DELTA Test Report

Reflectance of Wall paint for projector screens

Udført for: WriteWallPaint

Sagsnr.: DELTA-L117-323-101 rev.2
Side 1 af 6
0 bilag

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Title:	Reflectance of Wall paint for projector screens.
Certificate nr:	DELTA-L117-323-101
Client:	WriteWallPaint Theilgaards alle 9 4600 Køge Denmark
Contact person:	Betina Vandrup
Dato:	23. August 2017
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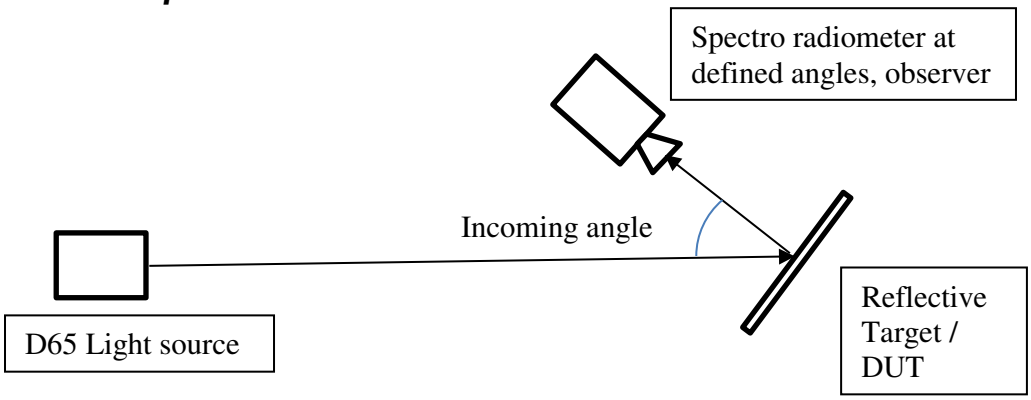
1. Description of hardware used under test

The DUT delivered by the client.

TopCon SR-3A Spectro radiometer

IO Cable for RS232
DLO941 BCR reference reflectance

2. Description of the test



A D65 Lightsource (UV removed to avoid fluorescent problems) shines light on reference target with known spectral reflectance, spectra was measured. In same angle unknown sample of wall paint was inserted and spectre was measured. This process was repeated on 4 angles:
77 degree on incoming light, and 0 degree observer angle.
36 degree on incoming light, and 0 degree observer angle.
22 degree on incoming light, and 0 degree observer angle.
0 degree on incoming light, and 12 degree observer angle.

Measured spectral energy is E, where E_{ref} is for the reference and E_{target} is for the unknown target. First the reference needs to be corrigated for loss, but since this is known for each wavelength its corrigated.

$$E_{ref\_corri\_\lambda} = ((1 - \beta_\lambda) + 1) * E_{ref\lambda}$$

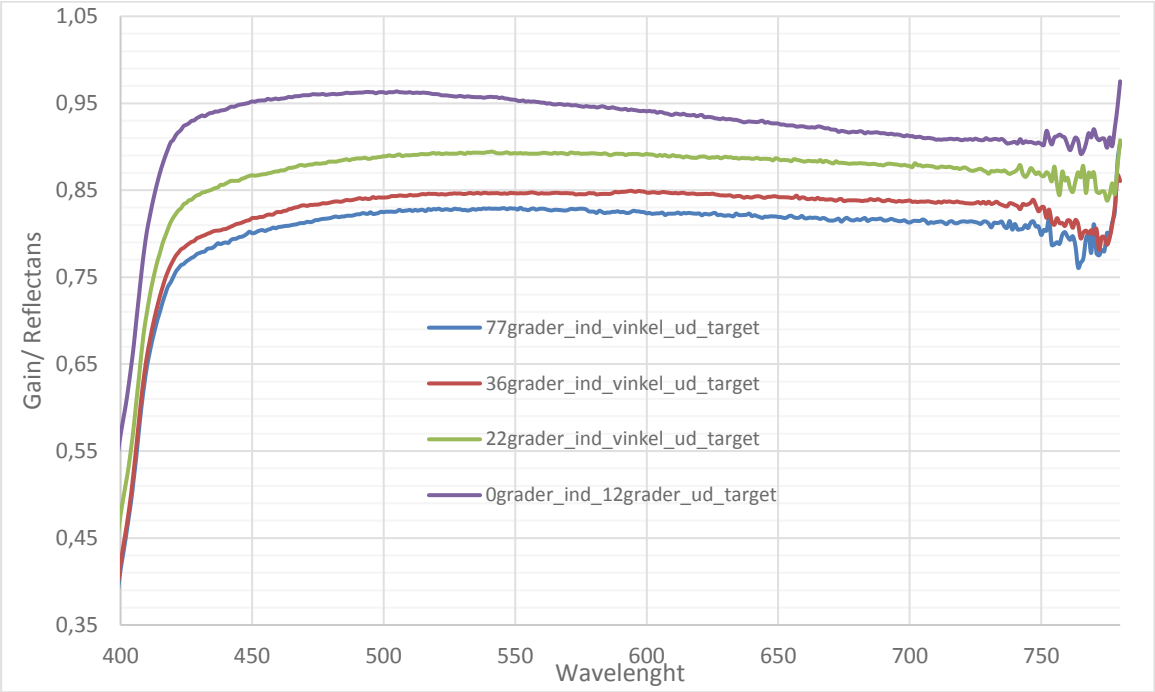
Reflectance is then calculated

$$Reflectanc_\lambda = 1 - \frac{(E_{ref_{corri_\lambda}} - E_{target_\lambda})}{E_{ref\_corri\_\lambda}}$$

The eye´s response curve Trisimulus Y or Lamda response, is added on, normalization for total reflectance gives the gain.

$$Gain = Normalize\,(\int_{380}^{780} Reflectance_\lambda * Trisimulus(Y)_\lambda)$$

3. Results



The Reflectance pr wavelength is shown, around 400nm the eye is limited in response, but the dip is cursed due to lack of light from the source to avoid fluorescent problems.

At 77 degree on incoming light, and 0 degree observer angle. Gain was found to be **0,8255**

At 36 degree on incoming light, and 0 degree observer angle. Gain was found to be **0,8451**

At 22 degree on incoming light, and 0 degree observer angle. Gain was found to be **0,890**

At 0 degree on incoming light, and 12 degree observer angle. Gain was found to be **0,9497**