

iFLEX-iRIS™ Laser Systems

The iFLEX-iRIS™ laser series is a range of solid-state, high performance lasers with low amplitude noise. All wavelengths are offered in the same small size with the same control inputs. All TEC and smart control electronics are inside the laser.

Precision control electronics make these lasers ultra-low noise and ideally suited to demanding imaging applications which benefit from improved signal-to-noise ratios.

Automatic power control ensures excellent power stability for lasers operating CW and also during modulation for iFLEX-iRIS lasers with CLM feature. The innovative Closed Loop Modulation (CLM) feature maintains excellent power stability during modulation and over the laser lifetime, plus precision adjustment at all output power levels. Unlike traditional open loop laser modulation, there is no need for laser calibration reset when using iFLEX-iRIS lasers with CLM feature.

The lasers are CDRH compliant when used with an iFLEX-iRIS CDRH interlock remote power supply. This is recommended for laboratory use.

Features:

- All wavelengths same compact size
- Fully integrated electronics
- Class leading power stability
- Ultra-low noise performance
- Class-leading beam pointing stability
- USB, RS232

Options:

- Analogue, Digital, Dual Mode Modulation with CLM feature
- Fiber delivery: SM PM, modular design with kineFLEX® and it can be added later
- OEM and End User versions

Applications:

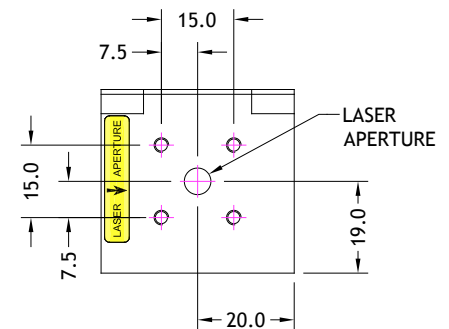
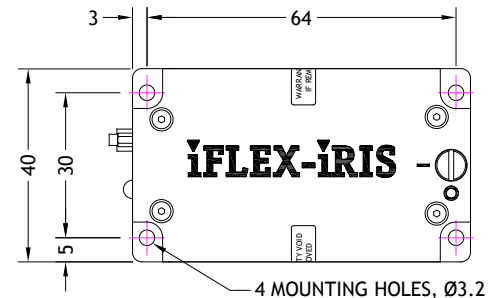
- Flow Cytometry
- Confocal Microscopy
- Medical Imaging & Instrumentation
- DNA Sequencing
- Metrology
- Ophthalmology
- Analytical Instrumentation



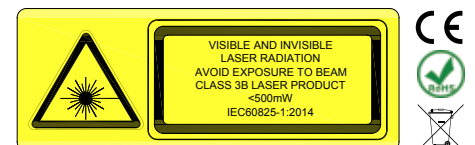
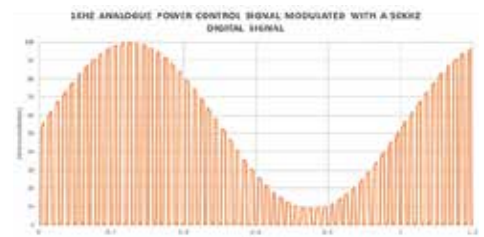
iFLEX-iRIS™ Specification Overview

| Wavelengths (nm) and power (mW) | | | | | | | | | | | | | | | | | | | | | | |
|---------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 375 | 405 | 413 | 445 | 458 | 473 | 488 | 505 | 515 | 520 | 532 | 561 | 594 | 633 | 637 | 642 | 647 | 660 | 670 | 730 | 780 | 830 | 852 |
| 20 | 50 | 100 | 20 | 20 | 75 | 20 | 50 | 20 | 30 | 20 | 20 | 20 | 30 | 20 | 20 | 50 | 80 | 10 | 20 | 70 | 100 | 35 |
| 40 | 100 | | 50 | 70 | | 40 | | 50 | | 40 | 40 | | 70 | 100 | 40 | | | | | | | |
| 50 | 200 | | 75 | | | 100 | | 60 | | | | | | | 100 | | | | | | | |
| | 20 | | | | | 140 | | | | | | | | | | | | | | | | |

| | iFLEX-iRIS CLM, 375-520nm & 633-852nm | 532 | 561 | 594 |
|----------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------|-----|-----|
| Spatial mode, TEM ₀₀ | M ² < 1.2 typ | | | |
| Beam Ø at 1/e ² | 0.7 ± 0.2 mm | | | |
| Beam circularity | ≤ 1:1.2 | | | |
| Pointing stability | < 5 µrad/°C | | | |
| Static beam alignment | Beam centration < 0.3 mm Beam alignment < 5 mrad | | | |
| Polarization ratio | ≥ 200:1, Vertical ± 2° | | | |
| Power supply | 12V DC, 1A | | | |
| Base plate temp. | 40 °C maximum | | | |
| Heat dissipation | 12 W maximum, < 5W typical | | | |
| Operation modes | CW, Digital Modulation, Analogue Modulation, Dual Mode Modulation, Computer Control | CW | | |
| Power stability, 8 hrs | < 0.5 % | < 2 % | | |
| RMS noise (20Hz - 20MHz) | < 0.05* % | < 0.3* %, <0.1% 561nm | | |
| Peak-Peak noise (20Hz to 1MHz) | < 0.5* % | < 3* % | | |
| Max Periodic noise spike (1KHz - 1MHz @ 10-100% power) | < 0.05* % | <0.3*% | | |
| CW, power adjust | 0%, 0.1 - 100% | Off, 50-100% and at 561nm Off, 15-100% | | |
| Digital Modulation Bandwidth Extinction ratio Rise / fall time | Digital signal DC to 5 MHz 1,000,000:1 < 100 nsec | OEM options | | |
| Analogue Modulation Bandwidth Extinction ratio Rise / fall time Power adjustment | 0 - 5V signal DC to 5 MHz 1,000,000:1 < 100 nsec Off and 0.1-100% | OEM options | | |
| Dual Mode Modulation | Two input ports for modulation. Same specifications as above Digital and Analogue. Simultaneous input signals for a) fast digital On/Off, and b) analogue power adjustment via external 0-5V input or internal software setting | OEM options | | |
| Communication | micro-USB, RS232 | OEM options | | |
| Environment | Operating temp. 10-40°C, Storage temp. 10-50°C, Humidity is non-condensing | | | |
| Laser only | 70(L) x 40(W) x 38(H) mm | | | |



Example: Dual Mode Modulation



*wavelength specific.



For technical information contact:
sales@qpl.qioptiq.com
 phone +44 (0) 23 8074 4500
www.qioptiq.com

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