CHARTAINER

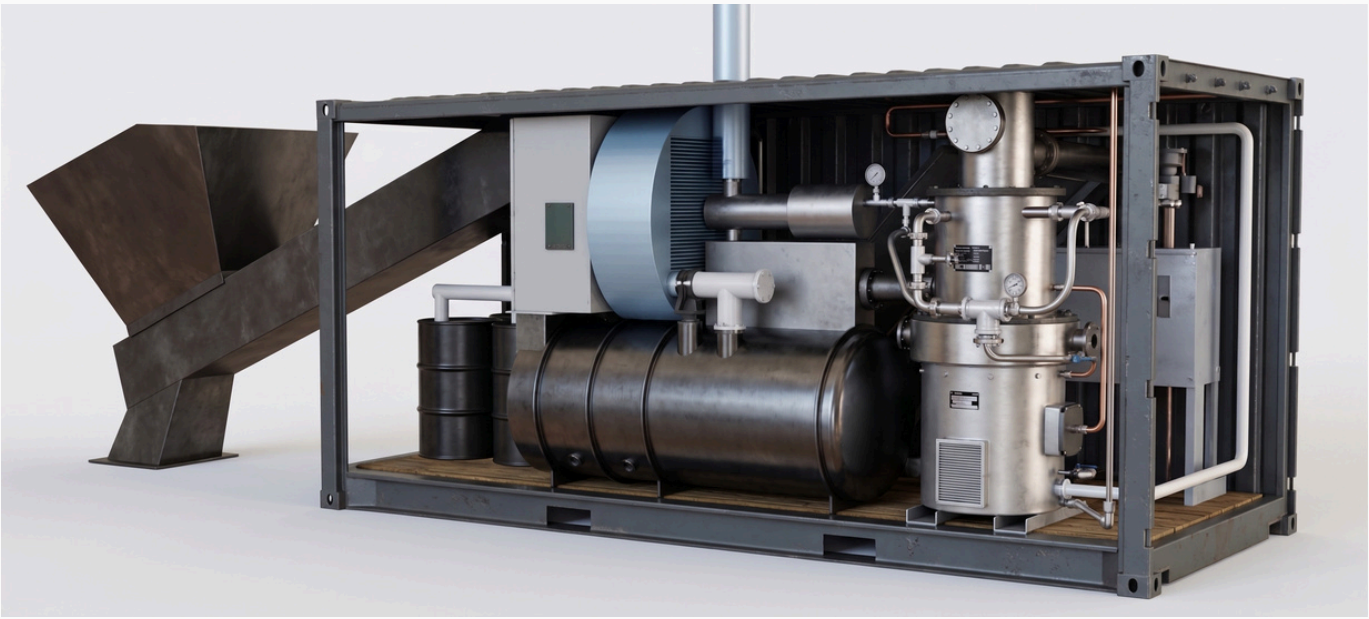
GASIFIER PYROLYZER FOR ADVANCED BIOCARBONS

SYSTEM DESCRIPTION

Housed inside a mobile 20-foot shipping container, the ALL Power Labs Chartainer is an advanced, high-throughput Combined Heat and Biocarbons (CHAB) pyrolyzer. Designed for simple operations and digital Measurement and Verification via our sophisticated control systems, it delivers a complete end-to-end processing suite—combining biomass feeding, gasification-retort technology, heat exchangers, an eco-friendly flare, and biocarbons extraction/processing.

Powered by APL's third generation field-tested Swirl Hearth Technology, the unit transforms 250kg/hr of organic waste into 500kWth of usable heat and 40kg/hr of top-tier, electrically active, geo-conducting biocarbons.

Refined alongside leading climate researchers, environmental scientists and biologists, the Chartainer provides reliable, carbon-negative performance backed by years of real-world data acquisition



CORE PERFORMANCE SPECIFICATIONS

PARAMETER	SPECIFICATION
Biomass Consumption Rate	250 kg/hr
High Temperature Biochar Yield (>600°C)	40 kg/hr
Heat Output	500 kWth
Hot Water Flowrate (min @ 20°C customer side)	100 gpm
Hot Water Temperature Range	80° – 90°C
Interface Plumbing Size / Type	3 in. NPT
Internal Operating Pressure (Relief Pressure)	15 psi

BIOMASS FEEDSTOCK SPECIFICATIONS

Particle Size	**1/8 in. – 2.5 in. (3 mm – 65 mm)**
Fines Fraction (< 1/8 inch)	**<12% by weight**
Main Fraction (1/8 in. to < 2.5 in.)	**>75% by weight**
Coarse Fraction (> 2.5 in., all < 5 in.)	**<3% by weight**
Moisture Content (Dry Basis)	**<15% External Drying Required**

COMPATIBLE FEEDSTOCK TYPES:

- Walnut Shells
- Hardwood Chips (e.g. oak, ash, beech)
- Softwood Chips (e.g. pine, fir, cedar)

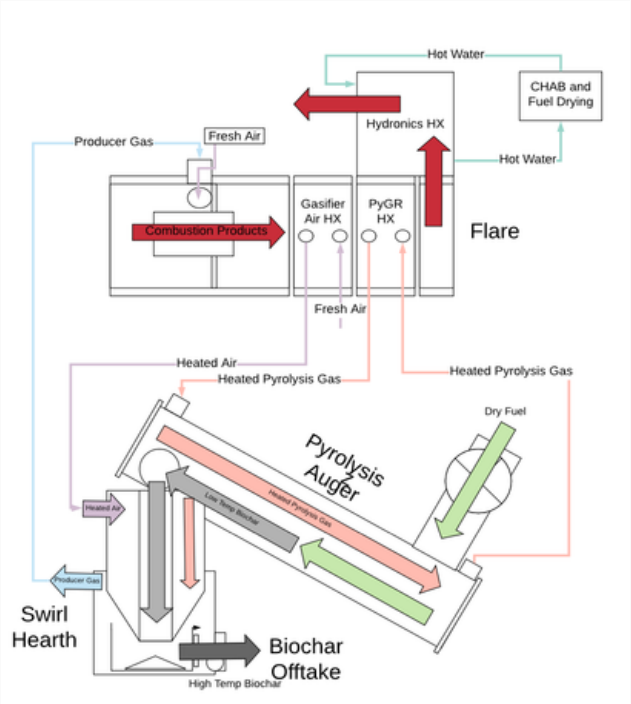
SUPPORTING INFRASTRUCTURE

Form Factor	**20 foot Shipping Container**
Footprint	**28 ft × 40 ft (8.5 m × 12.2 m)**
Clearance	**10 ft all sides (3 meters)**
Shore Power	**3 phase 240 V AC (200A breaker)**
Fuel Drying	**15% ± 3% moisture (dry weight)**
Fuel / Char Handling	**Conveyor or Manually**
Controls	**Wi-Fi remote monitoring**

GAS MAKING & FLARE SPECS

Gas System (Swirl Hearth + Auger)	**<50 mg/m³ Tar**
Char Output (High-Temp >600°C)	**<0.2 mg/kg PAH**
Flare Materials	**310 SS sleeve, 3" rock wool**
Flare Duty Cycle	**100%**
Flare Emissions	**CA AQMD compliant**

PROCESS FLOW DIAGRAM



COMPANY PROFILE

ALL Power Labs is the global leader in small-scale gasification technology. We make biomass-fueled power generators ready for everyday work across industry, agriculture, and climate mitigation in over 30 countries.

AUTOMATION FEATURES

- ✓ Full Temp & Pressure Instrumentation
- ✓ Smart Grate, Fuel, and Char/Ash Auger Control
- ✓ Diagnostic Messages for Error Recovery
- ✓ Configurable Setpoints for All Critical Systems
- ✓ Automatic Safety Shutdown
- ✓ Remote Monitoring and Datalogging