pedestal</td>
</tr>
<tr>
<td><strong>Welding Chamber Safety Certification</strong></td>
<td>Class 1</td>
</tr>
<tr>
<td><strong>FiberStar Lasing System</strong></td>
<td>Class 4</td>
</tr>
<tr>
<td><strong>Beam Delivery Presentation</strong></td>
<td>90 degree</td>
</tr>
<tr>
<td><strong>Wavelength</strong></td>
<td>1,070µm</td>
</tr>
<tr>
<td><strong>Operating Mode</strong></td>
<td>Pulse or Continuous Wave (CW)</td>
</tr>
<tr>
<td><strong>Output Power (Average)</strong></td>
<td>135 Watt (Pulse) / 225 Watt (CW)</td>
</tr>
<tr>
<td><strong>Polarization</strong></td>
<td>Random</td>
</tr>
<tr>
<td><strong>Output Power Stability</strong></td>
<td>+/-1%</td>
</tr>
<tr>
<td><strong>Maximum Peak Power</strong></td>
<td>1.35kW</td>
</tr>
<tr>
<td><strong>M</strong></td>
<td>2.0 - 15.0</td>
</tr>
<tr>
<td><strong>Pulse Length</strong></td>
<td>0.5 - 250 Milli-seconds</td>
</tr>
<tr>
<td><strong>Pulse Frequency</strong></td>
<td>0.5 - 20 Hz</td>
</tr>
<tr>
<td><strong>Burst (Count) Mode</strong></td>
<td>1 - 25 pulses</td>
</tr>
<tr>
<td><strong>Beam Diameter</strong></td>
<td>&gt; 25 micron</td>
</tr>
<tr>
<td><strong>Cooling System</strong></td>
<td>Internal Forced Air</td>
</tr>
<tr>
<td><strong>Cooling Capacity-Run Time</strong></td>
<td>24 Hour / Continuous</td>
</tr>
<tr>
<td><strong>Supply Circuit</strong></td>
<td>120V (+/-10%), 50/60Hz, 15 Amp, Single Phase</td>
</tr>
<tr>
<td></td>
<td>208V (+/-5%) or 230V (+/-10%), 50/60Hz, 15 Amp, Single Phase</td>
</tr>
<tr>
<td><strong>Binocular Microscope (3 versions)</strong></td>
<td>15x (optional 25x, 40x)</td>
</tr>
<tr>
<td><strong>Chamber Illumination System</strong></td>
<td>LED Natural Lighting (Quad)</td>
</tr>
<tr>
<td><strong>Parameter Adjustment Features</strong></td>
<td>External Touchscreen, Internal Chamber Joysticks</td>
</tr>
<tr>
<td><strong>Pulse Performance Profile Technology</strong></td>
<td>Exclusive Integrated Software</td>
</tr>
<tr>
<td><strong>Programming Memory</strong></td>
<td>99 Text Cells</td>
</tr>
<tr>
<td><strong>Language Display Options</strong></td>
<td>English</td>
</tr>
<tr>
<td><strong>Motorized Beam Expander</strong></td>
<td>Yes</td>
</tr>
<tr>
<td><strong>Shield Gas Supply</strong></td>
<td>Integrated “Soft Flow” Nozzle</td>
</tr>
<tr>
<td><strong>Inert Gas Welding Chamber Adjust Valve</strong></td>
<td>Dual - Integrated</td>
</tr>
<tr>
<td><strong>Welding Chamber Dimensions</strong></td>
<td>13.3&quot;L x 13.6&quot;W x 7.5&quot;H, 337mm x 346mm x 178mm</td>
</tr>
<tr>
<td><strong>Pedestal WorkStation</strong></td>
<td>37.5&quot;L x 15.8&quot;W x 44&quot;H, 952mm x 401mm x 1117mm</td>
</tr>
<tr>
<td><strong>“Footprint” Dimensions</strong></td>
<td>220 lbs / 100 Kg</td>
</tr>
<tr>
<td><strong>Warranty Coverage (Parts &amp; Labor)</strong></td>
<td>2 Years</td>
</tr>
<tr>
<td><strong>Laser Safety Certification Compliance</strong></td>
<td>FDA(CDRH), UL, CSA, CE</td>
</tr>
<tr>
<td><strong>Country of Origin</strong></td>
<td>Made in USA</td>
</tr>
</tbody>
</table>
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.

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**

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

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

- 3 Axis Precision Table

- X/Y Joystick Control (Optional Upgrade)

- Foot Pedal for Z Axis Control

- Magnetic Holder for Small Parts

- 8150 Series LaserStar Welder

- X/Y Swivel

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

- 360° Swivel

- Operator Interface Terminal (OIT)

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

- Soft Beam™ Profile Enhancement

- Resonator Technology (Optional)

- 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 1 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

Example of Integration Solution
## 7700 Series LaserStar Dual Component Welders

<table>
<thead>
<tr>
<th>Technical Profile</th>
<th>100 Watt</th>
<th>150 Watt</th>
<th>200 Watt</th>
</tr>
</thead>
<tbody>
<tr>
<td>LaserStar Lasing System</td>
<td>Class 4</td>
<td>Class 4</td>
<td>Class 4</td>
</tr>
<tr>
<td>Wavelength</td>
<td>1.064µm</td>
<td>1.064µm</td>
<td>1.064µm</td>
</tr>
<tr>
<td>Output Pulse Energy</td>
<td>0.5 - 150 Joules</td>
<td>0.5 - 150 Joules</td>
<td>0.5 - 150 Joules</td>
</tr>
<tr>
<td>Maximum Peak Power</td>
<td>10.0 kW</td>
<td>10.0 kW</td>
<td>10.0 kW</td>
</tr>
<tr>
<td>Average Power</td>
<td>100 Watts</td>
<td>150 Watts</td>
<td>200 Watts</td>
</tr>
<tr>
<td>Pulse Length</td>
<td>0.5 - 50 Milli-seconds</td>
<td>0.5 - 50 Milli-seconds</td>
<td>0.5 - 50 Milli-seconds</td>
</tr>
<tr>
<td>Pulse Frequency</td>
<td>0.5 - 20 Hz</td>
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<td>0.05mm - 2.00 mm</td>
<td>0.05mm - 2.00 mm</td>
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<tr>
<td>Cooling System</td>
<td>Internal / Chiller Ready</td>
<td>Internal / Chiller Ready</td>
<td>External Chiller Required</td>
</tr>
<tr>
<td>Cooling Capacity-Run Time</td>
<td>24 hour/Continuous</td>
<td>24 hour/Continuous</td>
<td>24 hour/Continuous</td>
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<tr>
<td>Supply Circuit</td>
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<td>230V (+/-10%),50/60Hz 30 Amp, Single or Three Phase</td>
<td>230V (+/-10%),50/60Hz 30 Amp, Single or Three Phase</td>
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<tr>
<td>Binocular Microscope</td>
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<td>15x (optional 25x, 40x)</td>
<td>15x (optional 25x, 40x)</td>
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<tr>
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<td>LED Natural Lighting</td>
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<tr>
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<td>Exclusive Integrated Software</td>
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</tr>
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<td>Automatic Sleep Mode</td>
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<tr>
<td>Parameter Adjustment Features</td>
<td>External Touchscreen Operator Interface Terminal</td>
<td>External Touchscreen Operator Interface Terminal</td>
<td>External Touchscreen Operator Interface Terminal</td>
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<tr>
<td>Preventative Maintenance Alert Software</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
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<tr>
<td>Motorized Beam Expander</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
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<tr>
<td>Shield Gas Supply</td>
<td>Dual Nozzles</td>
<td>Dual Nozzles</td>
<td>Dual Nozzles</td>
</tr>
<tr>
<td>Pedestal Power Supply Unit</td>
<td>30&quot;H x 24&quot;W x 35&quot;L 762mm x 610mm x 890mm</td>
<td>30&quot;H x 24&quot;W x 35&quot;L 762mm x 610mm x 890mm</td>
<td>30&quot;H x 24&quot;W x 35&quot;L 762mm x 610mm x 890mm</td>
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<tr>
<td>&quot;Footprint&quot; Dimensions</td>
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<tr>
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<td>250 lbs / 114 Kg</td>
<td>250 lbs / 114 Kg</td>
<td>250 lbs / 114 Kg</td>
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<td>Warranty Coverage (Parts &amp; Labor)</td>
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<td>Two years</td>
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<tr>
<td>Laser Safety Certification Compliance</td>
<td>FDA(CDRH), UL, CSA, CE</td>
<td>FDA(CDRH), UL, CSA, CE</td>
<td>FDA(CDRH), UL, CSA, CE</td>
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<td>Made In USA</td>
<td>Made In USA</td>
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</table>

**NOTE:** Fatigue test data can be provided upon request.

---

![Dual Component Rail Assembly](image)

* (Shown with Binocular Microscope)

![Operator Interface Terminal](image)
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.

- 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

HIGHLIGHTS

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

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

---

### 8000 Series LaserStar Fiber-Coupled Welding Systems

<table>
<thead>
<tr>
<th>Technical Profile</th>
<th>LaserStar 50 Watt</th>
<th>LaserStar 80 Watt</th>
<th>LaserStar 100 Watt</th>
<th>LaserStar 150 Watt</th>
<th>LaserStar 200 Watt</th>
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<tbody>
<tr>
<td><strong>Laser Type</strong></td>
<td>Nd:YAG</td>
<td>Nd:YAG</td>
<td>Nd:YAG</td>
<td>Nd:YAG</td>
<td>Nd:YAG</td>
</tr>
<tr>
<td><strong>Wavelength</strong></td>
<td>1.064µm</td>
<td>1.064µm</td>
<td>1.064µm</td>
<td>1.064µm</td>
<td>1.064µm</td>
</tr>
<tr>
<td><strong>Average Power @ Ambient</strong></td>
<td>50 Watts @ 35° Celsius</td>
<td>80 Watts @ 30° Celsius</td>
<td>100 Watts @ 30° Celsius</td>
<td>150 Watts @ 30° Celsius</td>
<td>200 Watts @ 30° Celsius</td>
</tr>
<tr>
<td><strong>Peak Power (KW)</strong></td>
<td>10.0kW</td>
<td>10.0kW</td>
<td>10.0kW</td>
<td>10.0kW</td>
<td>10.0kW</td>
</tr>
<tr>
<td><strong>Output Pulse Energy</strong></td>
<td>0.5 - 100 Joules</td>
<td>0.5 - 100 Joules</td>
<td>0.5 - 100 Joules</td>
<td>0.5 - 100 Joules</td>
<td>0.5 - 100 Joules</td>
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<tr>
<td><strong>Pulse Length (mS)</strong></td>
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<td>0.5 - 30mS</td>
<td>0.5 - 30mS</td>
<td>0.5 - 30mS</td>
<td>0.5 - 30mS</td>
</tr>
<tr>
<td><strong>Pulse Frequency (Hz)</strong></td>
<td>40Hz (2400 rpm)</td>
<td>40Hz (2400 rpm)</td>
<td>40Hz (2400 rpm)</td>
<td>40Hz (2400 rpm)</td>
<td>40Hz (2400 rpm)</td>
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<tr>
<td><strong>Supply Circuit</strong></td>
<td>208-240V (+/-5%)</td>
<td>208-240V (+/-5%)</td>
<td>208-240V (+/-5%)</td>
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<td>208-240V (+/-5%)</td>
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<td>10.0kW</td>
<td>10.0kW</td>
<td>10.0kW</td>
</tr>
<tr>
<td><strong>Output Pulse Energy</strong></td>
<td>0.5 - 100 Joules</td>
<td>0.5 - 100 Joules</td>
<td>0.5 - 100 Joules</td>
<td>0.5 - 100 Joules</td>
<td>0.5 - 100 Joules</td>
</tr>
<tr>
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<td>0.5 - 30mS</td>
<td>0.5 - 30mS</td>
<td>0.5 - 30mS</td>
<td>0.5 - 30mS</td>
<td>0.5 - 30mS</td>
</tr>
<tr>
<td><strong>Pulse Frequency (Hz)</strong></td>
<td>40Hz (2400 rpm)</td>
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<td>40Hz (2400 rpm)</td>
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<td>40Hz (2400 rpm)</td>
</tr>
<tr>
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<td>208-240V (+/-5%)</td>
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<td>10.0kW</td>
<td>10.0kW</td>
<td>10.0kW</td>
</tr>
<tr>
<td><strong>Output Pulse Energy</strong></td>
<td>0.5 - 100 Joules</td>
<td>0.5 - 100 Joules</td>
<td>0.5 - 100 Joules</td>
<td>0.5 - 100 Joules</td>
<td>0.5 - 100 Joules</td>
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<td><strong>Pulse Length (mS)</strong></td>
<td>0.5 - 30mS</td>
<td>0.5 - 30mS</td>
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</tr>
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</tr>
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<td>10.0kW</td>
<td>10.0kW</td>
<td>10.0kW</td>
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<tr>
<td><strong>Output Pulse Energy</strong></td>
<td>0.5 - 100 Joules</td>
<td>0.5 - 100 Joules</td>
<td>0.5 - 100 Joules</td>
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<td>0.5 - 100 Joules</td>
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<td>0.5 - 30mS</td>
<td>0.5 - 30mS</td>
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<tr>
<td><strong>Pulse Frequency (Hz)</strong></td>
<td>40Hz (2400 rpm)</td>
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<tr>
<td><strong>Supply Circuit</strong></td>
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<td>Nd:YAG</td>
<td>Nd:YAG</td>
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<td>150 Watts @ 30° Celsius</td>
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</tr>
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<td>10.0kW</td>
<td>10.0kW</td>
<td>10.0kW</td>
<td>10.0kW</td>
</tr>
<tr>
<td><strong>Output Pulse Energy</strong></td>
<td>0.5 - 100 Joules</td>
<td>0.5 - 100 Joules</td>
<td>0.5 - 100 Joules</td>
<td>0.5 - 100 Joules</td>
<td>0.5 - 100 Joules</td>
</tr>
<tr>
<td><strong>Pulse Length (mS)</strong></td>
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<td>0.5 - 30mS</td>
<td>0.5 - 30mS</td>
<td>0.5 - 30mS</td>
<td>0.5 - 30mS</td>
</tr>
<tr>
<td><strong>Pulse Frequency (Hz)</strong></td>
<td>40Hz (2400 rpm)</td>
<td>40Hz (2400 rpm)</td>
<td>40Hz (2400 rpm)</td>
<td>40Hz (2400 rpm)</td>
<td>40Hz (2400 rpm)</td>
</tr>
<tr>
<td><strong>Supply Circuit</strong></td>
<td>208-240V (+/-5%)</td>
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<td>208-240V (+/-5%)</td>
<td>208-240V (+/-5%)</td>
<td>208-240V (+/-5%)</td>
</tr>
</tbody>
</table>

#### Pulse Performance Profile Technology (P³)

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.

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**Optional Operator Interface Terminal (OIT)**
FiberStar Welding Systems

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:

- 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
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
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 / 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

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.

STABLE, RELIABLE, REPEATABLE PULSE AFTER PULSE

<table>
<thead>
<tr>
<th>ENERGY (J)</th>
<th># SHOTS</th>
<th>DURATION</th>
<th>STD. DEV (mJ)</th>
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</thead>
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<tr>
<td>.150</td>
<td>50</td>
<td>150 SEC.</td>
<td>0.90</td>
</tr>
<tr>
<td>.500</td>
<td>50</td>
<td>150 SEC.</td>
<td>1.29</td>
</tr>
<tr>
<td>2.00</td>
<td>50</td>
<td>150 SEC.</td>
<td>6.50</td>
</tr>
</tbody>
</table>

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.
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
# Model 3930
## Spot Size Reference Chart
### Focus Head - Fiber Cable

<table>
<thead>
<tr>
<th>Right Angle Focus Head Part #</th>
<th>Working Distance mm</th>
<th>Spot Diameter Fiber Core Diameter (microns)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>100µm</td>
<td>200µm</td>
</tr>
<tr>
<td>607-3930-01</td>
<td>25</td>
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<tr>
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<td>607-3930-03</td>
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<td>607-3930-11</td>
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<tr>
<td>607-3930-12</td>
<td>105</td>
<td>160</td>
</tr>
</tbody>
</table>

**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

<table>
<thead>
<tr>
<th>Right Angle Focus Head</th>
<th>Working Distance mm</th>
<th>Spot Diameter Fiber Core Diameter (microns)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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<td>100μm</td>
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<td>607-3931-01</td>
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<td>25</td>
<td>53</td>
</tr>
<tr>
<td>607-3931-03</td>
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<td>40</td>
</tr>
<tr>
<td>607-3931-04</td>
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<td>83</td>
</tr>
<tr>
<td>607-3931-05</td>
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<td>607-3931-06</td>
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<td>607-3931-07</td>
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<td>607-3931-08</td>
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<td>607-3931-09</td>
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<td>607-3931-10</td>
<td>85</td>
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<td>607-3931-11</td>
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<tr>
<td>607-3931-12</td>
<td>105</td>
<td>160</td>
</tr>
</tbody>
</table>

**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

<table>
<thead>
<tr>
<th>Straight &amp; Right Angle Basic Focus Head</th>
<th>Working Distance (mm)</th>
<th>Spot Diameter</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Fiber Core Diameter (microns)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>100μm</td>
</tr>
<tr>
<td>STRAIGHT</td>
<td></td>
<td>607-3045</td>
</tr>
<tr>
<td></td>
<td></td>
<td>607-3060</td>
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<tr>
<td></td>
<td></td>
<td>607-3070</td>
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<tr>
<td>RIGHT ANGLE</td>
<td></td>
<td>607-3540</td>
</tr>
<tr>
<td></td>
<td></td>
<td>607-3550</td>
</tr>
</tbody>
</table>

**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.

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

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

**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.
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.

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

LaserStar Learning Center (RI)
Corporate Offices • Manufacturing
Sales, Service, Training
401-438-1500 • Fax: 866-516-3043
Email: ri.sales@laserstar.net

LaserStar Learning Center (FL)
Sales, Service, Training
407-248-1142 • Fax: 866-708-5274
Email: fl.sales@laserstar.net

LaserStar Learning Center (CA)
Sales, Service, Training
213-612-0622 • Fax: 866-347-0934
Email: ca.sales@laserstar.net