GEK GASIFIER KIT

Complete System for Converting Biomass to Syngas

PERFORMANCE

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maximum Gas Flow Rate</td>
<td>60 m³/hr</td>
</tr>
<tr>
<td>Minimum Gas Flow Rate</td>
<td>10 m³/hr</td>
</tr>
<tr>
<td>Gas Energy Density</td>
<td>6.5 MJ/m³</td>
</tr>
<tr>
<td>Gas Composition</td>
<td>CO: 22%, H₂: 20%, CH₄: 3%</td>
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<tr>
<td></td>
<td>CO₂: 10%, N₂: 45%</td>
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<tr>
<td>Biomass Consumption</td>
<td>1.2 kg biomass = 3 m³ gas = 1 kWhe</td>
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<tr>
<td>Run Time per Hopper Fill</td>
<td>~12 hours</td>
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<tr>
<td>Start Up Time</td>
<td>5 -20 min.</td>
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</tbody>
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MAJOR COMPONENTS INCLUDED

- Gasifier
  - v5 GEK Gasifier with Thermal Recycling
- Automation
  - Arduino Based Microcontroller
- Feed System
  - Batch Hopper with Feedstock Auger
- Filtration
  - Packed Bed
- Gas Mixing
  - Active PID Controlled Wide Band O₂ Sensor
- Mounting Skid
  - Powdercoated Steel
- Flare Stack
  - Premixed, Auto-Igniting
- User Kit
  - Tools
  - Consumables

COMPONENTS NOT INCLUDED

- Battery
  - 12 VDC
  - Marine Recommended
- Genset Control
  - Mechanical or Electronic
- Exhaust Plumbing
  - Routing to Gasifier

Note: specifications provided assume connecting engine exhaust gas to the pyroreactor to support pyrolysis.
ALL Power Labs is the global leader in small-scale gasification. We make biomass-fueled power generators that are ready for everyday work, to serve real-world distributed energy needs.

Our project started in 2008 with the open-source Gasifier Experimenters Kit (GEK), supporting research, education and DIY hacking in biomass thermal conversion. Seven years later the GEK has evolved into the Power Pallet, a full solution for personal scale biomass power generation. Today you can find our systems in dozens of countries around the world, and supporting research in over 50 universities.

The APL team is an unusual combination of hands-on fabricators and university-trained scientists and engineers. The result is a powerful combination of technical ability and physical know how for building real things that have impact in the real world.

We invite you to join us for the ongoing collaborative process of refining GEK systems, and proving gasification to be a uniquely powerful solution for individual-scale energy independence.

Our facility is in Berkeley, CA. Please contact us to arrange a visit next time you are in the Bay Area. We'd love to show you around.