	Software A	Software B		
Neteorological Expression				
Required Data				
Horizontal Global Irradiance		hourly	hourly or monthly	monthly
Diffuse Irradiance		hourly	hourly or monthly	monthly
Air Temperature		hourly	hourly or monthly	monthly
Supported Database		, ,	, , , , , , , , , , , , , , , , , , ,	Ĭ
Number of stations	ma	ore than 3000	330	2385
Database Type	EnergyPlus	2126 stations		
51	TMY3	1020 stations		
	METPV-11	837 stations		
	METPV-3	836 stations		
	Meteonorm	importable		
Geometrical Expression				
Angle Free Operation	Pan / Tilt / Zoom		Pan / Tilt / Zoom	Pan / Tilt / Zoom
PV Module Placement		•	×	•
PV Array Generation / Placement		•	•	•
Automatic PV Array Placement		•	×	×
PV Strings Configuration		•	×	•
3D Model Positioning	Move	/ Copy / Rotation	•	•
3D Model Data Importing		STL format	Helios 3D format	×
Background Texture Image		3MP / PNG / TIFF format	×	×
Shading Effects		•	•	•
Reflected Light Effects		•	×	•
3D View Still Images Output	GIE / JPEG / F	3MP / PNG / TIFF format	•	×
3D View Movie Output		nat / Animation GIF	×	×
lectrical Expression				
Supported Database				
Grid Connected Systems		•	•	•
Stand-alone Systems		•	•	•
Supported Database		-		-
Supported Devices	Transformer, Cable, Inverter, Combiner Box, Step-up Converter, PV Module(PV Strings),		Inverter, PV Module	Inverter, PV Module
	and User of	defined Load Devices	i i i iodale	i i i iodale
esults Expression				
On Screen				
Summary		•	•	×
Detail Data Tables and Charts		•	•	×
Reports		•		
Excel-based Reports		•	×	×
Printed Reports		•	•	•
ystem Requirement				
PC Specs	\\/:			
OS	Window	ws XP SP3 (32bits) s Vista SP2 (32bits) vs 7 (32bits, 64bits)		
Microsoft .net Framework	.net Fram	ework 3.5 or higher		
Microsoft Office	Excel	2003 or higher		
Memory	1.0)GB or higher		
Disk		2.5GB		
Graphics		ompatible graphics card		

Field Logic has been developing and selling simulation and monitoring applications for PV systems in Kyoto, Japan.

Beans Measurement Software Beanso is a simple and flexible standard software suite for monitoring and analyzing measurement

Geschaftsfuhrer/Managing Partner

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+ Festa2®

Light Digital Signage Software Festa2® is a Flash®-based digital signage software. Ideal for broadcasting your message coupled with visualized measurement data.

Monitoring Software Owle enables users to monitor all measurement sites on a single display.

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Simulation Software for PV Systems







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Step1

Location and Meteorological Data

View Help Language									
on PV module candidate 3D model Specific	cation tree Editing DB								
athute and longitude of spot to use for solar motion calculation.							neteorological dat	í	
lathude North - 48 8 14209 = 48.13728			Set Latitude and Longitude			Category Value			
Long-hude East + 11 42 1309 * = 11790364			(m			Heles, DE name EnergyPlus EnergyPlus Westw		ter Data / L	
Distance to meteorological data site ##111km						Country	Germany		
					- 5	State	-		
coele Maps Meteorological data graph						Site name	MUNICH	£ 1.10	
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Get Lat/Lon Capture insee						Latitude(+) Lonatitude(48.13000		
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	the second is		h - 3	Sile	Cartan		ed meteorological Latitude[deg]		Devation
		SM D		Sile Name MUNICH	Cartan				
		100	660 M	Name	Cartan	n lad	Latitude[deg]	Longitude[deg]	
		100	1660 M	Name MUNICH	Cartan	~ (m.C	Latinude[deg] 48.1300	Longikude[deg] 11/000	
		Tite 1081	1660 M 1700 M 1200 P	Name HUNICH Nuenchen A.	Cartan	().m) ~ 0.0 26.6	Latitude[dee] 48.1300 48.2670	Lone/hude[dee] 11.7000 11.8000	
		141	660 M 1700 M 1200 P 500 S	Name HUNICH Muenchen A. INNSBRUCK	Cartan	0.m) ~ 0.0 26.6 100.0	Latihude[deg] 48.1300 48.3570 47.2708	Longibude[deg] 11,2000 11,2000 11,2000	
		141 1000 1003 1113 1113	1660 M 1700 M 1200 P 500 S 1100 L	Name MUNICH Muenchen A. NNSBRUCK SALZBURG	Cartan	0.8 0.8 26.6 100.8 100.9	Latitude§dee] 48.1300 48.3570 47.2700 47.0008	Longihude[dne] 11,7000 11,8000 11,3500 13,5000	
		741 1003 1112 1112 1110	660 M 700 M 200 P 500 S 1100 L 200 B	Name MUNICH Muerchen A. NNSBRUCK SALZBURG UNZ	Cartan	-3.m3 ~ 0.8 26.6 100.8 101.9 105.8	Latinude[dee] 48.1300 48.2570 47.2708 47.0008 48.2300	Longihude[dee] 11,7000 11,8000 11,3500 13,0000 14,2000	
		7 mi 1000 1001 1111 1111 1110 1100	640 M 700 M 200 P 500 S 1100 L 1206 B 7300 S	Name MUNICH Muerchen A. NNSBRUCK SALZBURG UNZ Bolzano	Cartan	0.8 0.8 26.6 100.0 100.9 105.8 105.8	Latikudeűdee] 48.1300 48.2570 47.2708 47.8008 48.2300 45.4709	Loreitude[dee] 112000 112000 112000 112000 112000 142000 112000	
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			640 M 1700 M 1200 P 500 S 1100 L 1200 B 1200 S 1200 T 1300 S 1400 U 1900 T	Name MUNICH Muenchen A., NNSBRUCK SALZBURG UNIC Boltano STUTTGART Faganella Tarvipic Aviano Udine-Canp.,	Cartan	-0.m3 ~ 0.0 26.5 100.0 102.5 102.5 102.5 102.5 227.0 227.0 220.5 244.3 260.0	Latikude[Stee] 48,1300 48,2570 47,2700 47,2700 47,000 48,2700 48,5700 48,5500 48,5500 48,5500 48,5500 48,5500 48,5500	Longihadeláne) 117660 113600 113560 113560 113360 113360 113360 115560 125600 125600 131660	

Precise location of the PV system

Precise location of the target PV system simulates the position of the sun accurately. Because HelioBase® calculates power output on an hourly basis, precise simulation of the sun's position is necessary. With the location setting screen, specific longitude and latitude are easily input with an online world-wide map.



Hourly meteorological data

Thousands of weather stations are available to give data on meteorological conditions for calculating the system's power production. HelioBase® uses hourly data, usually from the nearest meteorological station, to re-create weather conditions precisely.

METEOROLOGICAL DATABASE

TMY3	2126 stations 1020 stations
METPV-3/11	837 stations
METEONORM	(Importable)

Step2

3D Geometrical Expression



Layout of PV arrays and 3D models

With HelioBase[®]'s layout function, PV arrays and other 3D models such as buildings can be placed in 3D space. Moving and rotating functions help users to create and adjust the layout and design a sophisticated configuration.



Importable 3D models

HelioBase® accepts files formatted with STL as valid data for 3D models. STL files are importable simply by dragging and dropping.



What is an STL file? STL is a common data format for 3D models. Data from many 3D CAD and modeling software programs such as Google SketchUp can be exported into this format.

Flexible Representation of PV System Structure

Step3



Power calculation with System devices combination

HelioBase® finds the total system output power by calculating the power production and loss of each device. This patented calculation and expression method clarifies in detail the power generation and loss.



Cell Level I-V curve calculation

HelioBase® resolves the model level I-V curve at the cell level and takes into account shading effects at the cell string level. Because of this detailed analysis, HelioBase® can take into account PV array mismatches with the I-V curve and offer a true picture of the performance of the PV system.



PV arrays

PV modules

PV cells and Cell strings

Design Support Features



DXF file

Exportable Layout Data

Layout created in 3D space can be exported in a DXF file format so that the layout information can be used in other CAD software programs.

Shading Effects and Reflected Light

Once a layout is created in 3D space, shading and the reflected light of all objects are drawn for each date and time. Daily changes in shading and reflected light can be exported as a movie file or as still images for each time of day for any specific date.

Reports

HelioBase®

Simulation results can be saved in Microsoft Excel® format. Various conditions and data results can be shown in this format.

