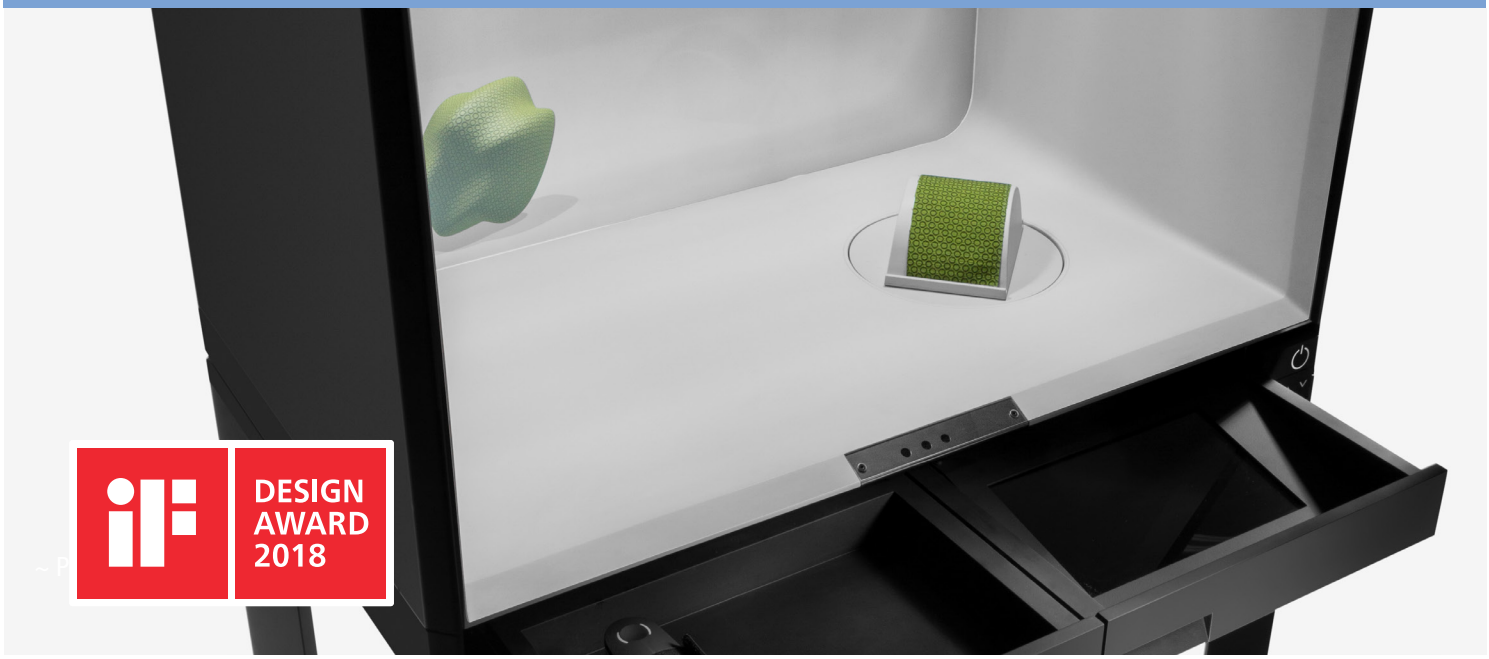
x-rite PANTONE®



Virtual Light Booth

As companies transition to digital design and interlocking manufacturing processes, there is a growing need for physically precise virtual designs that represent the true appearance of the final product. To date, CAD and rendering software solutions have been limited in their ability to precisely visualize physical appearance characteristics such as texture, gloss, transparency and opacity. The Total Appearance Capture Ecosystem and Virtual Light Booth (VLB) make it possible to capture and verify the true appearance characteristics of any material in a digital environment.

The Virtual Light Booth enables users to evaluate digitized materials on virtual objects in direct comparison to physical material samples. It uses sophisticated face tracking and other autosteroscopic technologies, in a fully immersive real-time rendering experience that does not require special glasses. Diffuse and spot light sources enable accurate visual assessment in a controlled visual observation environment for even the most complex materials, including those whose color and appearance changes based on viewing angle. It is first immersive Virtual Light Booth for evaluating material appearance in both a physical and virtual world. You can see your designs come to life.

- Directly compare virtual material samples with physical materials. Integrated camera-based sensors, spectrophotometers and colorimeters accurately visualize and evaluate materials, ensuring material consistency during the design process and for quality assurance.
- Assess samples under accurate lighting conditions. Ambient light measurement compensates for lighting around the VLB, generating accurate controlled lighting conditions in any environment. This frees the user to adjust, view and compare virtual and physical samples under controlled spot and diffuse lighting conditions.
- View from multiple angles. Motion and facial tracking adjusts the virtual representation as a person's viewing angle changes, ensuring accurate evaluation of materials that use special-effect pigments—whose color and appearance change based on the viewing angle.

For more information regarding this product, visit www.xrite.com/vlb

Specifications

	Virtual Light Booth
Dimensions and weight:	74 cm x 111 cm x 192 cm – 223 cm (height adjustable) I 29“ x 44“ x 76“ – 88“ – 232.5 kg I 512 lbs
Integrated SpectraLight QC Light Booth:	• Semi-diffuse D65 daylight simulator (filtered tungsten technology with high color rendering index, illuminance: 2000 lx ± 500 lx), switchable • D65 daylight spot (LED technology with high color rendering index), switchable • Embedded motorised rotation stage with three sample holders (speed and rotation controlled through touch screen, electronic synchronisation with virtual sample stage)
Integrated Virtual Light Booth:	• X-Rite factory calibrated 47” High Brightness LCD Display with 5000 cd/m2, native resolution 1920 x 1080 pixels, 10 bit color depth • X-Rite observer position depending closed loop real-time color management engine. • X-Rite OpenGL real-time rendering engine supporting included sample holders and sample objects, custom .obj wireframe models and AxF materials (BTF, SVBRDF and CPA car paint). • Virtual rotation stage
User Interface:	• motorized hydraulic height-adjustment to adjust viewing perspective • embedded 13.3 inch touch-screen to control device and rendering locally • PANTORA VLB software (single-seat license limited to 12-months) to configure rendering scene and materials (requires external PC)
Sensors & Controls:	• set of embedded motion controllers for body and face tracking • external X-Rite i1Pro 2 spectrophotometer for system calibration • embedded X-Rite i1Display Pro colorimeter for closed-loop display calibration • embedded X-Rite i1Pro 2 spectrophotometer for closed-loop ambient light tracking
PC & Data Interface:	• embedded motion controller PC • embedded rendering PC with NVIDIA Quadro P5000 GPU • USB 2.0 interface (front) to connect i1Pro 2 spectrophotometer for system calibration • Gigabit Ethernet interface (rear) to connect to external PC with PANTORA VLB software
Electrical Requirements:	TAC-VLB-JP: 100 VAC, 12A, 50/60 Hz TAC-VLB-US: 120 VAC, 12A, 60 Hz TAC-VLB-EU: 220-240 VAC, 7A, 50/60Hz
Product Safety:	cUL60950-1 including amendments 1 and 2 I IEC/EN60950-1 Information Technology Information
EMC Compliance:	FCC Part 15 I IEC/EN55032 I IEC/EN55024
Operating Temperature and Humidity:	10 to 35o C I 80% RH (non condensing)
Storage Temperature and Humidity:	-20 to 60o C
Shipping dimensions and weight:	108 cm x 130 cm x 196 cm I 42” x 51” x 77” – 363 kg I 800 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 Appearance eXchange File (AxF) file with the exact same optical characteristics as the real material (“digital twin”). Material scans can be viewed in the Virtual Light Booth for comparison with physical samples and/or virtually applied to a specific shape or 3D model of your product.

In a typical workflow:

- Physical material samples are scanned using the X-Rite TAC7 Scanner or X-Rite Scanning Service to create physically precise digital materials specifications in X-Rite’s vendor neutral AxF file format.
- AxF files are stored and managed using X-Rite’s Pantora Digital Material Hub and distributed from there to digital material rendering engines and plug-ins for third-party 3D rendering systems.
- The Virtual Light Booth is used to select, inspect and compare materials under multiple lighting conditions, and to directly compare them to physical material samples for activities such as final design selections and material consistency quality assurance (QA). It enables you to evaluate a physically-accurate 3D visualization of your final product’s appearance, under different lighting conditions.