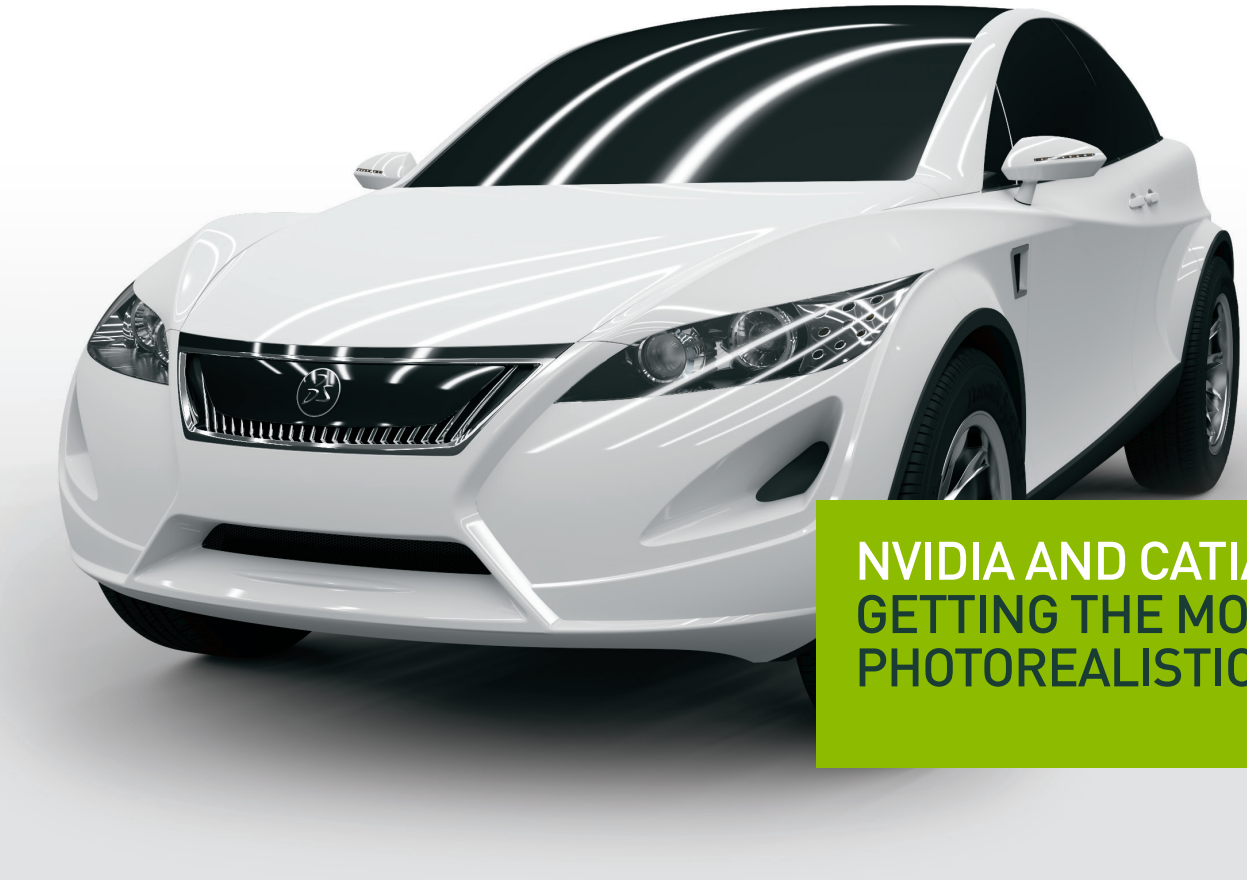


NVIDIA AND CATIA
GETTING THE MOST OUT OF PHOTOREALISTIC RENDERING

Interacting with photorealistic models has tangible benefits for Engineers and Designers. Complex add-on programs and long wait times used to mean that photorealistic rendering was reserved just for the styling and marketing departments. No longer. Realistic models are fast becoming a necessity for designers and engineers for more accurate and faster decisions throughout the entire process.

Now, with rendering integrated directly within CATIA Live Rendering —powered by NVIDIA® Multi-GPU technology— Live Rendering provides an intuitive and interactive means for creating images that rival photographs, up to 10x faster.[1] NVIDIA Multi-GPU technology combines multiple NVIDIA graphics processors in a single workstation to provide simultaneous design and simulation. One GPU performs the heavy lifting of photorealistic rendering or engineering simulation computation, freeing the other to power rich, full-performance, interactive design.

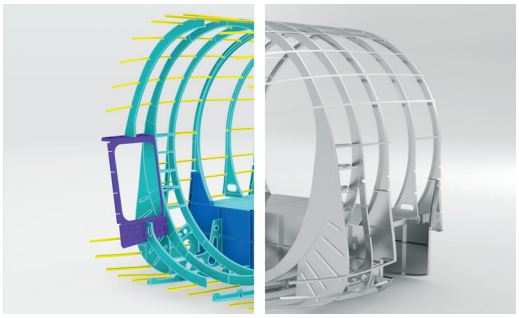
You can easily use materials and lights that correspond to and react like those in the physical world, quickly bringing your models to life. Assemblies of every size can now be interactively rendered directly within CATIA with a remarkably simple user interface.

Read on to find out how CATIA Live Rendering with NVIDIA Multi-GPU can benefit multiple styling and engineering roles.

Easily interact with photorealistic rendering right within the CATIA application.

SEE HOW CATIA LIVE RENDERING CAN BENEFIT YOU.

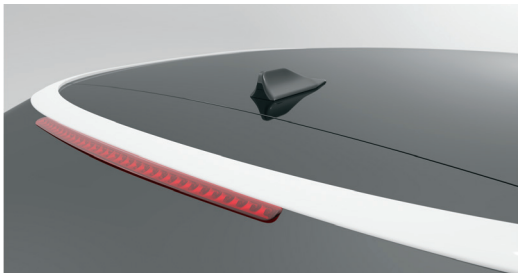
Engineering



Standard 3D model view (left) vs more accurate representation of materials with Live Rendering (right)

3D Modelers

Easily turn your CATIA models into compelling photorealistic rendering to clearly communicate your vision and progress. With the material and environment libraries pre-loaded in CATIA Live Rendering, pushing a button is all you need to turn your traditional CAD models into an exquisite picture. At any stage of the design, you and your colleagues can see how the product will look in real life. Use the final images to create compelling project update for management, next cube or around the world. An accurate picture is worth more than a thousand words.



Perceived Quality Engineers

Perform extensive gap analysis or fit and flush functionality tests to quickly and accurately see real-world examples of your design. Choose and place physically accurate lights that cast perfect shadows on your model so you can analyze them from countless points of view. Not only will this help evaluate perceived design quality, but could also help you catch fitting errors before its too late—and without creating costly physical models.

Ergonomic Engineers

Easily modify models and study reflections across windshields and mirrors early in a car design without prototyping. For example, CATIA Live Rendering allows optimal windshield curvature and dashboard light placement for daylight or nighttime environment. The interactive experience also allows you to quickly adjust side mirror angle of vision to minimize blind spots.

Light Engineers

See complex light designs in various environments from car headlights, blinkers, and dashboards gauges to diodes and screen reflections on consumer electronic devices.

Packaging Engineers

Place the "final" product on a supermarket shelf or an intimate boutique setting to see how it will look in a real-world environment against the competition. Make design changes on the fly before thousands are made and shipped.

Styling and Marketing

Design Review

The integration of NVIDIA® Iray® within CATIA means designers and engineers can now engage in interactive, photorealistic team reviews for quick and accurate decision making. With the power of NVIDIA Quadro GPUs you can seamlessly walk through photorealistic scale2 models and modify them on the fly if necessary.

Color and Trim Experts

Review and change materials interactively using lifelike material libraries. This allows you to see how different materials will look and interact with one another before materials are ordered and prototypes are built. Visualize reflections and refraction effects to create a rare wood feel or guide light through a designer perfume bottle.

Marketing

Waiting for physical prototypes and setting up expensive and lengthy photo shoots delay time to market and consume budgets. With CATIA Live Rendering stunningly accurate images are ready for prime time as soon as the design is done. Go right from the 3D model to the photorealistic representation of the product for use, as-is, in marketing or training materials. Save weeks and get to market faster!

Industrial Design

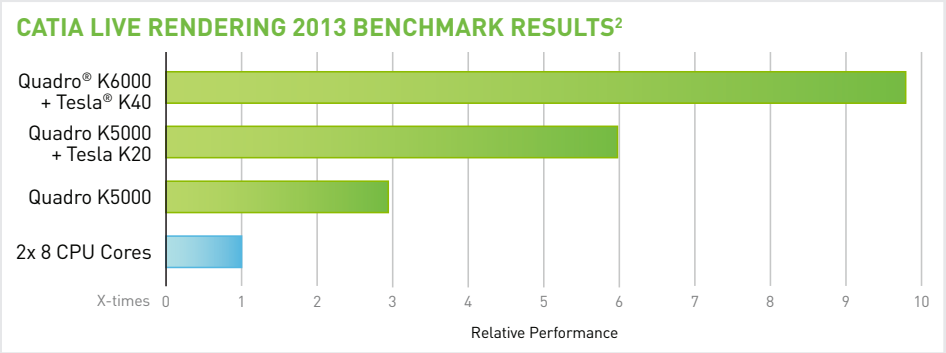
Make the right decisions very early in the concept design with models imported straight from CATIA. Choose the right shape language and evaluate proportions, the global form, and product attitude. Test out new ideas and see them in a real life environment to find the perfect design.

Master Surfacers

Traditional "zebra" analysis use approximations to evaluate the final surfaces. With the neon room environment available in CATIA Live Rendering you can directly interact with the final photorealistic model. You can move the model and study how the physically accurate light reflects and improve surface connections for the perfect finish.

Performance for CATIA Live Rendering

You can see how fast Live Rendering can be with the power of NVIDIA Multi-GPU technology. No longer do you need to wait forever for beautiful, print-quality images. As you add NVIDIA GPUs, performance gets exponentially faster. So you actually get more than you pay for. Multi-GPU technology gives engineers, designers, and digital content creators the freedom to visualize and simulate at the same time on a single system.



Which Quadro Solution is Right for Me?

	QUADRO K5000	MULTI-GPU: QUADRO K5000 + TESLA K20	MULTI-GPU: QUADRO K6000 + TESLA K40
USERS	CAD Modelers	Creative Designers	Visualization Experts
CATIA LIVE RENDERING USAGE	Occasional	Regular	Intensive
BENEFIT	Create photorealistic images to quickly communicate project progress and direction	Review and change materials interactively to fine tune material library and produce high-resolution images	Render production images with complex materials and huge data model sets.
CUDA PROCESSING CORES	1536	4032 (1536 on Quadro K5000 and 2496 on Tesla K20)	5769 (2880 on Quadro K6000 and 2880 on Tesla K40)
GPU MEMORY	2 GB DDR5	7 GB GDDR5 (2 GB on Quadro K5000 + 5 GB on Tesla K20)	24 GB DDR5 (12 GB on Quadro K6000 + 12 GB Tesla K40)

CATIA Live Rendering is available on all versions of CATIA V6 2011X and above. For the best experience, NVIDIA recommends running CATIA Live Rendering on a CATIA-certified platform equiped with the latest generation Quadro and lastest Dassault Systemes certified driver.

To learn more, visit **www.nvidia.com/catia**

3DS CATIA

Quadro professional graphics solutions are engineered, built, and tested by NVIDIA to provide the highest standards of quality for maximum system uptime. Nearly a decade of technical collaboration with NVIDIA has resulted in unprecedented performance and driver stability that more than 90% of Dassault Systemes customers trust for their mission-critical CAD workflows.

[1] 10x factor is obtained with a K6000+K40 MULTI-GPU configuration | [2] Run on Windows 7 64-bit, 32 GB RAM, 2x Xeon 3.3 GHz (E5-2643) with 8 cores each using NVIDIA Iray® technology

NVIDIA