

Application Sheet

ACCUREX USES BREUCKMANN STEROSCAN TO COMPARE BENJAMIN FRANKLIN BUSTS

HIGHLIGHTS :

- > Touchless scanning of priceless centuries old sculptures
- > Breuckmann Stereoscan features simultaneous data collection at triangulation angles of 30°, 20°, and 10° to capture fine detail
- > Materials from white marble to terracotta captured with no requirement for coating powders or sprays
- > Complex surface comparisons between busts carried out with RapidForm software

“The Breuckmann StereoSCAN’s ability to simultaneously capture data at multiple triangulation angles and to measure many surface materials types uniquely enabled the capture of the high quality models necessary for post-analysis.”
—Will Add Source

Background

When Benjamin Franklin arrived in Paris in December 1776 as minister for

clamored to take his portrait. The sculptor Jean-Antoine Houdon (1741–1828) created perhaps the most familiar and pow-

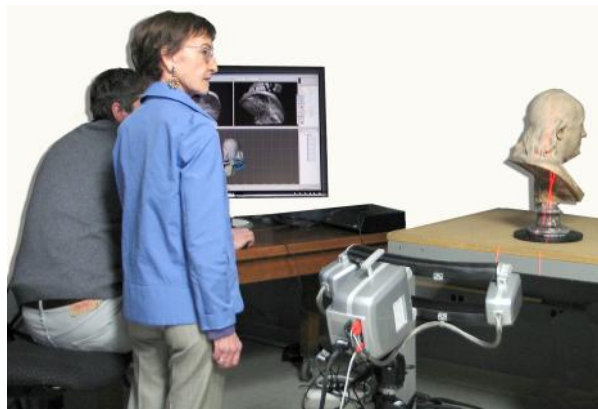
(1790), Robert Fulton, 1803-04, and Napoléon Bonaparte (1806).

Recently, for the 300th anniversary of his birth, busts of Benjamin Franklin by Houdon were temporarily brought to the Philadelphia Museum of Art, to join the Houdon bust that the Museum acquired in 1996.

Measuring the Busts

For this historic occasion, Accurex Measurement, Inc. was called in to scan four busts. Accurex choose a Breuckmann StereoSCAN for the project. This structured light scanner features simultaneous data collection at triangulation angles of 30°, 20°, and 10°. This makes it particularly suited to capturing the fine detail of the busts as well as the deeper holes in areas such as the hair. The busts were made from terracotta or white marble, and the StereoSCAN was able to capture the finest detail of these priceless historical treasures without the use of powders or sprays.

Alignment of the scans was done in the Breuckmann OptoCAT software. Post processing and a number of very complex measurements were made on the three dimensional models using RapidForm software. The Philadelphia Museum



Scanning a Benjamin Franklin Bust with StereoScan

the American colonies, he was already famous for his experiments with electricity and invention of the lightning rod. Charged with the crucial mission of obtaining support for the Revolutionary War, he became a focus of attention for a sympathetic French public, and was

erful portrayal of the famous Philadelphian and Founding Father.

Houdon was a French neoclassical sculptor. He is famous for his portrait busts and statues of philosophers, inventors and political figures of the Enlightenment. Houdon's



Triangulation Mesh from Scan Data

quickly elevated to celebrity status. Images of Franklin proliferated, and the leading artists of the day

subjects include Denis Diderot (1771), Benjamin Franklin (1778-09), Jean-Jacques Rousseau (1778), Voltaire (1781), Molière (1781), George Washington (1785-88), Thomas Jefferson (1789), Louis XVI

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of Art is continuing their analysis of the information from this project in cooperation with other museums which participated in the study. The forms of these four sculptures have now been captured digitally for all time.



Bust from the Louvre Museum



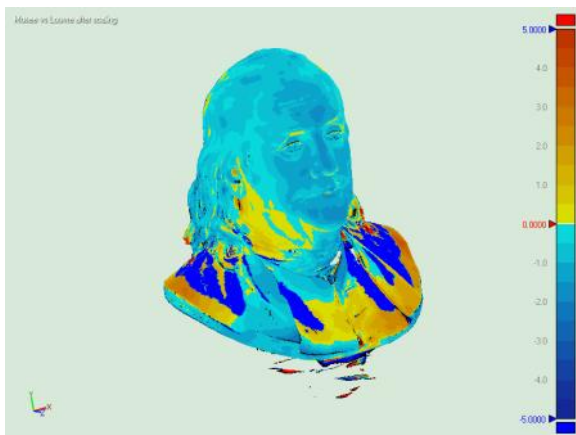
Bust from the Montpellier Museum



Bust from the Metropolitan Museum of Art



Bust from Philadelphia Museum of Art



Comparing Busts in RapidForm software