



## QUADRO® AND CATIA® GETTING THE MOST OUT OF PHOTOREALISTIC RENDERING



Easily interact with photorealistic rendering right within the CATIA application.

### INTERACTING WITH PHOTOREALISTIC MODELS HAS TANGIBLE BENEFITS FOR ENGINEERS AND DESIGNERS

With complex add-on programs and long wait times it used to be 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.

And now, with photorealistic rendering integrated directly within CATIA – powered by iray® and Quadro® technologies from NVIDIA® – CATIA Live Rendering blurs the lines between traditional modeling and photorealistic rendering.

For the first time ever in CATIA, CATIA Live Rendering provides an intuitive and interactive means for creating images that rival photographs, in a fraction of the time previously required. 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.

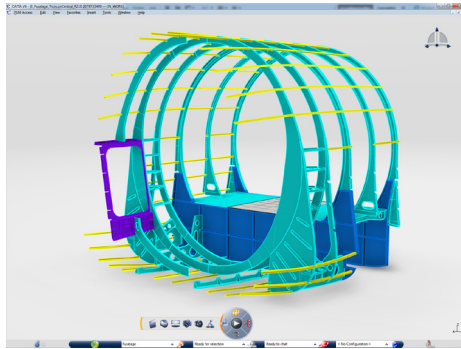
Read on to learn how CATIA Live Rendering can benefit multiple Styling and Engineering roles.

## SEE HOW CATIA LIVE RENDERING CAN BENEFIT YOU:

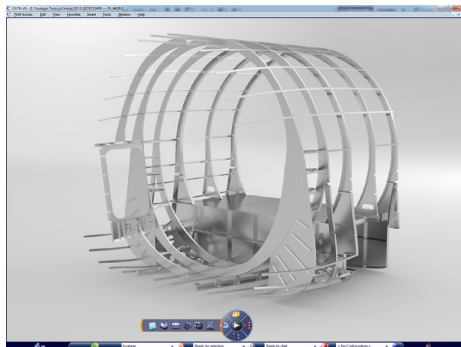
### ENGINEERING

#### 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.



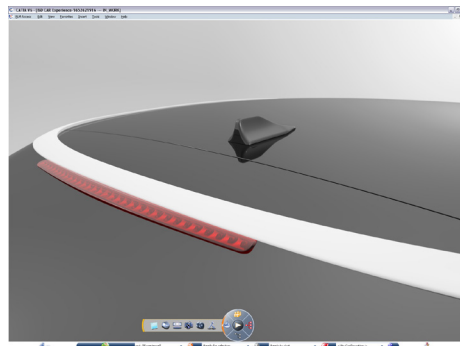
Standard 3D model view



More accurate representation of materials with Live Rendering

#### 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.



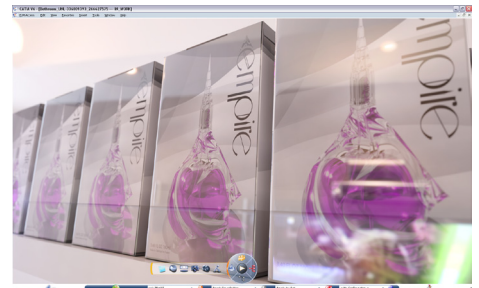
#### LIGHT ENGINEERS

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 & MARKETING

### INDUSTRIAL DESIGN

Make the right decisions very early in the concept design with models imported straight from CATIA. Choose the right shape language, 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.

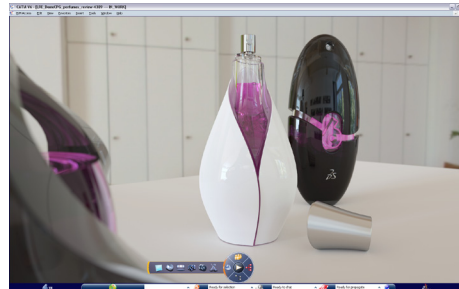
### DESIGN REVIEW

The integration of 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 scale 1 models and modify them on the fly if necessary.



### COLOR AND TRIM EXPERTS

Review and change materials interactively using life like 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.



### 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.

### 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!

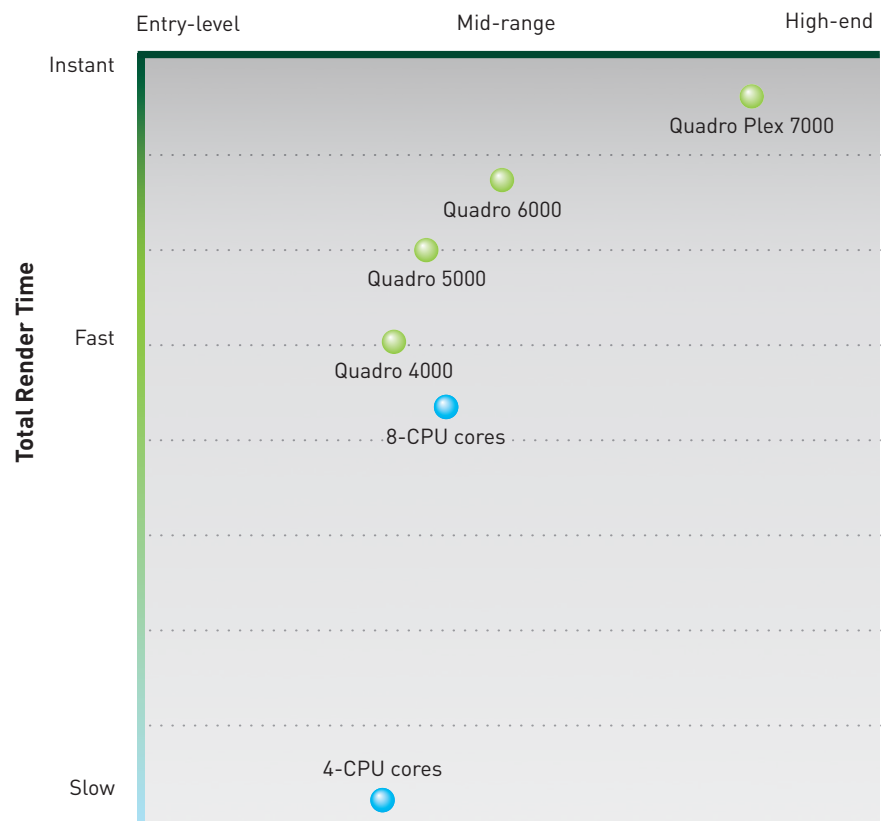


## LIVE RENDERING PERFORMANCE

With the power of NVIDIA Quadro GPUs, CATIA Live Rendering can be incredibly fast for every model you need to render. No longer do you need to wait forever for beautiful, print-quality images. As you add Quadro GPUs to a single CPU system, performance gets exponentially faster – so you actually get more than you pay for.

The comparison presented is based on industry standard workstation with quad core Xeon W5580 CPU @3.2GHz and appropriate CPU or GPU combination, 12GB RAM, Win7-64bit OS. Rel260 Dassault Certified Driver was used in the benchmark running at 1280x1024 resolution for a total of 500 frames.

### Complete Workstation Price



## WHICH QUADRO IS RIGHT FOR LIVE RENDERING?

|                                 | Quadro 5000  | Quadro 6000   | Quadro Plex 7000  |
|---------------------------------|--|---|---|
| Usage                           | <b>Creative Designers / CAD Modelers</b><br>Industrial Design, Engineering | <b>Visualization Experts</b><br>Color and Trim, Product marketing                                   | <b>Team and Executive Review</b>  |
| Benefit                         | Single screen, occasional usage of Live Rendering.                         | Single screen, large resolutions. Intensive usage of Live Rendering. Rapid ray tracing convergence. | The best choice for fast, interactive ray tracing for rapid team decisions. |
| CUDA Processing Cores           | 352  | 448   | 1024 (512 per GPU)  |
| Frame Buffer Memory             | 2.5 GB GDDR5   | 6 GB GDDR5  | 12 GB GDDR5 (6 GB/GPU)  |
| Memory Interface                | 320-bit  | 384-bit   | 384-bit per GPU   |
| Memory Bandwidth                | 120 GB/s   | 144 GB/s  | 163 GB/s per GPU  |
| Max Power Consumption           | 152 W  | 204 W   | 615 W   |
| Graphics Bus                    | PCI Express 2.0 x16  | PCI Express 2.0 x16   | PCI Express 2.0 x16   |
| Display Connectors <sup>2</sup> | 2 DisplayPort<br>1 Dual Link DVI-I<br>1 Stereo 3D                          | 2 DisplayPort<br>1 Dual Link DVI-I<br>1 Stereo 3D   | 4 Dual Link DVI-I (2 per GPU)<br>2 Stereo 3D                                |



For CATIA Live Rendering certified configurations and drivers visit Dassault Systemes certified system hardware page: <http://www.3ds.com/support/certified-hardware/overview/>

CATIA Live Rendering is available on all versions of CATIA V6 2011X and above. For best experience, NVIDIA recommends running CATIA Live Rendering on a CATIA certified platform equipped with the latest generation Quadro and release 259.70 driver or above. Quadro Plex 7000 is only supported on Driver release 270 and above.

**QUADRO<sup>fermi</sup>** | Exponentially better for CATIA

To learn more, visit [www.nvidia.com/catia](http://www.nvidia.com/catia)

<sup>1</sup>6GB is supported on Win7 and Linux64 (4GB memory limit on Windows XP64) via Rel 256 driver.

<sup>2</sup>Two out of any three connectors can be active at a time

