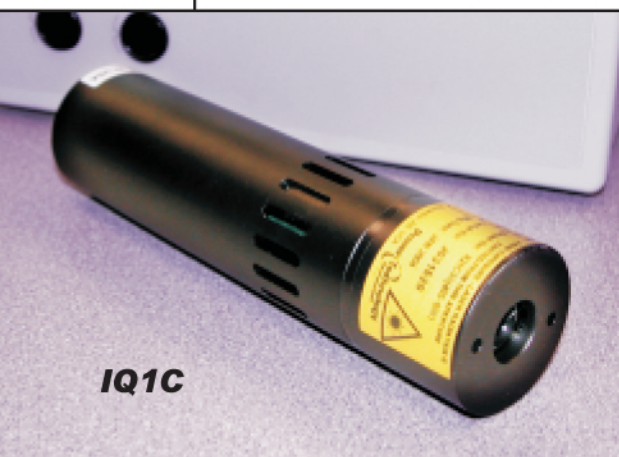


## Instrument Quality

## Laser Modules

## Temperature Controlled Laser Modules for the OEM



**IQ1C**

### Applications

- Interferometry
- Bioanalysis
- High-resolution printing
- Fluorescence
- Raman spectroscopy
- Confocal microscopy

### Features

- PID temperature control loop & precision current source
- CW, analog modulation, or digital beam modulation
- Circularized or standard elliptical beam

### Dimensions, Ø x L

- **IQ1A, IQ1C, & IQ1H:**  
1.5" x 6.1" [38.1mm x 153.7mm]
- **IQ2A, IQ2C, & IQ2H:**  
1.5" x 7.5" [38.1mm x 191.0mm]



Our new, *redesigned* Instrument Quality (IQ) series laser diode module has been created specifically to address the needs of high-end OEM applications requiring superior optical quality and ultra-stable wavelengths and output powers. Applications include fluorescence, spectroscopy, microscopy, and bioanalysis.

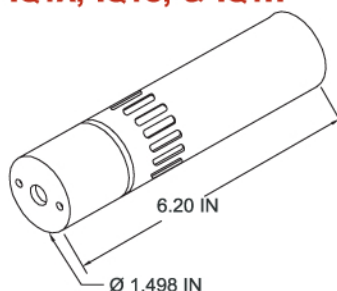
To promote stability of wavelength and output, our IQ modules have always incorporated a precision current source and a PID temperature control loop. The new, improved IQ takes this one step further, providing even more stability via several optical and mechanical improvements. In fact, the new IQ can now operate at a much wider temperature range. The module is also significantly more efficient, now designed to operate optimally from 5VDC rather than 12VDC. This lower operating voltage helps to create less waste heat within the laser

module, thereby increasing diode lifetime, efficiency, and reliability.

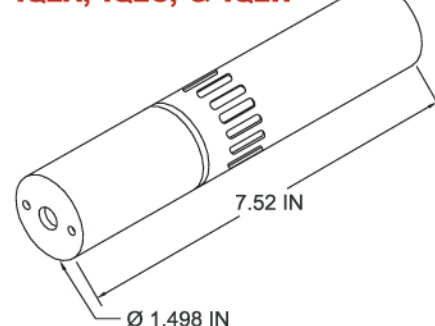
As always, the redesigned IQ features quality glass lenses to achieve optical superiority and can host laser diodes with wavelengths from 370 to 1600nm. For added beam quality, users may choose an IQ module with beam circularization.

Several version of the IQ are available. The **IQ1C** operates in CW mode and can deliver up to 1000mA of drive current. The **IQ1H** is capable of 100MHz digital beam modulation, while the **IQ1A** can deliver up to 70MHz of analog beam modulation. Each is available with a standard elliptical beam or a circular beam achieved via a microlensed diode. Also available are the **IQ2C**, **IQ2H**, and **IQ2A**, alternate models that feature anamorphic correcting prisms to produce a circularized beam.

### IQ1A, IQ1C, & IQ1H



### IQ2A, IQ2C, & IQ2H



| Specifications                            | IQ1A/IQ2A   | IQ1C/IQ2C | IQ1H/IQ2H   |
|---|-------------|-----------|-------------|
| Operating Voltage (VDC)                   | 5 - 15*     | 5 - 15*   | 5 - 15*     |
| Operating Temp. Range (°C)                | 5 - 40      | 5 - 40    | 5 - 40      |
| Max. Operating Current (mA)               | 3000        | 3000      | 3000        |
| Max. Laser Drive Current (mA)             | -           | 1000      | -           |
| Mod. Current Above Bias (mA)              | 10 - 1000** | -         | 450         |
| Modulation Freq. Range (MHz)              | CW - 70***  | -         | CW - 100*** |
| Beam Divergence (1/e <sup>2</sup> , mrad) | <1          | <1        | <1          |
| Rise/Fall Time (ns)                       | 10***       | -         | 2***        |
| Propagation Delay (ns)                    | 20          | -         | 10          |

\* Optimum IQ performance is achieved from most laser diodes when operated from 5VDC. Please note, however, that our 375nm, 405nm, 440nm, and 473nm lasers require a minimum of 6VDC.

\*\* Not all currents can be achieved at all frequencies. When higher current is achieved, frequency will be lower. When lower current is achieved, frequency will be higher.

\*\*\* Maximum modulation frequency and rise/fall times may vary depending on the laser diode chosen.



DS\_IQ Series 6-05