IPG’s Laser Welding 4-Axis Compact Workcell is a highly cost-efficient tool for welding smaller sized metal components and enclosures. The high pulse energy and high peak power of the QCW laser enables welding of a wide range of material types including steels, aluminum and alloys.

With an internally mounted laser to minimize footprint, the rugged industrial construction includes a granite base and superstructure for thermal and mechanical stability. The tool is easily programmed with standard G/M-code. The Laser Welding Workcell, fiber laser and welding head are designed, manufactured and supported by IPG – your partner for precision laser welding systems.
Laser Welding 4-Axis Compact Workcell

Laser Options
- CW: 300, 500 W
- QCW: 150/1500, 300/3000 and 450/4500 W
- Laser is Internally Mounted Saving Space

Modular Work Area
- 300 mm X Travel, 300 mm Y Travel, 300 mm Z Travel
- Aluminum T-slot Tooling Table
- Rotary Stages Available for X-axis

Up to 4-Axes of Coordinated Motion for 2D, Tube and 3D Materials Processing
- Ball-screw Driven Stages with 300 mm Travel
- Stages are Sealed to Protect against Damage, Contamination and Debris

System Enclosure
- CDRH Class 1 Enclosure with Laser-safe Viewing Windows
- Front Doors Available as Manual or Automatic Operation from HMI or G-code Programmable
- Access Panels on Front and Sides of Cell for Easy Access and Maintenance

Compact Footprint
- 1170 D x 813 W x 2005 H mm (46 x 32 x 79”)
- Minimizes Floor Space Requirements
- Easy to Install
- Ergonomic Work Height: Easy Part Loading and Unloading

User Interface
- Intuitive HMI for Machine Control
- Multiple Screens for Programming All Process Parameters
- G/M-code Programming
- CAD/CAM Software (Optional)

Beam Delivery
- IPG’s FLW-D30 Welding Head, Power up to 6 kW
- Lightweight for High-speed Part Processing
- Maintenance-free Fiber Feed to Head
- Coverslide with Integrated Contamination Sensor
- Computer Controlled Welding Gas Supply
- Coaxial Vision System & Display

Laser Welding for Small Parts
# Laser Welding 4-Axis Compact Workcell
## Automotive Components & Electrical Enclosures

### System Specifications

| Laser Power Options                  | CW: 300, 500 W  
|                                     | QCW: 150/1500, 300/3000 and 450/4500 Watt |
| Beam Delivery                       | IPG Photonics’ FLW-D30 Welding Head  
|                                     | Includes Co-axial Viewing System |
| Work Envelope                       | X: 300 mm (12 in.); Y: 300 mm (12 in.); Z: 300 mm (12 in.) |
| X-Y Stages Option                   | Travel: 300 mm, Accuracy ±25 µm, Repeatability ±3 µm, Velocity 400 mm/sec |
| Z-Stage Options                     | Ball-screw Drive: Travel: 300 mm, Accuracy ±25 µm, Repeatability ±3 µm, Velocity 100 mm/sec |
| Tooling                             | Aluminum T-slot Table |
| Rotation Stage Options (about X-axis) | Gear Drive:  
|                                     | Travel: 360° Continuous, Speed: 30 rpm max  
|                                     | Accuracy ±180 arc-sec, Repeatability ±45 arc-sec  
|                                     | 5C Collet, 3 Jaw Chuck |
| Controls/ Interface                 | Industrial Motion Controller, Full Look-ahead Contouring Capability  
|                                     | Laser Power Proportional to Velocity, Windows-based CNC Interface  
|                                     | G/M-code Programming, Editable Materials and Laser Parameter Database |
| Process Gas                         | Manually Adjustable Pressure Regulator and Computer Controlled  
|                                     | Solenoid Valve for Welding Gas up to 250 psi |
| Exhaust                             | 4” Blast Gate with Exhaust Plenum for Optional Welding Table |
| Safety                              | CDRH Class I Laser System (Complies with 21 CFR Chapter 1, Subchapter J) |
| Dimensions, LxWxH, mm in.           | 1170 x 810 x 2005  
|                                     | 46 x 32 x 79 |

*Please consult IPG for custom-designed laser welding solutions.*

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