

Laser Energy Control

AT4000 series precision laser attenuators with manual or motorized drive for spot-on energy control in industrial laser applications of high power pulsed lasers. Use your photons!



KEY FEATURES

- ❖ 5-95% energy control, continuously variable
- ❖ <1% accuracy and reproducibility
- ❖ Available at all excimer & Nd-YAG wavelengths
- ❖ Beam size up to 23mmx45mm
- ❖ Beam walk-off compensation(AT4020 & AT4040)
- ❖ Open gate feature for 100% transmission (AT4030 & AT4040))
- ❖ Massive finned Al beam dump/light trap
- ❖ AT4030 all manual control; AT4020 manual/motorized control from PC printer port(with ATPC)
- ❖ AT4040 with motorized control from RS232.

APPLICATIONS

- ❖ Quick and accurate determination of optimum processing parameters
- ❖ Industrial process control
- ❖ Stand-alone or integrated into systems



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AT4020,4030& 4040 energy controllers are particularly suitable for use with high power excimer lasers, Nd-Yag lasers & harmonics. For those lasers, internal control over o/p energy from within the laser source generally has an unwanted effect on beam profile. The fundamental principle of the AT4000 series attenuators is the shift in cut-off wavelength which occurs when a multilayer dielectric high pass filter is tilted w.r.t. to the beam,- Fig.1. The shift is towards a lower wavelength, and the coating is made so that the highest transmission occurs with the attenuator plate perpendicular to the laser beam. Transmission reduces progressively to a low value at 45° tilt. The part of the beam not transmitted is reflected into a combination light trap/heat sink. Tilt of the plate produces a slight lateral walk-off of the beam, which in AT4020 is entirely compensated by a second high transmission plate geared to the first.

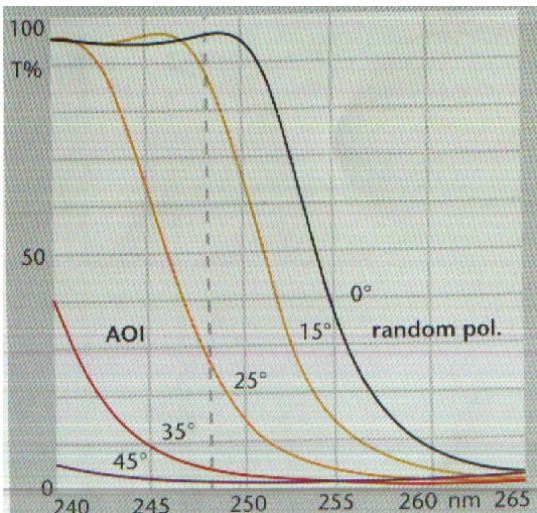
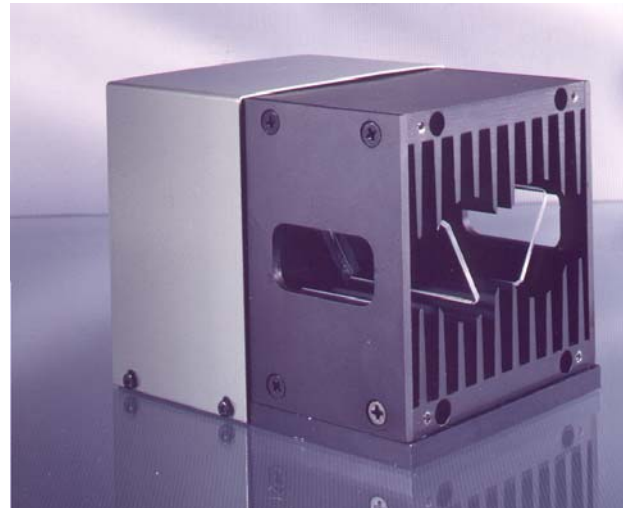
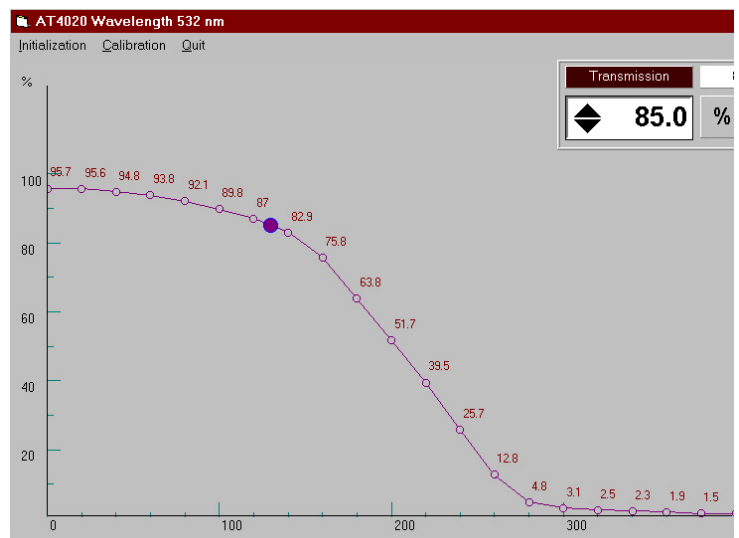
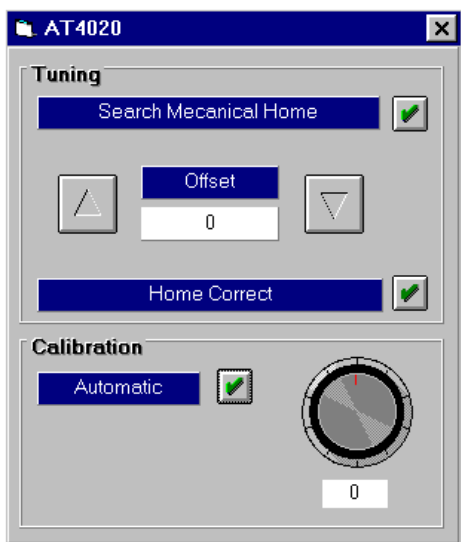


Fig.1



AT4020 motorized energy controller, showing geared plates & beam dump

AT4020 motorized energy controller requires 5V supply and accepts clock and direction pulses. **ATPC** drive unit allows PC control via the parallel port under @Windows. AT4040 uses RS232 interface. Easy to follow menu-driven software covers calibration and normal use.



AT4000 series optics are high damage threshold coatings the exceeding MIL spec. requirements.

Mechanical Useful aperture 50x23mm.

AT4020 & 4040 140x108x110mm, 2.2kg.

AT4030 104x108x102mm, 1.2kg.