



Safe Laser Bt.

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Laser Equipment classification: Safe Laser 500 Infra

Report Reference No:	SL5002507-2014
Date:	25.07.2014
Test Laboratory:	Optical Lab of the HAS Wigner Physical Research Centre
Test specification standard:	IEC 60825-1:2007 - Safety of laser products, Part 1: Equipment classification and requirements (MSZ EN 60825-1) Compatible with the „ANSI Z136.3-2011 American National Standard for Safe Use of Lasers in Health Care
Instrument applied in the test:	Coherent USB PM30 Serial number: 0569A16R
Test item description:	Soft laser equipment
Model type:	Safe Laser 500 Infra
Maximum output power:	500 mW
Wavelength:	808 nm (near infrared)
Laser beam type:	Scattered radiation (not considered as a beam)
General information:	<p>The Safe Laser 500 Infra equipment is a new special laser, which, similarly to the conventional laser equipments, radiates coherent, polarized and monochromatic light, however, it emits only scattered light from a large radiating surface, thus can not be focused into a small spot.</p> <p>We call this technique as “Safe Laser” (Patent no. 2103448)</p>
Measurements:	The light passed through a 7 mm diameter hole, was measured behind a 3.5 mm diameter hole, in 1 meter distance.
Test result:	<p>We have found 2×10^{-4}W power, resulting in a 0.03mW/cm² power density on the surface of the retina, which means no harm to the eye.</p> <p>Therefore we categorized the Safe Laser 500 Infra as safety Class 1 laser device.</p>
Additional information:	<p>Furthermore, while developing Safe Laser 500 Infra we have also checked the power density in an optical arrangement similar to the human eye. In the focus of a 4 mm focal length lens we have found 2500 times less power density, compared to a usual gas laser with similar power.</p> <p>Thus we conclude that the laser can safely be used in everyday practice.</p>

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Tamas Rozsa
Managing Director