

## **Integra™ C**



### Integra C, the Ti:Sapphire Ultrafast Amplifier

The Integra-C is the most compact and versatile amplifier available on the market today. Its platform includes an integrated pump laser, amplification stage(s), and a stretcher/compressor, amplifying the seed pulse energies to >3.5 mJ. The seed can be provided by an integrated fiber oscillator or an external Ti:Sapphire oscillator. The amplifier system can be designed to deliver ultrashort (USP- <40 fs), femtosecond (FS- 80-130 fs), or picosecond (PS- 1-3 ps) output pulses.

The Integra-C provides stable, long-term performance for the most demanding experiments. The Integra-C implements regenerative and multi-pass amplification technologies to provide high energy pulses and clean beam profile ( $M^2 < 1.3$ ). Our advanced Pockels cell design provides high contrast of both pre- and post-pulses, eliminating misleading results in experiments. Active thermal stabilization of the system and engineered "zero-drift" mounts ensure operational energy and pointing stability over a wide range of ambient temperatures, allowing you to focus on your research and not the laser.

The Integra-C is an excellent source of near infrared femtosecond pulses. When tunability is needed, it is an ideal pump source for OPAs. Apart from OPA Pumping, Integra-C is used for Transient Absorption Spectroscopy and Ultrafast Micromachining.

***Flexible, compact ultrafast system***

***Pulse energies > 3.5 mJ***

***40 - 130 fs; 1 - 3 ps***

***Exceptional beam pointing and power stability***

***Superior beam quality & stability***

***Wide thermal operation > 10° C***

***Proven highest uptimes for industrial and laboratory environments***

# Integra C Specifications

Description	RGA Only	RGA & PA	RGA Only
Model	Integra C-1.0	Integra C-3.5	Integra-C.X
Pulse Energy at 0.1-1 kHz (mJ)	>1.0	>3.5	>1.0 <sup>1</sup>
Pulse Duration (FWHM)	FS (with integrated fiber oscillator): 130 fs FS <sup>3</sup> (with external Ti:Sapphire oscillator): 80-130 fs USP <sup>4</sup> (with external Ti:Sapphire oscillator): <40 fs PS <sup>5</sup> (with external Ti:Sapphire oscillator): 1-3 ps		
Pulse Repetition Rate (kHz)	up to 3 (user adjustable)	up to 3 (user adjustable)	10 kHz
Spatial Mode (TM <sub>00</sub> )	M <sup>2</sup> <1.3	M <sup>2</sup> <1.3	M <sup>2</sup> <1.3
Contrast Ratio	>1000:1 Pre & Post Pulse	>500:1 Pre & Post Pulse	>1000:1 Pre & Post Pulse
Energy Stability <sup>2</sup> (% RMS)	<0.5	<0.5	<1
Beam Pointing Stability (μrad)	<20	<20	<20
Transform Limit (Gaussian TBP)	<1.4 times	<1.4 times	<1.4 times
Center Wavelength (nm)	790±10	790±10	790±10
Beam Diameter (1/e <sup>2</sup> )	2.5	2.5	2.5
Polarization	<12	<12	<12
Beam Divergence (mrad) <sup>3</sup>	8	8	8

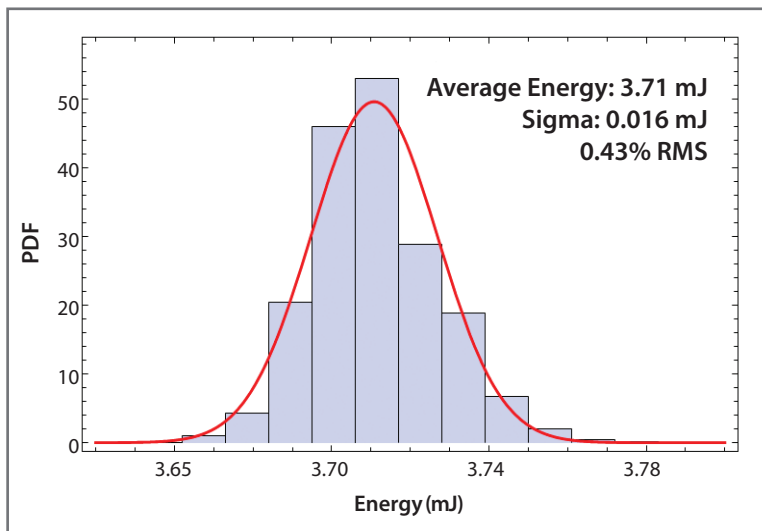
## Notes

Output specified over 10°C temperature range

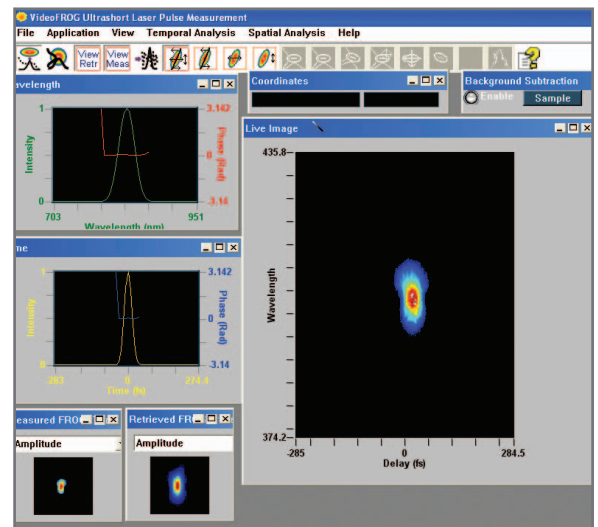
1. At 10 kHz
2. Over 4°C temperature range
3. Requires a seed source with more than 15 nm bandwidth
4. Requires a seed source with more >40 nm bandwidth
5. Requires a >200 mW seed source with <10 nm bandwidth

As a part of our continuous improvement program, all specifications are subject to change without notice.

## Integra C-3.5 Output Stability (24 hrs)



## FROG Trace Output for Integra C.USP



## Control Interface

### Ultrafast Commander Software Features

- Easy to use interface
- Pump laser control & monitoring
- Energy attenuation and shutters
- Compressor tuning
- Data logging
- Labview Compatible

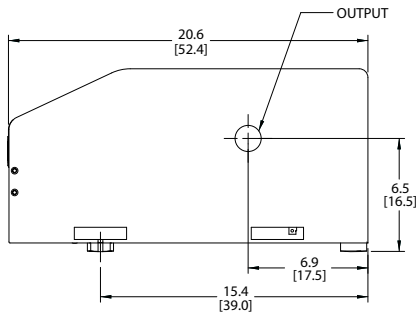
# Integra C System Requirements

Size	Optical Head (LxWxH)	813 x 524 x 267 mm (32.0 x 20.6 x 10.5 in)
	Power Supply (LxWxH) Chiller (LxWxH)	742 x 545 x 603mm (20.2 x 21.4 x 23.7 in) 699 x 483 x 411 mm (27.5 x 19.0 x 16.2 in)
Electrical Service	Power Supply	Single-phase: 208-240 VAC, 50/60 Hz Operating current: 10A, Max current: 15A
	Chiller	Single-phase: 230 ±10% VAC, 50/60 Hz Operating current: 10A, Max current: 15A
Water Service		No external cooling required for standard models External water to water cooling available as option

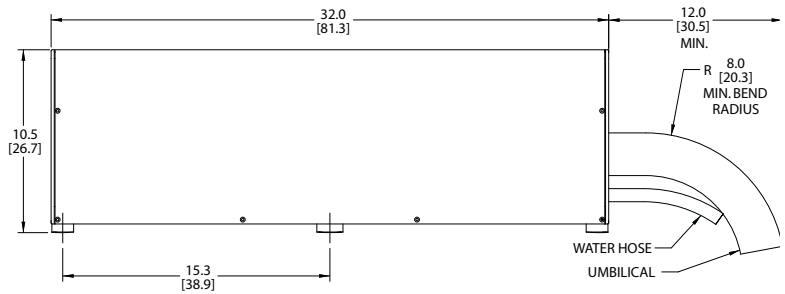
## Integra C Physical Layout

All dimensions are in inches [cm]

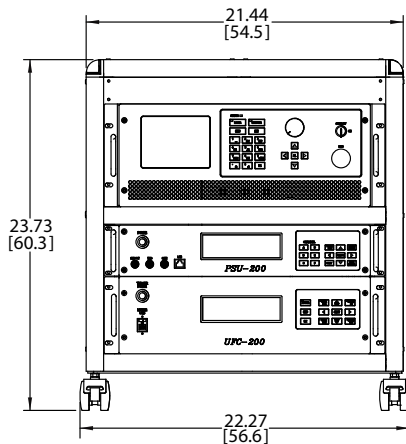
LASER HEAD  
OUTPUT VIEW



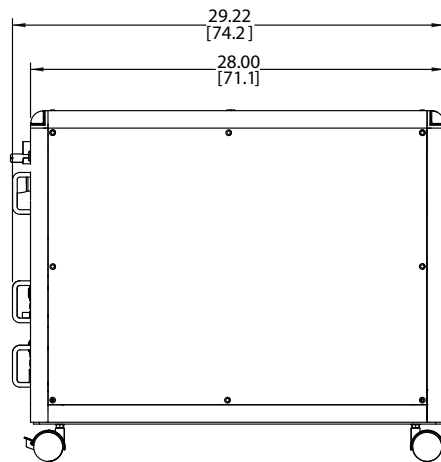
SIDE VIEW



CONTROL UNIT  
FRONT VIEW



SIDE VIEW



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