Solar Pro

Laplace System Co., Ltd.

1. Solar Pro offers dynamic shadow analysis using 3D graphics
2. Solar Pro performs highly accurate simulations by constantly making instantaneous calculations
3. Solar Pro supports various PV systems, including arch-shaped, sun-tracking, and mega solar systems

Overview of Product / Technology

Product Functionality
Solar Pro, a simulation software program for PV power generation systems, supports various conditions that vary depending on the system and can make highly accurate calculations by taking account of the influence of shadow. It’s a powerful tool for making PV systems efficient and well designed. With its graphical interface, Solar Pro can also be used for presentations and educational sessions on PV power generation.

Product Features
• With Solar Pro, the user can easily input data on the facility where the PV system is installed. With its visual interface, the program is user-friendly—the user doesn’t have to be an expert.
• With analysis features using 3D graphics, Solar Pro calculates the influence of sunlight shadow on power generation. The calculation is not based on the amount of rated power generation and the amount of insolation, but is made by solving an electric current equation per module and generating an I-V curve.
• Solar Pro constantly makes instantaneous calculations, instead of calculating based on the amount of total annual insolation. This allows the program to offer well-supported, highly accurate calculations. Solar Pro also supports atypical systems, such as sun-tracking and arch-shaped systems.
• Solar Pro’s accurate simulations make an optimal system design possible, reducing costs and making the PV system more efficient.

Examples of Applications
Our primary vendors inside and outside Japan have been using Solar Pro for predicting the amount of power generated and the design of power generation systems. Solar Pro can also be used for giving presentations to potential customers who are considering installing a PV power generation system and for providing educational sessions on PV power generation systems. Furthermore, the program can be adjusted to perform simulations on behalf of another party or customized to meet the user’s unique needs.
Detailed Information on Product / Technology

- The framing plan feature lets the user create building layouts efficiently, even with dormer windows and chimneys. In addition, the program includes a wide variety of input choices for building shapes, including gable roof, hip roof, pyramid roof, shed roof, and half-hipped roof.
- I-V calculation is performed by using an electric current equation per module and solving the simultaneous equation based on the total number of modules. Moreover, Solar Pro lets the user check the relationship between the connection patterns of modules and the influence of shadow.
- For electric power calculation, two methods are available: the program calculates generated power 1) every day, for 365 days a year; or 2) on 15th of every month and multiplies the result by the number of days of the month.
- Calculation results can be displayed as charts and reports. The reports can be output as a CSV file.
- For the calculation of economic efficiency, inputting initial costs and operation costs allows the user to compare PV power generation systems in terms of power generation costs and electric power trading, as well as learn the amortization period of the installed system.

Company Overview

1) Business Summary, Overview
We develop and distribute science and technology software products, especially systems and applications related to natural energy, including PV power generation measurement/display systems and PV power generation simulation applications.

2) Flagship Product Lines (Solar Link Series)
- Solar Link ZERO: This is a PV power generation measurement and display system with a small terminal. The compact body offers a variety of features, including measuring data, displaying measurement results on a large monitor, and connecting to the Internet.
- Solar Link Viewer: This software system offers advanced measurement and impressive display features. When used with a large monitor, Solar Link Viewer can serve as a tool for calling attention to the status and efficacy of the installed power generation system.
- Solar Link Web: This measurement and display software system offers remote monitoring and public exposure through the Internet. On the control screen, Solar Link Web lets the user know in real-time the operating status of multiple power generation systems at remote sites so that he/she can respond quickly in case of a system failure.

3) Achievements in Japanese Market (market share, sales performance, customers, partners, etc.)
Founded in 1990, Laplace System is a pioneer in systems for measurement and analysis of natural energy power generation. Our customers include Sharp Group, Kyocera Solar Corporation, SEM Daikin Co., Ltd., Mitsubishi Electric Corporation Group, Toshiba, Nissin Electric Co., Ltd., and many other companies.

4) Overseas Expansion (production bases, export, partners, sales performance, etc.)
We have an office in Germany and distributors such as Dahan Tech Inc. in South Korea, Lawson Transworld Inc. in Taiwan, and Leonics Co., Ltd. in Thailand. We also plan to set up an office in the U.S. In addition, we have delivered measurement systems and simulation software programs to many other countries.

Contact
Laplace System Co., Ltd.
URL: http://www.lapsys.co.jp/english/
Contact Person: Ryutaro ISOBE / Shiori ISHIHARA
E-mail: isobe@lapsys.co.jp / ishihara@lapsys.co.jp
Address: [Headquarters] 307-21 Nishiotecho, Fushimi-ku, Kyoto, 612-8362, JAPAN
[Tokyo Branch] Cosmos Gyoen Bldg. 7F, 1-16-10, Shinjuku, Shinjuku-ku, Tokyo, 160-0022, JAPAN