



# Vitara

*Extreme Performance, Maintenance-free, Ti:Sapphire Lasers*

**Superior Reliability & Performance**

# Vitara

Ultrafast Ti:Sapphire  
Laser



Vitara is the world's leading ultrashort pulse Ti:S laser – the pioneering product of Coherent's ***Industrial Revolution in Ultrafast Science***.

- It combines unparalleled, extreme, ultrafast performance with industrial-design and validated reliability and lifetime (HALT/HASS)
- Thousands of hours of proven maintenance-free laser reliability allows you to focus on results and publications
- Recognized as the laser of choice in high-uptime research facilities (e.g. free electron lasers, synchrotrons)

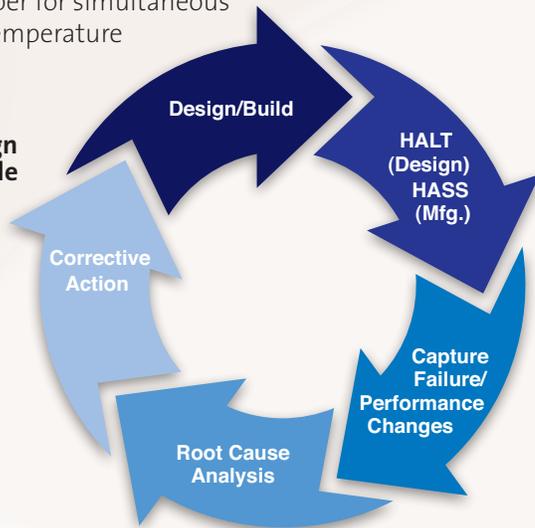
# The Industrial Revolution in Ultrafast Science

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

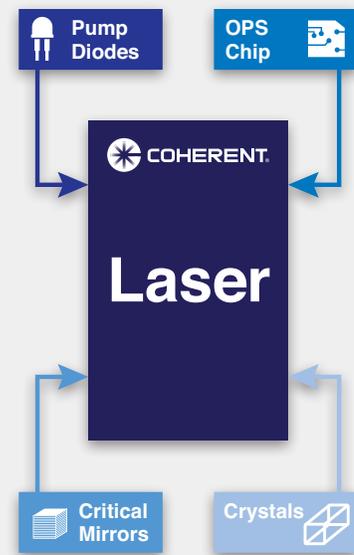


## Unmatched Industrial Laser Experience

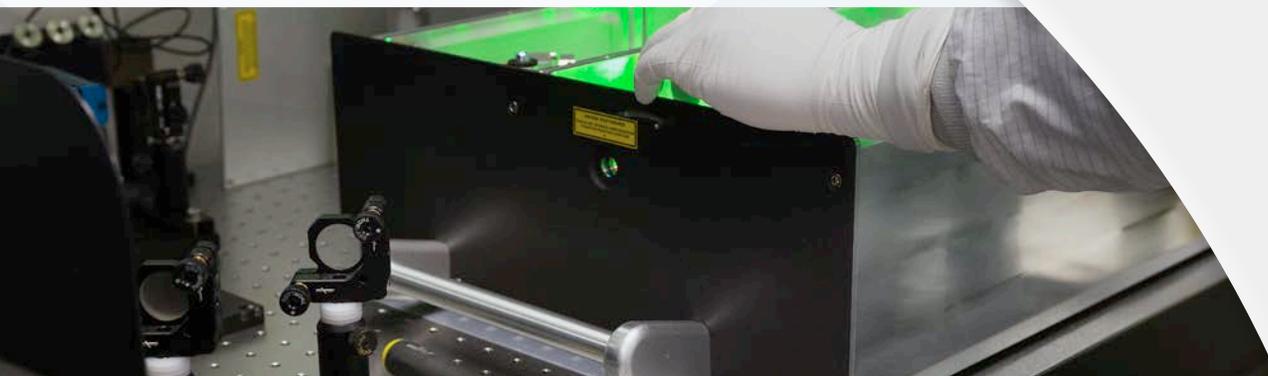
- Worldwide leadership in industrial lasers – superior reliability, lifetime, breadth of technology
- Advanced manufacturing expertise – contamination control, material qualification

## Vertical Integration

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



## Vertical Integration



# Enabling Demanding Science

Four Models for Flexibility and Upgradeability

## Options & Accessories

- Synchronization –
- CEP Stabilization –
- Internal Spectrometer –
- Harmonic Generators –
- Pulse Picker –
- Pulse Compressor –

### Vitara-T

- Unparalleled flexibility in bandwidth and wavelength
- Fully automated, computer-control of center wavelength and bandwidth/pulse width

### Vitara-T-HP

- More power for your stand-alone applications

### Vitara-S

- Economical, ideal seed engine for Ti:Sapphire amplifiers
- Fixed central wavelength, pulse duration and bandwidth

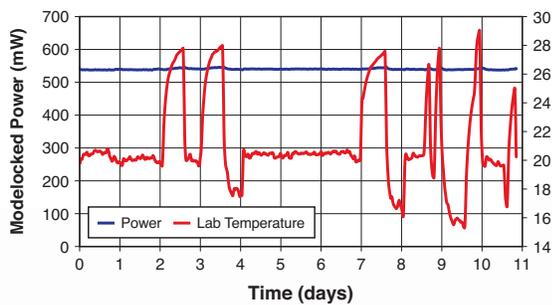
### Vitara-UBB

- Few-cycle version with pulse width compressible to  $<8$  fs

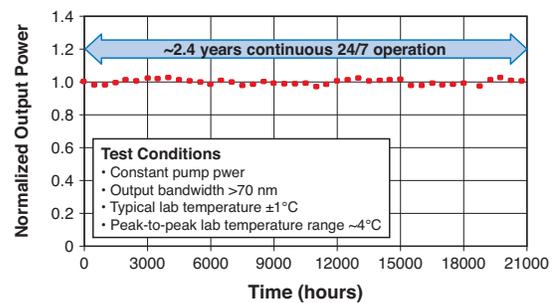


# Industrial Reliability

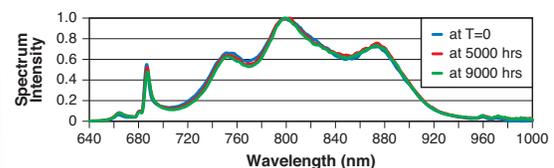
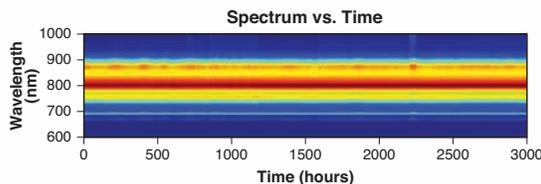
Vitara delivers extreme performance with extraordinary, long term reliability. Ultrashort pulse lasers typically require frequent cleaning and alignment, but Vitara is different. Thanks to our leadership in high power industrial UV lasers, we have developed advanced contamination control and material qualification processes that ensure a pristine environment where it matters – in the laser cavity. In addition, HALT/HASS techniques significantly enhance long term reliability.



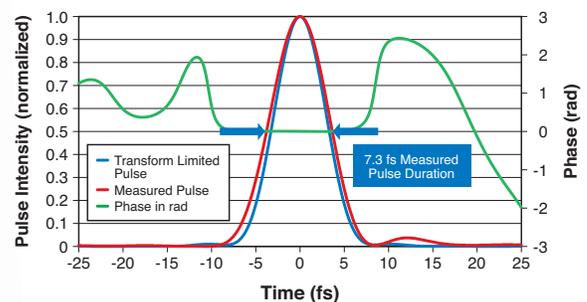
Vitara-T operates with exceptional stability even when undergoing random and sizable temperature changes over an 11-day period



Typical life test data shows the outstanding, long-term stability of a Vitara-S with over 2 years of continuous hands-free operation



A Vitara UBB, even when operated in constant pump power mode and without any operator intervention, ran for 9000 hours with flawless spectral stability



Sub-8 fs pulse length demonstrated on Vitara-UBB

# The Coherent Advantage

Reliable Performance. Reliable Support.

## Reliable Performance

- All production systems HASS-verified for reliability
  - Models offering a variety of performances
    - Pulse widths <8 fs
    - Adjustable bandwidth and wavelength
    - Market-leading, Verdi pump laser
  - PowerTrack™ for fast warm-up and long-term stability

## Reliable Support

- Largest and most experienced, factory-trained, global network for rapid, expert scientific support
- Vitara reliability supported by value-based service plan 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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