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PAPER TITLE Comparison of hazard evaluation meters and spectroradiometers for the measurement of short wavelength light sources,

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ABSTRACT (See instructions overleaf)

Comparison of hazard evaluation meters and spectroradiometers for the measurement of short wavelength light sources

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In order to protect the health of workers in trade and industry, measurements of short wavelength light are required regularly. As the biological effect on the radiation is strongly wavelength dependent, spectroscopic measurements and subsequent multiplication with the respective action spectrum are performed to calculate effective irradiance. However the measurements are difficult to perform and measurement equipment is bulky and expensive. Instruments are available to measure effective irradiance directly, however in terms of dynamic range, influence of straylight and accuracy, the performance of these radiometers is poor compared to spectroscopic measurements. In order to characterise the usefulnes of hazard evaluation meters for workplace measurements, serveral typical UV and blue liegt sources found in industry have been measured with a double monochromator and the resulting effective irradiane values have been compared with valueus obtained with hazard evaluation meters. The comparison shows that great care has to be taken when performing short wavelength exposure measurements with hazard evaluation meters, as the measured effective irradiance values can differ substantially from the values as measured spectroscopically.