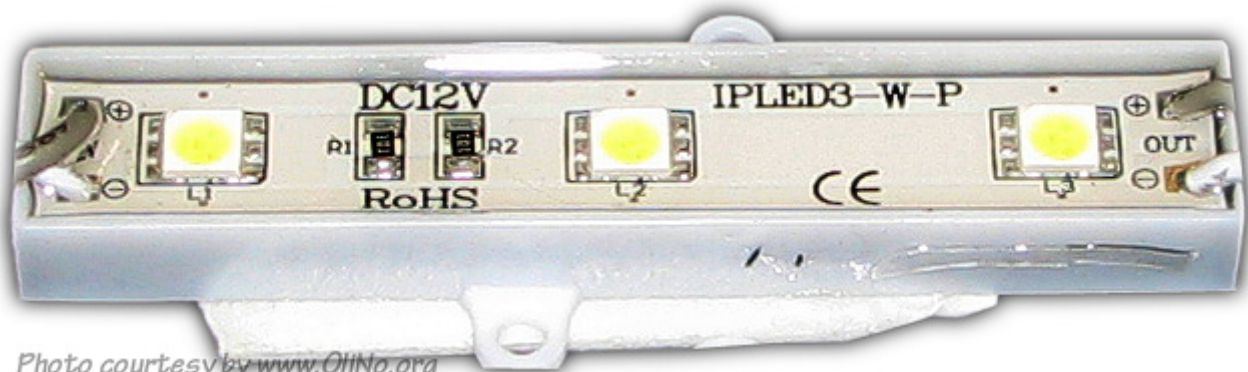


Lamp measurement report – 12 Oct 2011

Endurance test IPLED 20x led module on external
power supply

by
IPLED





Lamp measurement report – 12 Oct 2011

Summary measurement data

parameter	initially	after endurance	remarks
Color Temperature	6839 K	7652 K	Cold white, increased in value.
Luminous Intensity I_v	363.6 Cd	330.0 Cd	Went up at beginning and then down
Beam Angle	123 deg	122 deg	Almost no variation.
Power P	14.8 W	17.8 W	
Power Factor	0.89	0.88	No variation.
Luminous Flux	1151 lm	1033 lm	
Luminous Efficacy	63 lm/W	58 lm/W	
CRI_Ra	65	66	
Coordinates Chromaticity Diagram	x=0.3063 and y=0.3306	x=0.2964 and y=0.3166	

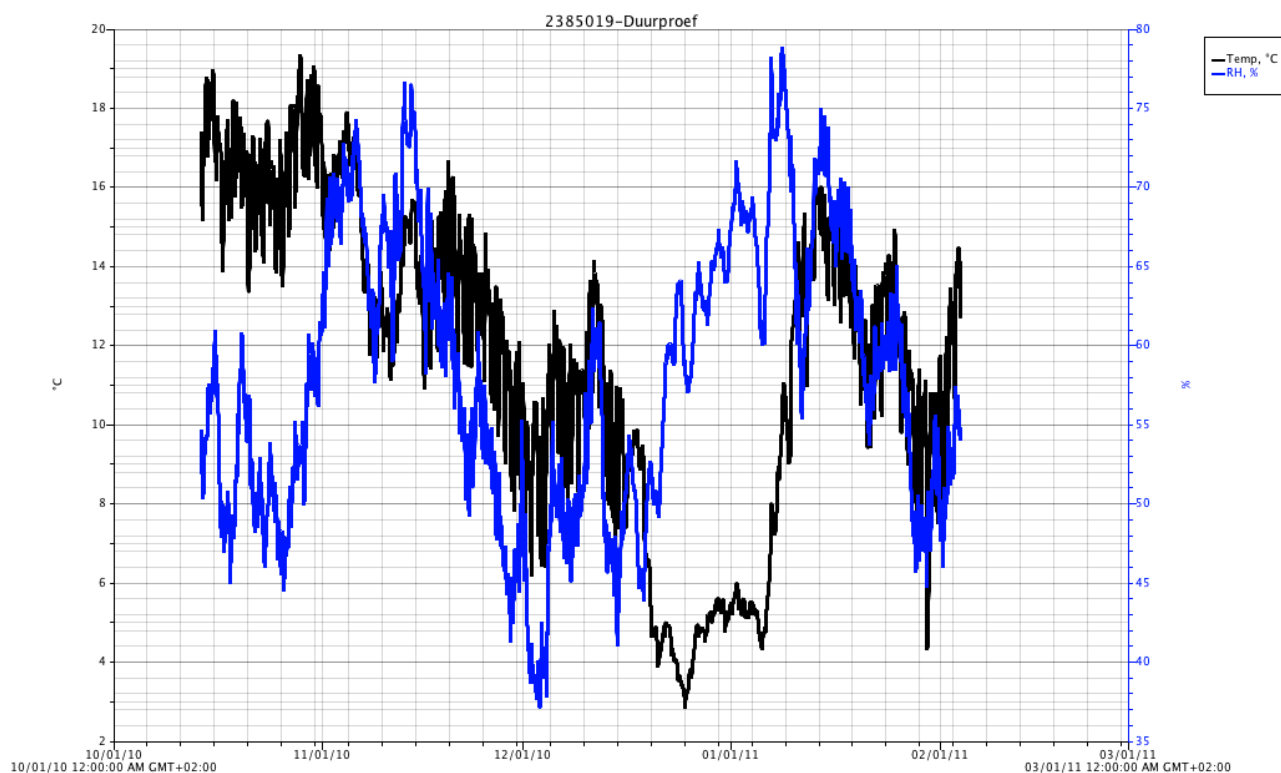


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Test duration and test environment

The lamp went into endurance test on 12 Dec 2010 and the test lasted until 30 Aug 2011.

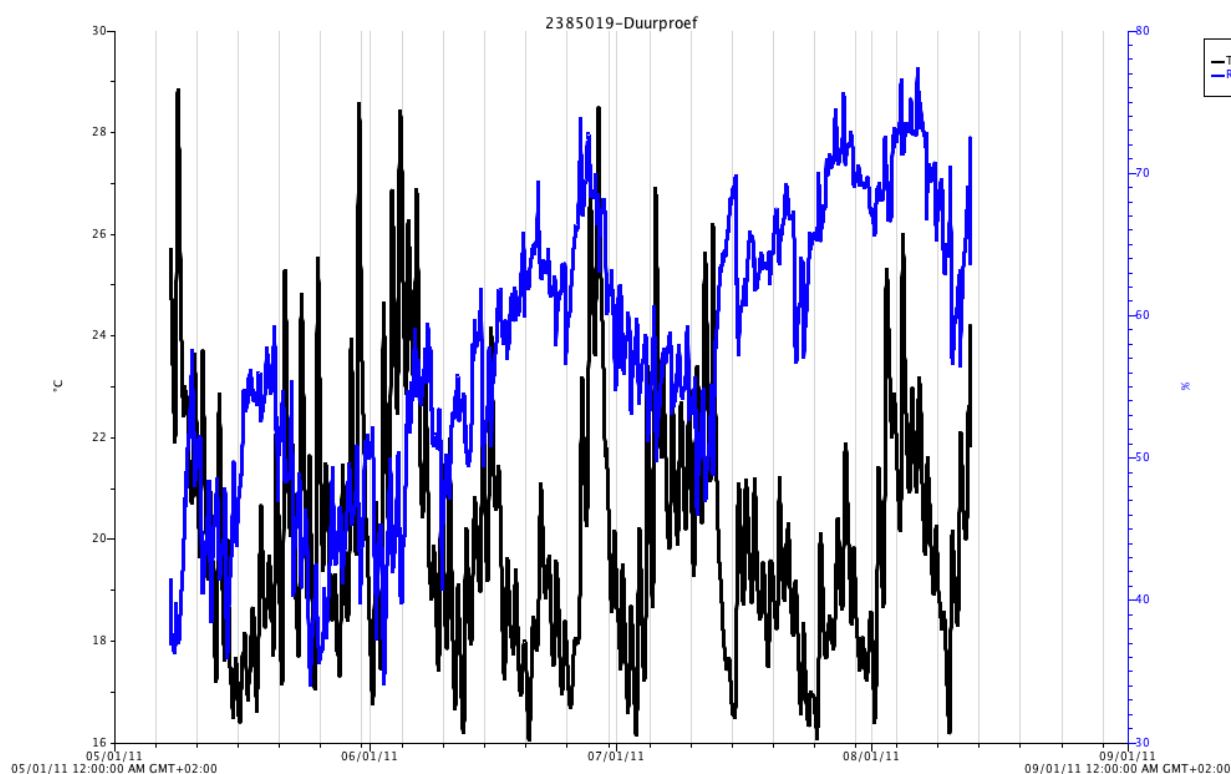
During this period of time the lamp has seen the following ambient temperature and ambient relative humidity.



Period Oct 2010 - March 2011



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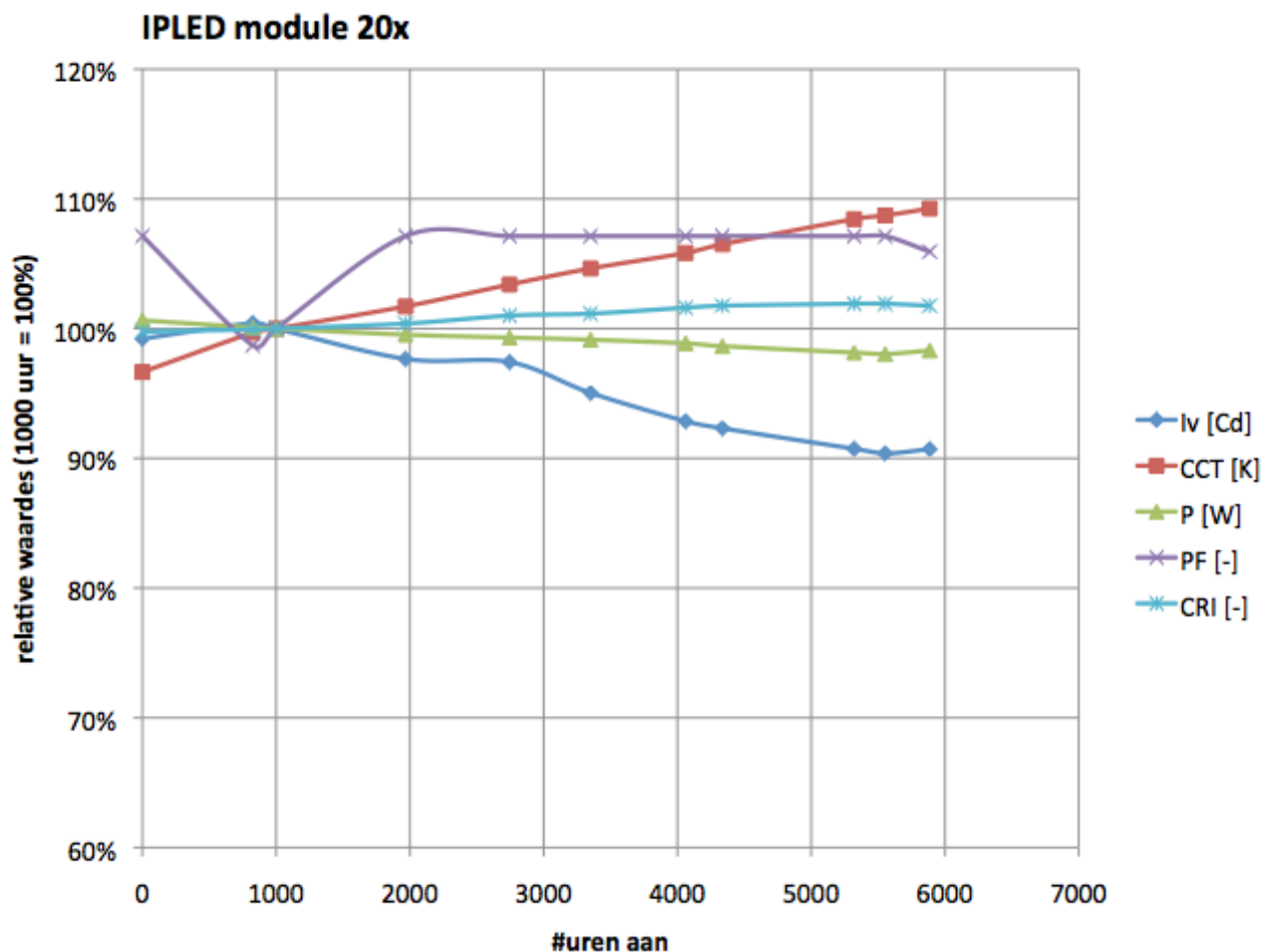


Period May 2011 - August 2011

The ambient temperature close to the lamp varied between 3-29 deg C and the relative humidity between 35-80 %.

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Variation of lamp parameters



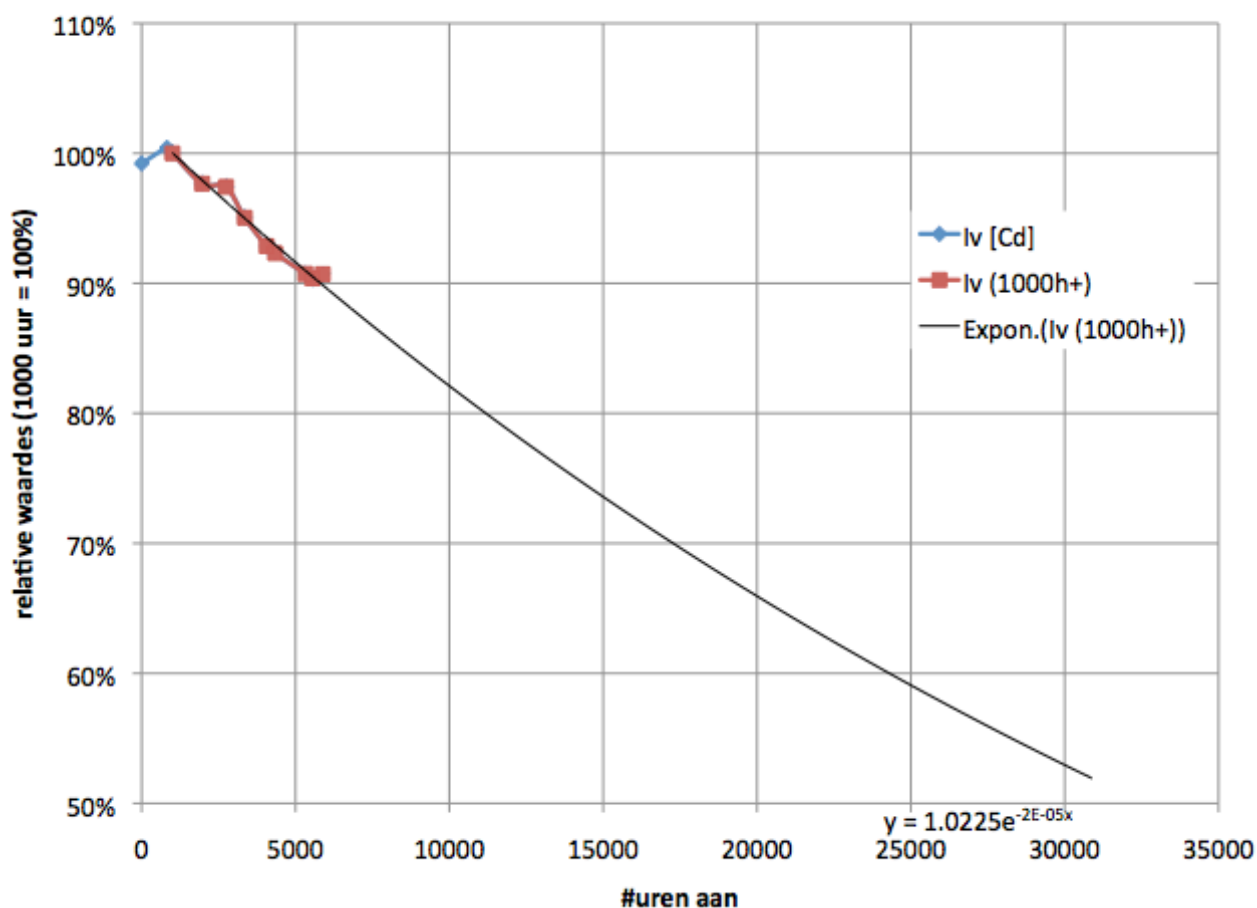
The variation of the lamp parameters during the endurance test.

See the explanation on the OLiNo site for more on the test method.

An extrapolation is done to get to the 70 % illuminance value. The illuminance value straight underneath the lamp is expected to be the good indicator of the total luminous flux. When this illuminance drops with 30 % then the luminous flux is expected to drop as well with 30 %. The assumption is here that the beam angle and the radiation diagram remains the same. This has been checked, see also the initial table.

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IPLED module 20x



Extrapolation of the illuminance.

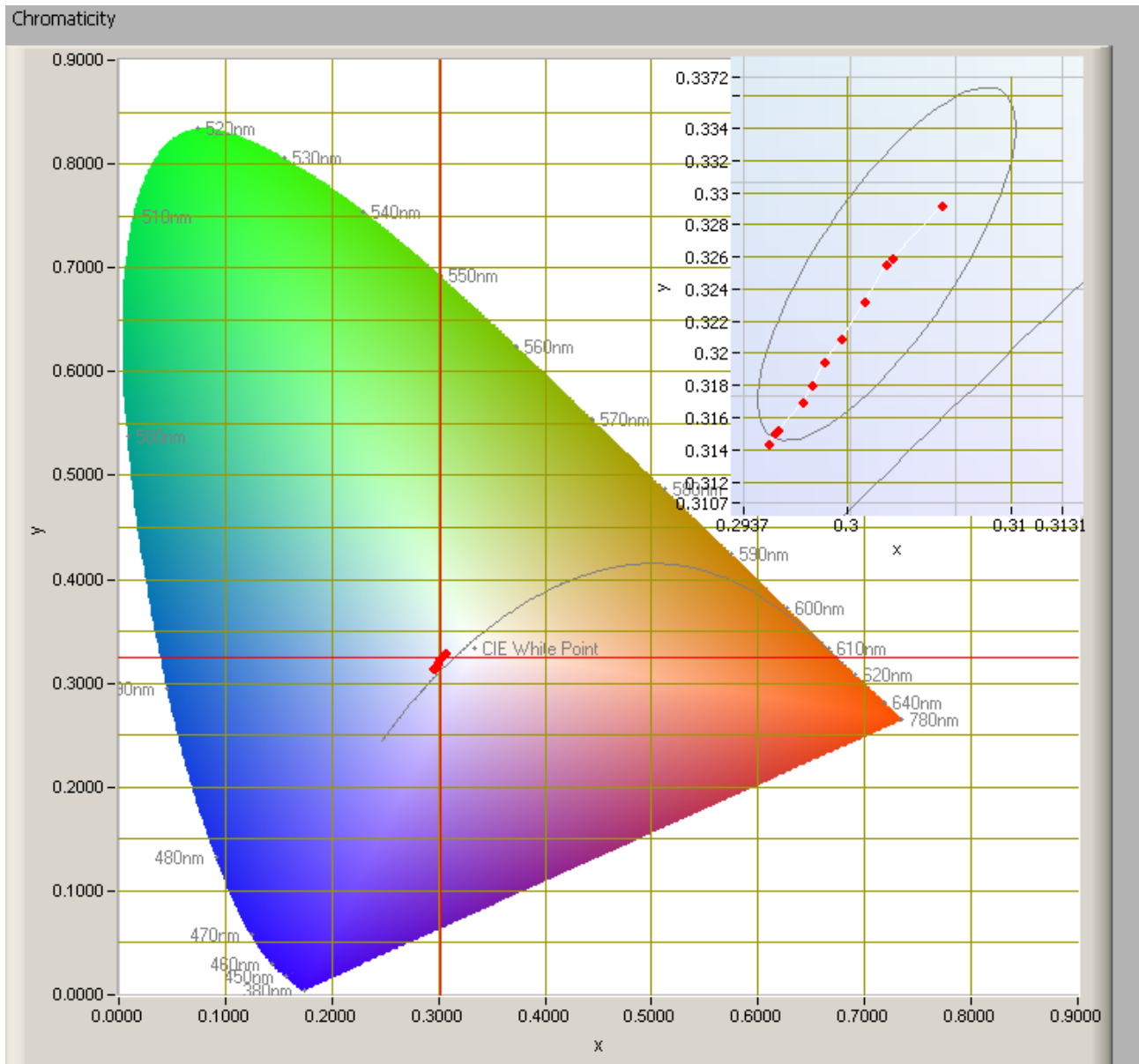
See the explanation on the OLiNo site for more explanation and the link to the ASSIST document for the method of extrapolation.

The result is 17,000 hours before the L70 is reached.

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Color change

The color change (change in color coordinates) is measured during the test period.



Change in color coordinates during the endurance test.

The color coordinates indicated with the red cross-hairs are the coordinates after 1000 burn hours. These are taken as reference. After 6000 hours the color point gets outside the 4-step McAdams ellipse.



Lamp measurement report – 12 Oct 2011

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