



SERIES 800 Nd:YAG LASERS

A Major Design and Performance Upgrade

The Series 800 represents a *new generation* of CW and Q-Switched Nd:YAG lasers from Lee Laser. It incorporates significant optical head design improvements combined with a power supply that is engineered to meet future uniform international electrical codes. The power supply also uses a new concept of arc lamp *power control*.

Although the fundamental design of the Series 800 lasers is similar to that of the highly successful Series 700, performance comparisons reveal the following about the Series 800:

- **More Efficient.** Comparable laser power at reduced arc lamp power
- **Greater Q-Switched Peak Pulse Power.** Shorter pulse width at comparable pulse rates and average power.
- **Longer Arc Lamp Lifetime.**
- **Better Q-Switched Pulse Stability.** Most noticeable for TEM₀₀ models at elevated pulse rates above 10 kHz.
- **"CE Mark" Certification.** Special configurations that comply with the EMC Directive defined under European Community Directive 89/336/EEC, and that bear the "CE Mark" certification.

New design features of the Series 800 lasers are summarized below:

I. Power Station

A. Power Supply: many new features

1. Built according to IEC 950 design standards for operator safety.
2. Constant *power* source rather than constant current source
 - a. improves arc lamp power stability
 - b. uniform arc lamp performance: compensates for lamp-to-lamp voltage differences.

3. External Computer Interface (optional): Optically isolated interface circuit for external laser power control, plus output ports for computer monitor of system internal fault diagnostics.
4. Emergency STOP: Front panel red palm button.

B. Q-Switch Driver

1. Designed primarily for computer control
2. Frequency Meter removed: not required for computer control (will be supplied for users that need local control).
3. Internal Frequency Control
 - a. Knob on front panel adjusts over range 2-10 kHz
 - b. Lower limit (2 kHz) and upper limit (10 kHz) set for test purposes

II. Optical Assembly: changes only to Head Block Assembly which is totally new. Design improvements produce significant results:

- A. Better Q-switch pulse stability at higher frequencies.
- B. Improved optical pump efficiency.
- C. Longer arc lamp lifetime.

