

LGM

Leafy Green Machine™



READY SET GROW

A Complete Farm-to-Table System

The Freight Farms platform enables you to supply local food at the scale you need today while providing you the infrastructure to easily expand in the future. So whether you're building your own local produce business or looking for a cost-effective way to supply your campus, restaurant, or hotel with fresh and sustainable greens and herbs, Freight Farms has the tools you need.

The Leafy Green Machine™ is a complete hydroponic growing system built entirely inside a shipping container with all the components needed for commercial food production. The system is designed and engineered for easy operation, allowing users of all backgrounds to immediately start growing.





The farmhand® app allows users to stay connected to their operation from any location, and purchase all of their growing supplies directly from their smartphone. Remote monitoring and management capabilities take the heavy lifting out of farming.

Freight Farms' two day training (also known as "Farm Camp") along with our launch support and Farmer Success Team ensure the success of each of our farmers.

What you'll find inside:

- 1 Leafy Green Machine™ - product specifications and crop guide
- 12 Operating Requirements - sample of average monthly expenses
- 14 farmhand® Connect and Shop - how our tools will help monitor and manage farm operations
- 18 Training - what to expect from the two day in-farm training
- 20 Support - you've joined the Freight Farms community, now what?
- 22 Timeline - what to expect from deposit to first harvest

LGM

Leafy Green Machine™

Built from upcycled shipping containers, the modular and stackable design makes it easy to integrate into any operation. Each farm acts as an immediate solution to shorten the food supply chain and bring local, fresh produce to any environment.



2017 Leafy Green Machine™ MSRP \$85,000*

International availability upon request.

Set up and delivery costs are separate and based on location. Freight Farms can handle delivery logistics; estimate at least \$2.25 per mile from zip code 02048 in Massachusetts.

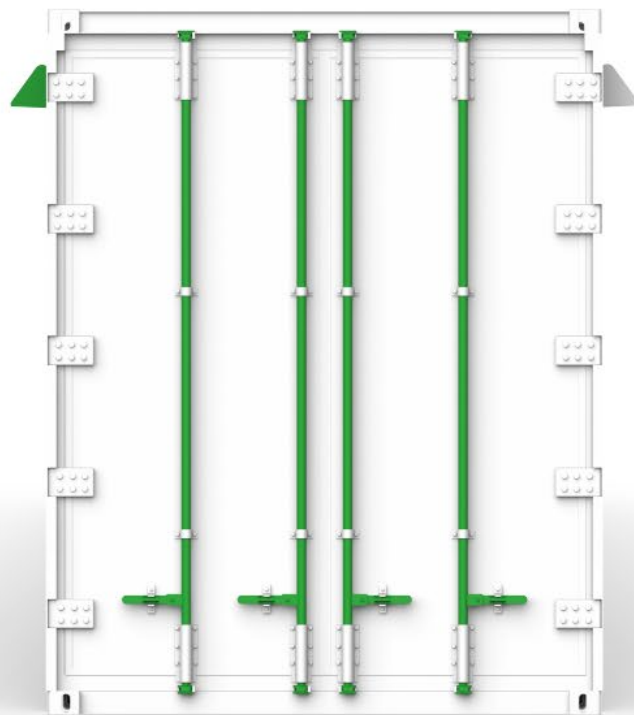
**International pricing will vary.*

The highest standard in controlled environment agriculture

Turnkey system designed to maximize operational efficiency and streamline workflow.

Perfect environment is achievable **365 days a year**, regardless of geographic location.

Automated scheduling reduces the amount of labor required to operate.



Environmental sensors measure and record temperature CO₂ levels, and nutrient levels.

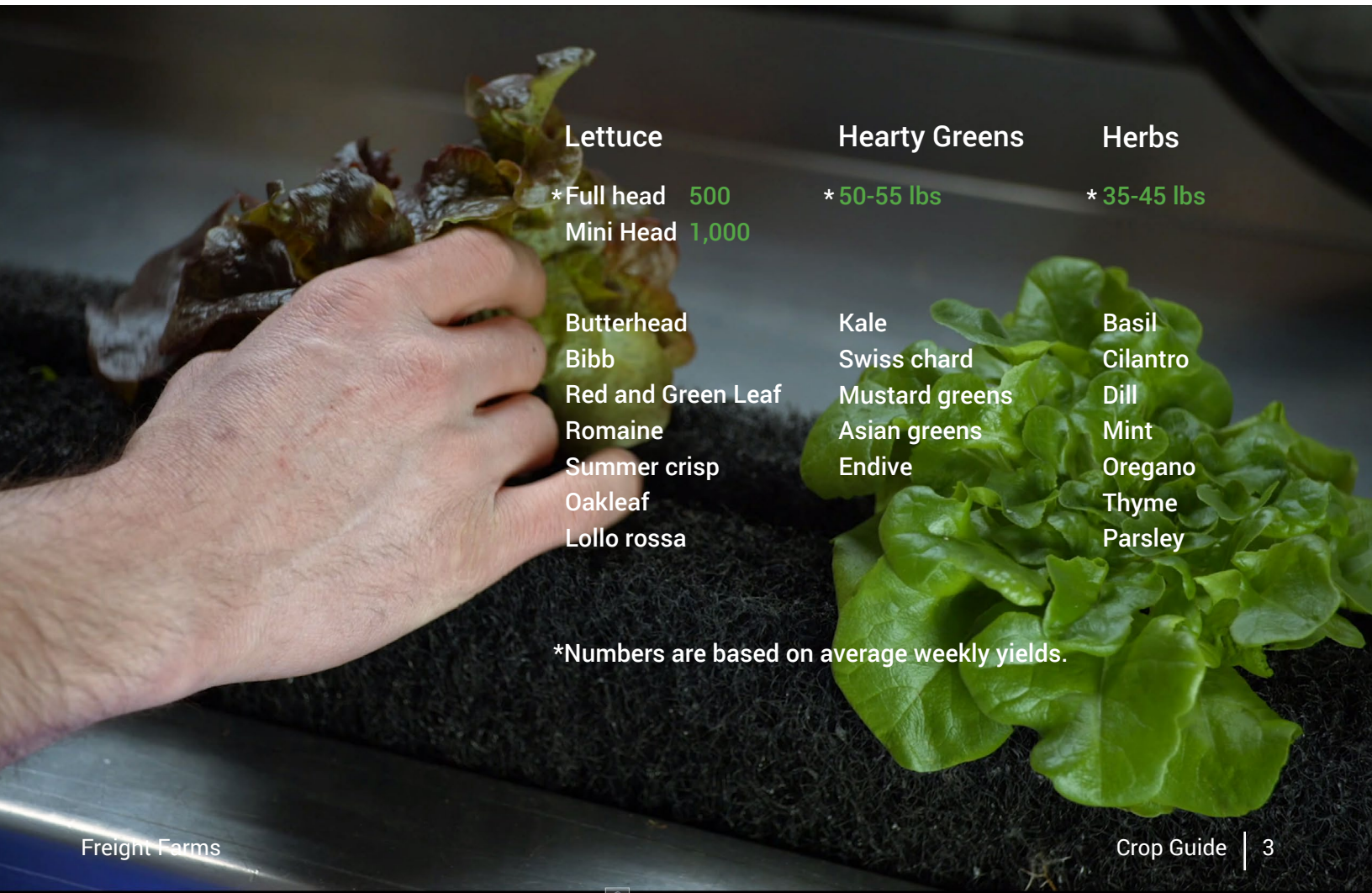
Climate controls automatically respond to sensors and adjust to maintain **optimal conditions**.

The **Leafy Green Machine™** is a complete hydroponic growing system capable of producing a variety of lettuces, herbs and hearty greens. Assembled inside an upcycled shipping container, the pre-built system includes all necessary components for commercial food production and enables any individual, community or organization to grow fresh produce year-round, no matter their background or climate.

Crop GUIDE

What can you grow?

The LGM™ is built and optimized for the growth of a wide variety of lettuces, herbs, and hearty greens. Below is a sample list of what can grow, along with corresponding weekly yields for each crop type.



Lettuce

* Full head 500
Mini Head 1,000

Butterhead
Bibb
Red and Green Leaf
Romaine
Summer crisp
Oakleaf
Lollo rossa

Hearty Greens

* 50-55 lbs

Kale
Swiss chard
Mustard greens
Asian greens
Endive

Herbs

* 35-45 lbs

Basil
Cilantro
Dill
Mint
Oregano
Thyme
Parsley

*Numbers are based on average weekly yields.



Seedlings germinate and grow in this area of the LGM for about three weeks before being transplanted into the vertical towers.

Nursery Stage

Multi-function, aluminum workstation integrates an ebb and flow irrigation system with an LED lighting array for seed germination and early-stage growth. There is space to grow up to 3,600 seedlings at one time.



In the mature growth area of the LGM there is 1,792 linear feet of growing space.

Growth Stage

Vertical towers create a high-density growing environment inside the farm with four rows of 7' vertical towers providing space for over 4,500 plants in 256 towers. An overhead drip irrigation system and strip LED lighting support crop growth from transplant to harvest.



CO₂ pH ≈
† † †

The climate can be tailored to the specific crop(s) growing inside the LGM to achieve the ideal harvest.

Climate Optimization

Inside each farm is a series of environmental sensors that measure climate conditions (temperature, humidity, CO₂, and nutrient levels) and communicate with the in-farm controller. The controller then responds to air and water sensors to maintain optimal growing conditions. The multi-planed airflow and intercrop aeration system keeps air circulating

through the dense growing environment inside the container. This automated smart ventilation system controls temperature and humidity with a 24,000 BTU air conditioner in addition to balancing internal and external temperature.



The LEDs emit deep red and blue hues to mimic sunlight, providing plants with just the right spectrum for photosynthesis.

Lighting

A patented vertical, high-efficiency LED lighting system mimics sunlight and delivers growth-optimized spectrums of red and blue, required for photosynthesis and uniform plant development. The 128 lighting strips run approximately 18 hours per day to maximize the growth cycle. They are off during the day to avoid using electricity at peak demand hours and to give the plants time to rest.



The closed-loop hydroponic irrigation system inside the LGM uses over 90% less water than traditional agriculture.

Hydro Control

A responsive, recirculating irrigation system delivers a consistent nutrient-rich water solution directly to plant roots, ensuring strong and uniform growth. Water conditions are measured and controlled through temperature, pH and EC sensors. The nutrient dosing panel responds to sensors to ensure the water has optimal levels of nutrients for plant growth.



Easily monitor and manage timers and set environmental parameters using the weatherproof touchscreen.

In-farm Controller

The in-farm controller communicates with the climate sensors inside the LGM to automatically adjust components and maintain the ideal growing environment. A weatherproof touchscreen displays farm data and provides quick access to all components inside the farm.

Site REQUIREMENTS

Space

The LGM dimensions are 40' x 8' x 9.5'. Allow for 1 foot of space around the perimeter and a minimum of 5 feet at the front of the container to access the man door, electrical panel, condenser and propane cage.

Farms can be placed in alleyways, parking lots, and other under-utilized spaces - we suggest placing the farm on either trap rock, railroad ties, sonotubes, or a 45' x 10' concrete pad.

Image courtesy of Acre in a Box
Houston, TX





Image: 2015 Leafy Green Machine

Electrical

The LGM requires a 60 amp, 120/240 volt single phase connection (120/208 volt three phase is also acceptable). If you choose to hardwire we recommend hiring a licensed electrician for installation at the time of delivery.

Water

You'll need access to water in order to the fill water tanks inside the LGM. A designated water source is suggested, but it can be achieved with a common garden hose feed as well. The LGM is capable of automatic tank level management.

Operating REQUIREMENTS

To help future freight farmers, we've broken out the monthly expenses that can be expected when operating a Leafy Green Machine™ (LGM) in the United States. It is important to note that each farm will vary slightly, as electricity and water rates are specific to a location.





Power
125 kWh/day

Each farm uses an average of 125 kWh per day. We estimate the national average cost of electricity to be approximately \$0.12 per kWh. Based on these rates the average monthly electrical expense for a farm is \$400.

More details on regional pricing can be found [here](#) and local utility providers can give exact information based on location.



Supply
\$150/month

To keep operations running smoothly and to ensure successful harvest, a freight farmer will need the following items: seeds, nutrient solutions, and supplies. All of these items and more can be purchased directly from farmhand shop.



Water
5-10 Gallons/day

The LGM uses an average of 10 gallons of water per day, and both municipal and well water will work in the system. Water rates can vary by location. The dehumidification system can reduce water consumption up to five gallons each day by pulling the excess moisture out of the air and filtering it back into the tanks.



Other

Additional monthly expenses that should be considered are insurance, farm site rent, product packaging, marketing materials, and internet connectivity.

MONTHLY OPERATING COSTS

Power	\$400
Supplies	\$150
Water	\$10
Farmhand® Subscription	\$10
Other	\$120

Average monthly operating costs \$690

Meet your personal farm assistant

FARMHAND®

Rest assured that your farm is running smoothly, wherever you are in the world.





Connect

Using real-time data from sensors and in-farm cameras, farmhand (fh) Connect allows hydroponic farmers to track their farm's climate conditions, set parameters for ideal growing conditions and receive notifications should any changes occur to the environment.

Farmers can monitor and control temperature, humidity, CO₂, nutrients and pH levels inside their

farm -- all directly from their iOS device or web browser. The real-time status of each component inside the farm is easily accessible, so you always know how things are operating. **fh Connect** offers secure cloud storage of all farm data, including climate and alarm history, equipment run-times, access logs and system settings information.



Track

Using fh Track, farmers can plan, schedule and record various tasks like seeding, transplanting, and harvesting directly in the app. Track helps all farmers keep a detailed record of each crop cycle by logging key metrics such as germination rate and yield numbers.



Shop

fh Shop is a quick and easy way for hydroponic farmers to purchase their growing supplies. Users can browse through a curated collection of seeds, nutrients and farm supplies from top hydroponic and indoor gardening brands. All **fh Shop** purchases are shipped directly to the customer's door and include tracking information to ensure successful delivery.

Organic nutrients and GMO-free seeds are available.

Training & Launch

FARM CAMP

Freight Farms is here to ensure every new farmer has all the tools and training needed to run a successful and smooth operation. Freight farmers are supported through an intensive training as well as assistance launching the LGM upon delivery.





Farm Camp

Training with Freight Farms is encouraged for all new freight farmers. With a combination of in-farm lessons and classroom sessions, each new customer leaves feeling confident about getting started.

Classroom Sessions

- An Overview of Leafy Green Machine Operations
- Crop Selection & Climate Optimization
- Food Safety Tutorials, Resources & Best Practices
- Software and Operating System Tutorial
- Business Strategy & Marketing Sessions

In-farm Lessons

- Component Identification & Terminology
- Software & Operating System Breakdown
- LGM Operations: Seeding, Transplanting, Harvesting
- Food Safety Best Practices
- Farmhand Demonstration & Tutorial

LGM™ Launch Support

- Powering up the LGM
- Leveling & Organizing the LGM
- Testing Irrigation System
- Camera Setup & Installation
- Connecting the LGM to farmhand®
- Programing Climate Software
- Seeding your first crop!

FARMER SUCCESS

Freight Farms is dedicated to making sure each farmer's operation is growing successfully after the launch of their LGM. There are a variety of different resources all farmers can leverage for support from our Farmer Success Team to our online Knowledge Base.





Knowledge Base

Our digital Knowledge Base has 100+ articles on best practices around farming, tech, and business. It's updated weekly, and available on the web and mobile 24/7.

Farmer Community Forum

Connect with freight farmers all over the world in this forum that's just for our community. You can post pictures, ask questions, and share news and information.

Farmer Success Check-Ins

We're here for you even past your first harvest. Outside of regular support, we'll be periodically checking in to help you on your freight farming journey.

From first DEPOSIT to first harvest

To ensure a successful journey from first deposit to first harvest, here are key action items and events that each farmer should plan for! It's important to keep in mind that the sequence and timeline of these events may vary depending on financing and delivery options.





Step One

- First Deposit kicks off farm build*
- Submit location information for site approval
- Work with Freight Farms on logistics
- Determine your market and business strategy



Step Two

- Second payment
- Schedule Farm Camp
- Receive pre-training packet for Farm Camp
- Confirm shipping preferences



Step Three

- Review the provided Farm Camp Material
- Prepare your marketing and business plan
- Schedule estimated timeframe for delivery
- Complete farm site water test



Step Four

- Get hands-on training from our Farmer Success Team
- Learn the ins and outs of being a freight farmer
- Official initiation into the Freight Farms Community



Step Five

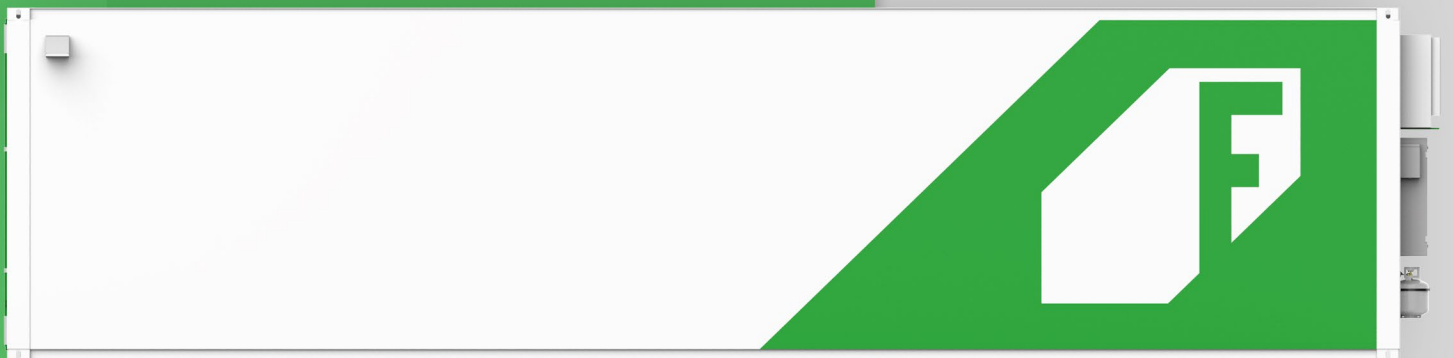
- Final payment due plus delivery
- Receive delivery date and final shipping quote
- Schedule electrician and plumber for installation
- Setup wifi service for farmhand connection
- Source supplies and materials for launch



Step Six

- Farm delivery!
- Launch your LGM with the help of the Farmer Success Team
- Get growing! Plant first trays of seeds for germination
- First harvest within 7-8 weeks depending on crop type

*additional information available for institutional customers



Freight Farms are covered with a 1 year warranty.

The information in this brochure is correct as of the published date listed here.

Availability, specifications, features and colors are subject to change without notice. Images shown may vary slightly from actual applications.

Any previous publications, pricing, and descriptions may no longer be valid.

FreightFarms.com

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