

# Integra - HE

Ultrafast laser performance for any environment



## FEATURES & BENEFITS

- Compact single box design: 45" x 30" x 12"*
- Excellent beam pointing and long term power stability*
- Temperature stabilized for  $\pm 5^{\circ}\text{C}$  operating range*
- Includes highly reliable fiber seeded oscillator*
- Simple crystal cooling package*
- Complete computer control with **Ultrafast Commander** software*

**Ultrafast**

The *Integra-HE* Series of amplifiers are designed to deliver  $> 7\text{ W}$  ultrafast pulses at kHz repetition rates. When equipped with a fiber oscillator, this system is a one-box laser containing all the components including oscillator, stretcher, amplifiers, pump laser, and compressor. It provides a highly reliable light source for pumping multiple or high energy OPAs.

This amplifier uses a structure similar to the successful *Integra-C* series, which includes a regenerative preamplifier and a multipass power amplifier. The ultrafast pulses are first amplified by the regenerative amplifier, then the multipass power amplifier boosts the power to  $> 6\text{ W}$ . In the amplifiers, the laser crystals are cooled by a simple package without the use of vacuum or dry chambers. This provides a more compact and reliable structure and makes the operation and maintenance easy.

The whole system is pumped by two *Darwin* lasers. The small footprint of the *Darwin* laser allows the integration of the pump lasers into the amplifier box.

This high power amplifier system is built on the same proven engineering advancements found in the *Integra* and *Odin* series of amplifier systems. The compact design includes all essential components (pulse cleaner, amplifier, pump lasers, compressor) in one package. Thermal stabilization and robust Zero-Drift optical mounts result in an unsurpassed  $\pm 5^{\circ}\text{C}$  operating range. The whole system is built on our precision-engineered baseplates, giving exceptional thermal stability and alignment-free operation. This allows you to focus on your experiments and not the laser system.

Quantronix lasers are available with a wide range of custom options and accessories. Options such as motorized mounts, shutters, frequency conversion and advanced computer control and system integration are all available.

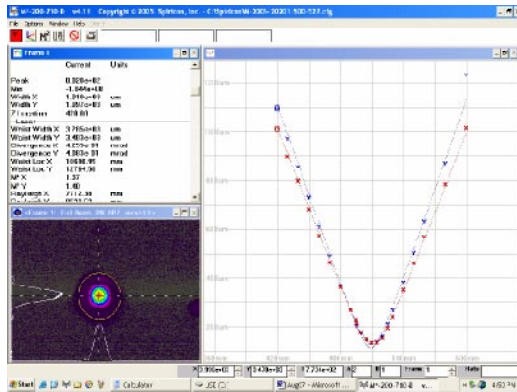
## SPECIFICATIONS AND MODELS

	Integra-HE	Integra-HE.E	Integra-HE.USP	Integra-HE.PS	Integra-HE.X
Output Power	Configuration 1: 7 W @ 1-2 kHz* Configuration 2: 6 W @ 3 kHz; 5 W @ 4-5 kHz*				4 W
Pulse Duration (FWHM)	<130 fs	70-130 fs	40-70 fs	1-3 ps	<150 fs
Repetition Rate	Configuration 1: 1-2 kHz user adjustable* Configuration 2: 3-5 kHz user adjustable*				5-10 kHz adjustable
Spatial Mode	$M^2 < 1.5$				
Contrast Ratio	$> 1000:1$				
Energy Stability	$< 1\%$ RMS				
Pointing Stability	$< 30\ \mu\text{rad}$				
Transform Limit	1.5				
Center Wavelength	800 nm				
Beam Diameter	10 mm				
Polarization	Vertical				
Seed Laser	Integrated				Integrated
Pump Laser	2 x <i>Darwin</i>				

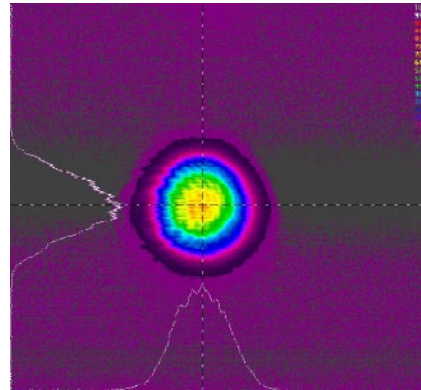
\* Configurations 1 and 2 are switchable on site by Quantronix engineers or trained users.  
All specifications subject to change without notice

## FEATURED SPECIFICATIONS

$M^2 < 1.5$

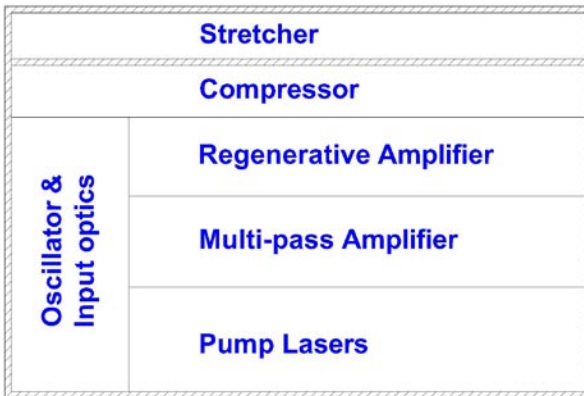


Output Beam Profile



## LAYOUT

45" (114 cm)



30" (76 cm)

## MECHANICAL & UTILITIES

Electrical Service	230 V±10% AC, 50/60 Hz, 30A
Water Service	No external cooling required for standard models External water to water cooling available as option
Size Laser Head	45" x 30" x 12" (114 x 76 x 30 cm)
Size Control Unit	21" x 32" x 40" (53 x 81 x 102 cm)

## CONTROL INTERFACE

*Ultrafast Commander* Software features:

- Control via USB/RS232
- Easy to use interface
- Pump laser control & monitoring
- Energy attenuation and shutters
- Compressor tuning
- Data Logging
- Complete TOPAS OPA control
- *Q-Scan* beam delivery compatible
- Labview Compatible

