The Spectra-Physics' HighQ-2 is an ultracompact, aircooled, turn-key, fixed wavelength femtosecond laser. It features high peak power and ideal, highly focusable Gaussian spatial beam profile, making it the perfect laser source for fixed wavelength multiphoton imaging in vivo, micro- and nano-structuring, micro- and nano-surgery, and micro-dissection applications.

Designed as a reliable OEM laser for 24/7 operation, the HighQ-2 laser combines true turn-key operation and fast cold start turn-on, ensuring quick installation and easy operation.

The HighQ-2 Advantage

- Ultracompact, air-cooled laser head for easy integration
- High TEM $_{00}$ beam quality with $\mathrm{M}^{2}<1.15$
- High peak power for multiphoton imaging and micro-processing
- True turn-key operation
- Proven, dependable performance under 24/7 operation

HighQ-2 is equipped with long life diodes, a sealed optical cavity design and is manufactured in a controlled, cleanroom environment. The result is a highly dependable laser with long lifetime, high uptime and low cost of ownership.


## Applications

- Multiphoton imaging (YFP, RFP, SHG, THG)
- Optogenetics
- Two-photon polymerization
- Micro- and nano-surgery, micro-dissection

HighQ-2 Specifications ${ }^{1,2}$

|  | HighQ-2 | HighQ-2-SHG |
| :---: | :---: | :---: |
| Output Characteristics | IR | SHG |
| Average Power | $>1.5 \mathrm{~W}$ | $>0.65$ W |
| Wavelength | $1045 \pm 8.0$ nm | $522 \pm 4.0 \mathrm{~nm}$ |
| Repetition Rate | 63 MHz |  |
| Pulse Width (FWHM) | <250 fs |  |
| Pulse Energy | $>24 \mathrm{~nJ}$ | $>10 \mathrm{~nJ}$ |
| Peak Power | >80 kW | >35 kW |
| Power Stability | $<1 \% \mathrm{rms}$ (100 hours); $<0.5 \%$ rms (12 hours) |  |
| Beam Quality | $\mathrm{TEM}_{00}, \mathrm{M}^{2}<1.15$ |  |
| Beam Diameter, at waist (nominal) | 0.8 mm | 1.0 mm |
| Polarization | 100:1, vertical | 100:1, horizontal |
| Ellipticity | <10\% |  |
| Cold Start Time | $\leq 20$ min |  |
| Warm Start Time | $\leq 15$ min |  |
| Operating Temperature Range | $18-32^{\circ} \mathrm{C}$ |  |
| Cooling Requirements |  |  |
| Laser Head | Air-cooled |  |
| Power Supply | Air-cooled |  |
| Utility Requirements |  |  |
| Voltage | 100-240 VAC, $50 / 60 \mathrm{~Hz}, 175 \mathrm{~W}$ |  |
| Laser Head |  |  |
| Dimensions ( $\mathrm{L} \times \mathrm{W} \times \mathrm{H}$ ) | $8.74 \times 8.03 \times 3.97$ in ( $222 \times 204 \times 100.9 \mathrm{~mm}$ ) |  |
| Weight | $13.7 \mathrm{lbs}(6.2 \mathrm{~kg}$ ) |  |
| Power Supply Physical |  |  |
| Dimensions ( $\mathrm{L} \times \mathrm{W} \times \mathrm{H}$ ) | $\begin{gathered} 19 \text { " rack mountable, } 2 \mathrm{U} \text {. } \\ 18.03 \times 19.02 \times 3.46 \text { in }(458 \times 483 \times 88 \mathrm{~mm}) \end{gathered}$ |  |
| Weight | $28.2 \mathrm{lbs}(12.8 \mathrm{~kg}$ ) |  |

[^0]
## Gaussian Beam Profile



Typical Long Term Power Stability >100 hours ${ }^{1}$


1. Typically measured performance; not a guaranteed or warranted specification.

HighQ-2 Dimensional Drawing


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HighQ-2_3/24
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[^0]:    1. Due to our continuous improvement program, specifications are subject to change without notice.
    2. HighQ-2 is a Class IV - High Power Laser, whose beam is, by definition, a safety and fire hazard. Take precautions to prevent exposure to direct and reflected beams. Diffuse as well as specular reflections can cause severe skin or eye damage.
