Lighting simulation software in CATIA V5

ANALYZE AND VIRTUALLY VALIDATE INNOVATIVE LIGHTING SYSTEMS DIRECTLY IN CATIA V5

Unique 100% CATIA V5 integrated solution

100% included in your PLM process

• Automotive • Electrical & Electronics • Aerospace
• Lighting • Consumer goods • Architecture • Medical
• Defense • Luminaires • Interior design...

www.optis-world.com
THE ONLY LIGHTING SOLUTION FULLY INTEGRATED
IN THE PLM PROCESS FROM DESIGN TO PRODUCTION

OPTIS is the only optical technology available in the market which is fully integrated in CATIA V5. Integrated technology means you use exactly the same software for your mechanical design, lighting analysis, optical design and rendering.

You don’t have to rebuild the optical model to redo the simulation. Building the optical model is where you spend 80% of your time. With the OPTIS solution you save 80% of your time spent during the design process.

The advantage of being 100% PLM integrated...

80% AVERAGE CUSTOMER TIME AND COST SAVINGS

...compared to being just interoperable

6 REASONS TO CHOOSE SPEOS CAA V5 BASED

- First software to integrate optics, light, visual ergonomics and human vision in PLM
- Allows CATIA V5 users to master light throughout design process
- Fast photometric, colorimetric virtual measurement and analysis
- Product is simulated as perceived in real lit environment
- Based on industry proven, physics-based SPEOS technology
- Fast learning curve

MERGE LIGHT, OPTICS AND MECHANICS... IN ONE PLM SOFTWARE
Visual Ergonomics

Photo Realism “Visualize the aspect of your finished products with lighting and optical effects in CATIA® V5”

- Spectral-, BRDF- and real measured material based libraries
- Lit and unlit appearances taking into account display properties
- Image analysis (photometry, colorimetry...)

Human Vision “The decisions we make are based on what we see”

- Visual perception simulation and analysis based on a physiological human vision model
- Detect visual obstructions, glare, reflection, blooming before validation
- Enhance perceived quality by optimizing color, contrast, harmony, light uniformity, intensity...

Lighting Sceneries “The perfect way to see your final product in its virtual environment”

- Improve comfort and safety, simulate ambient lighting conditions, sun, fog, day and night vision before validation
- Validate the integration of luminous objects (displays, buttons, lighting, GPS...) in full environment and lighting 3D scenes
- Check compliance with industry-specific standards
- Optimize the ergonomics of the operator’s position

Virtual Mock-up becomes real

Improve the virtual reality of your simulations thanks to exclusive Optis peripheral hardware

SquaLe: Capture surface and color appearance “ON SITE” and transfer it immediately into your virtual prototypes...
**Light Modeling**

The best set of tools on the market for optimizing the light performance of your systems directly in CATIA® V5

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**Step 1 • Design**

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**Step 2 • Optimization**

- Optimize your photometric results in CATIA® V5
- Model, simulate, analyze, optimize, **luminous flux** in any object or future product.
- Accurately predict stray light, hot-spots, uniformity, and study intensity, luminance, illuminance.
- Active 3D ray tracing
- Upgrade with colorimetry and radiometry

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**Step 3 • Validation**

- Use source, material & surface libraries
- Check compliance with standards
- Obtain intuitive 2D & 3D map results for easy analysis

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**Optis Customer Says...**

Thanks to Optis software, we truly believe we can shorten our product development time and eliminate the time-consuming and costly phase of making physical prototypes. It was a very valuable evaluation experience for the cockpit lighting design, and I am confident we can extend the technology to other applications.

Richard Heppell
Manager Core Systems Engineering, Montreal Bombardier Aerospace

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**Bench: acquire our static optical bench to obtain very accurate input data or we can also provide you customized measurements...**

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**Easy to Use**

Multiply virtual lighting prototypes

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www.optis-world.com
Windshield Analysis

EXCLUSIVE TOOLBOX TO QUANTIFY AND QUALIFY
THE OPTICAL PERFORMANCES OF A WINDSHIELD

- Optical Regulation Tests
- Static distortion visualization
- Dynamic distortion visualization

Options

LIGHT EXPERT
TO UNDERSTAND HOW LIGHT PROPAGATES IN CATIA® V5

- Light Path Finder
- 3D Ray Tracing Filtering
- Surface Contribution Analyser

Stray light tracking
Hot-spot analysis
Ghost image detection

OPTIMIZATION & TOLERANCING
TO SAVE TIME, OPTIMIZE YOUR SYSTEMS AND REACH DESIGN EXCELLENCE

- Genetic and gradient optimizer
- Multi-configuration tool
- Automation

Tolerancing
Optimization
Automatic task management

DISTRIBUTED CALCULATIONS
PC CLUSTER

- Network calculations to distribute tasks
- Concurrent simulations: work on another file or software during the calculation

Reduce time to market
Optimize competitive advantage
Increase hugely your simulation power
LIGHT MODELING is based on advanced high speed Monte-Carlo non-sequential light propagation. Light can be split into reflected, refracted, diffracted and scattered components. Propagation takes into account optical properties for all surfaces, materials and sources emission. Results can be used to verify the compliance with International Standards and customer specification. Virtual Photometric Laboratory (VP Lab) provides a range of tools (cross section, contrast, iso-curves, spectral and chromaticity coordinates...) for analysis. Moreover, sensors simulation allows you to treat illuminance(lux), irradiance(W/m²), intensity(cd), radiant intensity(W/sr), luminance(cd/m²) and radiance(W/m².sr).

VISUAL ERGONOMICS is based on a unique physics based approach to light. The final picture takes into account all optical properties (scattering, absorption, refraction,...) including their spectral behavior: the only way to obtain exact colors. The exact aspect of the final surface even for brushed surfaces and iridescent paints offers very realistic rendering of virtual products including lit appearance. Human vision is taken into account thanks to a very accurate physiological human vision model.

COLORIMETRY allows you to make colorimetric analysis of all photometric and image results: spectral/colorimetry-chromaticity coordinates (xyY, Lab, Luv...) can be easily obtained.

LIBRARIES

All the input data from our libraries are:
- Totally measured
- Accurately and fully modeled
- Downloadable on-line
- Regularly updated

Check the parts available at http://www.optis-world.com/libraries/

100% INCLUDED IN YOUR PLM PROCESS

DIRECTLY IN CATIA V5

ANALYZE AND VIRTUALLY VALIDATE

IN THE PLM PROCESS FROM DESIGN TO PRODUCTION

TO OFFER YOU AN UNEQUALLED LEVEL OF REALISM

ALGORITHMS AND METHODOLOGIES ARE

100% BASED ON PHYSICS LAWS

105 surface references
25 standards references
320 source references
105 surface references
715 material references

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