



INSPIRER is a software package for physically accurate lighting simulation and image rendering. INSPIRER can be effectively used in architecture offices, by lighting, automobile and aerospace manufacturers. Introducing INSPIRER into the design process allows a user to virtually reproduce spaces and objects and to simulate various lighting effects for analysis of illumination characteristics.

As effects that light creates are reproduced based on the physical behavior of light and nothing is for the visualization purpose only, designers are given reliable supports for their design. For those who want to add more value to their products suppressing cost and time increase to market the products, INSPIRER provides a strong aid to design activities.

◀ Virtual reproduction of outdoor/indoor illumination

Applications

Virtual reproduction of exterior and interior illumination

- Virtual reproduction of exterior and interior illumination
- Illuminance distribution inside facilities (offices, halls, stadium, etc.)
- Visual effects provided by lighting fixtures placed inside a room
- Influences on visibility provided by light outside (e.g. sunlight) and inside (e.g. room lamp) a car
- Design of architectural structures with the optimized use of natural light

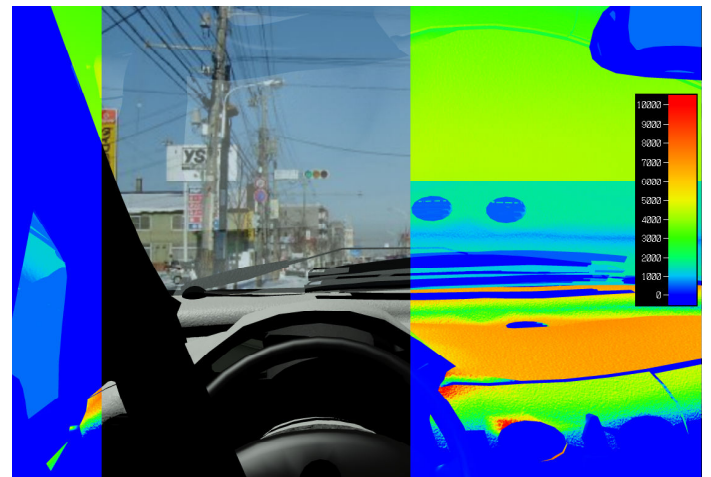
Analysis of object appearance in outdoor illumination

- Illuminance distribution in outdoor spaces (sport facilities, parks, avenues, etc.)
- Visual effects provided by lighting fixtures placed outside the building (building illumination, etc.)
- Appearance of various products (automobiles, etc.) in outdoor spaces under clear or cloudy sky
- Visibility and emitting characteristics of automobile lights (head and tail lamps) under sunlight or road light
- Shadows cast by buildings due to projection of sunlight or artificial light

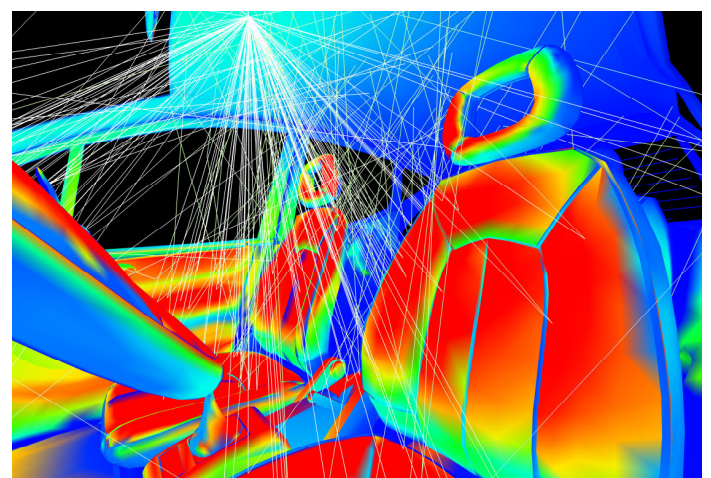
Other applications

- Reproduction of the coating (metallic, pearlescent, etc.) appearance
- Visual synthesis of real environments with virtual objects
- Reproduction of the glare effect caused by direct viewing of a light emitting object

* Please feel free to consult us for customization of our products.



▲ Visibility evaluation inside a car under daylight



▲ Visualization of rays emitted from a roof light of a car

Features

Simulation mechanisms

- Fast and accurate bi-directional Monte Carlo ray tracing method reproduces the behavior of light in 3D space
- Progressive processing allows a user to suspend calculation and to present results step by step during processing

Building models

- Interface to the external CAD (e.g. IGES converter) allowing to build models using existing CAD data
- Use of CATIA® data via a dedicated plug-in for efficient cooperation between two applications by incremental data updating to accelerate the modeling-rendering iteration process
- Support of daylight (skylight) at any arbitrary point on the earth by specifying latitude, longitude, date and time
- Support of HDRI for high-quality visual synthesis of rendered objects with the real environment
- Support for reflection and transmission when characteristics change depending on incident or emitting direction (BRDF/BTDF)
- Assignment of measured light intensity distribution to the light sources realizing arbitrary light emitting characteristic

Presentation of simulation results

- Advanced rendering capability allows high-quality reproduction of object appearance under specified illumination conditions
- Shadows and reflections can be reproduced even in case of rendering with OpenGL® hardware
- Real-time ray tracing allows generation of photorealistic rendered image in a few seconds
- Inquiry can be made for a spatial distribution of luminance and illuminance on surfaces as well as for luminance and light intensity in various directions
- Propagation of the rays emitted from the light sources can be visualized three-dimensionally

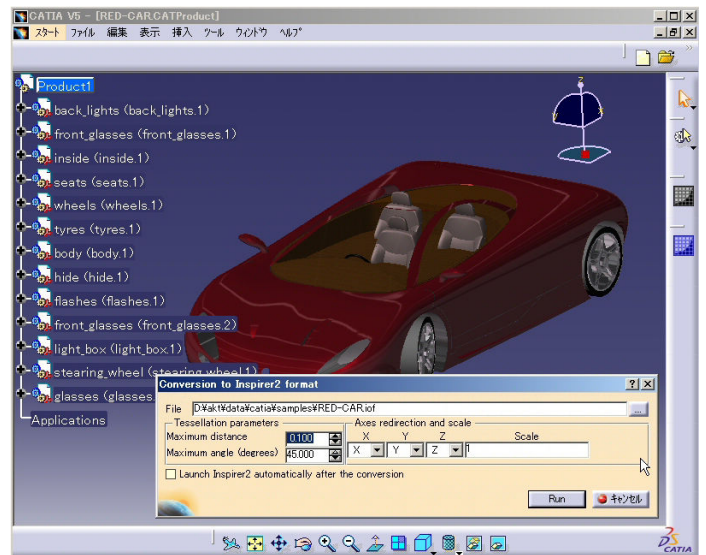
Other features

- In addition to the multiprocessing with on-board CPUs, distributed processing by computers on the network is available*1

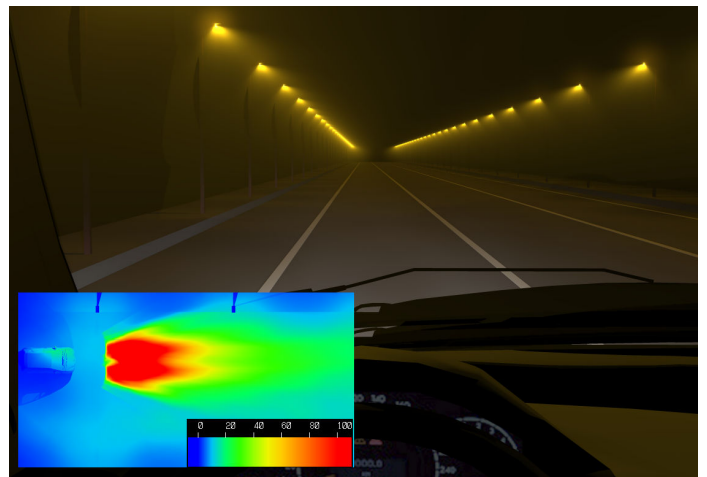
System requirements

CPU	Intel® Pentium® 4 or equivalents
RAM	512 Mbytes or greater
HDD	1 Gbytes or greater free area
OS	Microsoft® Windows® 2000/XP
Display	1024 by 768 pixels, True Color (24 bit) or greater

*1 Multiprocessing and network-wide distributed processing are provided as an option



▲ Easy operation to pass models from CATIA®



▲ Distribution analysis for light projected by car headlamps in the night



▲ Reproduction of illuminating head and tail lamp

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