

2. An average or CW output power exceeding 1 W;
- b. An output wavelength of 600 nm or more but not exceeding 1,400 nm and:
1. An output energy exceeding 1 J per pulse and a pulsed "peak power" exceeding 20 W; *or*
 2. An average or CW output power exceeding 20 W; *or*
- c. An output wavelength exceeding 1,400 nm and:
1. An output energy exceeding 50 mJ per pulse and a pulsed "peak power" exceeding 1 W; *or*
 2. An average or CW output power exceeding 1 W;
1061. 5. c. 2. Non-"tunable" "lasers", as follows:
NOTE:
1061.5.c.2. includes atomic transition solid state "lasers".
- a. Ruby "lasers" having an output energy exceeding 20 J per pulse;
- b. Neodymium glass "lasers", as follows:
1. "Q-switched lasers" having:
 - a. An output energy exceeding 20 J but not exceeding 50 J per pulse and an average output power exceeding 10 W; *or*
 - b. An output energy exceeding 50 J per pulse;
 2. Non-"Q-switched lasers" having:
 - a. An output energy exceeding 50 J but not exceeding 100 J per pulse and an average output power exceeding 20 W; *or*
 - b. An output energy exceeding 100 J per pulse;
- c. Neodymium-doped (other than glass) "lasers", as follows, with an output wavelength exceeding 1,000 nm but not exceeding 1,100 nm: (For Neodymium-doped (other than glass) "lasers" having an output wavelength not exceeding 1,000 nm or exceeding 1,100 nm, see 1061.5.c.2.d.)
1. with a "pulse duration" of less than 1 ns and:
 - a. A "peak power" exceeding 5 GW;
 - b. An average output power exceeding 10 W; *or*
 - c. A pulsed energy exceeding 0.1 J;
 2. Pulse-excited, "Q-switched" lasers, with a pulse duration equal to or more than 1 ns, and:
 - a. A single-transverse mode output with:
 1. A "peak power" exceeding 100 MW;
 2. An average output power exceeding 20 W; *or*
 3. A pulsed energy exceeding 2 J; *or*
 - b. A multiple-transverse mode output with:
 1. A "peak power" exceeding 200 MW;
 2. An average output power exceeding 50 W; *or*
 3. A pulsed energy exceeding 2 J;
 3. Pulse-excited, non-"Q-switched lasers", having:
 - a. A single-transverse mode output with:
 1. A "peak power" exceeding 500 kW; *or*
 2. An average output power exceeding 150 W; *or*
 - b. A multiple-transverse mode output with:
 1. A "peak power" exceeding 1 MW; *or*
 2. An average power exceeding 500 W;
 4. Continuously excited "lasers" having:
 - a. A single-transverse mode output with:
 1. A "peak power" exceeding 500 kW; *or*
 2. An average or CW output power exceeding 150 W; *or*
 - b. A multiple-transverse mode output with:
 1. A "peak power" exceeding 1 MW; *or*
 2. An average or CW output power exceeding 500 W;
 - d. Other non-"tunable" "lasers", having any of the following:
1061. 5. c. 2. d. 1. A wavelength less than 150 nm and:
- a. An output energy exceeding 50 mJ per pulse and a pulsed "peak power" exceeding 1 W; *or*
- b. An average or CW output power exceeding 1 W;
1061. 5. c. 2. d. 2. A wavelength of 150 nm or more but not exceeding 800 nm and:
- a. An output energy exceeding 1.5 J per pulse and a pulsed "peak power" exceeding 30 W; *or*
 - b. An average or CW output power exceeding 30 W;
3. A wavelength exceeding 800 nm but not exceeding 1,400 nm, as follows:
- a. "Q-switched lasers" with:
 1. An output energy exceeding 0.5 J per pulse and a pulsed "peak power" exceeding 50 W; *or*
 2. An average output power exceeding:
 - a. 10 W for single-mode "lasers";
 - b. 30 W for multimode "lasers";
 - b. Non-"Q-switched lasers" with:
 1. An output energy exceeding 2 J per pulse and a pulsed "peak power" exceeding 50 W; *or*
 2. An average or CW output power exceeding 50 W; *or*
 4. A wavelength exceeding 1,400 nm and:
 - a. An output energy exceeding 100 mJ per pulse and a pulsed "peak power" exceeding 1 W; *or*
 - b. An average or CW output power exceeding 1 W;
1061. 5. d. Dye and other liquid "lasers", having any of the following:
1. A wavelength less than 150 nm and:
 - a. An output energy exceeding 50 mJ per pulse and a pulsed "peak power" exceeding 1 W; *or*
 - b. An average or CW output power exceeding 1 W;
 2. A wavelength of 150 nm or more but not exceeding 800 nm and:
 - a. An output energy exceeding 1.5 J per pulse and a pulsed "peak power" exceeding 20 W;
 - b. An average or CW output power exceeding 20 W; *or*
 - c. A pulsed single longitudinal mode oscillator with an average output power exceeding 1 W and a repetition rate exceeding 1 kHz if the "pulse duration" is less than 100 ns;
 3. A wavelength exceeding 800 nm but not exceeding 1,400 nm and:
 - a. An output energy exceeding 0.5 J per pulse and a pulsed "peak power" exceeding 10 W; *or*
 - b. An average or CW output power exceeding 10 W; *or*
 4. A wavelength exceeding 1,400 nm and:
 - a. An output energy exceeding 100 mJ per pulse and a pulsed "peak power" exceeding 1 W; *or*
 - b. An average or CW output power exceeding 1 W;
1061. 5. e. Free electron "lasers";
1061. 5. f. Components, as follows:
1. Mirrors cooled either by active cooling or by heat pipe cooling;
Technical Note:
Active cooling is a cooling technique for optical components using flowing fluids within the subsurface (nominally less than 1 mm below the optical surface) of the optical component to remove heat from the optic.
 2. Optical mirrors or transmissive or partially transmissive optical or electro-optical components specially designed for use with embargoed "lasers";
1061. 5. g. Optical equipment, as follows:
1. Dynamic wavefront (phase) measuring equipment capable of mapping at least 50 positions on a beam wavefront with:
 - a. Frame rates equal to or more than 100 Hz and phase discrimination of at least 5% of the beam's wavelength; *or*
 - b. Frame rates equal to or more than 1,000 Hz and phase discrimination of at least 20% of the beam's wavelength;