



Vitara

Automated, Hands-Free Ultrashort Pulse Ti:Sapphire Oscillator Family



Features

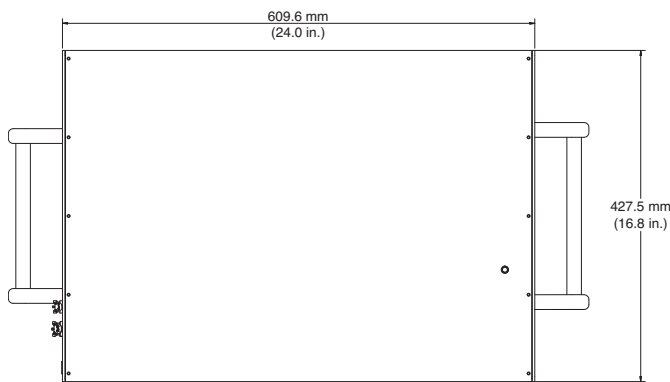
- Automated for hands-free, reliable operation
- Computer controlled bandwidth
- Computer tunable center wavelength
- PowerTrack™ active optimization
- <8 fs to >30 fs pulsewidth capability
- Low noise
- Integrated Verdi™ G pump laser
- Compact footprint

Options and Accessories

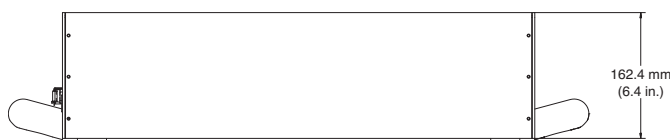
- Carrier-Envelope Phase (CEP) Stabilizer
- Pulse synchronization – Synchrolock-AP
- Integrated, calibrated spectrometer
- Compact Pulse Compressor – CPC-II
- Second Harmonic Generator
- Factory configurable for use with internal or external pump laser

Mechanical Specifications

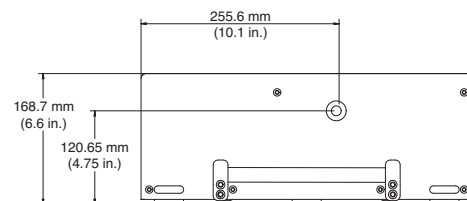
Vitara Laser Head



Top View



Side View



Front View

Superior Reliability & Performance

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System Specifications ^{1,2}	Vitara-T	Vitara-T-HP
Power (mW)		
at minimum specified bandwidth	>525	>930
at 60 nm bandwidth	>450	>850
at maximum specified bandwidth	>425	>800
Bandwidth (nm)(FWHM)	30 to 125	40 to 100
Tuning Range (nm)		
at minimum specified bandwidth	755 to 860	765 to 810
at 60 nm bandwidth	765 to 840	775 to 825
at 100 nm bandwidth	790 to 820	795 to 805
Uncompressed Pulsewidth ³ (fs)	<20 (typically <15)	<20 (typically <15)
Compressed Pulsewidth ³ (fs) with External Compressor (not included)	<12	<15
RMS Noise ⁴ (%)	<0.05	<0.05
Power Stability ⁵ (%)	±0.5	±0.5
Repetition Rate ⁶ (MHz)(standard)	80	80
M ² (average of X & Y)	<1.3	<1.3
Beam Diameter ⁷ (mm)	2	2
Beam Divergence (mrad)	<1	<1
Polarization	Horizontal	Horizontal
Features		
Integrated Verdi-G Pump Laser	•	•
PowerTrack™ Active Optimization	•	•
Computer Controlled Bandwidth	•	•
Computer Tunable Center Wavelength	•	•
Options and Accessories (not included)		
Integrated and Calibrated Spectrometer	•	•
Carrier to Envelope Phase (CEP) Stabilizer	•	•
SynchroLock-AP – Repetition Rate Synchronization	•	•
CPC-II – Compact Pulse Compressor	•	•
Second Harmonic Generator	•	•
PulsePicker	•	•
Electrical and Cooling Requirements		
Voltage	100 to 240	100 to 240
Current Max. (A)	5	5
Line Frequency (Hz)	50 to 60	50 to 60
Cooling	Closed-cycle chiller	Closed-cycle chiller
Laser Head Dimensions (L x W x H)	609.6 x 427.5 x 162.4 mm (24.0 x 16.8 x 6.4 in.) excluding handles	609.6 x 427.5 x 162.4 mm (24.0 x 16.8 x 6.4 in.) excluding handles
Beam Height	120.6 mm (4.75 in.)	120.6 mm (4.75 in.)

¹ Specifications subject to change.

² Specifications apply at 800 nm and 80 MHz rep. rate unless otherwise stated.

³ At max. bandwidth and measured with FC Spider (APE GmbH).

⁴ Measured from 10 Hz to 10 MHz.

⁵ Measured over 2 hrs. after 30 min. warm-up at constant environmental temperature.

⁶ Can be factory set between 65 to 95 MHz.

⁷ Average 1/e² diameter measured at output.

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System Specifications ^{1,2}	Vitara-S ⁷	Vitara-UBB
Power (mW)		
at minimum specified bandwidth	-	-
at 60 nm bandwidth	-	-
at maximum specified bandwidth	>325	>550
Bandwidth (nm)(FWHM)	>70 (fixed)	<180 to >220 at -10dB
Tuning Range (nm)		
at minimum specified bandwidth	-	-
at 60 nm bandwidth	-	-
at 100 nm bandwidth	-	-
Uncompressed Pulsewidth ³ (fs)	-	-
Compressed Pulsewidth ³ (fs) with External Compressor (not included)	<20	<10 (<8 option)
RMS Noise ⁴ (%)	<0.1	<0.1
Power Stability ⁵ (%)	±0.5	±0.5
Repetition Rate (MHz)(standard)	80	80
M ² (average of X & Y)	<1.3	<1.3
Beam Diameter ⁶ (mm)	1	2
Beam Divergence (mrad)	<1.5	<1
Polarization	Horizontal	Horizontal
Features		
Integrated Verdi-G Pump Laser	•	•
PowerTrack™ Active Optimization	•	•
Computer Controlled Bandwidth		•
Computer Tunable Center Wavelength		
Options and Accessories (not included)		
Integrated and Calibrated Spectrometer	•	•
Carrier to Envelope Phase (CEP) Stabilizer		
SynchroLock-AP – Repetition Rate Synchronization		
CPC-II – Compact Pulse Compressor	•	
Second Harmonic Generator		
PulsePicker	•	
Electrical and Cooling Requirements		
Voltage	100 to 240	100 to 240
Current Max. (A)	5	5
Line Frequency (Hz)	50 to 60	50 to 60
Cooling	Closed-cycle chiller	Closed-cycle chiller
Laser Head Dimensions (L x W x H)	609.6 x 427.5 x 162.4 mm (24.0 x 16.8 x 6.4 in.) excluding handles	609.6 x 427.5 x 162.4 mm (24.0 x 16.8 x 6.4 in.) excluding handles
Beam Height	120.6 mm (4.75 in.)	120.6 mm (4.75 in.)

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² Specifications apply at 800 nm and 80 MHz rep. rate unless otherwise stated.

³ At max. bandwidth and measured with FC Spider (APE GmbH).

⁴ Measured from 10 Hz to 10 MHz.

⁵ Measured over 2 hrs. after 30 min. warm-up at constant environmental temperature.

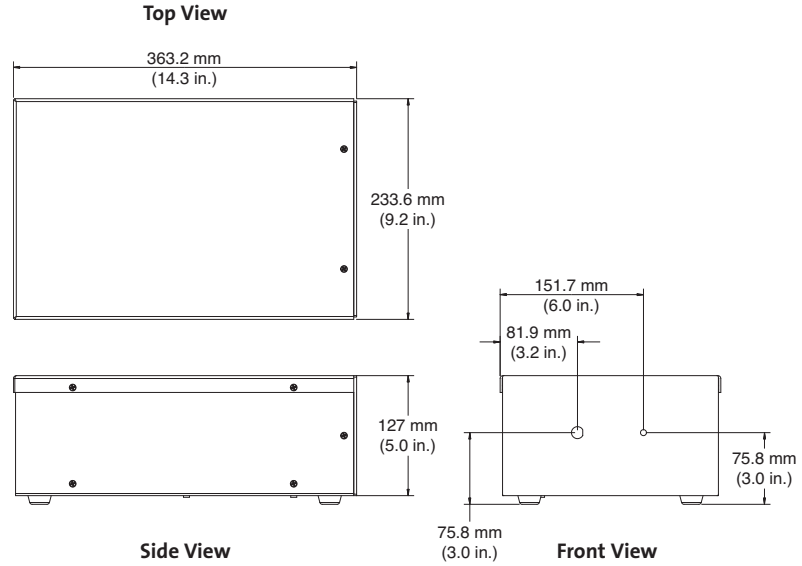
⁶ Average 1/e² diameter measured at output.

⁷ Center wavelength of output from Vitara-S is fixed at 800 ±10 nm.

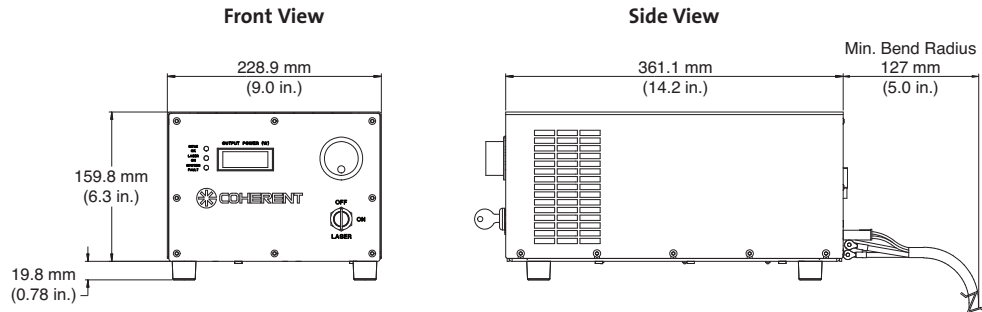
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Controller



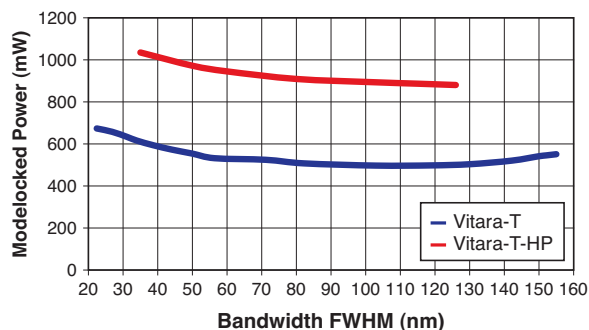
Power Supply



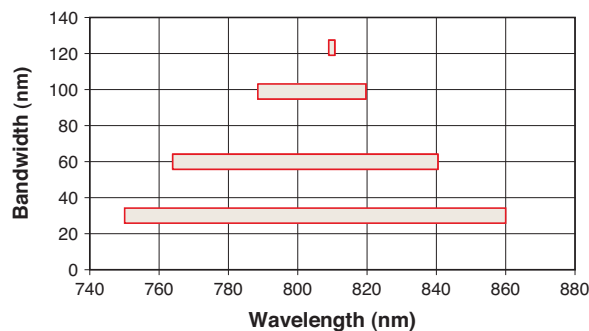
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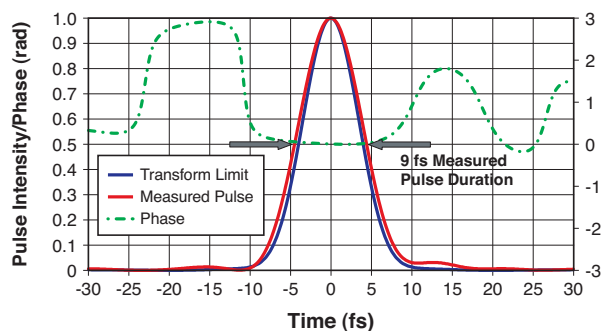
Vitara-T and Vitara-T-HP
Typical Power vs. Bandwidth
at 80 MHz



Vitara-T Typical
Tuning Range vs. Bandwidth



Vitara-UBB
Typical Pulse Duration



Coherent follows a policy of continuous product improvement. Specifications are subject to change without notice.

Coherent's scientific and industrial lasers are certified to comply with the Federal Regulations (21 CFR Subchapter J) as administered by the Center for Devices and Radiological Health on all systems ordered for shipment after August 2, 1976.

Coherent offers a limited warranty for all Vitara lasers. For full details of this warranty coverage, please refer to the Service section at www.Coherent.com or contact your local Sales or Service Representative.



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