

LASER WARNING SIGNS

CSA Standard Z-386-08 "Safe Use of Lasers in Health Care Facilities" and ANSI Standard Z136.1-2007 "American National Standard for the Safe Use of Lasers" specify what is required for laser warning signs:

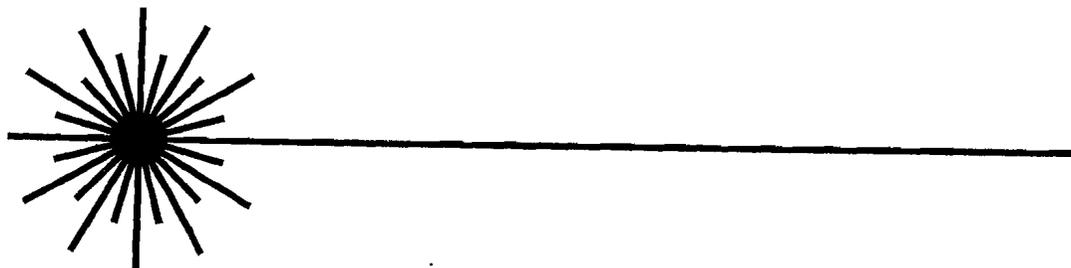
Symbols.

Two similar laser symbol designs are accepted for laser signs and labels:

1. Laser Symbol Design.

One of two possible designs can be used:

- **ANSI Design:** The laser hazard symbol shall be a sunburst pattern consisting of two sets of radial spokes of different length and one long spoke, radiating from a common centre:



- **IEC 60825-1 Design:** The laser hazard symbol shall be composed of an equilateral triangle surrounding a sunburst pattern consisting of two sets of radial spokes of different lengths and one spoke, radiating from a common center.



SYMBOL AND BORDER: BLACK
BACKGROUND: YELLOW

2. Safety Alert Symbol.

A symbol which indicates a potential personal safety hazard. It is composed of an equilateral triangle surrounding an exclamation mark and is to be located to the left of the signal word on the "Danger" or "Caution" signs. It is not used on the "Notice" signs.

Signal Words.

The purpose of a laser area warning sign is to convey a rapid visual hazard-alerting message that:

- (1) Warns of the presence of a laser hazard in the area
- (2) Indicates specific policy in effect relative to laser controls
- (3) Indicates the severity of the hazard (e.g., class of laser, NHZ extent, etc.)
- (4) Instructs appropriate action(s) to take to reduce the hazard (e.g. eyewear requirements, etc.)

The laser warning signs shall utilize signal words which have the following meanings:

“DANGER” indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury. This signal word is to be limited to the most extreme conditions. The signal word “Danger” shall be used with all signs and labels associated with Class 3B and Class 4 lasers and laser systems. For locations requiring the use of eyewear the optical density (OD) of protective eyewear and wavelength shall be shown on the sign.

“CAUTION” indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury. It may also be used to alert against unsafe practices. The signal word “Caution” shall be used with all signs and labels associated with Class 2 and Class 2M lasers and laser systems

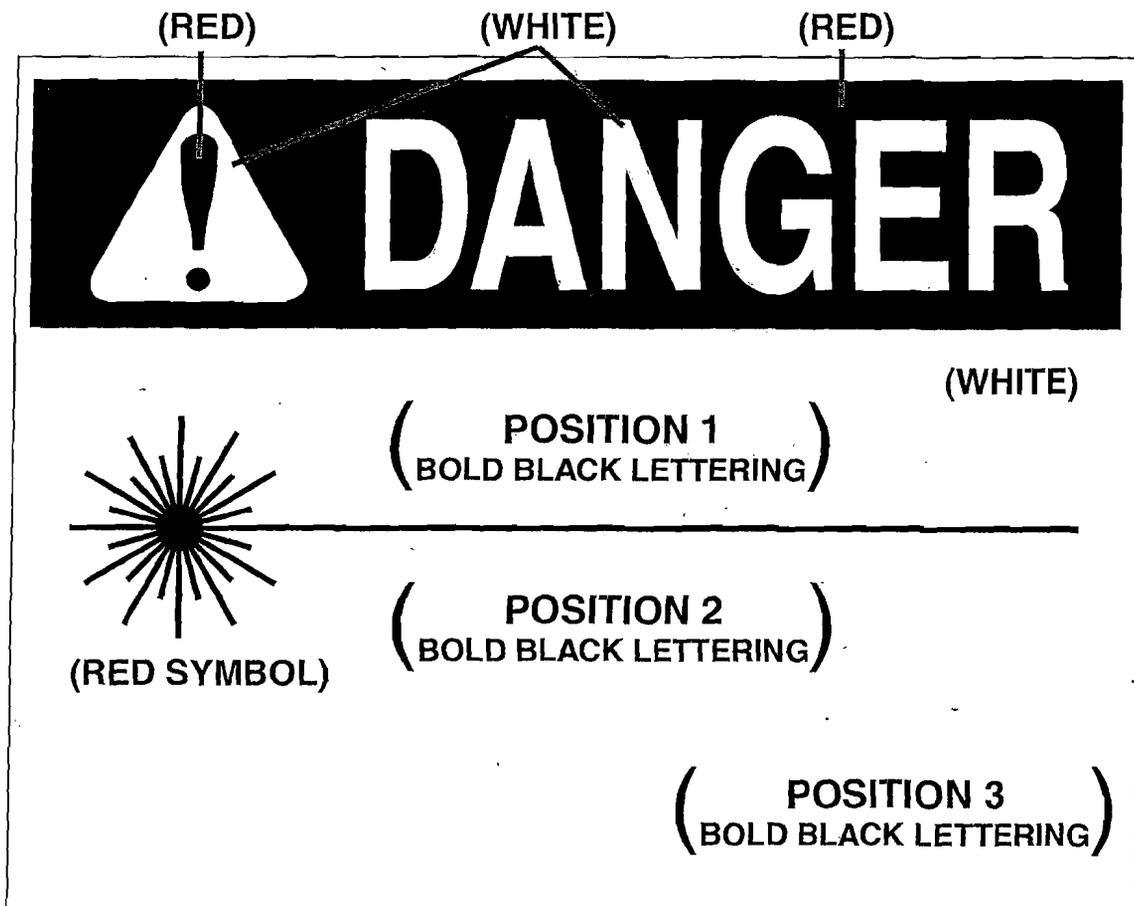
“NOTICE” is used to indicate a statement of facility policy as the message relates directly or indirectly to the safety of personnel or the protection of property. This signal word shall not be associated directly with a hazard or hazardous situation and must not be used in place of “DANGER” or “CAUTION.” The signal word “Notice” shall be used on signs posted outside a temporary laser controlled area, for example, during periods of service. When a temporary laser controlled area is created, the area outside the temporary area remains Class 1, while the area within is either Class 3B or Class 4 and the appropriate danger warning is required

Pertinent Sign Information.

Sign information and warning shall conform to the following specifications:

1. The appropriate signal word (Caution or Danger) shall be located in the upper panel with the Safety Alert Symbol to the left.
2. Adequate space shall be left on all signs and labels to allow the inclusion of pertinent information. Such information may be included during the printing of the sign or label or may be handwritten in a legible manner, and shall include the following:
 - (1) At position 1 above the tail of the sunburst, special precautionary instructions or protective actions that are required:
 - (a) For all Class 3B lasers and laser systems:
“Laser Radiation – Avoid Direct Exposure to Beam”
 - (b) For Class 4 lasers and laser systems:
“Laser Radiation - Avoid Eye or Skin Exposure to Direct or Scattered Radiation”

- (2) At position 1 above the tail of the sunburst, other special precautionary instructions or protective actions that may also be applicable. For example:
- Laser Surgery in Progress - Eye Protection Required
 - Laser Protective Eyewear Required
 - Invisible Laser Radiation
 - Knock Before Entering
 - Do Not Enter When Light Is On
 - Restricted Area
- (3) At position 2 below the tail of the sunburst, type of laser (Nd:YAG, CO2, etc.), or the emitted wavelength, pulse duration (if appropriate), and maximum output
- (4) At position 3, the class of the laser or laser system



Posting of Warning Signs.

Warning signs shall be conspicuously displayed in locations where they best will serve to warn onlookers and on all doors entering the laser treatment controlled area (LTCA), so as to warn those entering the area of laser use. Warning signs should be covered or removed when the laser is not in use.