OPOTEK

RADIANT QX
Tunable Laser

Known for industry leading OPO engineering, OPOTEK has redesigned the RADIANT for the modern laboratory. With an improved mechanical design, the RADIANT QX tunable laser system can now be installed by you; saving time and money over competing solutions. By offering tuning ranges from the deep UV to the mid IR, choosing the best system for your application has never been easier. Never let fixed wavelength laser technology limit the boundaries of your discovery.

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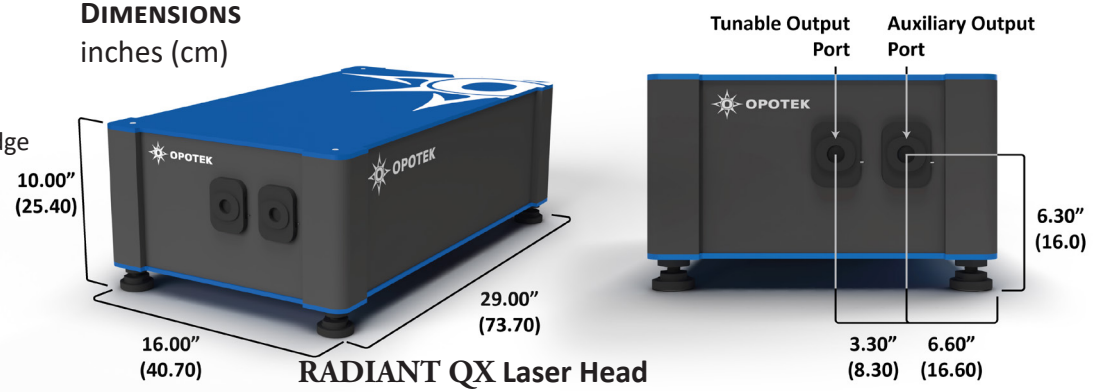
SYSTEM FEATURES

- Fully integrated optical layout
- Flashlamp based pump laser with minimal maintenance
- End-user replaceable flashlamp (100 million shot lifetime) and DI cartridge
- Flashlamp and/or Q-Switch external triggering
- Computer controlled via a single USB connection
- Control software and software development kit (SDK)
- Programmable scans
- No factory installation required
- End user accessible alignment verification
- Temperature controlled, motorized Harmonics
- All tunable wavelengths output from a single port and accessible without any manual configuration changes
- Access to fundamental and pump beams (1064nm, 532nm, and/or 355nm)
- Fiber bundle compatible output ports

DIMENSIONS
inches (cm)



RADIANT QX Laser Head

AVAILABLE OPTIONS AND ACCESSORIES

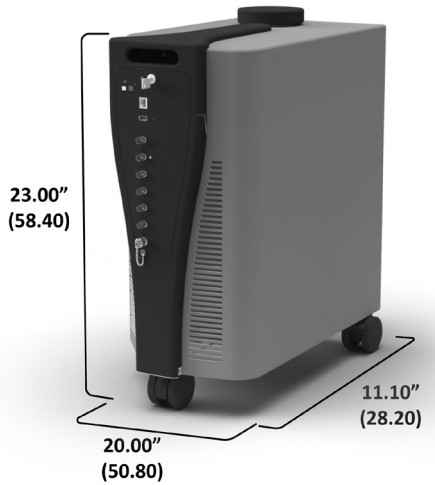
Extended UV Tuning Range: Extends the tuning range to 193-410nm (EUV) or 210-410nm (UV). Available on RADIANT QX8130 or QX4130/QX8130 systems respectively.

Motorized Variable Attenuator (MVA): Mounted, motorized and computer-controlled Glan Laser polarizer that allows continuously attenuation from 100% down to 1% while maintaining maximum pulse to pulse stability. End user removable/installable. Reduces max pulse energy by 10-15% when installed. Can only be used with visible, near-infrared and mid-infrared wavelengths and should be removed when operating below 400 nm if applicable.

Integrated Fiber Bundle (FB): Fiber bundle is installed directly into the auto-locking OPO output port. For optimal performance, an internal lens is installed inside the system. The lens can be removed by the end user for free space access. Typical transmission is 60-70% in the SIGNAL wavelengths and 40-60% in the IDLER wavelengths. Fiber bundle specifications: 2.0 m long, 3.0-5.0 mm input and output diameter, NA = 0.37. Transmits 410-2600 nm only.

Access to full power harmonic wavlengths (2F/3F/4W): Access to 532 nm, 355 nm and/or 266 nm output. 355 nm available on RADIANT QX30 systems only. 266 nm available on RADIANT QX20 and QX30 systems only.

Wavemeter (WM): Integrated Wavemeter for real-time monitoring of wavelengths (some wavelengths through interpolation) and enabling harmonic auto optimization from near peak energies. Patch fiber and optics included to connect laserhead to Wavemeter. Available for RADIANT QX20 and QX30 systems only.

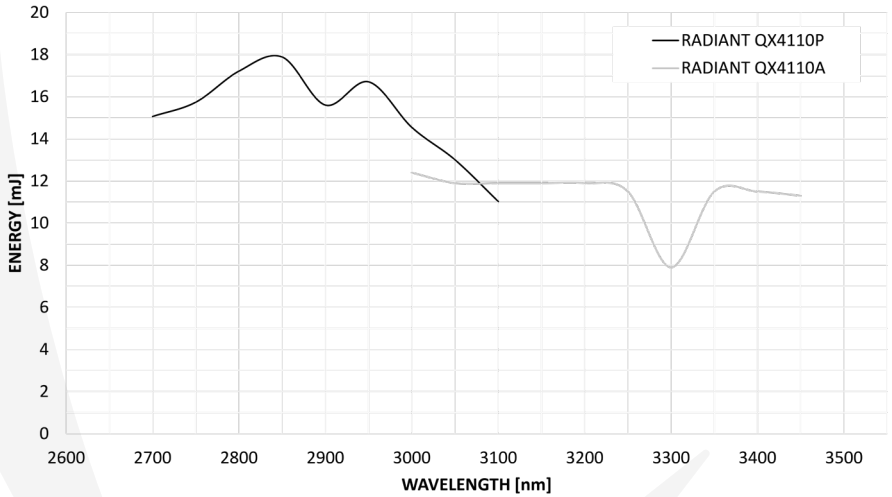


Power Supply

RADIANT QX10

RADIANT QX4110P | RADIANT QX4110A

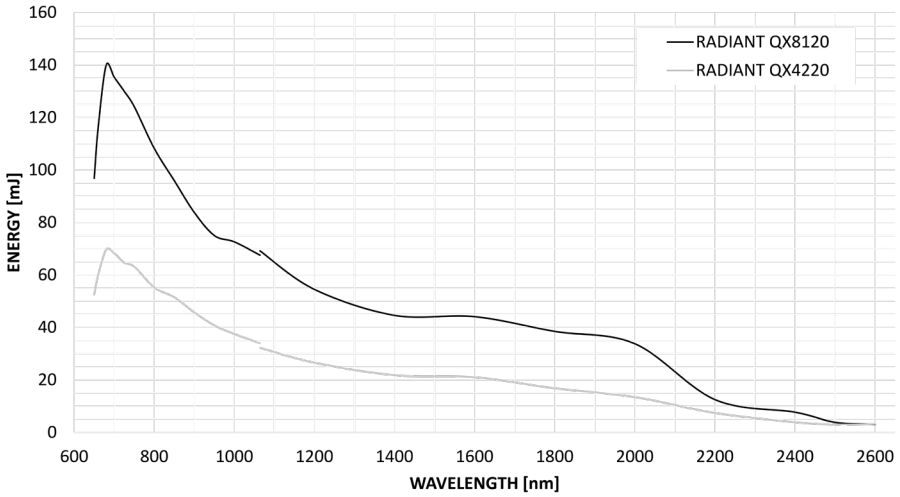
MIR TUNING RANGE



RADIANT QX20

RADIANT QX4220 | RADIANT QX8120

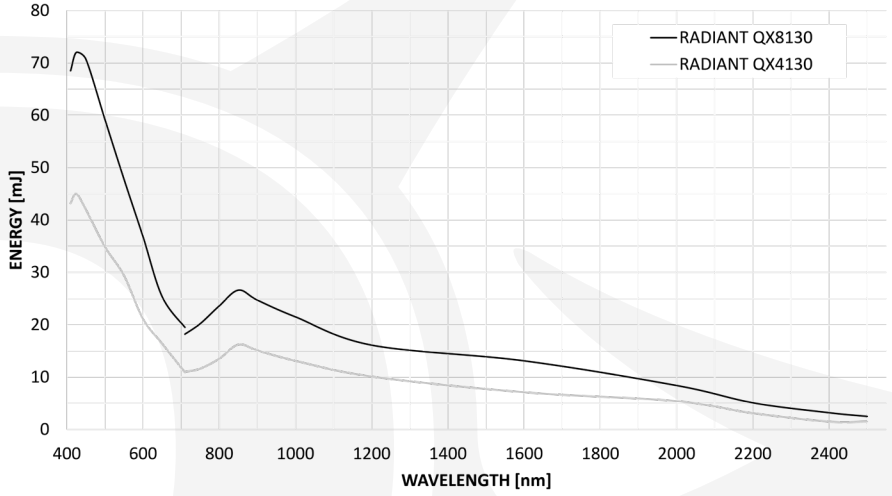
NIR TUNING RANGE



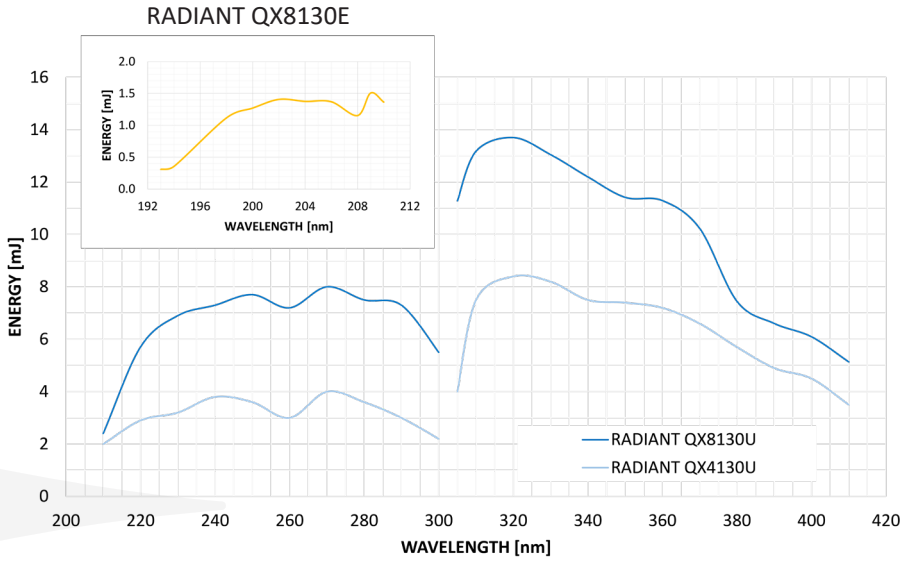
RADIANT QX30

RADIANT QX4130 | RADIANT QX8130

UV/VIS/NIR



RADIANT QX8130E



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OPO SPECIFICATIONS	RADIANT QX10		RADIANT QX20		RADIANT QX30	
	RADIANT QX4110A	RADIANT QX4110P	RADIANT QX4220	RADIANT QX8120	RADIANT QX4130	RADIANT QX8130
WAVELENGTH RANGE (nm)	3000-3450	2700-3100	650-2600		410-2500	
w/ UV (option)	--		--		210-2500	
w/ EUV (option)	--		--		193-2500	
Peak (Max) OPO Energy (mJ)	12	18	70	140	45	70
Peak UV Energy (mJ)[1]	--		--		8.5	14
Peak EUV Energy (mJ)[2]	--		--		---	1.5
Pulse to Pulse Stability (%) 3	< 2		< 2		< 2	
Pump Laser Residual Energy (mJ)	100 @ 1064 nm	100 @ 1064 nm	40-50 @ 532 nm	80-100 @ 532 nm	30-60 @ 355 nm	40-80 @ 355 nm
Linewidth (cm^{-1})	4 - 7		10 - 15		4 - 7	
Tuning Resolution (nm)	< 1		< 1		< 1	
Pulse Duration (ns)	6		6		6	
Beam Diameter (mm) 4	7		7	9	7	9
Beam Divergence (mrad) 5	< 5 (vertical); < 10 (horizontal)		< 2 (Both Axis)		< 2 (Both Axis)	
Signal Polarization	--		Horizontal		Horizontal	
Idler Polarization	Vertical		Vertical		Vertical	

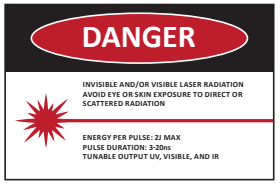
PUMP LASER SPECIFICATIONS						
OPO Pump Wavelength (nm)	1064		532		355	
OPO Pump Energy (mJ)	150		175	390	110	200
Pulse Duration (ns)	6		6		6	
Beam Divergence (mrad)	< 1		< 1		< 1	
Pulse to Pulse Stability (%) 6	< 2		< 2		< 2	
Pulse Repetition Rate (Hz)	10		20	10	10	

[1] UV option decreases OPO by ~30%
[2] EUV option decreases OPO and UV option by ~40-50%
[3] RMS @ peak OPO, 99% of shots
[4] at output of the laser
[5] Full angle, at 1/e² of the peak; @ peak OPO
[6] RMS, 99% of shots

DIMENSIONS (all systems)	
Laser Head (L x W x H; inches [cm])	29.0 x 16.0 x 10.0 [73.7 x 40.7 x 25.4]
Electronics Box (L x W x H; inches [cm])	11.5 x 10.3 x 3.8 [29.2 x 26.2 x 9.7]
Power Supply (L x W x H; inches [cm])	11.1 x 19.9 x 20.2 [28.3 x 50.7 x 51.3]
Laser Head Weight (lbs [kg])	100 [45.4]
Power Supply Weight (lbs [kg])	59.5 [27]

OPERATING REQUIREMENTS (all systems)	
Cooling System	Integrated air-water heat exchanger (included)
Coolant	Distilled water
Temperature	64-82°F / 18-28 °C
Power	100-240 VAC, 50/60 Hz, single phase 1000VAC

CE



VERSION 1.03
Due to ongoing product improvements, all specifications are subject to change without notice.
All tuning curves represent nominal values.
All dimensions approximate in inches (centimeters).