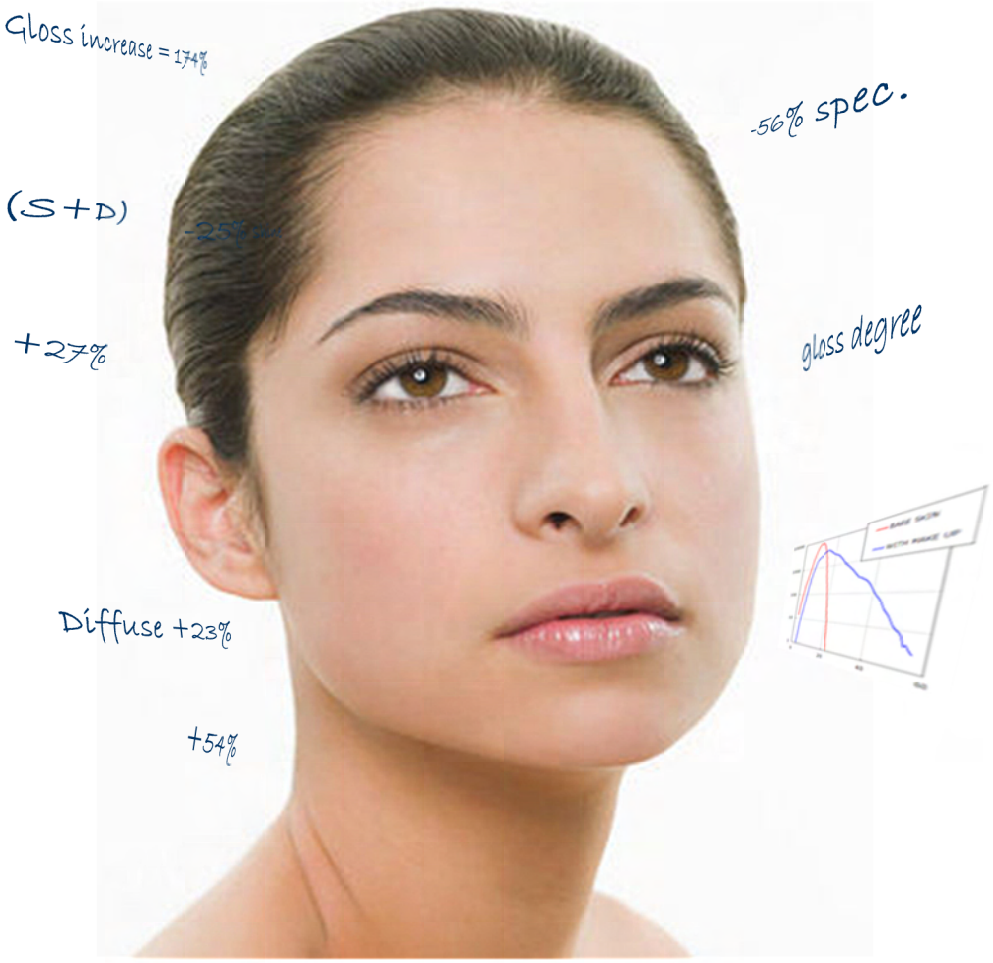


SAMBA Face System

The science behind shine

Complete characterization of visual appearance
to
Substantiate claims & Evaluate product efficacy

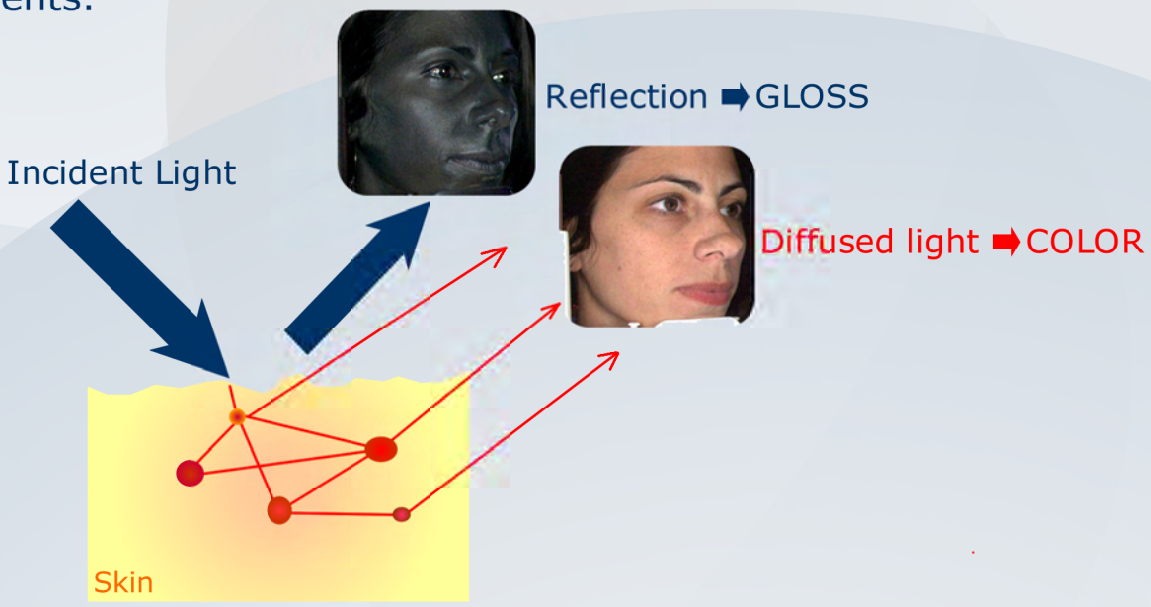
for skin-care and cosmetic products

Bossa Nova Tech

INTERACTION OF LIGHT WITH SKIN

Light interacts with skin in a way that 2 different types of light are observed.

- **Reflection** on the skin surface. This reflection creates a GLOSS image.
- **Diffused light** is a background uniform color on which reflections overlay. It comes from the internal scattering on skin pigments.



TECHNOLOGY

The SAMBA technology enables the acquisition of two states of polarization images at video rate. A polarized illumination coupled with a polarization camera allows to acquire a complete head shot in real time. Polarization imaging then allows to separate reflections from diffusion as illustrated below.

Classical image
reflection & color

Gloss image
reflection only

Diffused image
color only

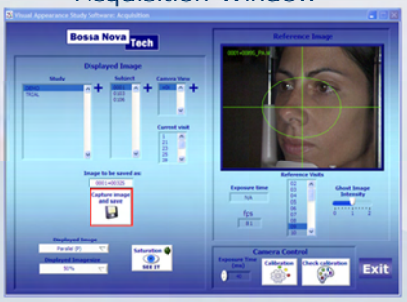
SOFTWARE

The dedicated software allows to handle large studies with as many panelists and visits as needed. Data acquisition is separate from the data processing allowing easy post processing.

Main Window

Create studies, hundreds of panelists, review old visits and acquire new ones. Easier repositioning by superimposition of an old visit to the live image.

Acquisition Window



Create or modify new regions of interest (ovals, rectangles, free shape) that can be reused over different studies.

Pre-process the visits by adjusting the position of the regions.
Direct visualization of gloss histograms and others and easy export to Microsoft Excel for post-processing.

Results Window

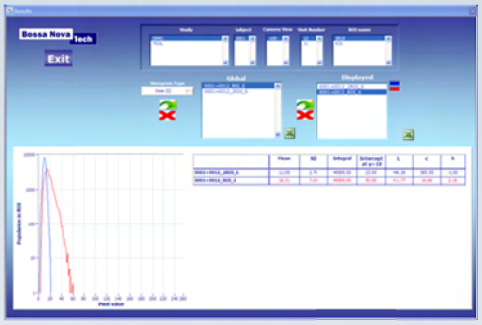
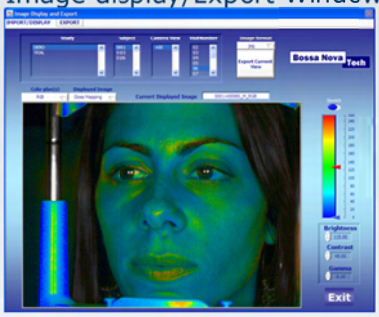


Image display/Export Window

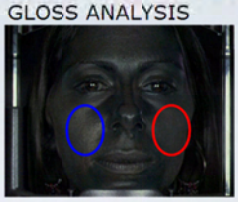


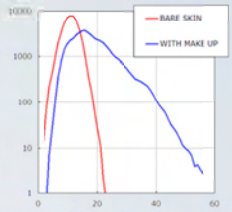
Easy review and export of all images in .jpg, .tif or .bmp format.

OUTPUT DATA

Images, histogram and numerical data are delivered. Below is an example of measurement.

GLOSS ANALYSIS





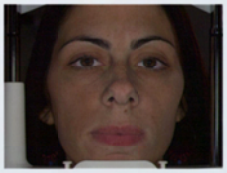
Region Of Interest

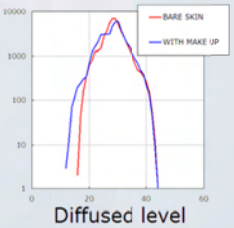
Gloss level

ROI	Mean value	Standard deviation	ROI size (pixels)
BARE SKIN	11.1	2.8	49585
WITH MAKE UP	18.3	7.0	49585

Numerical data clearly show an increase of gloss in the region where the make up was applied compared to bare skin. Objective quantification is possible.

COLOR ANALYSIS





Diffused level

ROI	Mean value	Standard deviation	ROI size (pixels)
BARE SKIN	29.6	4.1	49585
WITH MAKE UP	29.3	4.7	49585

Numerical data show that the skin color did not significantly changed. The effect of this make-up is only to increase specular light on the surface of skin.

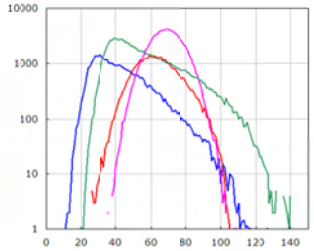
SAMBA Face System

Numerical Data

	Forehead - ROI1	L. Cheek - ROI2
Product A	+29%	+19%
Product B	+11%	+7%

Images

Histogram



SAMBA Face system is a unique tool to provide quantitative measurements of gloss on skin correlated to subjective visual assessments. It is used worldwide by cosmetic manufacturers to objectively evaluate in-vivo the efficacy of face products for formulation and claims substantiation.
SAMBA Face system comes as a turn-key system including hardware and computer with dedicated software.

DATA	
Data Format	Images (RGB 32 TIFF Color images) Gloss Histogram Numerical data
Measurement uncertaintly	1% over 24h
Data repeatability	<5%
GENERAL SPECIFICATIONS	
Sensor	SAMBA polarization camera - 8 bit color
Illumination	5100K high frequency fluorescent light
Sample Holder	Chin Rest
Computer	Slimline HP PC & 19" flat screen monitor Windows VISTA Home Edition Excell 2007 licence
Weight/dimension	30"W x 16"H x 22"D - 29lbs 762mm W x 406mm H x559mm D - 13 kg
Electrical requirements	110/220 V, 50/60 Hz

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