

Title (en)

ArF LASER WITH LOW PULSE ENERGY AND HIGH REP RATE

Title (de)

ArF-LASER WITH NIEDRIGER PULSEENERGIE UND HOHER WIEDERHOLRATE

Title (fr)

LASER ArF A FAIBLE ENERGIE PULSEE ET CADENCE DE REPETITION ELEVEE

Publication

EP 1147582 A1 20011024 (EN)

Application

EP 99969612 A 19991213

Priority

- US 9929682 W 19991213
- US 21182598 A 19981215
- US 45175099 A 19991130
- US 21734098 A 19981221
- US 38693899 A 19990831

Abstract (en)

[origin: WO0038286A1] A reliable modular production quality ArF excimer laser capable of producing laser pulses at repetition rates in the range of 3,000 to 4,000 Hz or greater with pulse repetition energies in the range of about 2mJ to 5mJ or greater with a full width half maximum bandwidth of about 0.4 pm or less and dose stability of less than 0.4 percent. Using this laser as an illumination source, stepper or scanner equipment can produce integrated circuit resolution of 0.10 μm (100nm) or less, replaceable modules include a laser chamber (80); a modular pulse power system; and a line narrowing module (86) for a given laser power output. The higher repetition rate provides two important advantages. The lower per pulse energy means less optical damage and the larger number of pulses for a specified illumination dose means better dose stability.

IPC 1-7

H01S 3/22

IPC 8 full level

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CPC (source: EP)

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