PV*master* ET

Large-scale inverter
North-America

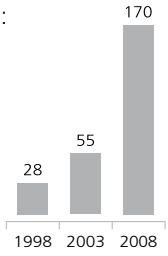
Who we are

The LTi company group is a pioneer in power inverter technology with more than 35 years' experience in this field. With technologically sophisticated drive solutions in the industrial environment, where more than 1 million inverters have been used, this medium-sized family-owned company has played a leading role in a number of segments in recent years.

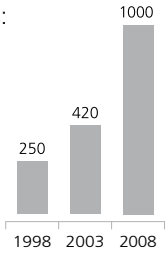
The company group has over 800 employees worldwide and is excellently represented with a large sales and service network in Europe, Asia and America. The company's future is secured by continuous growth on a solid economic foundation as well as products of the highest quality and cutting edge technology.

"The courage to follow new avenues is as an opportunity for achieving success and shaping the future".
Dr. Wolfgang Lust, Managing Director

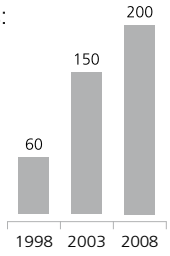
Turnover (Mio. EUR):



Employees:



Patents:



What we do

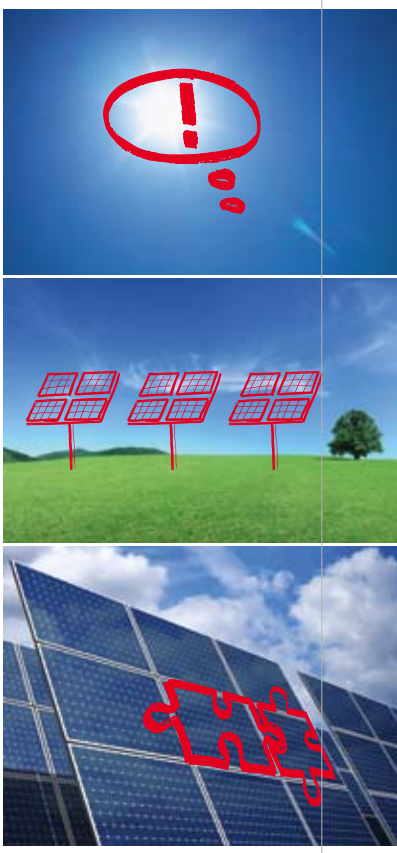
At five locations we develop and produce the most diverse technologies, focusing on the three fields of: electrical drive technologies, microsystems and sensors, and renewable energies. All of these are characterized by a high level of innovation and the finest quality.

LTi REEnergy GmbH has been highly active in the area of renewable energies for more than a decade. As a pioneer, we are fully familiar with the technical and quality requirements. The three main segments in which the company is active in this area are: photovoltaics, biomass, and wind energy.

In the area of photovoltaics we offer the large-scale inverter series PVmaster, which are available in different topologies in the power range from 33 kW up to1 MW. These state-of-the-art large-scale inverters are used in middle-sized and large photovoltaic energy systems and are ideal for all common modules – employing thin-film technology as well as silicon.

In the biomass segment, the company develops and produces systems for the utilisation of process heat. These generators are used in biogas, bio-oil and wood gasification plants as well as solar thermal systems employing an ORC process and supply the power gained from the waste heat to a central power supply system via a power inverter.

In the area of wind energy we offer mains inverters which are used in middle-sized wind turbines with 300 kW power.



Why PVmaster

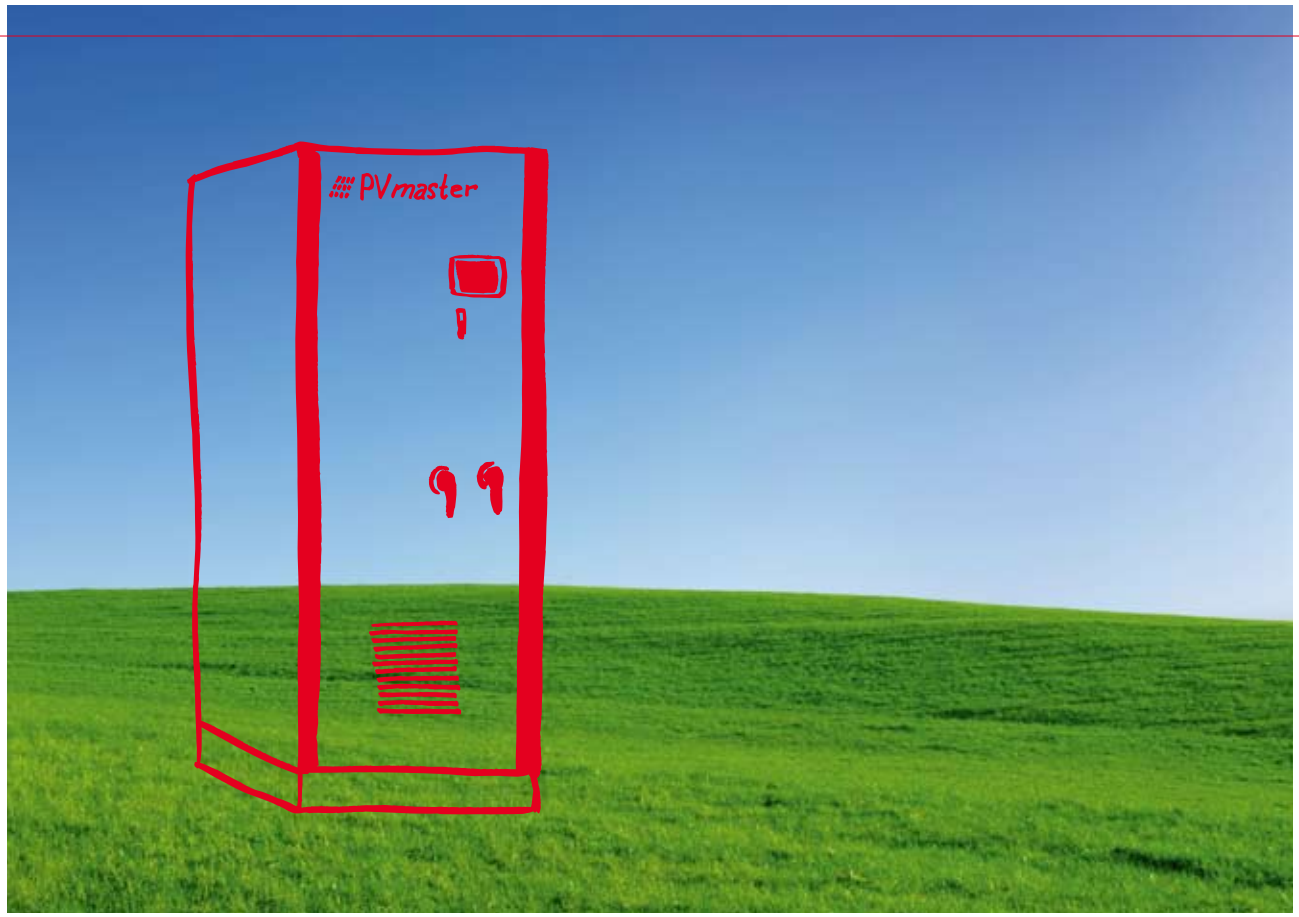
At our location in Unna we utilize the entire technological know how of the LTi Group for the development and production of our PVmaster large-scale inverters.

The PVmaster offers reliability, convenience and high efficiency.

The many years of experience of LTi with power inverters and large number of systems manufactured testify to the exceptional quality of the PVmaster. High quality components and sophisticated control algorithms are designed to ensure high photovoltaic power plant outputs.

An integrated data logger records the daily curves of all electrical input and output quantities as well as temperature for at least 30 days. These logbook files can be sent via the Internet. PVmaster provides immediate notification per e-mail in case of unusual events.

The use of high-quality components makes PVmaster almost maintenance-free. If service should be required however, the diagnostic function supports identification of the assembly affected. The modular design enables quick and easy component replacement.



Tried and tested millions of times – in individualized applications

All core elements of the PVmaster are developed and produced directly by ourselves. These elements are for instance the sensors, PCBs, inverters, and switch cabinets. Components we cannot produce ourselves we buy exclusively from renowned manufacturers so that we can provide our customers an absolutely high quality product. High piece numbers enable us to offer this quality at a low price.

Grueling tests, best results

The inverter technology behind the PVmaster has already been used successfully over a million times in the industrial environment. The inverters for the PVmaster were adapted specifically to the requirements of a PV installation. The development of components and software is powered by our team of experienced engineers who can also assist you on request with the project work for your PV installations. The long service life of our products is verified by grueling 100 % and endurance tests.

PVmaster 300-068 and 300-100-ET

PVM 300-068-ET*, PVM 300-100-ET*

Technical data

Designation	PVM 300-068-ET	PVM 300-100-ET
Grid connection (AC)		
Nominal power	68 kW	100 kW
Nominal voltage	480 V[1)]	480 V[1)]
Grid frequency	60 Hz	60 Hz
Line fuse (480 V connection)/maximum output current AC)	100 A	150 A
Power factor λ	0,999	0,999
Generator connection (DC)		
Max. PV power (recommended)	78 kWp	114 kWp
Maximum input voltage	600 V / 850 V	600 V / 850 V
Maximum input current	250 A	315 A
MPP voltage	300 V to 600 V / 450 to 850 V	300 V to 600 V / 450 to 850 V
MPP trackers	1	1
Efficiency		
Maximum efficiency	> 96 % / > 97 %	> 96 % / > 97 %
European efficiency	> 95 % / > 96 %	> 95 % / > 96 %
CEC	> 95 % / > 96 %	> 95 % / > 96 %
Dimensions[2)]		
Height	1800 mm	1800 mm
Width	1000 mm	1000 mm
Depth	600 mm	600 mm
Weight	350 kg	400 kg
General data		
Topology	PVmaster with external transformer	
Operating temperature	-10 °C to +40 °C	
Protection class	IP 52 (equals NEMA type 12)	
Cooling concept	Air cooled	
Consumption (operation/night)	<1 % nominal power AC / 1,5 W	
Approvals	CE, UL 1741 (pending)	
Features	• Remote interrogation via Internet, error messaging per e-mail • Overvoltage protection, DC main switch, AC short-circuit proofing • Ground fault monitoring and grid monitoring	
Options	• Touch Screen • GPRS modem, PV plant monitoring, status e-mail, error messaging per text message • Distribution box • Service contract, extended warranty • Multimaster principle	

* Transformer is not shown in the picture [1)] Other voltages upon request [2)] Dimensions without mounting parts

Information and specifications can be changed at any time. Please read up on the updated version at www.lt-i.com.

In the selection and use of all components, LTi engineers have ensured in particular that the component functions are used in an optimal manner and complement each other. The result is an extremely slim design using only a few components and a highly efficient system.

PVmaster technology

- **Display**
  The user can conveniently view the AC and DC instantaneous values, daily curves as well as status data of the PVmaster.

- **Power inverter**
  The heart of the PVmaster are power electronics developed at LTi that have demonstrated their high quality as frequency converters in industrial drive engineering on a daily basis for years.

- **Data logger**
  Operation of the PV power plant is recorded in the data logger. Recording input and output quantities as well as temperature as daily curves allows early determination of the optimal operation of the PV generator.

- **Communication**
  A log file and measured values are made available via the Internet (www.pvmaster.de) or mobile phone network. Unexpected events are directly reported – either per e-mail or SMS direct to mobile phone.

- **Main switch**
  Integrated AC and DC disconnect switches enable simple isolation of the power inverter.

- **Filters**
  The employed filters in conjunction with dynamic current control produce a line current with a quality that exceeds standard requirements. The current distortion THD is < 2 %. This makes it possible to operate the PVmaster also on "weak" power systems. PVmaster can also contribute to improving the system voltage quality.

- **Overvoltage protection**
  Overvoltages can occur due to lighting strikes, switching operations and atmospheric disturbances. Built-in overvoltage protectors limit the voltage and prevent failures.

- **Multimaster principle**
  The PVmaster features the necessary interfaces in order to link several PVmaster. This enables the efficiency of the PV power plant to be increased on days where there is less sunshine in that only the actual number of required power inverters is activated.

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Everything geared to your success

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