

Contact person RISE

Stefan Källberg
Measurement Science and Technology
+46 10 516 56 26
stefan.kallberg@ri.se

Date

2021-06-22

Reference

105105-123849-04

Page

1 (2)

Intellego Technologies AB
Fatburs Brunnsgata 30
118 28 STOCKHOLM
Sweden

UV exposure at 222 nm of UVC indicator

(1 appendix)

RISE Research Institutes of Sweden has evaluated the colour shift for a UVC dosimeter after exposure to irradiation from a 222 nm UVC Excimer ultraviolet germicidal irradiation lamp. The colour shift of the dosimeter after exposures of 5, 20, 50, 75, 100 and 150 mJ/cm² was documented by pictures. Also, the closest matching standard Pantone colour was selected based on visual comparisons between the exposed dosimeters and a Pantone colour chart.

Identification

Object	Yellow UVC dosimeter, see picture in the appendix.
Object state	Upon arrival the sample had no visual damage and were without any colour changes.
Location	Borås, Sweden
Measurement date	June 22, 2021

Measurement methods and procedures

The UVC dosimeters were exposed by UVC-radiation from an UVC Excimer ultraviolet germicidal irradiation lamp with a peak wavelength 222 nm and 3 nm bandwidth (FWHM). No UV irradiation outside the range 200-240 nm is emitted from the lamp. The irradiation level at the sample plane (about 600 μW/cm²) was determined by a calibrated silicon detector with a precision aperture in front of the detector's photosensitive surface.

Each sample piece was exposed a certain time corresponding to exposure levels of 5, 20, 50, 75, 100 and 150 mJ/cm². The colour of the exposed area was documented by taking pictures of the exposed samples. Also, the closest matching standard Pantone colour was selected based on visual comparisons between the exposed dosimeters and a Pantone colour chart.

Comment: Note that the perceived colours and the matching with the Pantone standard colour will depend on the actual light under which the dosimeter is viewed. Also, there is a subjective part involved when determining the closest Pantone colour.

Measurement conditions

Ambient temperature	23 ±2 °C
Exposure wavelength	222 ±2 nm (peak wavelength)

RISE Research Institutes of Sweden AB

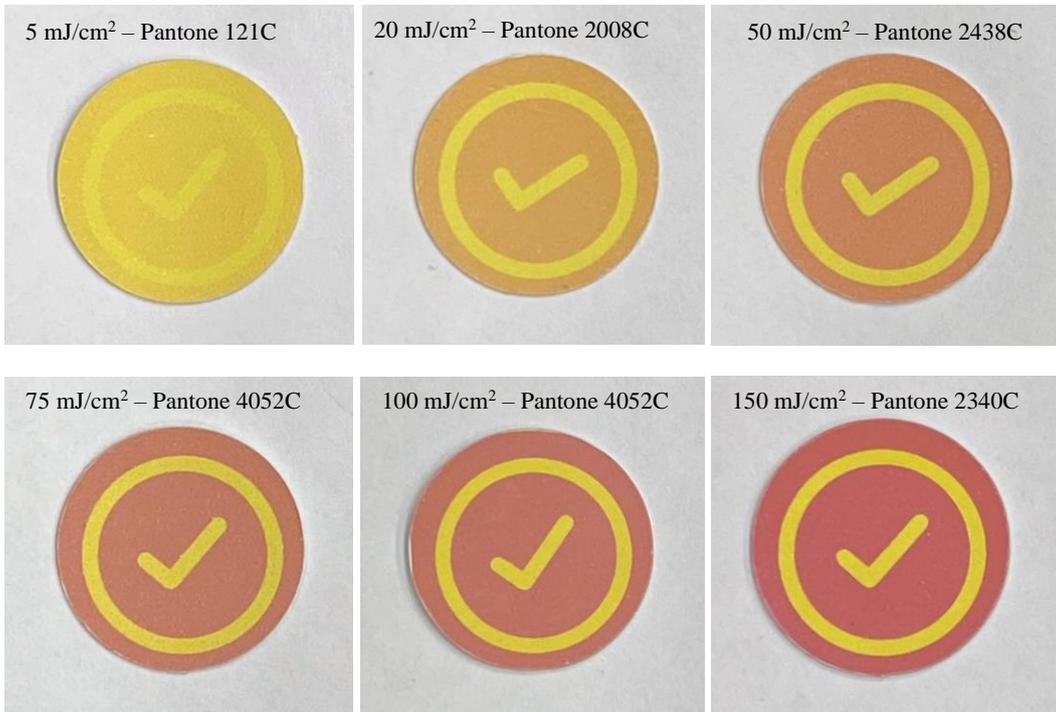
Postal address	Office location	Phone / Fax / E-mail
Box 857	Brinellgatan 4	+46 10 516 50 00
SE-501 15 BORÅS	SE-504 62 BORÅS	+46 33 13 55 02
Sweden		info@ri.se

This document may not be reproduced other than in full, except with the prior written approval of RISE.

Results

The results only refer to the object specified in this document.

The results are presented below as pictures together with the colour code for the Pantone colour estimated to have the closest match to the exposed dosimeter.



Equipment

Reference silicon detector 10×10 mm, inv.no. 500963

Ushio Care222® Far-UVC Excimer Ultraviolet Germicidal Irradiation Lamp, s/n 00020

Precision aperture Ø7 mm, inv.no. 502607

Marabu PANTONE® Colour chart (solid coated)

iPhone 11Pro camera

RISE Research Institutes of Sweden AB
Measurement Science and Technology - Time and Optics

Performed by

Stefan Källberg

Appendix

Picture of the unexposed dosimeter

Appendix 1

Picture of the unexposed dosimeter

