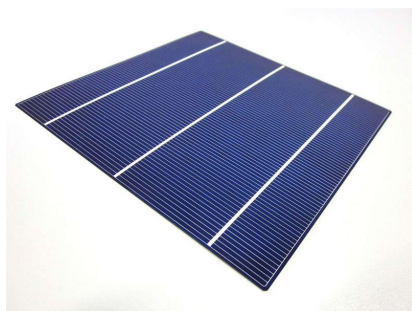


Laser Process Integration

Advancements in industrial laser performance and cost have dramatically increased potential applications. The unique processing capabilities of ultrafast lasers in particular have opened up entirely new markets to innovation. However, successfully implementing advanced lasers in a robust, production worthy system still remains a difficult challenge. Owens Design has helped our customers introduce leading edge technologies into high volume manufacturing environments hundreds of times over the last 30 years.



Solar Cell Processing



Biomedical



Electronics

Owens Design Laser Process and Integration Solutions

Owens Design has developed a wide range of laser process systems in industrial settings. We have core competencies in sub-micron high accuracy machine platforms, high speed processing applications, and fully automated test systems. Our systems meet all global laser safety and regulatory requirements.



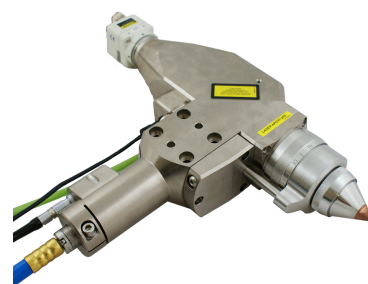
Fully automated platforms for precision welding, ablation, drilling, and cutting.

Laser Process Integration (cont.)

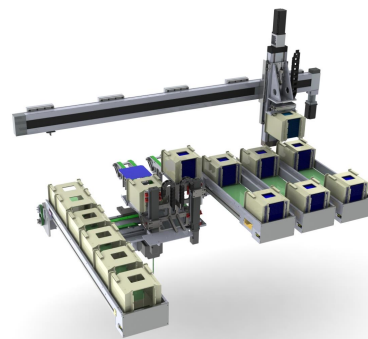
Equipment Development Solutions

- Semi-automated systems
- Fully automated processing lines
- Beam delivery and optical engineering
- Safety engineering
- System design and build
- Precision welding, scribing, cutting
- Extensive supplier collaboration network
- Vision inspection and guidance
- Sub-micron precision alignment
- Thermal management
- Cleanliness and particle management
- Data reporting and database integration

JK fiber laser focusing head used in ablation of crystalline solar cell



High capacity solar cell automation supports 3600 cell per hour throughput



Sub-micron alignment and laser spot welding for micro electronics

