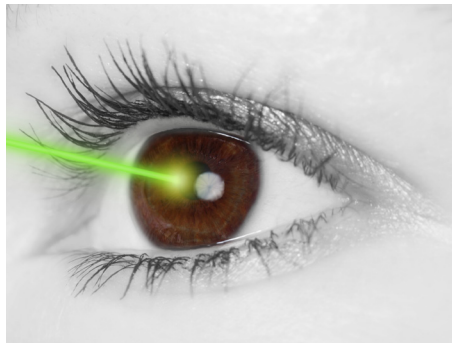


SHINY INSTRUMENTS IN STERILE PROCESSING

Could potentially damage your eyes with your current barcode reader

Sterile Processing Departments (SPD) are proud to have all stainless steel instruments clean and shiny on a daily basis.

The problem comes down to the laser readers typically used to read the DataMatrix codes (2D Code) on surgical instruments. These class I and II laser readers can pose potential damage to the operator's eyes if corrective measurements are not taken. The problem is not aversion; (Closure of the eyelid, eye movement to avoid a bright light), but specular reflection: Exposure from laser hitting a "shiny" object. This reflection can be as hazardous as the primary beam.



of the light is absorbed by the material exposed (Carton box, wood, paper, glass, plastic etc.) But unfortunately they were mistakenly placed in the SPD environment for instrument tracking where everything is shiny and many surgical instruments with "mirror" finish can pose a potential risk.



For this laser class (II), the normal human aversion response of (0.25 seconds) to bright radiant sources affords eye protection if the beam is viewed directly. The potential for eye hazard exists if this normal reflex motion is overcome and the exposure time is greater than 0.25 seconds, unfortunately humans react differently with specular reflections.

Barcode readers are generally safe in industrial environments, where most



There is no regulation in place for class II laser safety in a "shiny" environment. NuTrace's recommendation is using laser protection glasses (650nm) and consulting your EHS (Environmental Health & Safety) Officer for further information. □
Video: <http://vimeo.com/133300243>

Facts

Reflection is primarily a function of the physical character of the surface of the target material. A smooth polished surface is generally a good or specular reflector.

A reflector such as a flat mirror changes the direction of an incident beam with little or no absorption. A curved mirror or surface will change the divergence angle of the impinging laser beam as well as its direction.

Class-II lasers are limited to 1 mW continuous wave, or more if the emission time is less than 0.25 seconds or if the light is not spatially coherent. Intentional suppression of the blink reflex could lead to eye injury. Many laser barcodes are class II



References

FDA Laser Products

<http://www.fda.gov/Radiation-EmittingProducts/RadiationEmittingProductsandProcedures/HomeBusinessandEntertainment/LaserProductsandInstruments/ucm116362.htm>

OSHA Laser Classification

<https://www.osha.gov/SLTC/etools/hospital/surgical/lasers.html#classifications>

Berkeley Lab

<http://www2.lbl.gov/ehs/safety/lasers/bioeffects.shtml>

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**NuTrace R+ Healthcare,
 is the safest and fastest
 laserless 2D reader in
 the world.**
