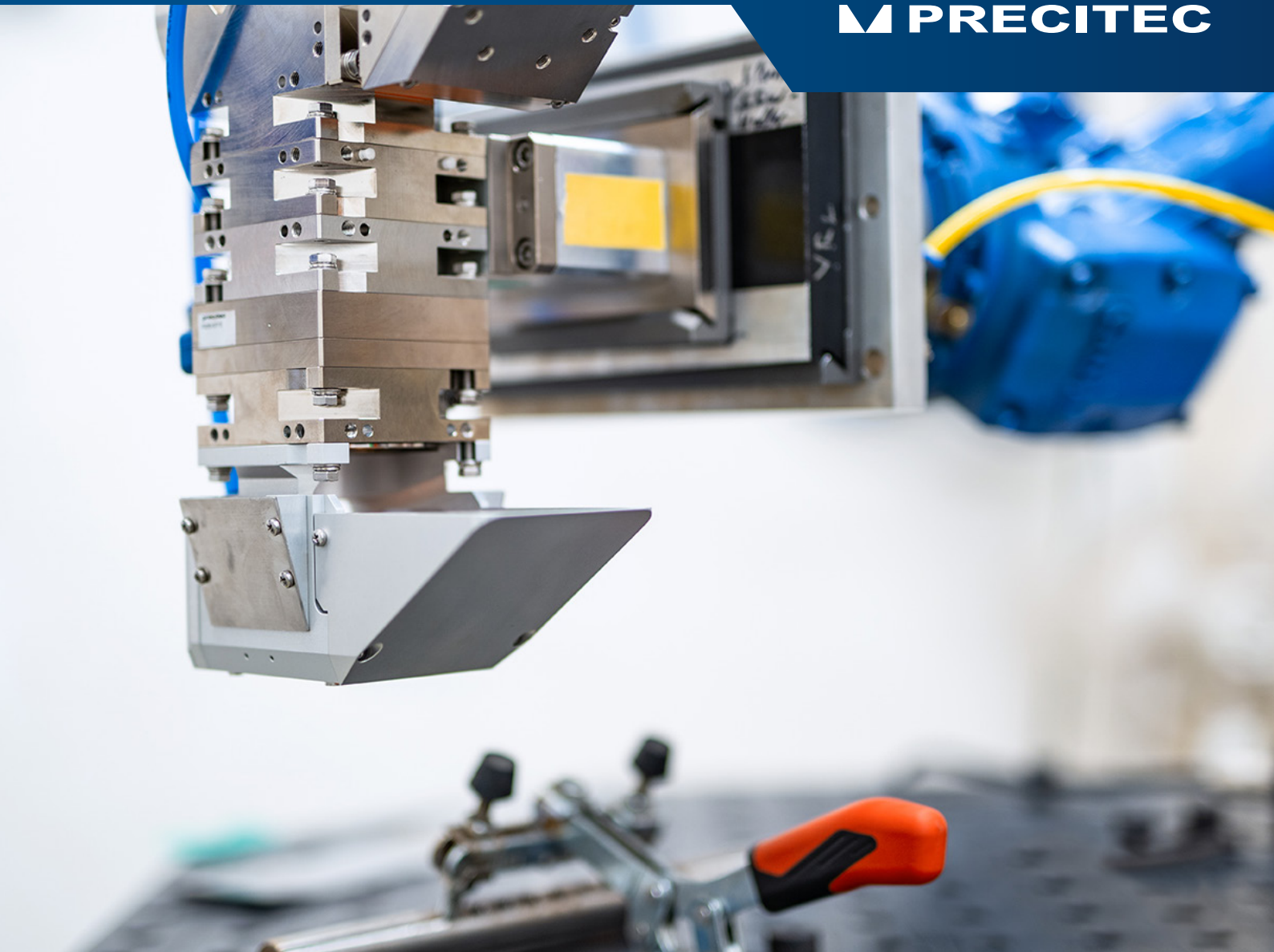




## **YW52 LASER WELDING HEAD –** PRECISION AND FLEXIBILITY FOR DEMANDING WELDING PROCESSES

The YW52 laser welding head stands for high process stability and maximum flexibility in industrial welding applications. Developed for modern laser beam sources, it delivers reliable results even at high laser powers and with demanding component geometries. Thanks to its modular design, the YW52 can be precisely configured for the respective application – from an economical basic solution to a fully equipped system solution with integrated process monitoring. This makes it particularly suitable for automated production environments where quality, availability and efficiency are decisive.

Its modular architecture enables tailored configuration for different welding tasks and system concepts. High-quality, water-cooled optics, application-specific extensions and the prepared integration of process monitoring and seam tracking systems create the prerequisites for reproducible results and high system availability. In this way, the YW52 combines high performance with flexible integration and helps implement demanding welding processes economically, stably and with assured quality.

# WHAT MAKES THE YW52 STAND OUT?

## Efficient

The YW52 is designed for high laser powers of up to 20 kW and ensures consistently high welding quality thanks to high-quality, water-cooled optics. Even in demanding applications, processes remain stable and reproducible. Application-specific CrossJet concepts support long protective glass service lives, high system availability and efficient operation.

## Flexible

Thanks to its modular design, the YW52 can be adapted to different applications and process requirements. A wide selection of collimation and focusing focal lengths enables precise configuration for the respective task. In addition, the welding head can be easily integrated into new or existing systems and, if required, expanded with optional modules such as a camera or beam splitter.

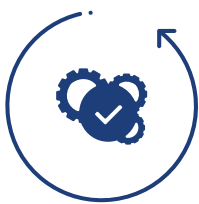
## User-friendly and safe

An optional camera module supports simple teaching and process observation. Optics can be replaced quickly and easily, simplifying service and retooling. The protective glass cassette is optionally available with condition monitoring and enables checks for presence, temperature and degree of contamination. The robust and well-conceived design ensures reliable operation in everyday industrial use.

## Integration and quality assurance

The YW52 can be combined with Precitec in-process monitoring systems such as the Laser Welding Monitor LWM or Precitec IDM. Connection to seam tracking systems such as WeldMaster Track is also possible. In addition, the welding head can be expanded with seam geometry monitoring, making it ideal for automated and digitalized production environments.

## YOUR ADVANTAGES AT A GLANCE



### Productivity

- Suitable for high laser powers
- High welding quality thanks to high-quality optics and water-cooled modules
- Long protective glass service lives thanks to application-specific CrossJet concepts



### Flexible

- Modular design, adaptable to different spatial conditions and specific process requirements
- Individual, customer-specific configuration
- Optionally expandable with camera, beam splitter and monitoring modules



### User-friendly and safe

- Protective glass cassette with monitoring (optional)
- Operating status can be monitored via PC (optional)
- Integration of process monitoring systems possible

# TYPICAL APPLICATIONS

## Automotive industry (body-in-white / transmission parts)

Precise and reproducible welding of structural components at high speeds – even with varying gap dimensions and high laser powers.

## Battery production and e-mobility

Reliable joining of battery housings and components with high requirements for tightness, reproducibility and integrated process monitoring.

## Structural and body components

Process-reliable welding of complex geometries at high power densities and with a simultaneous need for quality monitoring.

## Mechanical engineering and metalworking

Flexible adaptation to different materials and component thicknesses – even in applications with increased performance requirements.

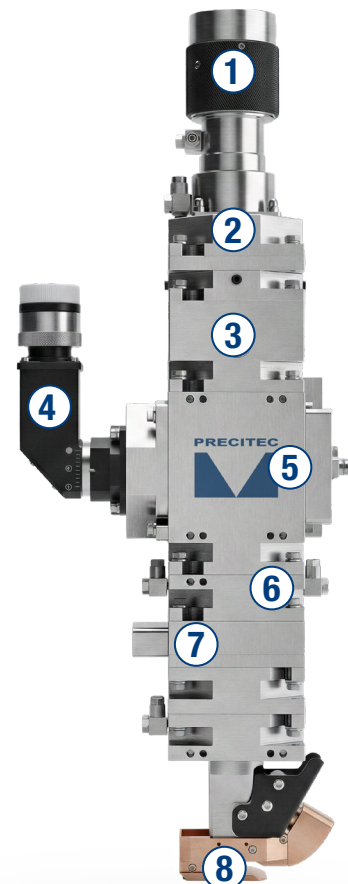
## Automated series production

Use in highly productive production lines with seamless integration of monitoring systems to ensure stable and traceable processes.

### Typical application focuses

- High-power laser welding with a modern laser beam source
- Welding processes with integrated process monitoring
- Automated production lines with high requirements for availability and reproducibility
- Application-specific system configurations for different component geometries

- 1 Fiber connector
- 2 Aperture stop, water-cooled
- 3 Collimating lens, water-cooled
- 4 Camera module
- 5 Beam splitter module, water-cooled
- 6 Focusing lens, water-cooled
- 7 Protective glass cassette
- 8 CrossJet with air guide plate and air connection



## TECHNICAL DATA

|                           |                                                          |
|---------------------------|----------------------------------------------------------|
| Max. laser power          | up to 20 kW (higher on request)                          |
| Laser beam source         | 1020 - 1080 nm                                           |
| Design                    | modular                                                  |
| Collimation focal lengths | 100 / 125 / 150 / 175 / 200 mm                           |
| Free aperture             | 48 mm                                                    |
| Numerical aperture        | depending on focal length, up to $NA \leq 0.25$          |
| Focusing focal lengths    | 250 / 300 / 400 / 680 mm                                 |
| Optics                    | water-cooled collimation and focusing optics             |
| Weight                    | depending on configuration                               |
| Protective glass cassette | optional with monitoring                                 |
| CrossJet system           | application-specific design                              |
| Camera module             | optional                                                 |
| Strahlteilermodul         | optional                                                 |
| Cooling                   | water-cooled components, stainless-steel cooling modules |
| Integration               | prepared for process monitoring systems                  |
| Operating environment     | automated production lines                               |

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## READY FOR THE FUTURE OF EFFICIENT LASER WELDING?

With the YW52 laser welding head, you choose a **powerful and flexibly configurable solution** for demanding industrial welding processes. The modular design, high process stability and the option to integrate monitoring and quality assurance systems create ideal conditions for economical, reproducible and digitally traceable production.

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