



HELIOS 3D

SOLAR PLANT LAYOUT

E-mail helios.3d@schletter.us or call (520) 289-8756 for Helios 3D pricing and training information.

Introduction

Helios 3D is a premier design software for utility-scale PV solar systems for both ground and roof areas. The software features automatic, optimized drop shadow free placement of PV tables, making planning large systems virtually seamless. The program's sophisticated design tools and intuitive workflow allow users to complete days worth of project work in hours.

A two-part software system, Helios 3D consists of database management and an AutoCAD-based drafting interface. Helios 3D is a proven software system for utility scale solar planning in Europe and Schletter is the exclusive distributor of Helios 3D in North and South America.

Project phases supported include:

- **Project development**
Analysis and evaluation of the terrain and rate of yield
- **Project layout**
Structuring of the terrain, placement of modules, optimization of placement for maximum yield
- **Evaluation and documentation**
Bill of materials, list of GPS coordinates





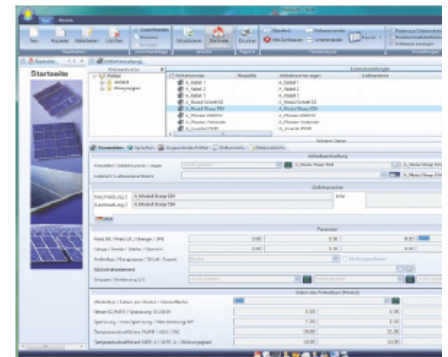
Database

The **user interface** of the database is similar to many Microsoft® programs. The Helios database system remembers and tracks all changes to any component or project entry created in the system.

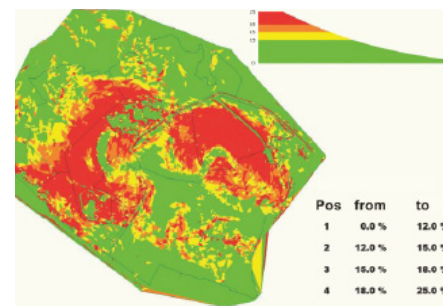
Components such as racks and modules created in one layout will be accessible in all drawings. When using a shared SQL server installation, multiple users can access and update database information, with the capability to lock components for editing. The database provides the capability to manage multiple aspects of the project and its phases.

Examples of information that can be managed through the database:

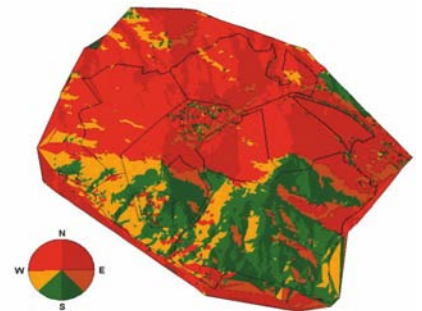
- Racks
- Modules
- Posts
- Bill of materials
- Post coordinates
- Company name and contact information
- Excel®, Word®, PDF, DWG (executable through DB) documents



Project Data



Angle of Slope



North South Orientation

Terrain Analysis

The **digital terrain analysis tool** enables the ability to rapidly assess any particular tract of land and helps determine if it will be suitable for the proposed project.

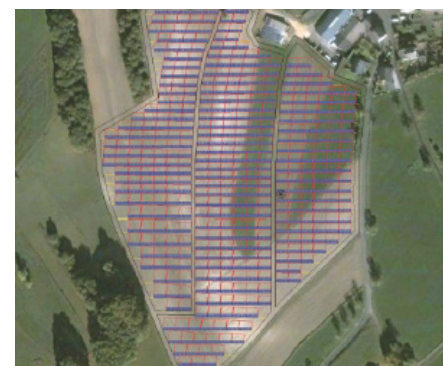
Recognizing terrain constraints in the initial analysis can save time and money in the planning and construction phases of development. Various forms of data can be used to create Digital Terrain Model (DTM), while terrain information may be imported in a variety of ways.

There are several ways to obtain and create a DTM surface for Helios to analyze:

- Google Earth (GE)
- USGS
- Surveyors Data File Report
- AutoCAD files with points and contours

Once a digital terrain is created, analysis is only few clicks away. The three terrain analysis tools are useful when determining terrain characteristics. The analysis tools take into account height, slope and direction.

All analysis tools can be graphically enhanced to any preference so that changes in land characteristics are more easily observed. In addition, the aerial photo imported from GE can be viewed while defining the PV field boundaries.



First Layout



CAD

The most functional and highly intuitive aspect of Helios is its design capability. Once a DTM is created, designers have the ability to maximize the project development potential. The powerful tools in Helios, such as rack placement optimization and configuration, in conjunction with sophisticated shading analysis, give users the ability to effectively manage time and the result is rapid assessments in the development phase and further project developments.

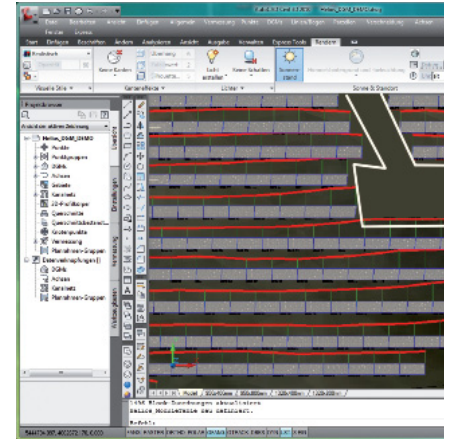
Once racks and components are defined it takes only minutes, or as little as seconds, to make changes to the structural components, rack layout, and field boundaries. Every project at some point in time will likely experience the need to change design criteria. The quicker it can be done, the faster things can progress. Creating blocks and layouts with simple 2D CAD functions is repetitive and time consuming. **Helios makes changes quickly and easily, which gives greater control of project time, money, and specifications.** Reduce layout work of PV arrays from weeks to days!

Design tools include:

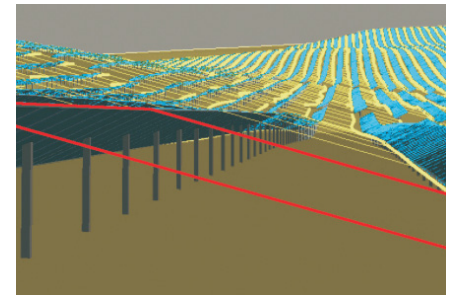
- Rack placement (auto calculated)
- Shadow object placement and calculation (for any time of the day and year)
- Row numbering
- Terrain analysis
- Row distance specification
- Field alignment and layout
- Access roads, staging areas, etc. (integrable with Design)
- Differentiation between interior and exterior array sections (if applicable with used racking)

Features include:

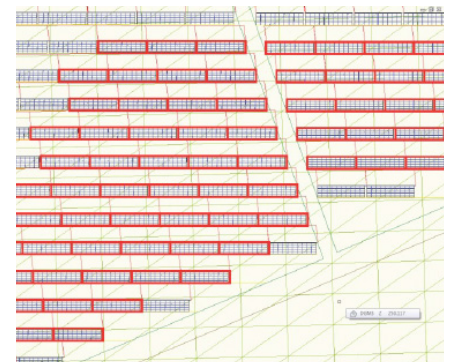
- Ability to define any rack type
- Electrical design tools (numbering of strings, wire dimensioning, trenching) available in the near future
- Export of data to PVSYST-System
- Calculation of earth movement possible through Civil 3D platform (for grading purposes, will show actual masses that need to be moved)



Module Placement with Blocking Area



3D Shadow Plane



Tables with Drop Shadow at Fixed Row Distance



System Requirements

Helios 3D software has several minimum PC system requirements to operate to its fullest potential. Contact Schletter for specifications. AutoCAD Civil 3D 2011 or higher must be installed and fully operational before Helios can function. It is recommended that users have a basic understanding of AutoCAD Civil 3D fundamentals before using the Helios software.

Basic system requirements:

- AutoCAD Civil 3D 2011 or 2012
- Windows 7 professional (64 bit)
- 8GB RAM
- Dualcore CPU: 3 Ghz
- Certified graphics accelerator card

Helios 3D Pricing & Training

Contact Schletter regarding questions and pricing for Helios 3D.

Different licence types for the software are available. Schletter also offers Helios 3D training available on-site or online through GoToMeeting. Please e-mail helios.3d@schletter.us or call **(520) 289-8756** for software and training pricing.

➔ Helios3D on the web: schletter.us/helios3d.html



© Microsoft, Excel, and Word are registered trademarks of the Microsoft corporation.