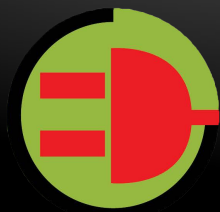


**MEC**<sup>®</sup>  
STIRLING TECHNOLOGY



**Off-Grid**  
SUPPLY

**ALLGEN**

OUR ANSWER TO YOUR NEED  
FOR ENERGY-INDEPENDENCE

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# THE SOLUTION FOR THE RELIABLE SUPPLY OF POWER AND HEAT

Worldwide there is a growing desire for independence from large scale energy systems and geopolitical influences. Because of their vulnerability, unpredictability and unreliability in delivery and pricing. If you recognize yourself in this situation, the AllGen might meet your needs for energy-independence.

MEC's AllGen is the solution for the reliable supply of power and heat. Extremely suitable for use in rural, remote and isolated environments, or in your village or countryside house. Fired with locally available solid (bio and waste) fuels, such as wood chips, coal, olive kernels, saw chips, anthracite, peat, pellets, etc.

The AllGen, in combination with solar panels and batteries, enables you to maintain an off-grid and energy-independent lifestyle. With minimal primary energy cost and the lowest possible equipment maintenance cost.

The patented, proven and extremely reliable MEC Free Piston Stirling converter uniquely combines its characteristics with the robust and extensively tested hard fuel bulk combustion unit. Applying a wide range of hard fuels, this user-friendly and low-maintenance combination provides power and heat, and efficiency and simplicity at their best.



PELLETS

WOOD CHIPS

COAL

# PROVEN TECHNOLOGY, ROBUST DESIGN

The AllGen is the result of a close cooperation between MEC in The Netherlands (Free Piston Stirling converter) and Bulg Kessel in Germany (pellet, woodchip, coal gasifier). The unit stands out because of its simple and yet robust design, based on proven technology, using solid and reliable key subsystems and components. The construction is such that the AllGen unit can be handled and maintained by any technically inclined person without specialist tools and/or equipment.

Thanks to the above-described characteristics and design features the AllGen is fit for use in rugged, rough and remote circumstances and rural environments with the appropriate fuels over a large number of years.

## CHARACTERISTICS KEY SUB SYSTEMS

### The MEC Biomass Free Piston Stirling Converter:

- is the World's first commercially available Free Piston Stirling converter;
- has no bearings, no need for lubrication and is sealed for life, enabling a maintenance free operation design life of over 50,000 hours;
- is based on an innovative professional design which together with the meticulous high-tech manufacturing has been perfected since its introduction in 2011;
- can boast of 20,000 units sold and between 350-400 million (!) run hours since its introduction;
- is equipped with a specially designed and patented biomass heat acceptor, enabling many years of trouble-free use, even when exposed to aggressive biomass combustion gases.
- operates quietly at a fixed or a floating frequency based on a resonant system principle;
- is controlled by dedicated MEC Stirling and Power controls;
- supports e.g. NASA's Space Power Program to use Free Piston Stirling Converters for its future deep space and moon programs;

### The bespoke Burner and Feeder:

- The solid fuel burner is equipped with a new generation screw feeder. This enables the use of a wide range of fuels in loose and granulated form. The basic design fuel is coal in granulation 0-32 mm (from fine coarse to coarse coal).
- The burner, without any structural changes, also works flawlessly on biofuels such as pellets (6-8-12mm), wood chips (G50), nuts and grains.
- Gray cast iron is used to construct the feeder, while the screw is made of ductile cast iron, which increases corrosion-resistance.
- This is of great importance when using different moisture content of fuels containing sulfur, which accelerates corrosion.
- The use of cast iron reduces the noise of the feeder and has a lower tendency to transmit vibrations to other elements of the boiler.

### Userfriendliness

Easy cleaning of:

- ashtrays;
- heat-exchanger;
- Stirling heat acceptor;
- combustion pan;
- accessibility.

### MEC Stirling controls for:

- Stirling operation;
- supply of Power & Hot water;
- Stirling safety;
- Stirling Error codes.

### The Bulg Boiler Controls for:

- fuel supply;
- burner conditions;
- water temperatures & distribution;
- safety;
- boiler error codes.



# ALLEN DATASHEET

Item	Specifics	Unit	Value
<b>Thermal</b>	Rated Power	kW	18,0
	Max Power	kW	20,0
	Efficiency (rated pellets)	%	92,00%
	Efficiency depends on fuel type & moisture level		
<b>Electrical</b>	Rated Power	Watt electric	1000 Watt
	Max Power		1200 Watt
<b>Total energy conversion</b>		%	95,00%
<b>Stirling Converter</b>	MEC 50 HZ, 230 Volt, Biomass heatacceptor	Rated	1.000 Watt
<b>Boiler Class</b>	EN 303-5: 2012		
<b>Fuel Type</b>	Pellets (6-8-10 mm), Woodchips (G50), Sawchips, Coal/Anthracite, Nutshells, Olive kernels		
	Woodchip mixtures with Pelletized Straw, Pelletized Miscanthus, etc.		
	Moisture sensitivity reduced due to fuel drying - pre-heating in screw/feeder		
<b>Fuel consumption*</b>	Pellets	4.9 kg/H	
	Anthracite	2.7 kg/H	
	Woodchips (G50) and other fuels	Depending on e.g. moisture content	
<b>Fuel Bunker</b>	Standard (larger possible)	Liter	250
<b>Total Device weight</b>		kg	480
<b>Electrical consumption</b>	Operation	Watt	130
	Idle	Watt	10
<b>Electrical connection</b>	General	Voltage/Frequency	230V/50HZ
	MEC Stirling Converter	Diverse options	AC or DC
<b>Water Temperatures</b>	Minimal water return temperature	°C	52
	Maximum water supply temperature	°C	95
	Stirling max return	°C	70
	Stirling min return	°C	2
<b>Dimensions</b>	Width	mm	1570
	Depth	mm	680
	Height	mm	1670
<b>Chimney</b>	Exhaust Temperature	°C	
	Connection height	mm	
	Connection diameter	mm	
<b>Main subsystems</b>	Bulg Combustion (heat) Chamber: fuel heating - drying in burner / screw feeder unit		
	Bespoke Bulg _ Ekoenergia burner - screw		
	MEC 50 Hz, PM1 Biomass Stirling Converter, rated 1000 Watt		
	Bulg Heat-exchanger and ashtray		
	Bulg-Key Boiler controller and MEC Stirling controller		

\*Pellets (6-8-10-12 mm), Woodchip (G50), Pelletized Peat, Sawchips, Coal, Anthracite, Olive kernels, Nuts.

## MORE INFORMATION?

Do you want to know more about the AllGen? Are you interested in purchasing a unit? Do you need to discuss your specific situation with an expert? Do not hesitate to contact us: [service@Off-Gridsupply.com](mailto:service@Off-Gridsupply.com)



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\*\*this product is not CSA or EPA certified for Canada or the USA. You should consult with your property insurance company or local bylaw officials prior to purchase or installation.