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Measurement of photoluminescence according to DIN 67510-1:2009 (1 appendix)

Identification

Object	One photoluminescent strip, denoted "Aluminium Ledelinje", width 50 mm, thickness 1,5 mm.
Object state	Upon arrival the object had no visual damages.
Arrival date	Apr 29, 2011
Location	Borås
Measurement date	May 11, 2011

Measurement methods and procedures

The sample was exposed during a time of 5 minutes at 1000 lux from a 150 W xenon lamp filtered to D65. The illuminance at the measuring plane was measured with a luxmeter, Hagner, Model S2. After 5 minutes the xenon lamp was turned off and a luminance meter, Hagner ERP-105, connected to a PC-computer, was recording the luminance every minute during two hours. The measuring aperture corresponds to a measuring spot of about Ø 45 mm. The sample was kept under dark conditions for at least 48 h prior to excitation.

To determine the colour during excitation and attenuation, a spectrophotometer, Photo Research PR-705, was used. The excitation was done with the light source D65 at 1000 lux for 5 minutes and the attenuation colour measurement started about 15 seconds after the lamp was switched off.

In accordance with section 4.5 in DIN 67510-1, a logarithmic extrapolation of the results was made in order to determine the time when the luminance is $0,3 \text{ mcd/m}^2$, the decay time.

Measurement conditions

Room temperature	$(23 \pm 2) \text{ }^\circ\text{C}$
Relative humidity	$(45 \pm 5) \%$
Illumination	Perpendicular to the sample, CIE standard illuminant D65

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Results

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

Table 1: Compilation of the results for luminance and decay time.

Sample ID	Luminance (mcd/m ²)					Decay time (min)
	2 min	10 min	30 min	60 min	120 min	
Aluminium Ledelinje	3481	658	185	79,7	33,7	7000

Table 2: CIE 1931 chromaticity coordinates for 2° standard observer. The colour denominations is according to Fig. 1 in DIN 67510-1:2001 (excitation – attenuation).

Sample ID	During excitation		During attenuation		Colour denomination
	x	y	x	y	
Aluminium Ledelinje	0,356	0,412	0,282	0,587	EW-K

Measuring uncertainty

The measuring uncertainty is $\pm 5\%$ of the measured luminance values and $\pm 0,005$ of the given values for x and y.

The reported expanded uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the coverage factor $k = 2$, which for a normal distribution corresponds to a coverage probability of approximately 95%. The standard uncertainty has been determined in accordance with EA Publication EA-4/02 (formerly EAL-R2). The long term stability of the calibrated object is not included in the reported expanded uncertainty of measurement.

Equipment

Xenon-lamp with D65-filter, SP inv.no 502959
 Luminance meter ERP-105, SP inv.no 602931
 Multimeter Keithley 2000, SP inv.no. 602550
 Luxmeter Hagner S2, SP inv.no 500305
 Photometer Spectrascan PR-705, SP inv.no 503130

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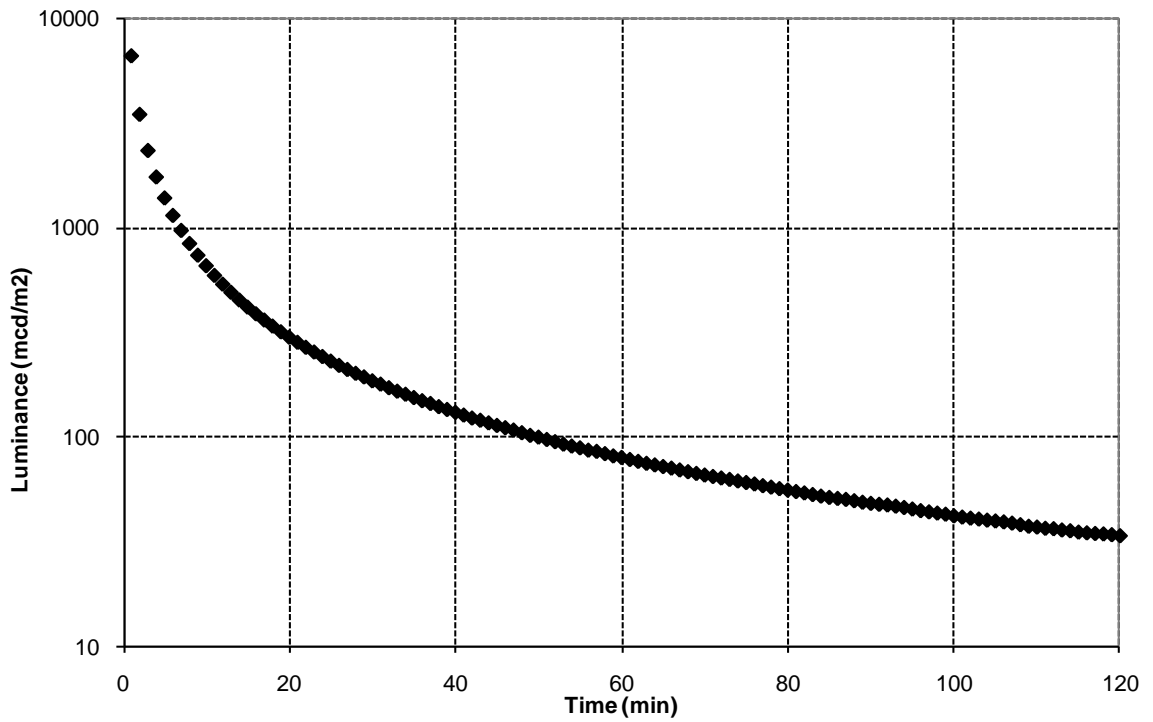
Stefan Källberg
 Technical Officer

Appendix

Measured luminance, table and diagram

Appendix 1

Measured luminance after 5 minutes exposure at 1000 lux:



Time (min)	Measured luminance (mcd/m ²)	Time (min)	Measured luminance (mcd/m ²)
5	1387	65	72,1
10	658	70	65,7
15	417	75	60,5
20	299	80	55,7
25	230	85	51,4
30	185	90	48,1
35	154	95	45,2
40	131	100	41,9
45	113	105	39,6
50	99,7	110	37,1
55	88,6	115	35,1
60	79,7	120	33,7