



“At the core of our material process is a flexible solution for easily creating, processing and providing virtual materials in a multitude of different systems with the ultimate level of realistic depiction. Solutions from our partner X-Rite help us to accomplish this task.”

~ Jan Pflüger, Digital Retail / After Sales IT Solutions, AUDI AG

TAC7 Scanner



In the highly competitive world of design, manufacturing and retail, time to market and cost-effectiveness are critical to success. By using the Total Appearance Capture (TAC) Ecosystem from X-Rite, brands across a wide variety of industries can reinvent the way product designs are imagined, with the accurate portrayal of both color and appearance of a wide variety of complex materials and shapes, by truly harnessing the full capabilities of 3D visualization.

The TAC is a seamless ecosystem of sophisticated but intuitive software and instruments that automates and streamlines the creation of dimensional and virtual material libraries, and true-to-the-eye product renderings – even for complex materials independent of lighting conditions. The TAC Ecosystem takes virtualization a giant leap forward. Its physically accurate measurements mean that the virtual material will agree with its physical counterpart under any lighting condition and in any scenario, enabling reuse of materials across multiple product lines and product variations.

- Unleash designer creativity by making available a robust material library to explore and consider new designs, reducing the early-stage need for time-consuming physical comps and enabling designers to capture reality in a physically precise way.
- With more accurate material capture, key design decisions in regards to color and material are made earlier and with more confidence, shortening the design cycle.
- Improve communication from design to manufacturing and from design to marketing with more accurate renderings and benefit from systematic appearance-based quality control.
- Use photorealistic digital assets for marketing and sales channels such as online storefronts and retail purchasing (including collateral creation), creating a consistent and accurate representation across multiple product lines season after season.
- Reduce the number of physical sales samples required by providing sales representatives with one sample for each model, using physically precise 3D renderings to demonstrate additional variants in color and appearance.

Specifications

TAC7 Scanner

Dimensions and weight:	74 cm x 74 cm x 172 cm 28.5 in x 28.5 in x 66 in – 139 kg 306 lbs
Sample dimensions and sample weight:	22 cm x 30 cm 8.6 x 11.8 in (approx. A4/US letter) height: up to 3 cm 1.18 in 5.45 kg ; 12 lbs maximum
Measurement spot and sample handling:	130 mm diameter, ±3 mm depth of field step-less rotation stage for anisotropic samples, manual-loading
Pickup:	4 industry-grade monochrome cameras Camera Positions: 5°, 22,5° (car paint), 45° and 67.5° (fresnel) with electronic shutter High-grade optics which ensure same depth of field for all cameras and the entire sampling area
Optical resolution (cameras):	up to 385 dpi (66 µm per pixel) up to 577 dpi (45 µm per pixel) (car paint camera) for 22.5° pick-up
Capture time and data size:	measurement typical: 15 - 120 minutes 20 - 60 GB raw data post processing typical: 15 -90 minutes 1 - 200 MB processed data
Illumination:	32 white LED point-light sources; fixed incident angles: 3 (resolution: 22.5°) x fixed incident directions: 8 (resolution: 45°) 8 spectral light sources on 3 filter wheels with 10 bands Variable Linear Light Scanner with 0.3° steps Backlight Option with single white LED Spectrophotometer for system calibration
Structured light:	1 structured light projector for creation of height maps
Data interface:	Gigabit Ethernet port at rear
Electrical Requirements:	100-240 VAC / 50-60 Hz AC line input is 250W max Class 1, protective earth
Overvoltage Category: EMC Compliance:	Category II IEC (EN) 61326-1, FCC Part 15 B
Operating Temperature and Humidity:	10° C to 40° C 20% to 80% relative, non-condensing
Altitude, operating:	2000 m
Pollution Degree:	2
Storage Temperature and Humidity:	-20° C to 55° C 5% to 90% relative, non-condensing
Shipping dimensions and weight:	112 cm x 112 cm x 180 cm 44.1 in x 44.1 in x 70.9 in – 270 kg 596 lbs

TAC Ecosystem: How It Works

Physical material samples are scanned using the TAC7 scanner under a multitude of lighting conditions. The result is a digital representation in an AxF file with the exact same optical characteristics as the real material. The AxF file can then be ingested by popular CAD and PLM software, and rendering engines. Material scans can also be stored in the Pantora Material Hub for distribution and reuse. Material scans can be viewed in the Virtual Light Booth (VLB) for comparison with physical samples and/or virtually applied to a CAD model in the VLB's various lighting conditions. TAC7 scans delivers significant time and cost savings due to the reduced requirement for manual adjustments made to files within most design tools—ensuring realistic, accurate and consistent appearance throughout the design, production and sales/marketing processes.

With TAC, there is no need to change your current infrastructure or software investments. TAC's AxF file format is vendor neutral. TAC easily integrates with popular PLM and CAD software, and rendering engines. With access to a single library of physically-accurate digital materials, design and marketing teams can now achieve a universally consistent look and feel from digital prototyping to online and point-of-sale environments.