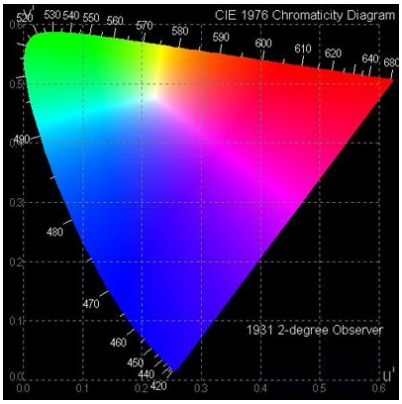
QualityLogic

Saved as XPS from Microsoft® Office 2007 Word



Human, binocular, color vision is able to distinguish electromagnetic radiation wavelengths in the range that is between 780 nanometers and 380 nanometers in length. We call that part of electromagnetic radiation that we can see, that small chunk between radio waves and gamma waves, visible light.

Light travels in a vacuum at the same speed, $c = 3.0 \times 10^8$ m/s, it reflects, it refracts, it disperses, it diffracts and it interferes but for our purposes it illuminates.

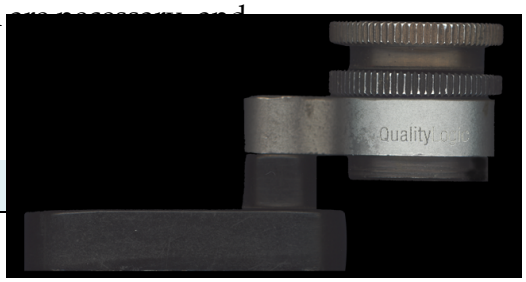
Eyesight has served man well. It is, arguably, our primary sense. But, increasingly, when used as a gauge in a test environment it suffers from a lack of consistency and is very difficult to calibrate, yet it is still the "real world" touchstone that is the ultimate basis for all of work in any case. We do not print color pages merely for machines to read.

SPECTRUM OF ELECTROMAGNETIC RADIATION

REGION	WAVELENGTH	WAVELENGTH	FREQUENCY	ENERGY
Radio	$>10^9$	>10	$<3 \times 10^9$	$<10^{-5}$
Microwave	$10^9 - 10^6$	10 – 0.01	$3 \times 10^9 - 3 \times 10^{12}$	$10^{-5} - 0.01$
Infrared	10^6 - 7000	$0.01 - 7 \times 10^{-5}$	$3 \times 10^{12} - 4.3 \times 10^{14}$	0.01 - 2
Visible	7000 - 4000	$7 \times 10^{-5} - 4 \times 10^{-}$	$4.3 \times 10^{14} - 7.5 \times 10^{14}$	2 - 3
Ultraviolet	4000 - 10	$4 \times 10^{-5} - 10^{-7}$	$7.5 \times 10^{14} - 3 \times 10^{17}$	$3 - 10^3$
X-Rays	10 - 0.1	$10^{-7} - 10^{-9}$	$3 \times 10^{17} - 3 \times 10^{19}$	$10^3 – 10^5$
Gamma	<0.1	$<10^{-9}$	$>3 \times 10^{19}$	$>10^5$

Advances in machine vision and automation notwithstanding, an understanding of the basic functionality and diversity of human vision is critical to proper test design, evaluation and classification.

We shall examine two distinct aspects of human vision, color and visual acuity; how well we distinguish colors and how fine a gradation in contrast or resolution do we detect. Ultimately we must determine the outlines for testing this particular gauge, which tools are useful, which are necessary, and how to quantify the bounds of acceptability.



For information on QualityLogic XPS test products, go to http://go.microsoft.com/fwlink/?LinkId=66319