

Multi-spectral analysis and the next generation of photo-scanning: a non-destructive method of reading the unreadable



Dr. Michael Lerche Nielsen, Institute for Name Research deomete Dr. Jens Michael Carstensen Videometer A/S













Visible light



Monochrome CCD Sensor

Spectral response

Spectral Response BM-500 GE



Traditional Color Imaging

Uses 3 broadband filters for Red, Green and Blue



RGB Image

Traditional Color Imaging



Chlorophyll a og b give almost the same RGB signals





Multispectral Imaging







Biscuit with wet spot



Humidity detection on biscuit



Digital photo AM 53 4to, fol. 8 r.



Multispectral imaging AM 53 4to, fol. 8 r





Parchment AM 544 4to, Hauksbók



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Multispectral imaging of Hauksbók



Detail of the multispectral image



AM 618 4to under the lamp



palimpsest AM 618 4to, text 1586



AM 618 4to, removal of the ink from 1586 with multispectral imaging

Suzanne Reitz inspects the charter

Charter, Dipl.Dan. LXV no. 14

Nyt lys på middelalderens skjulte ord

The Elder Westrogothic Law National Library of Sweden

Page 1 front, RGB

Page 1 front, spectrally enhanced

The Elder Westrogothic Law National Library of Sweden

Page 1 front, RGB

Page 1 front, spectrally enhanced

Testimonial

During the work with <u>the Elder Westrogothic Law (Äldre</u> <u>Västgötalagen)</u> we used VideometerLab to make spectral imaging and analysis of four partially or largely unreadable pages. During this process we obtained valuable new information and VideometerLab proved to be a highly useful and efficient tool. Thanks to the Videometer images, we now know a lot more about the author, than we knew before.

Per-Axel Wiktorsson Professor emeritus in Swedish language, Örebro University

Stitching one spectral component

Reverse side of book cover

sRGB

Spectral enhancement

Manuscript from BNF, France

Maps from the Danmark expedition 1906-1908

VideometerLab used to reveal the destiny of sledge team 1.

Berlingske tidende, Jan. 13, 2013

Thank you for your attention: Dr. Jens Michael Carstensen Videometer A/S, <u>www.videometer.com</u>

Dr. Michael Lerche Nielsen, Department of Scandinavian Research, University of Copenhagen, <u>http://nfi.ku.dk/english/</u>

VideometerLab Laboratory instrument for multispectral imaging (360 nm to 1050 nm).

Specialist on color and texture measurements.

