



*Laser solutions  
for your world*

## DIODE PUMPED LASERS

- .Home
- .Laser Marking Systems
- .Laser Machining Centers
- .High Power CW Nd:YAG
- .Pulsed Lasers
- .Diode Pumped Lasers
- .Spare Parts & Accessories
- .Contact Us
- .Search

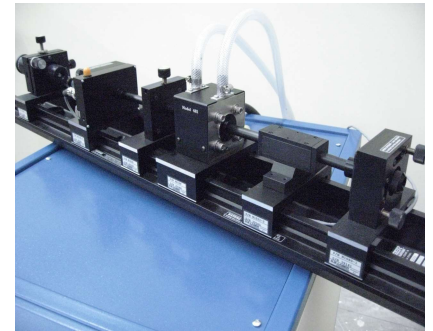
### News:

- [Used Lasers](#)
- [Articles](#)
- [Press Releases](#)
- [New Products](#)
- [Tech. Notes](#)

Unlike their lamp pumped counterparts, Diode Pumped Lasers use high efficiency, long life solid state diodes as their pump source. The diodes emit light precisely at the Nd:YAG pump band, unlike flash lamps, which emit light in a broad spectrum. The unused light in a lamp pumped laser generates extra heat in the laser rod which must be dissipated by the cooling system. This heat causes thermal effects in the laser rod, and results in a loss of beam quality.

Because the solid state diodes emit light which closely matches the pump band of the rod, minimal excess heat is generated, resulting in better beam quality. An additional benefit is lower power usage, and a significantly smaller cooler. The U.S. Laser Diode Pumped Laser head features a proprietary design utilizing close coupled side pumping for high efficiency and beam circularity, and requires no routine maintenance. The solid state diodes used are only the highest quality, aluminum-free type, and their life expectation is well in excess of 10,000 hours.

Because of the excellent beam quality, U.S.Laser Diode Pumped Lasers can generally be focused to smaller spot sizes, and are excellent lasers for use in laser marking and micro machining. When used in Q-switched mode, diode lasers generally have shorter pulse duration than their lamp pumped counterparts. In many applications a lower power diode pumped laser will do the same job as a higher powered lamp pumped laser. Earlier U.S. Laser systems with lamp pumped lasers can easily be retrofitted with newer style diode pumped lasers.



### Diode Pumped SHG Lasers Operating at 532nm

U.S. Laser Corp diode pumped lasers are also available in a frequency doubled configuration to provide output at 532nm. Models 480G and 481G are based on their 1064nm counterparts with the addition of an intracavity second harmonic generator. The harmonic generator used is a non-critically phase matched, temperature tuned LBO crystal. Phase match temperature to the cell is controlled by an oven and precision temperature controller, which is included with the system.

### SPECIFICATIONS - DIODE PUMPED LASERS

MODEL NO:	480	480G	481	481G	482	483	484	485	486	487
Max C.W. Power (watts)	10	2	20	3-4	25	50	70	100	150	200
Operating Mode	TEM <sub>00</sub>	TEM <sub>00</sub>	TEM <sub>00</sub>	TEM <sub>00</sub>	MultiMode	MultiMode	MultiMode	MultiMode	MultiMode	MultiMode
Beam Dia. (mm)	1	1	1	1	3	4	4	4	5	5
Divergence (milliradians)	D.L.	D.L.	D.L.	D.L.	5-7	6-8	6-8	6-8	8-12	8-12
Wavelength (microns)	1.06	.532	1.06	.532	1.06	1.06	1.06	1.06	1.06	1.06

D.L. = Diffraction Limited

