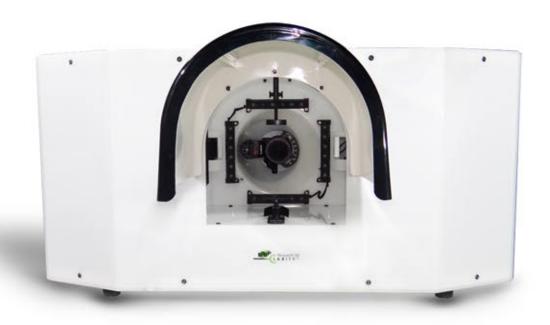
# Artificial Intelligence In Skin Science

## A new dimension for claims substantiation and product efficacy testing





BTBP's Clarity Research 3D System is a unique product in clinical research offering fast data throughput and more precision than any other system on the market. Three dimensional measurement capability improves recognition of features with depth and height.

The BTBP Clarity Research 3D System comes with three cameras ensuring the front, left and right facial profiles are scanned efficiently and without error.

\* Upcoming Features

# Never go through clinical services again



### Multi-spectral imaging to view & measure surface and sub-surface features

Our patented AI analysis software uses different wavelengths of light to highlight features on the face automatically in order to count and measure them. The information is displayed in many formats including a count and classification of features along with images highlighting the features and measurements are of interest. We use our patented blue light wavelength to replace the dangerous UV light in the system. This means images can be taken with the subject eyes open(perfect for eyelash measurements) and there is no need to worry about skin damage.



### Detailed, high resolution 3D models & measurements

The Research 3D System creates high resolution (0.05mm in the xy-plane and less than 0.004mm in the z-plane) photogrammetric 3D model from three separate images. This model can be used for high resolution depth measurements for features such as Wrinkles, Acne, Scars, Facial Contours, Sagging, Enlarged Pores, Texture, Under Eye Bags & Lash Volume. We are the only company that can extract measurements from the 3D models of the face through artificial intelligence. Display beautiful high resolution models in 4K resolution with our BTBP 3D Viewer.



### Automatic alignment of all images and 3D models

Never worry about subject facial positioning with the automatic alignment software. Images will be automatically normalized so that there is no error caused by position changes between different timepoints.



### Automatic detection of over 110 facial regions for use in analysis

With our recognition technology we automatically detect 110 points on the face and can accurately find the position of any region or feature relative to any of these points. This allows for tracking of specific features or regions overtime for many image sets by our algorithms. The power of this technology removes the need for drawing the regions of interest more than once.



#### Study Management Modules

Never deal with clinical services again, Configure studies quickly and analyze them instantly with our artificial intelligence software that is more repeatable than a panel of dermatologists.



#### Progression trends\*

Do more than comparisons with our artificial intelligence software to compare measurements between different timepoints automatically.



### **Batch Processing**

There is no need to go through clinical services with our products as all of their analysis capability is handled by our forward thinking artificial intelligence engine which is years ahead of the competition. This will save you time and money because you will not need to pay for each analysis and studies will be completed in fraction of the time because our engine is faster & more repeatable than any visual grader. Batch process the images taken after panelists leave in order to maximize the amount of images taken for a study.



#### Facial contour and volume modeling

View macro and micro level changes in contours and volume. Get exact numbers for the changes you are seeing through our patented artificial intelligence software.



Simultaneous 3 Profile Capture Front, Left & Right



Rapid capture



Archiving & Retrieving



Movie timeline of skin progression\*



Image and 3D model export



Data Export into Excel

Power Specifications: 100 - 240 VAC 120 @ 10 amps



\* Upcoming Features

## Measured Features



### Skin Type

Skin Type classification from I-VI (Fitzpatrick)

High Resolution BTBP skin type classification 1-50

RGB Average

L\* a\* b\*



### Radiance

Luminance Delta

L\* from LAB color space



### Redness

Degree of Intensity & Surface Area



### Pigmentation

Spot Count

Percentage of Surface Area

Size Classification & Size Distribution

Intensity & Contrast

Melasma Scoring via: Darkness, Homogeneity, Average Brightness



### Subsurface Pigmentation

Spot Count

Percentage of Surface Area & Total Surface Area

Size Classification & Size Distribution

Intensity & Contrast

Pigment Darkness



### Wrinkles

Total Count w/ Emerging, Fine and Deep Line Classification

Average Length, Width & Severity

Total Surface Area

Volume



### Enlarged Pores

Pore Count

Percentage of Surface Area

Average Size, Diameter, Visibility, Circularity & Intensity

Size Classification with Count & Distribution in 3 Categories

Volume



### Texture

Average Roughness

Average RGB values

3D Skin Topography



#### Acne

Active Acne Count & Visibility Scores

Post Inflammatory Hyperpigmentation & Visibility Scores

Acne 3D Topography



#### Eye Area

Under Eye & Crow's Feet Wrinkle Surface Area

Under Eye Darkness (L\*a\*b)

Individual Typology Angle (ITA) \*

Eyelid Crepiness (Roughness-Average R, G, B)

Puffiness, i.e. 3D Curvature Profile \*



### Lips

Surface Area & Redness Levels

Border Contrast, Smoothness & Curvature

Lip Wrinkle Counts Classified by Severity

3D Lip Volume



### Facial Contours \*

3D Volume measurement

Facial Surface area and volume mapping by region of interest

Sagging Jowls, Hollow Areas, Deep Folds/Creases

Drooping of the Brow & Upper Eye Lid



### Eye Lid Texture

Roughness



### Lash Surface Area

Lash density

Maximum Length

Average Length



### Lash Volume

Lift Up Angle

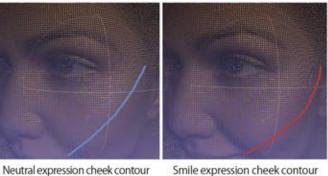
Curl Up Angle



### The BTBP Difference

- · We are the only company that can extract measurements from 3D models of the face through artificial intelligence.
- · We replace clinical services with our patented Al analysis engine saving your time and money.
- We don't just highlight features on the face, we measure them automatically without the need of a visual grader.
- Display beautiful high resolution models in 4K resolution with our BTBP 3D

# Facial Contour analysis



Neutral expression cheek contour

# Facial Volume Analysis

