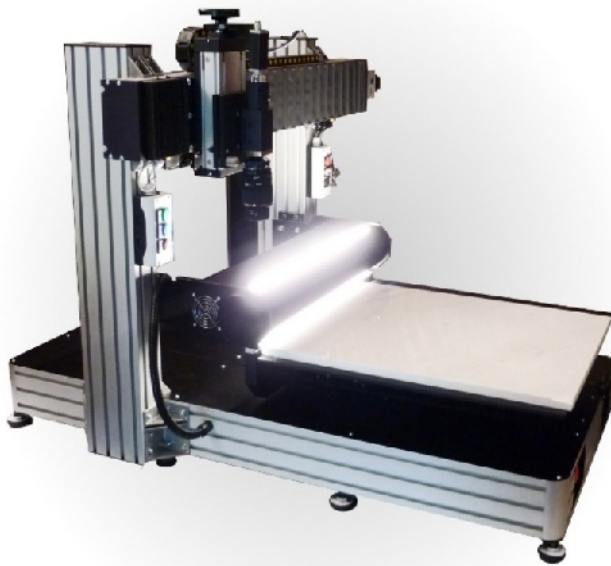


Spectral scanner Vs. Digital camera

Purpose of this document is the analysis of advantages and disadvantages of the two acquisitions system



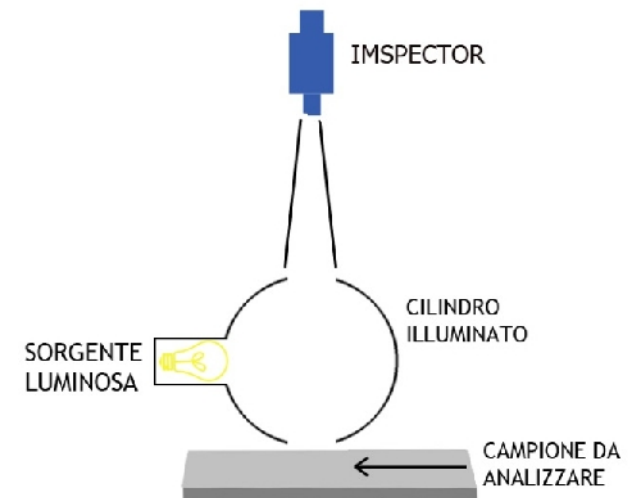
PEOPLE KNOWLEDGE and SET PREPARATION

The digital photo camera need some specific requirements:

- The operator needs to have a previous experience and have to be the attitude for the matter
- To perform the photographic shot is necessary to have a room without any type of incoming light and is necessary to use special illumination.
- Different positioning of illumination light and camera will give different results

Instead with the spectral scanner:

- All the parameters, for example, distance and type of illumination, are fixed during the installation
- The operator have only to select the resolution of the image and the dimension of the subject to acquire

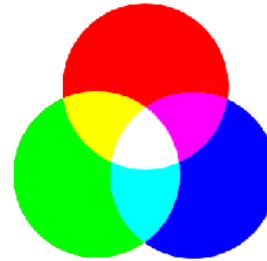


COLOR QUALITY

The digital camera create a files containing RGB or LAB data.

For every point of color there are three values to represent it:

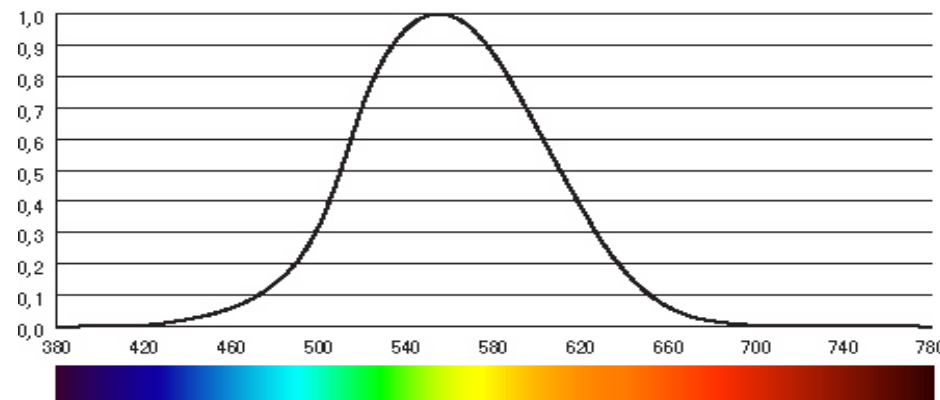
R(red) G(green) B(blue) or LAB



The spectral data read all the range of visible, for every point of color there are **31 points** to represent it:

More datas to elaborate is a system to have more precise information.

Spectral data are more precise and are «pure» data, not related to anyone ICC Profile or manual correction.



Reflectance	
Lab=(72.6, 0.1, -6.5)	
w=400	r=47.92
w=410	r=49.91
w=420	r=51.04
w=430	r=51.69
w=440	r=51.79
w=450	r=51.45
w=460	r=50.75
w=470	r=49.65
w=480	r=48.70
w=490	r=48.16
w=500	r=47.64
w=510	r=46.97
w=520	r=46.42
w=530	r=45.93
w=540	r=45.56
w=550	r=45.39
w=560	r=44.43
w=570	r=42.89
w=580	r=41.41
w=590	r=41.11
w=600	r=41.70
w=610	r=42.41
w=620	r=42.71
w=630	r=43.00
w=640	r=43.93
w=650	r=45.62
w=660	r=47.98
w=670	r=50.69
w=680	r=53.63
w=690	r=56.53
w=700	r=59.09

DATA QUALITY

The digital camera can not read testcharts.

This means that will be necessary to use two different system to do the photographic shot and to read the testcharts.



Using different instruments may introduce significant color differences.

The spectral scanner may read with the same instrument, subjects and testchart.

Furthermore, ***the spectral scanner is supplied with a specific developed color profilation software*** to optimize the final results.

With an image coming from a digital camera the operator have to use a standard color profilation software to create an ICC profiles and his ability in Photoshop to modify the out of gamut tonalities (the color profilation software for spectral scanner to this job AUTOMATICALLY: