

SANANBIO ARK

**THE MOBILE FARM FOR ALL CLIMATES
BROCHURE**

SANANBIO
Vertical Farming | Horticultural Lighting

SANANBIO ARK

the Mobile Farm for All Climates

SANANBIO ARK was created to grow local food for local communities. It integrates indoor vertical farming and hydroponics in one shipping container, ready to be deployed under any climate across the globe.



For All Climates



Flexible Deployment



Stable and Productive



Check out sananbio.com for more information.



For All Climates

SANANBIO ARK is engineered with a refrigeration house-grade structure that features a thermal conductivity index as low as 0.024W/(m·K). Equipped with PCT heating, water heating, and solar energy storage, SANANBIO ARK is proven to operate in a cold environment as low as -40°F on a highland 15,000 feet above the sea level, while maintaining the interior temperature above 59°F, nurturing the growth of fresh lettuce.



Flexible Deployment

SANANBIO ARK is a mobile farm built inside a shipping container so it can be transported to communities across the globe, bringing food production back to the community.



Stable and Productive

A 40-foot ARK is built with two rows of grow racks inside the system, empowering growers to harvest 2,430 heads of lettuce in one continuous rotation.

The grow rack features an adjustable light-to-bed distance so that 300+ varieties can be grown inside the farm 365 days/year.

Proven annual yields:

3,300-4,400 lbs tons of cucumber

7,700 lbs of arugula or 8,000 lbs of lettuce.

Versatile Application

SANANBIO ARK monitors and controls temperature, relative humidity, lighting, CO₂ concentration, and nutrient ratio through its sensors and climate control system. Islands, deserts, highlands, polar regions, or metropolises, ARK is applicable in these scenarios as a lab, a demonstration base, or a commercial farm.



Commercial



Research



Demonstration

Check out sananbio.com for more information.

Suitable Crops

SANANBIO ARK supports the growth of 300+ varieties: leafy green, microgreen, fruiting crops, edible flowers, herbs, and medicinal plants.



Leafy Greens



Aromatic Herbs



Medicinal Plants



Fruiting Crops



Edible Flowers



Micro Green

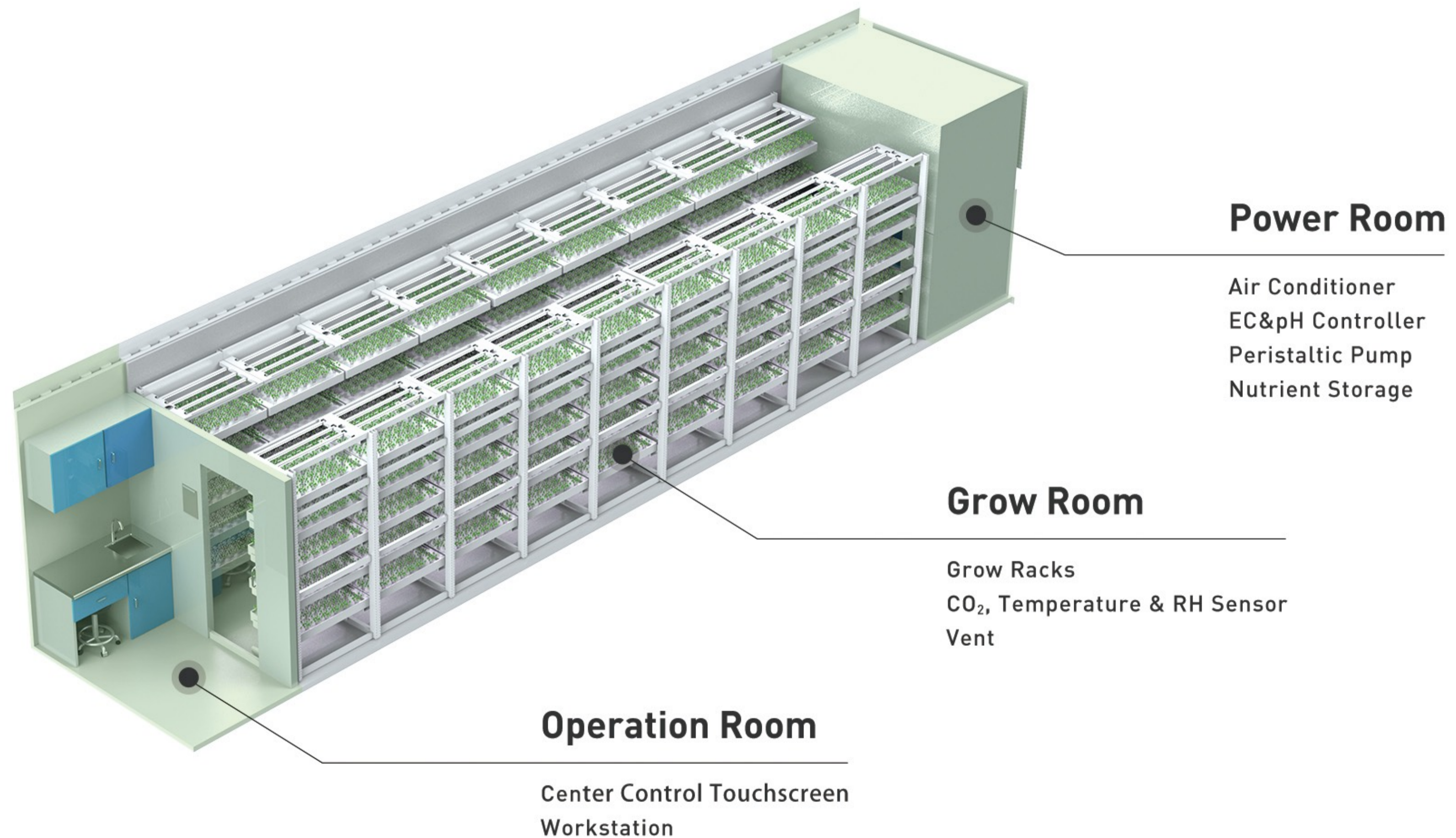


Pasture

Check out sananbio.com for more information.

Spatial Utilization

SANANBIO ARK is built in a 40-foot shipping container. Customization of the container size is available. Grow rack arrangement is available in four formations with the ARK grow rack or Radix.



Grow System



7 Sets
SANANBIO Radix,
the Vertical Hydroponic Module

A diagram showing a single set of the SANANBIO Radix vertical hydroponic module, which consists of a metal frame with four levels of perforated trays.

X

8 Rafts/Rack
54/180-Hole Raft

A diagram showing a single 54/180-hole raft, which is a rectangular tray with a grid of 180 holes (6 rows by 30 columns).

=

56 Rafts
Hosting Up to
**3,024-10,080
Plant Sites**
Available

A diagram showing the total capacity of the SANANBIO Radix system, which is 56 rafts, capable of hosting up to 3,024-10,080 plant sites.

18 Sets
SANANBIO ARK Grow Rack

A diagram showing a single set of the SANANBIO ARK Grow Rack, which consists of a metal frame with five levels of perforated trays.

X

5 Rafts/Rack
54/180-Hole Raft

A diagram showing a single 54/180-hole raft, which is a rectangular tray with a grid of 180 holes (6 rows by 30 columns).

=

90 Rafts
Hosting Up to
**4,860-16,200
Plant Sites**
Available

A diagram showing the total capacity of the SANANBIO ARK system, which is 90 rafts, capable of hosting up to 4,860-16,200 plant sites.

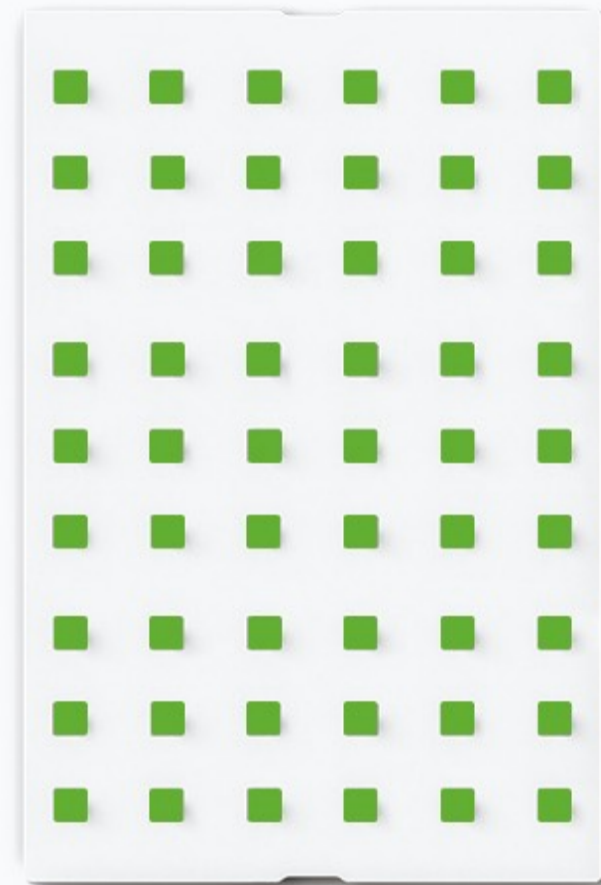
Plant Density



Density 15



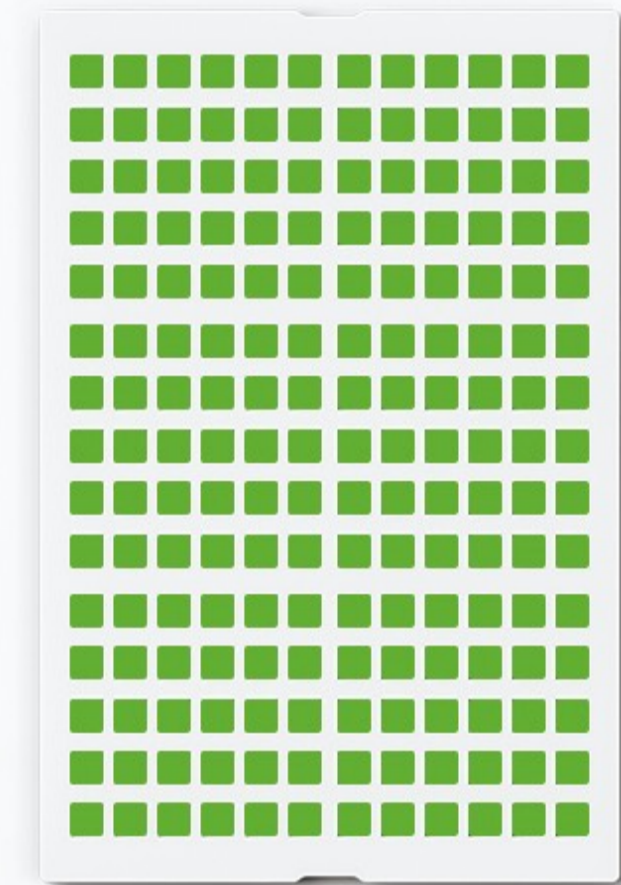
Density 27



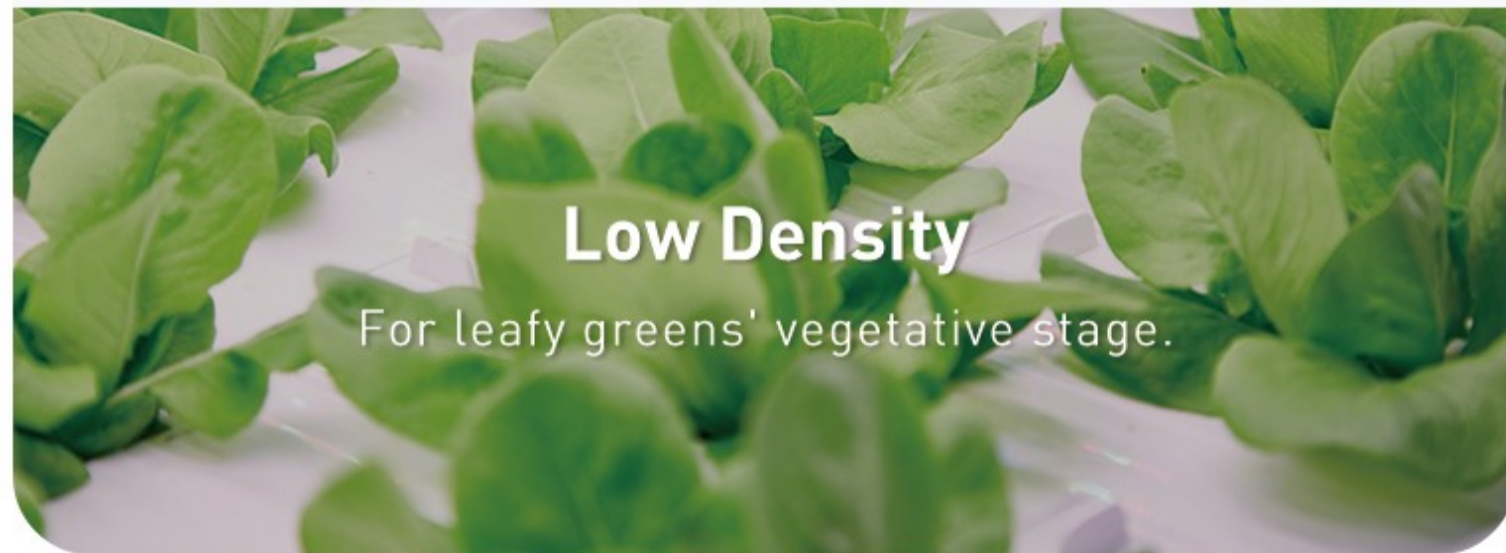
Density 54



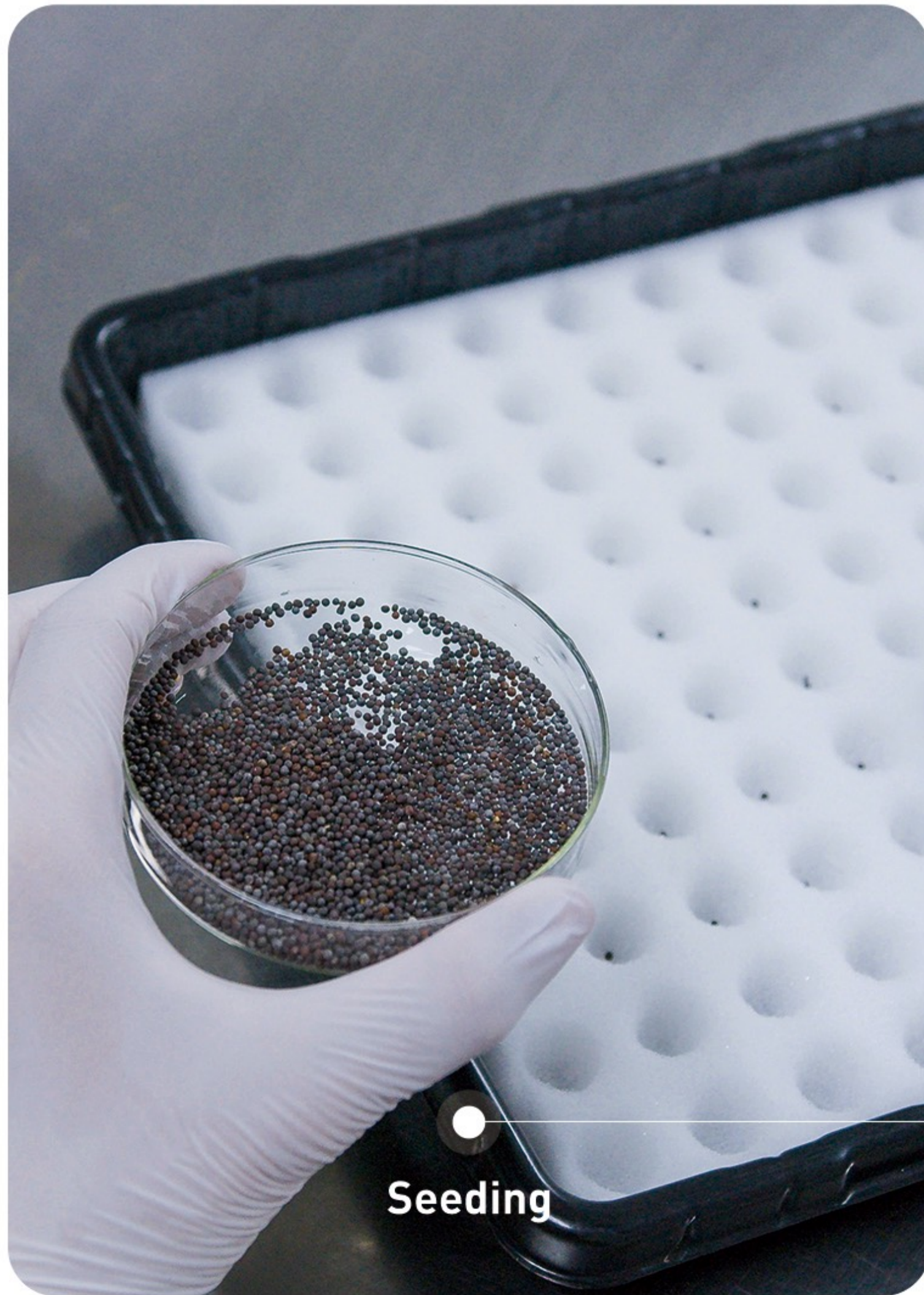
Density 90



Density 180



From Seeding to Harvesting



From Seeding to Harvesting



Vegetative



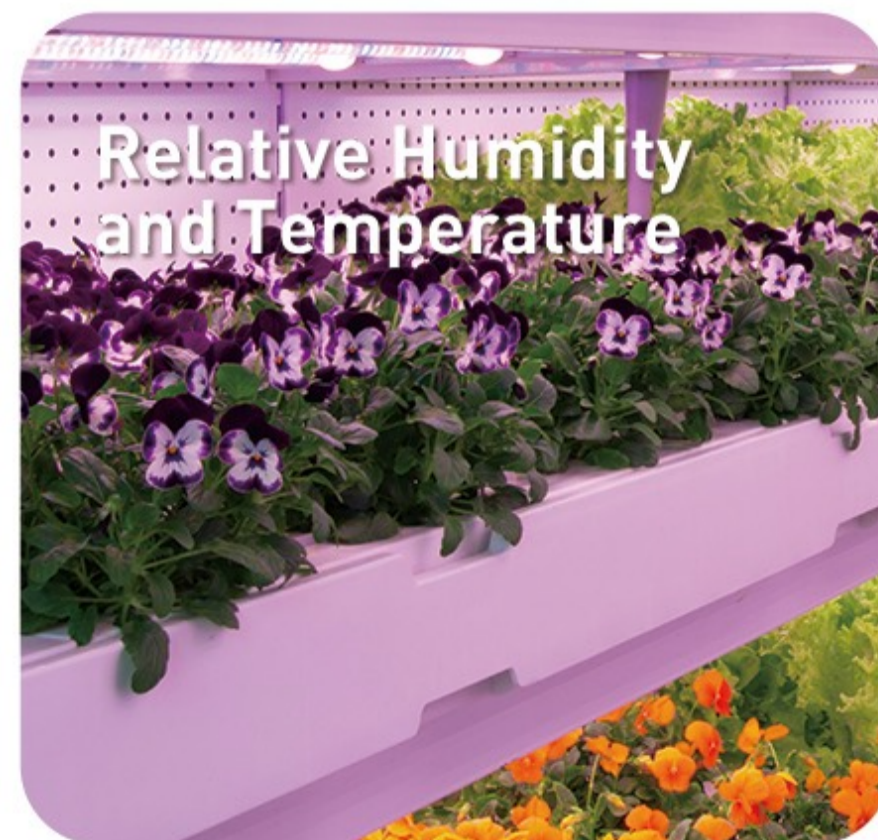
Harvesting

Sow the seeds and harvest an armful.

Seeding, propagation, transplanting, vegetation and harvest, all happening inside the containerized system.

Plant Keeper™

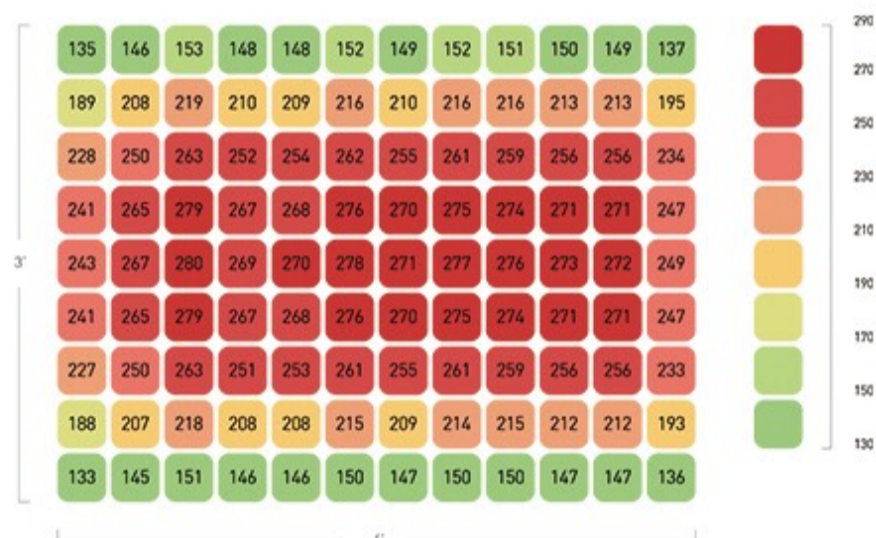
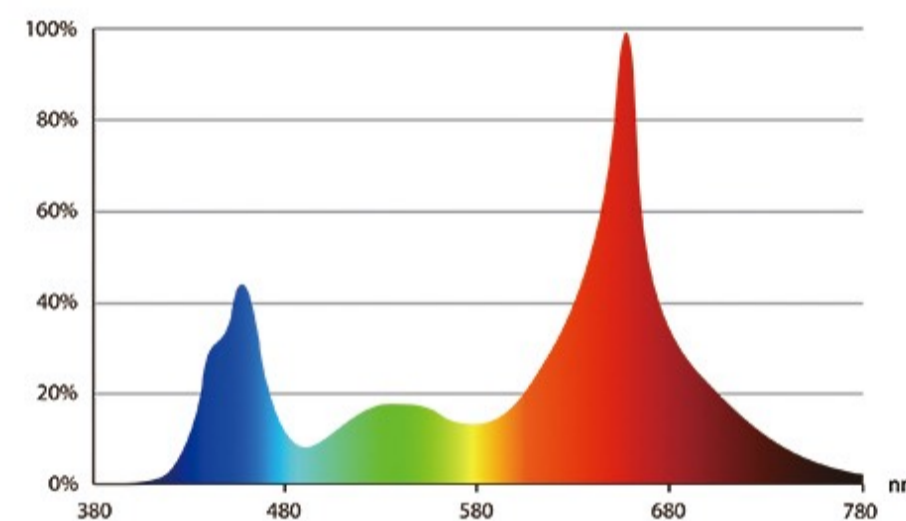
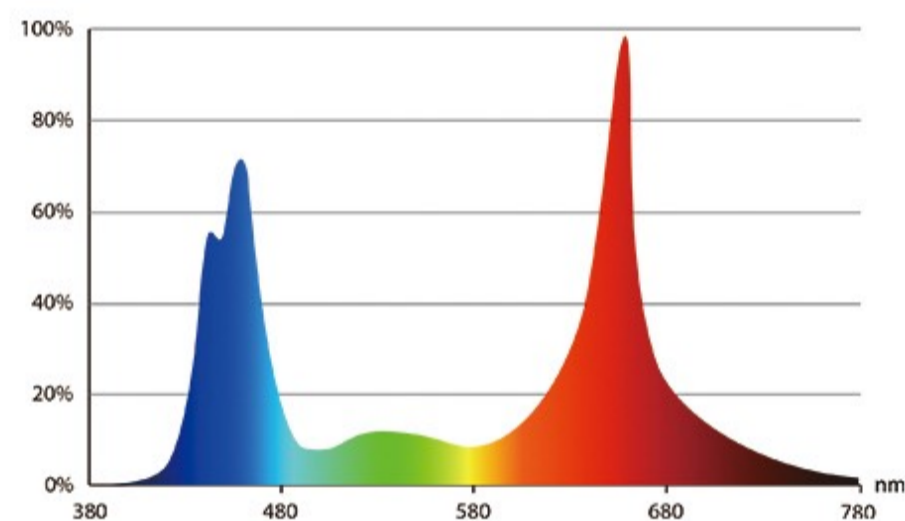
Engineers simplify farming procedures by inputting proven metrics to Plant Keeper™, SANANBIO's proprietary farm management system, which empowers growers with minimum experience to start growing food in a short period of time and monitor farm conditions on their phones.



Check out sananbio.com for more information.

Lighting System

SANANBIO ARK utilizes SANANBIO Skylark grow lights to empower the growth of 300+ varieties throughout their life stages with 80+ spectra available.



Skylark-GE Spectrum For Leafy Green

Power: 11.5 W
 PPF: 24 $\mu\text{mol/s}$
 Number of lights per layer: 8 pcs
 Light-to-bed distance: 20 cm (0.65')
 Avg. PPFD: 225 $\mu\text{mol/s/m}^2$

Skylark-VE Spectrum For Leafy Green

Power: 13.5 W
 PPF: 28.5 $\mu\text{mol/s}$
 Number of lights per layer: 8 pcs
 Light-to-bed distance: 28 cm (0.92')
 Avg. PPFD: 230 $\mu\text{mol/s/m}^2$

Check out sananbio.com for more information.



SANANBIO Skylark series is available with 10+ models for a variety of crops.

Installation and Operation

Locating

SANANBIO ARK needs to be positioned horizontally and is suggested to be placed on 6 concrete bases (1.31'*1.31'*0.16') to avoid flooding in rainy days.

Input Voltage

220V±10%.

Water Consumption

32 gal/day.

Consumables and Accessories

SANANBIO also offers extra grow rafts and germination trays to growers.

Data Transportation

SANANBIO ARK is able to transfer data to growers via WiFi or IoT. Data traffic is projected to be 1G/month if no picture needs to be transferred.

Check out sananbio.com for more information.



Specs

Specs		
	Product	40-Foot Container Farm
Dimension	L*W*H	40' * 8' * 9.5'
	Gross Weight	30,864.71 lbs
Climate Control	Climate Control System	Plant Keeper™
	Insulation Material	Polyurethane 0.3'-thick/ Rock wool board 0.16' -thick
	Air Conditioning	Domestic air conditioning/Air conditioning geared for cold areas
	CO ₂ Supply	40 lbs/88 lbs of CO ₂ stored in gasholders
Electrical	Power	10 KW
	Voltage	50 Hz ± 1 Hz
	Frequency	220 v ± 10% (Customizable)
Data Collection and Transfer	Types of Sensors	EC&pH sensor, Three-in-one sensor (CO ₂ , temperature and RH)
	Data Traffic	1G/month (If no pictures need to be transferred)
Annual Yield	Lettuce	7,936.64 lbs
	Cucumber	3,306.93-4,409.25 lbs
	Arugula	7,716.18 lbs
Consumption (Based on the data of lettuce)	Electricity	70 KWh/day
	Water	32 gal/day
Other	Accessories Available	Energy storage and water storage systems
	Certification	CNAS, CCS

Grow System		
	SANANBIO ARK Grow Rack	SANANBIO RADIX
L*W*H	3.2* 1.9 * 7.5'	4.4 *3 * 6.8'
Number of Lights per Layer	4	8
Grow Area per Layer	5.81 ft ²	11.62 ft ²
Number of Grow Rafts per Layer	1	2
Plant Sites per Raft	54 holes/180 holes	
Layers	1-5 Layers	1-4 Layers
Material	Galvanized Iron	Food-Grade PP

Lighting		
Grow Light	Skylark-GE Spectrum	Skylark-VE Spectrum
Power	11.5 W	13.5 W
PPF/Light	24 μmol/s	28.5 μmol/s
Efficacy	2.1 μmol/J	2.1 μmol/J
Average PPF/Layer	225 μmol/s/m ²	230 μmol/s/m ²

Check out sananbio.com for more information.



SANANBIO is a diverse group of growers, engineers, scientists, designers, and business professionals working to build a sustainable and resilient global food system. We are empowering growers globally with cutting-edge indoor vertical farming and horticultural lighting technologies that allow them to meet local and global market demand for essential agricultural products. Our team of controlled environment agriculture (CEA) experts in conjunction with our industry leading technology, creates unmatched value. We are creating the STANDARD in indoor vertical farming and horticultural lighting. We solve complex problems to build you simple solutions.

Check out sananbio.com for more information.

GLOBAL PHOTOBIOTECH SUPPLIER



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