

Human limitations as safety factor considerations in Femtosecond Laser beam alignments

Two similar laser accidents happened in different Israeli research institutes, which resulted in permanent eye damage to students who were performing alignment procedures with ultra-short Ti:sapphire laser beams. Both students had been wearing laser safety eyewear chosen to have a proper attenuation bandwidth and to prevent saturation and non-linear effects. The students used IR cards to locate the invisible laser beams. They had trouble observing the IR card emission through the laser safety eyewear, and unfortunately decided to remove the eyewear for a short time. The Ti:sapphire diffuse reflection from the IR card was sufficiently intense to cause permanent vision loss.