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# **SAFETY CLASSIFICATION OF LEDS AND LAMPS ACCORDING TO EN 62471:2008 AND IN RELATION TO THE EU OPTICAL RADIATION DIRECTIVE**

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In 2008 the standard IEC 62471:2006 "Photobiological Safety of Lamps and Lamp Systems" was adopted as EN standard (EN 62471:2008) and is to be harmonised under the low voltage directive. According to EN 62471:2008 sources of optical radiation are classified into risk groups subject to their potential photobiological hazard. In order to determine the risk group of a source, its spectral irradiance or radiance has to be measured in a specified distance, weighted with action spectra and compared to different exposure limits.

The significance of the harmonised lamp safety standard EN 62471:2008 will increase when the "Directive 2006/25/EC on the minimum health and safety requirements regarding the exposure of workers to the risks arising from artificial optical radiation" has to be implemented into national European law by April 27<sup>th</sup> 2010. According to the EU-directive "artificial optical radiation" the employer has to assure that workers are not exposed to potentially hazardous levels of optical radiation at the workplace. The risk group classification of sources of optical radiation by the manufacturer can be an important help for the employer: if a source is assigned to a "safe" group (Exempt group), or to a low risk group there is no need for the employer for a detailed and in most cases expensive workplace evaluation.

We have measured a wide variety of sources of optical radiation, including LEDs, general lighting service (GLS) lamps (e.g. stage lighting, studio lighting) and non GLS lamps (e.g. infrared emitters used in industrial processes). Additionally to the distances specified in EN 62471:2008 for risk group classification we have measured the sources in a number of distances. The results show that even sources which are assigned to risk group 3 (high risk) based on the measurement at 20 cm can have relatively small hazard distances.