



# ALL POWER LABS

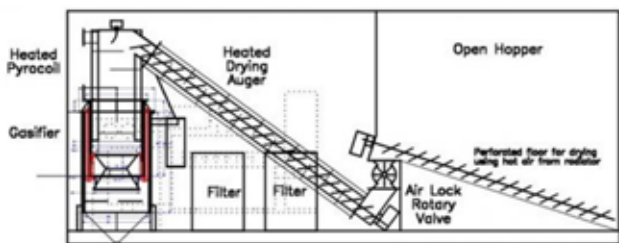
## Carbon Negative Power & Products

### POWERTAINER - PT150 Beta 2

## RENEWABLE, PORTABLE ON-DEMAND POWER



The **ALL Power Labs PowerTainer PT150** is a compact, cost-optimized and portable biomass power generation system, enclosed within a standard 20' shipping container. The system is fully automated and complete – from biomass hopper, gasifier and gas filtering, to engine, generator and electrical output control – all within the shipping container envelope. Designed to address forest-fire mitigation, especially due to beetle and drought tree kills, via a waste to energy solution that avoids the air pollution and carbon impact of typical open-burn disposal.



PowerTainer Alpha



3D CAD PowerTainer Alpha

### PERFORMANCE SPECIFICATIONS

PRELIMINARY VALUES	
Maximum Continuous Power Output <sup>1</sup>	100-150 kWe @ 60Hz
Minimum Continuous Power Output <sup>1</sup>	30 kWe @ 60 Hz
Thermal Output	315 kWt
Coolant Only	1 kWt: 1 kWe
Coolant + Exhaust	2.1 kWt: 1 kWe
System Efficiency	55%
Electrical	20%
Thermal - Coolant Only	35%
Fuel Consumption	1.0 kg/kWh
Maximum Continuous Operation	24 hours
First Start Fuel Drying	Yes
Form Factor Footprint	8' x 8' x 20'
Standard ISO container	
Sound Level @ 10 meters	85 db(A)

<sup>1</sup> Actual power will vary depending on fuel type, shape, energy density and moisture content.

### OPERATIONS & MAINTENANCE

ESTIMATED VALUES	
Operators/Maintenance personnel Required	2
Daily Service Requirement	2 hours/day
Design Yearly Operating Hours	5200
Start-up Time	0.75 hours
O&M Cost - percentage of capital cost	10-15% per annum

### BIOMASS FEEDSTOCK

SPECIFICATIONS	
Size	1/2 inch - 1 1/2 inch (12-40 mm)
Moisture Content - Dry Basis	80%
Forest Thinning for Fire Mitigation	Yes
Planned Primary Feedstock <sup>3</sup> Expected Normal Operating Procedure	Nut Shells (e.g. Walnut, Hazelnut) Softwood Chips (e.g. Fir, Pine) Hardwood Chips (e.g. Oak, Ash)
Targeted for additional Testing <sup>3</sup> Possible Increased Operating Effort	Corn Cobs Coconut Shells Palm Kernel Shells
Not Approved Dangerous & Will Void Warranty	Coal Tires Medical Waste Plastic Municipal Solid Waste

<sup>3</sup> Warranty coverage for use with any particular species of feedstock requires specific testing and approval. Visit <http://www.allpowerlabs.com/fuels> for the most current information on feedstock suitability.

All specifications are subject to change without notice