

Remote

Laser

Welding



Fraunhofer  
USA

## Center for Coatings and Laser Applications

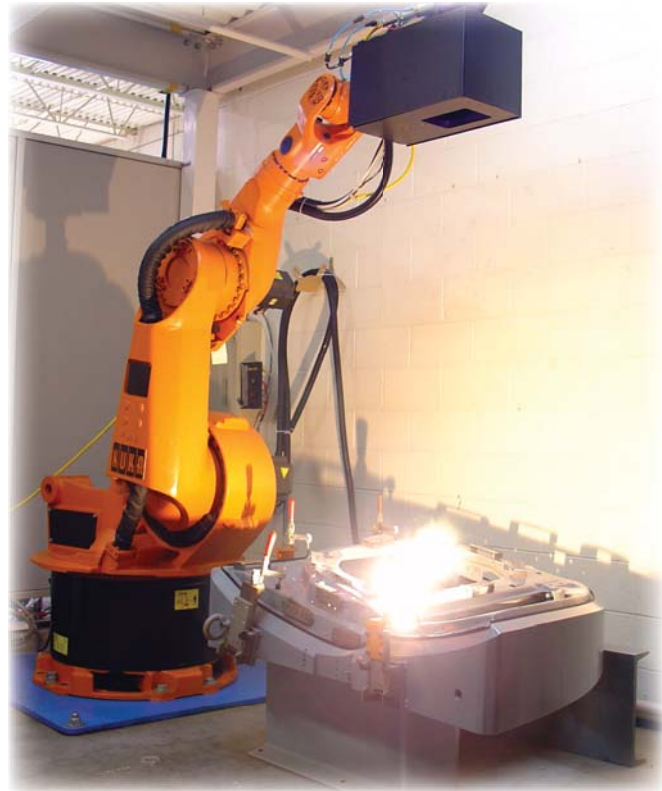
### Remote Laser Welding at Fraunhofer CCL

Remote welding involves the use of moving optics in order to rapidly scan the laser beam across the workpiece over large distances both for welding and for high speed and precision point to point movement which can dramatically reduce welding process cycle times compared to conventional welding. Fraunhofer CCL has state of the art 6kW fiber delivered lasers with 100 micron (0.1mm) fiber output capability for use in remote welding applications.

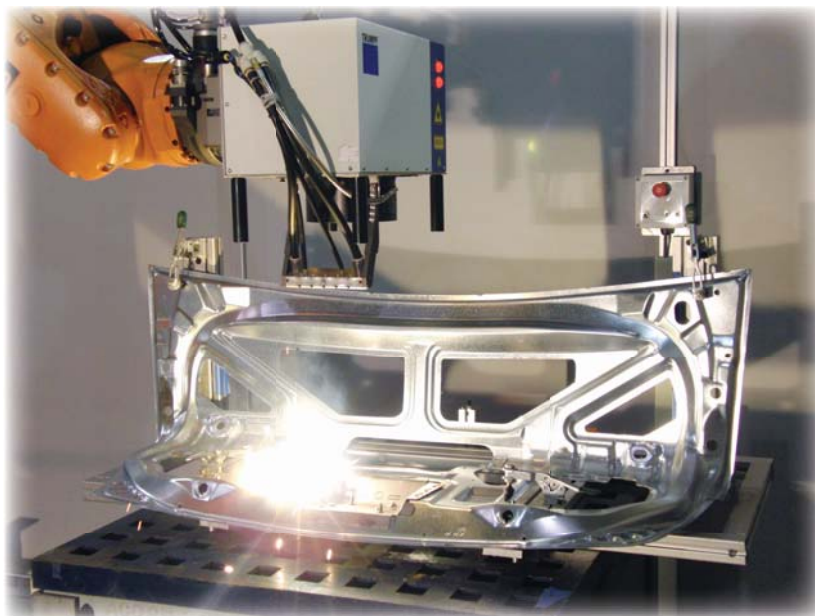
Advantages of Remote Welding using high beam quality solid state lasers:

- Increased work envelope
- Increased stand off distance
- Smaller achievable spot size
- Higher welding speed
- Reduced cycle times

Fraunhofer has considerable experience and know-how working with the remote laser welding process on a wide range of applications using laser beam scanners from many different equipment OEM's.



Remote Laser Welding of Automotive Door Assembly



Remote Laser Welding of Automotive Lift Gate

### Energy Applications

- Li-Ion Battery Welding
- Heat Exchangers
- Electrical Connections

### Automotive Welding Applications

- Seat Assemblies
- Door Assemblies
- Lift Gate / Tail Gate Assemblies
- Instrument Panels
- Hat Rack / Parcel Shelf

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