



# Astrella

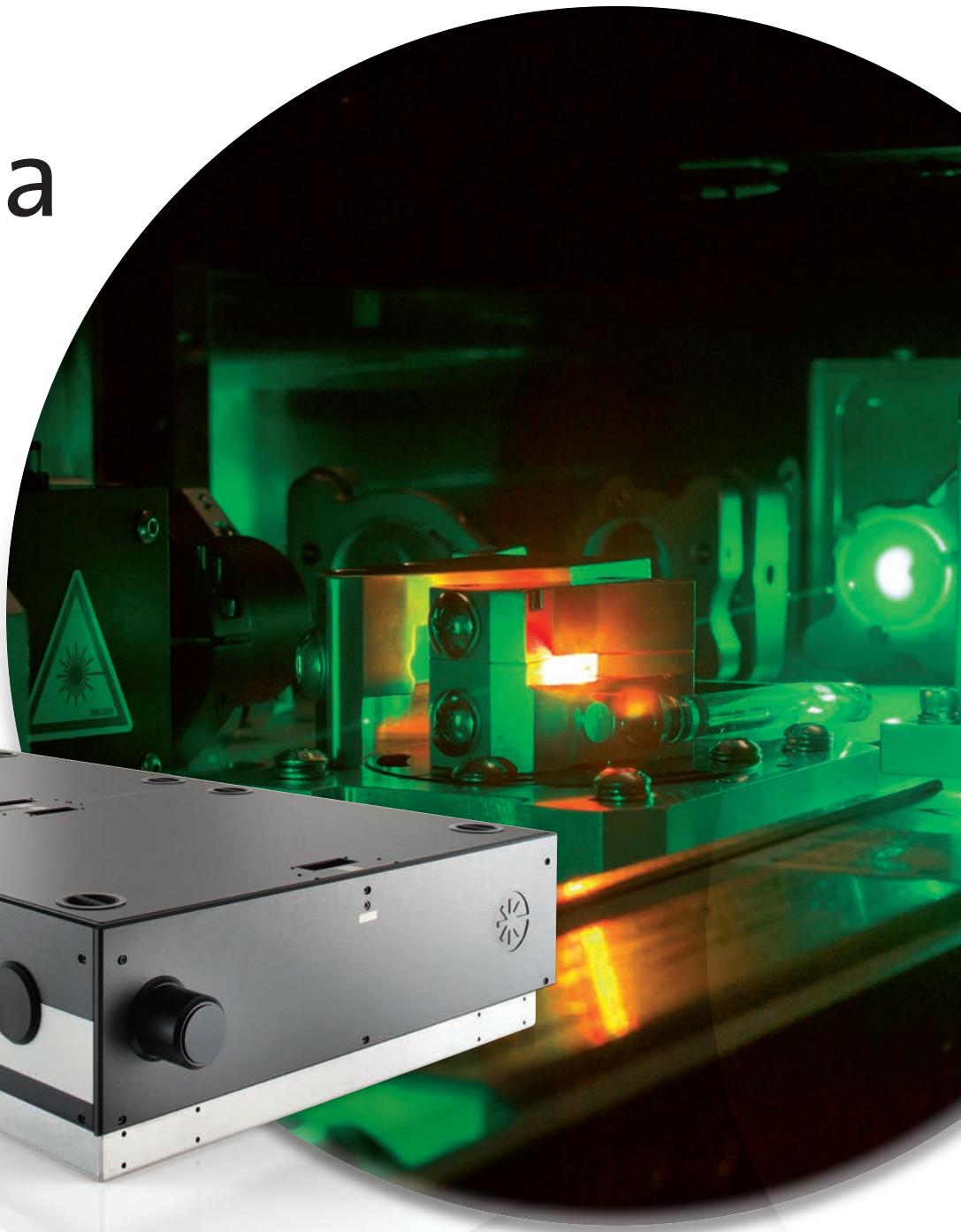
*Industrial Reliability for Femtosecond Research*



**Superior Reliability & Performance**

# Astrella

Ultrafast Ti:Sapphire  
Amplifier



Astrella is a next-generation, high-performance, kHz amplifier at the forefront of ***the Industrial Revolution in Ultrafast Science.***

- Unmatched combination of performance, reliability, and affordability
- Designed and manufactured using advanced stress testing (HALT/HASS) in a customized test chamber
- Industrial-grade laser reliability allows you to focus on results, publication, and funding

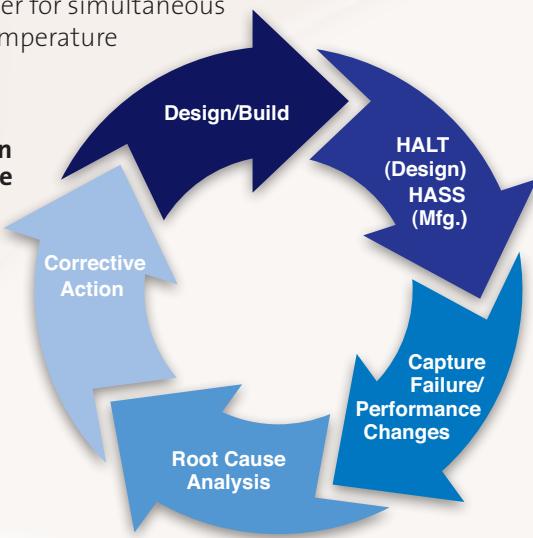
# The Industrial Revolution in Ultrafast Science

A Superior Way to Design and Build Ultrafast Lasers

## Unique HALT/HASS testing with enhanced engineering margins drives reliability and lifetime

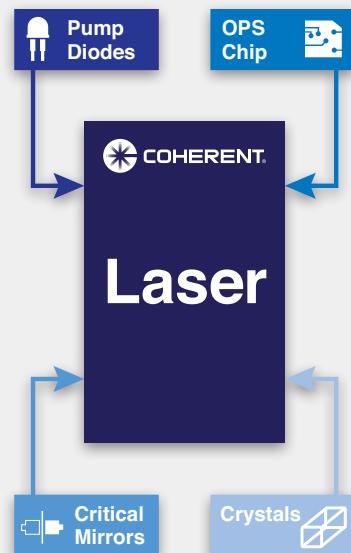
- HALT (Highly Accelerated Lifetime Testing)
- HASS (Highly Accelerated Stress Testing)
- In-house chamber for simultaneous vibration and temperature stressing

## Industrial Design and Testing Cycle



## Vertical Integration

- In-house production of diodes, crystals, critical optics – superior supply and quality control

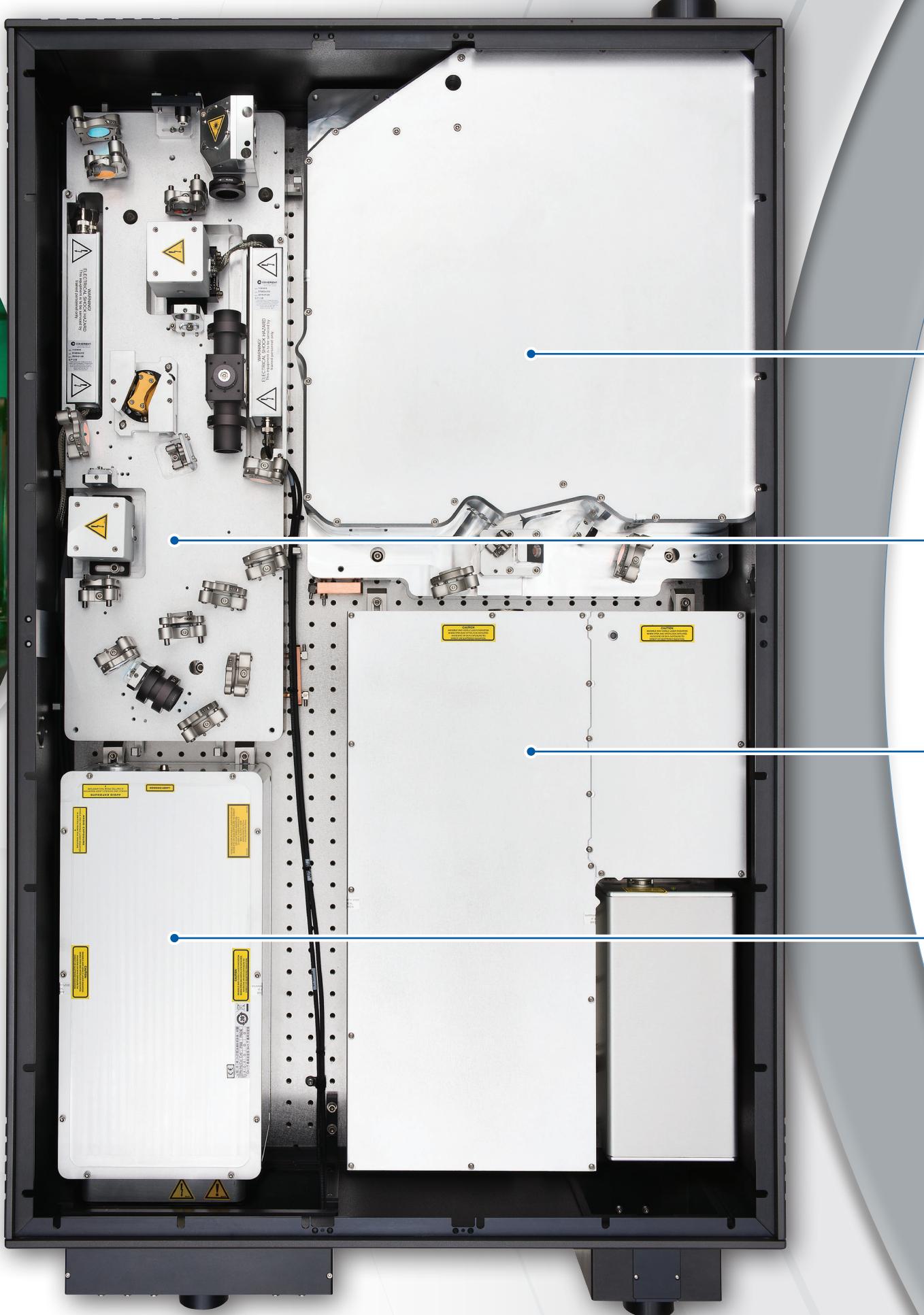


Vertical Integration

## Unmatched Industrial Laser Experience

- Worldwide leadership in industrial lasers – superior reliability, lifetime, breadth of technology
- Advanced manufacturing expertise – contamination control, material qualification





# Industrial Reliability

Each unique Astrella sub-system is HASS-verified before integration. The complete amplifier is then HASS-verified for unmatched reliability and lifetime.

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## Sealed Stretcher/Compressor

- Robust, thermally stabilized
- Controlled clean environment
- Proprietary optical design
- Stable pulse width and minimized power degradation over time

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## Robust Regenerative Amplifier

- STAR (STable Architecture Regenerative amplifier) platform
- Maximum stability, efficiency and beam quality
- Thermally-stabilized baseplate
- Low profile, stable mounts
- Unique, Ti:Sapphire slab-geometry enables simple, water-only cooling

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## Vitara Oscillator

- The most successful and reliable broadband oscillator on the market
- Laser of choice in the vast majority of high uptime facilities
- Integrated Verdi pump laser for proven reliability
- In-house manufacturing and quality control of critical, negative dispersion optics

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## Revolution Amplifier Pump

- Built on the strengths of its successful predecessor, the Evolution
- Ample performance margin over design specification



# The Coherent Advantage

Reliable Performance. Reliable Support.



## Reliable Performance

- All production systems HASS-verified for reliability
  - Available with either <35 fs or <100 fs pulse width
  - Pulse energy specified to >7 mJ at 1 kHz
    - Perfect OPA pump (TOPAS, OPerA Solo) with coverage from UV to IR

## Reliable Support

- Largest and most experienced, factory-trained, global network for rapid, expert scientific support
  - Astrella reliability supported by market-leading, value-based service plans offering up to 5 years coverage
  - Certified spare parts available from regional warehouses in US, Europe and Asia for faster delivery



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