



## **3D Lighting: Integrated software modeling and simulation package using 3Dsolar and Rayfront with Radiance**



*ALware, Dipl. Phys.-Ing. Andreas Lahme, Leopoldstraße 7a, D-38100  
Braunschweig,  
Telefon: +49 . 531 / 250 72 - 80, Fax: - 81,  
Mail: [info@alware.de](mailto:info@alware.de), Internet: [www.alware.de](http://www.alware.de)*

**Daylighting planning by simulation in practice - easy, fast, and convincing with 3D Lighting. Daylighting planning by simulation in practice is presented by the means of typical examples. The conditions for an easy and fast workflow are termed and convincing, reliable results are shown.**

### **Introduction**

The task formulation of lighting planning by simulation during the design phase of a building is usually complicated by long-winded and wasteful revisions of the CAD model.

### **Overview: Lighting planning**

Daylighting planning by simulation in the design phase is an optimization process and goes through the stages task formulation, input, calculation, result, variation, documentation, evaluation, and recommendation.

### **Easy 3D input for the simulation**

The condition for an economic lighting planning is a fast, easy and flexible input of the 3D geometry into the simulation program, including a geometry control function.

### **Calculation**

An internationally acknowledged calculation engine is used for setting up the lighting simulation.

### **Convincing results of the lighting simulation**

Physically accurate results concerning luminance, illuminance, daylight factors, and daylight autonomy as well as day paths of solar radiation can be generated.

### **Variation**

Fast geometry input and batch processing allow the easy set-up of variations which are necessary for the optimization process.

### **Documentation**

For further lighting planning a documentation of input and results of all variations in comparison is essential.

### **Evaluation and recommendation**

Documented inputs and results are evaluated on the basis of evaluation criteria in order to give recommendations for appropriate measures.

### **Conclusion**

Daylighting planning by simulation with 3D Lighting offers planning security and contributes to quality assurance and building optimization in an economic way.