

miniGEN

Compact Power for Remote Systems

Preliminary Datasheet • Target Output: 50–300 W

OVERVIEW

A compact and efficient generator intended for low-power, man-portable applications, remote sensors, and small unmanned systems. Designed to supply low-power electricity in locations where grid access and sunlight are unreliable.

Compact Portable On-Demand Power

Small power demands. A family of compact engine designs targets applications below conventional portable-generator power levels.

Fuel flexibility. Operation demonstrated with gasoline, diesel, kerosene, Jet-A, JP-8 and Coleman fuel, without hardware modifications.

Application fit. Candidate uses include field electronics, remote sensing, low-power lighting and power systems for small unmanned vehicles.

CORE ENGINE TECHNOLOGY

The platform couples a reciprocating piston engine to an alternator. Lean combustion and specialized carburetion support efficient small-scale operation and heavy fuels without miniature fuel-injection hardware. Single-unit voltage and power control, including load following, have been demonstrated. Parallel operation is under active development.

PERFORMANCE

The miniGEN family targets a range of power levels and package sizes. Modeled maximum net electrical output is listed below.

Model	Displacement	Net Electric Power Target
miniGEN-5	5 cc	80 W
miniGEN-8	8 cc	120 W
miniGEN-12	12 cc	170 W
miniGEN-20	19 cc	220 W
miniGEN-30	27 cc	290 W



miniGEN-5 concept rendering
• 80 W net electrical output target
• water bottle shown for scale

SPECIFICATIONS

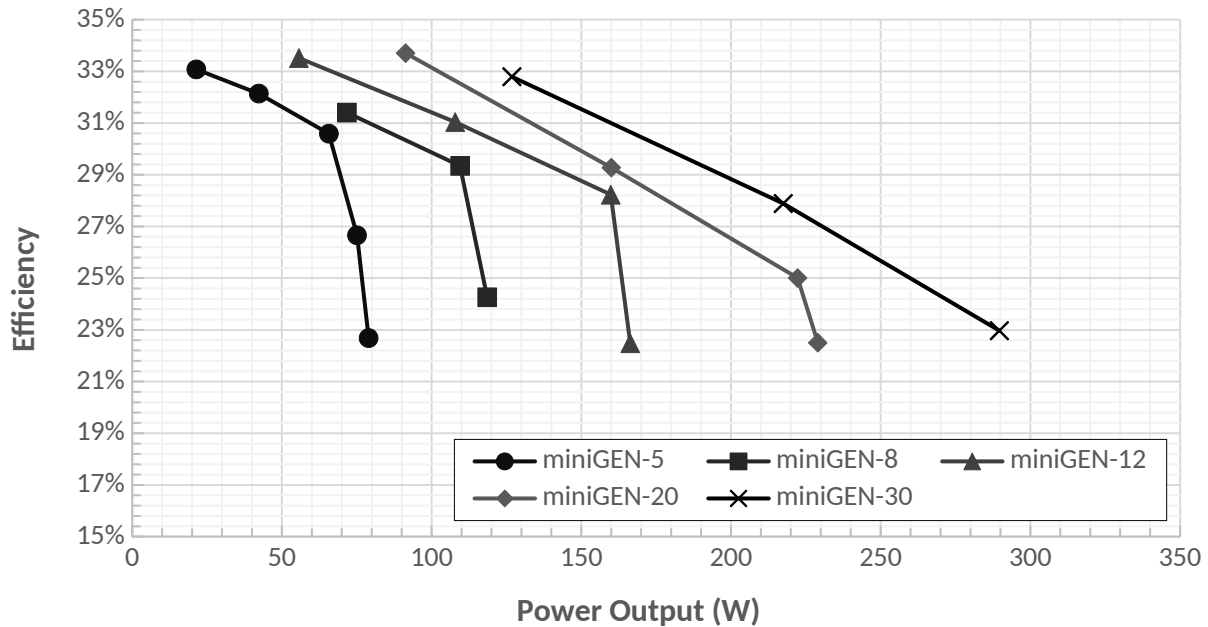
Features can be tailored to the application. Preliminary modeled portfolio targets are shown below.

Parameter	Value
Engine Displacement	5–30 cc
Net Electrical Output	50–300 W
Fuel-to-Electric Efficiency	22–32%

PRELIMINARY DATA: specifications in this document are subject to change. Specifications represent engineering targets based on detailed analysis using proprietary high-fidelity models. Prototype performance under evaluation.

TECHNICAL DATA & MODELED PERFORMANCE:

Integrated prototypes have been tested for net electrical output, fuel consumption and fuel-to-electric efficiency, with measured results compared against model predictions. The listed model specifications and curves are engineering targets derived from proprietary modeling, not measured ratings or guaranteed production specifications. Power denotes net electrical output; efficiency denotes fuel-to-electric conversion. Values are subject to change as development and testing continue. Custom configurations can be designed for other application requirements.



DISCUSS YOUR APPLICATION:

Share your continuous and peak power needs, preferred fuel, size and weight limits, operating environment and deployment timeline. Contact Hidden Gradient to discuss configuration options and development status.

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