

CAT XII WORKING DRAFT

Updated 18 October 2010

Category XII – Fire Control, Range Finder, Optical and Guidance and Control Equipment

A. End Items, Systems, Accessories, Attachments, Equipment, Parts and Components

1. Fire control systems as follows:
 - a. (ITAR T2) Recommend fire control radars be moved to USML Category XI.
 - b. Remaining items require further technical input to determine appropriate tiering within the USML
2. Lasers as follows:
 - a. (ITAR T2) Lasers designed exclusively for directed energy weapons.
 - b. (ITAR T2) Lasers for target designators containing standard or encoded designator pulse formats
 - c. (ITAR T2) Lasers specifically designed for infrared countermeasures

Note: Ultrafast lasers X picoseconds or less in temporal duration are controlled on the CCL.
3. Thermal imaging systems with any of the following discriminating functionality:
 - a. (ITAR T2) Incorporating a laser target designator
 - b. (ITAR T3) Designed for weapons mount on a defense article
 - c. (ITAR T2) Incorporating Counter-measures such as a filter or other mechanisms designed to defend against lasers and other infrared or image intensification blinding/disabling systems.
 - d. (ITAR T2) Designed to specifically identify and track defense articles
 - e. (ITAR T2) Incorporating a defense article laser range finder
 - f. (ITAR T2) Incorporating a US Gen III image intensification tube or better
4. (ITAR T2) Thermal imaging systems with a defense article focal plane array and having range performance greater than X when using NVTherm calculations.

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5. (ITAR T2) Night vision or other Night Sighting "Systems" with a US Gen III image intensification tube or better
6. Inertial Systems
 - a. (ITAR T2) Inertial navigation systems with specified performance better than X nautical miles per hour during exposure to each of the following:
 - i. vibration levels equal to or greater than Xg rms; and
 - ii. shock values equal to or greater than X g; and
 - iii. exposure to temperature range X; and
 - iv. angular rates greater than X degrees per second
 - b. (ITAR T2) Inertial systems that designed to meet requirements for space radiation hardening
 - c. (ITAR T2) Inertial systems having functions specific to missile systems

NOTE: High dynamics, severe environment and performance capability within those environments are the military differentiators.

Components, parts, accessories and associated equipment for the items controlled by this Category as follows:

1. (ITAR T2/Dual Use T2) Two dimensional infrared focal plane arrays having individual elements with a peak response in the wavelength range exceeding 1,200 nm but not exceeding 30,000 nm (cooled focal plane arrays) that exceed X when performing a figure of merit calculation. [FOM is based on sensitivity, pixel pitch and number of pixels or resolution.]
2. (Dual Use T2) Two dimensional Infrared focal plane arrays based on "microbolometer" material having individual elements with an unfiltered response in the wavelength range equal to or exceeding 8,000 nm but not exceeding 14, 000 nm (uncooled focal plane arrays) are controlled on the CCL (Suggested placement in existing ECCN 6A002.a.3.f.)

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3. (ITAR T2/Dual Use T2) Visible focal plane arrays that exceed X when performing a figure of merit calculation.
4. (ITAR T2/Dual Use T2) Uncooled photon detectors that exceed X when performing a figure of merit calculation.
5. (ITART2) Gen3 image intensification tubes with a FOM of XXXX or more.
6. (ITAR T3) Gen 3 image intensification tubes with a FOM of XXXX or less.
7. (ITAR T2) Countermeasure filters.
8. (ITAR T2) Image intensifier tubes containing autogated technology, halo X or less or including countermeasure filters.
9. (ITAR T1/T2) Inertial measurement units capable of achieving performance equivalent of the following in an inertial navigation configuration:
 - a. vibration levels equal to or greater than Xg rms; and
 - b. shock values equal to or greater than X g; and
 - c. exposure to temperature range X; and
 - d. angular rates greater than X degrees per second
10. (ITAR T2) Gyros -
 - a. Measurement criteria and environments TBD / under study.
11. (ITAR T2) Accelerometers
 - a. Measurement criteria and environments TBD / under study.
12. (EAR T2) Note: Laser diodes or stacked arrays are controlled on the CCL. (ECCN 6A005)
13. (EAR T3) Note: Yag laser rods are controlled on the CCL.
14. (EAR/below T3/not controlled/ EAR99) Note: Night sighting systems/device kits not containing an image intensification tube or a focal plane array are controlled under the CCL.

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15. (EAR T3) Note: Gen II image intensification tubes and systems containing them are controlled under the CCL.