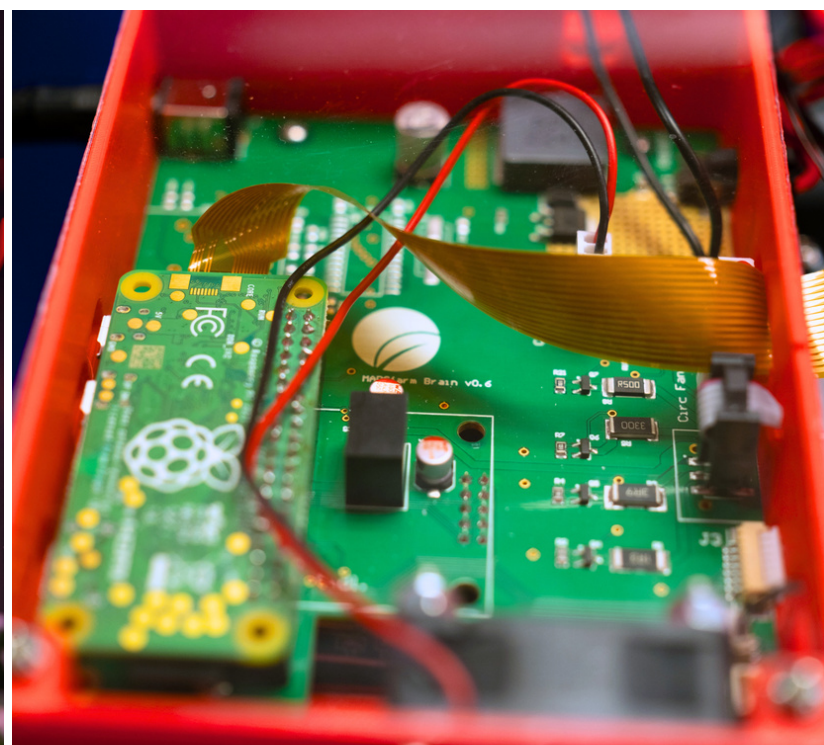


MARSfarm Version 1



peter@marsfarm.com | (314) - 766 - 2422
1805 Belt Way Dr Overland, MO 63114

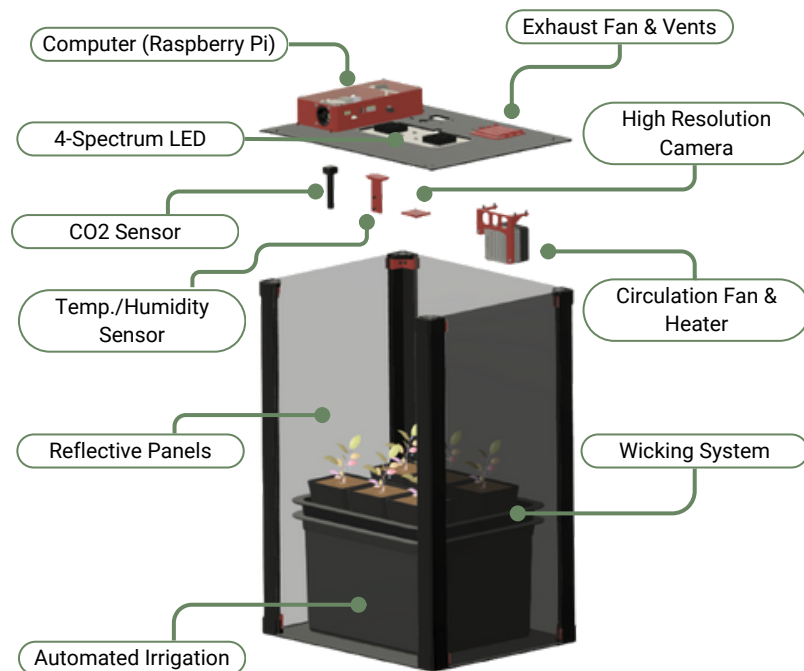


MARSfarm

OUR PRODUCT & SPECS

The MARSfarm Version 1 is a countertop-sized smart greenhouse with consumable growing material kits. Software controls the heat, light, and water, uploading data and pictures hourly. The MV1 is linked to an online platform, which converts sensor data into charts and time-lapses. Students can program new climate recipes sent to their greenhouse to replicate any conditions or climate they want to test.

Specifications	MV1
Dimensions	16.5" x 13" x 26"
Max Growth Height	20" (herbs, leafy greens, tomatoes, peppers, strawberries, etc.)
Environmental Monitoring Sensors	Temperature, Humidity, and CO2
Environmental Control	Increase temperature up to 90F (assuming ambient of 72F)
Irrigation System - Capacity	Pump and 2 gallon reservoir - refill every 14-28 days
Irrigation System - Automation	Custom recipes to prescribe ML at any time in day
LED System	4 Spectrum LED (red, blue, white, far-red) - custom recipes
Software Interface	Charts of sensor data, high-quality photos
Ideal Course	7-14 CTE and AG Courses



MV. 1 PACKAGES

Entry-Level

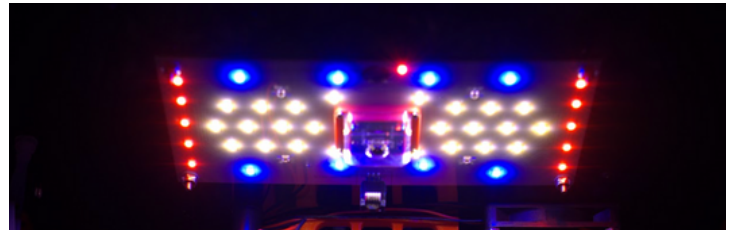
- 4 MV1 Units
 - Enclosures, Brains, LEDs, Heaters
 - 4 MV1 - Bok Choy Lab
 - Wicking System, Consumables
 - District Software License
- Total: \$6,312 (\$500 Discount)**

Top-Tier

- 25 MV1 Units
 - Enclosures, Brains, LEDs, Heaters
 - 25 MV1 - Bok Choy Lab
 - Wicking System, Consumables
 - District Software License
- Total: \$31,950 (\$5,000 Discount)**

Understanding the Components: Lights

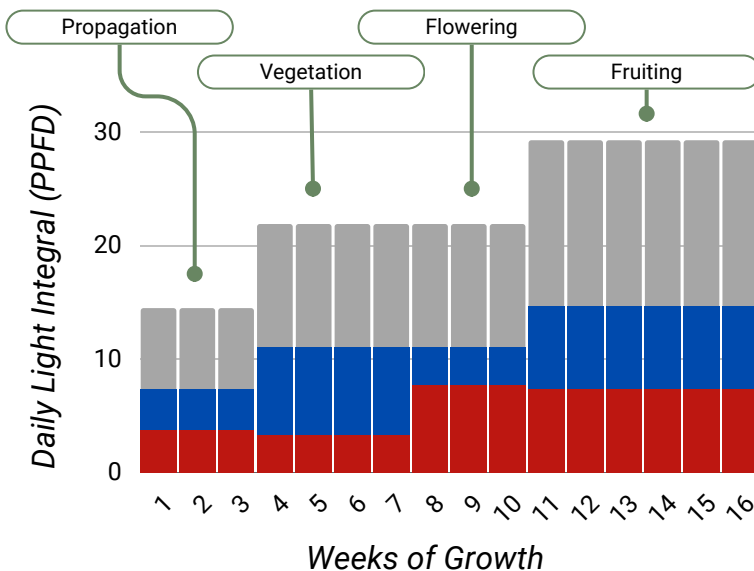
- Calculate & Control Light Intensity
- Four color spectrums: red, blue, white, and far-red
- High-quality Horticultural LED chips designed for CEA



Why Is Our Lighting the Best?

Our lighting enables the user to **apply custom durations and intensities for all four spectrums**. This allows students to run experiments specific to various curricula.

DLI Readings Per Week Over Tomato Growth Cycle



Our lights are high-quality **CREE™ LEDs** tailored for our machines and plant growth success. They are selected for their intensity and extremely accurate spectrum with a color rating index of 93CRI+.

The lighting inside an MV1 is completely uniform, due to our reflective walls that ensure **consistent light intensity regardless of plant location**. The reflective walls (one-way mirrors) reduce the energy used by reflecting 95% of light.

Lighting with **multiple spectrums (red, white, blue, and far-red)** allow for optimization between species and growth phases of plant growth (flowering, fruiting, etc).

Our Lighting

We designed custom a LED 4-color spectrum that can be controlled individually. They preserve energy to exert minimal heat and are easily changed for max customization.

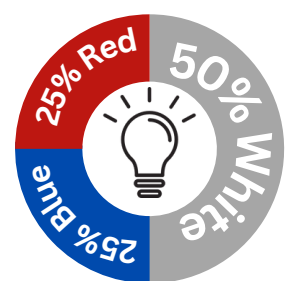
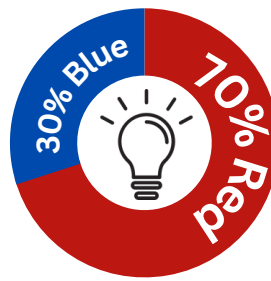
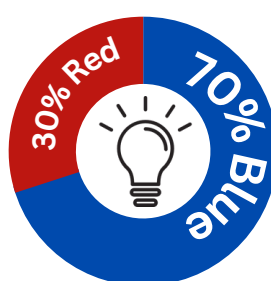
Available Wavelengths:

Red (660nm): Key driver in photosynthesis, Triggers and regulate fruiting and flowering, Promote stem growth.

Blue (448nm): Early stages of growth, Focuses on plant and stem development.

Warm White (3500K): Provides more balanced plant growth, Gives usable energy to the plants.

Far-Red (730nm): Introduces flowering and Fosters plant vertical growth.



Understanding the Equipment: Thermostat

- *Dynamic: Set Different Temperatures for Day & Night*
- *Prevents variation in classroom temperature from affecting plant growth.*
- *Can simulate heat stress & extreme conditions*

Why Is Our Thermostat the Best?

MARSfarm allows you to grow plants in temperature controlled environment that is custom to your experiment. You can choose separate day and night temperatures, helping you reproduce climates ranging from 70°F to 90°F. Allowing students to grasp non-ideal plant growth temperatures and associated challenges.

Excessively low or high temperatures can stop growth or cause poor appearance. Plants also need constant airflow. Without adequate airflow, the seedlings grow "leggy" and do not develop stems strong enough to support them.

Day 7



Propagation

 82°F

 82°F

Day 21



Vegetation

 78°F

 70°F

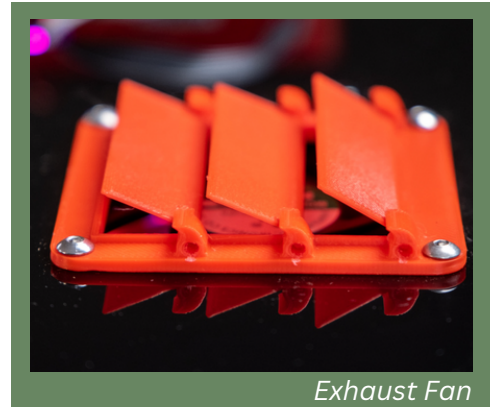
Day 35



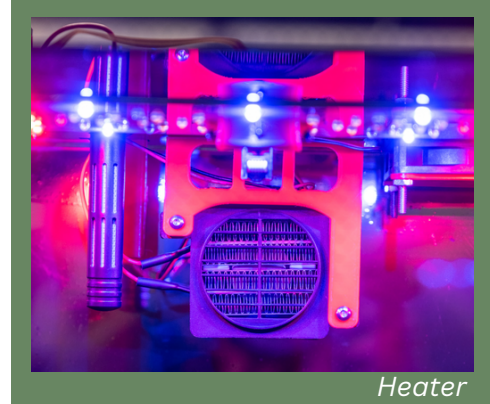
Flowering

 90°F

 90°F



Exhaust Fan



Heater

Our Thermostat:

Heater

The heater works to bring up the temperature in the box. It can cause the unit to heat up to 90 degrees, allowing students to simulate some of the world's hottest climates.

Exhaust Fan

The exhaust fan brings in outside air to cool down the temperature inside the chamber. It can be down to 70 degrees (far below what is ideal for plant growth), allowing study on the connection between temperature and plant growth.

Circulation Fan

Located at the top of the box, the circulation fan keeps heat and air moving throughout the box, so no air is stagnant.

Understanding the Equipment: Irrigation

- Customizable watering output and time
- Reservoir lasts about two weeks without the need to refill.
- Allows for experimentation in extreme water conditions

Why Is Our Irrigation System Best?

The water output and watering time are custom to the experiment you are running. It allows for experiments with overwatering and drought. Our irrigation system allows for longer experiments (ex dwarf peppers). It also prevents watering from impacting other experiments.

The MV1 irrigation system can keep plants alive over break times. The easy-to-fill reservoir prevents spills and is easy to clean. The wicking mat allows for the constant distribution of water. The MARSfarm automatic irrigation system allows you to not worry about water unless you want to.

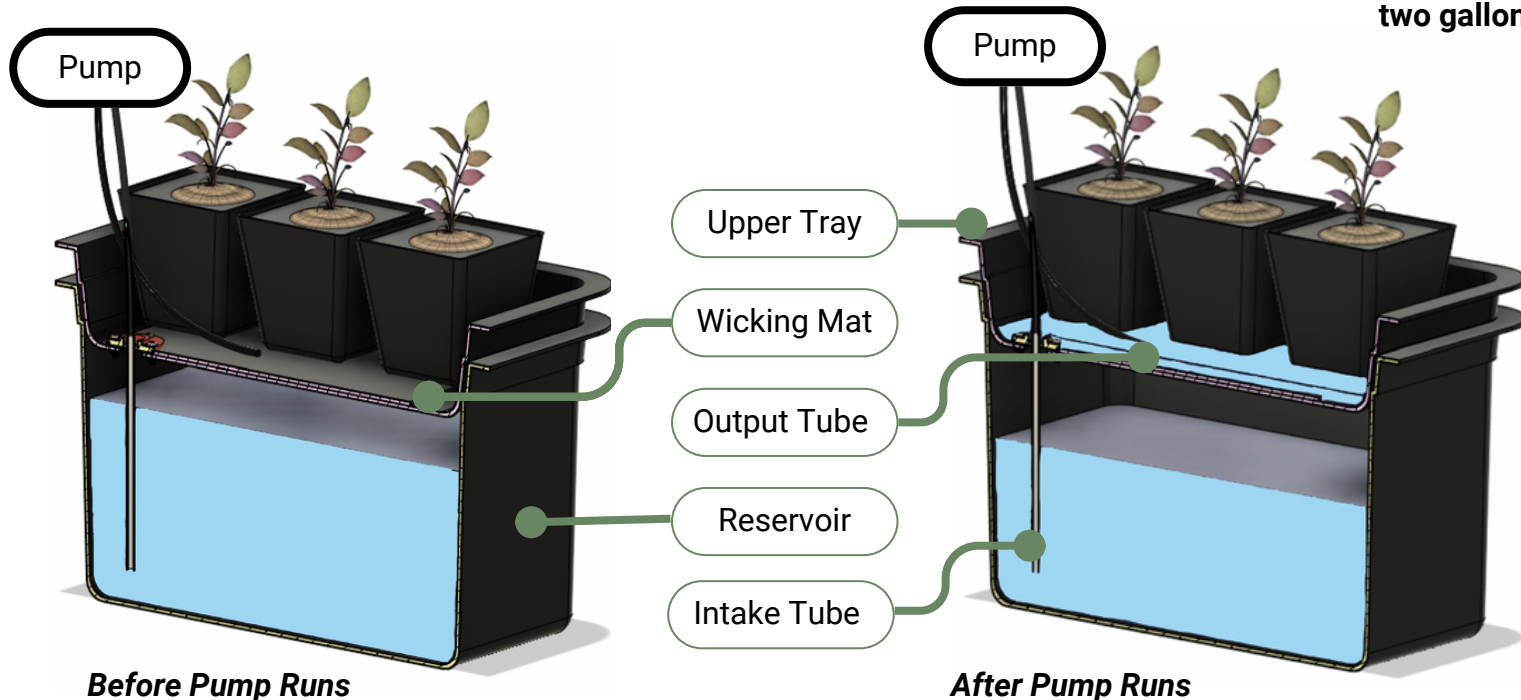


Our Irrigation System

The MV1 uses an automatic irrigation system. Each irrigation system includes a reservoir, an upper tray, two black tubes, and a wicking mat. It uses a programmable peristaltic pump

At a time of your choosing, every day the pump will suck water up from the reservoir. The water will then come back down and flood the upper tray. From there, the wicking mat will distribute the water evenly between the plants, and access water will be drained back into the reservoir below.

Our reservoir lasts about **two weeks** and can hold **two gallons**.





CUSTOMER SPOTLIGHT: DR. SURENDRA MAHA CTE, Agriculture, & Horticultural Science Teacher

"I strive to make my curriculum more research-oriented. MARSfarm has allowed me to provide a more data-driven science education, while also allowing students to envision why it is important to grow plants in different environments. I have been a plant scientist in both the professional and academic worlds for many years. I have worked in many different labs and fields, I choose to use MARSfarm to expand my student's research capacity and improve their understanding of data. I have integrated MARSfarm units in many classes including Principle of Agriculture, Food and Natural Resources, Greenhouse Operations, and Scientific Research and Design."



CUSTOMER SPOTLIGHT: DR. DONNA JAGIELSKI Education Programs Manager, Arizona Sustainability Alliance

"At AZSA, I oversee the Food Tech for the Future Project. MARSfarm as our partner in this Project has allowed my team to make accessible the learning experience of building food computers, conducting plant growth experiments, and sharing data globally for students all over the Phoenix Metro Area. Working with MARSfarm has gotten our partner teachers and students excited about the future of studying food technology to ensure that global food needs continue to be met as the world grows. We at AZSA particularly love working with MARSfarm because they make the learning experience inclusive to all sorts of classrooms and learners which makes the Food Tech for the Future Project a successful and sustainable one."



CUSTOMER SPOTLIGHT: JEREMY HALL Agriculture Education Teacher- 24 Years, FFA Advisor & NAAE National Agriscience Teacher Ambassador

"My priority in my high school agricultural education classroom is to engage in Project- & Inquiry-Based Learning, and MARSfarm allows me to do just that. In my students' self-directed research projects, they're able to control the exact environment they want to test, collect and share data with ease, and experiment with new crop types. MARSfarm not only enhances my students' in-classroom experience, but also prepares them for Engineering, Science Communications, and Botanical careers once they leave the classroom."

Connect with MARSfarm

- 1) Visit our website for a quote:
www.marsfarm.com
- 2) Watch for new releases [@getMARSfarm](https://twitter.com/getMARSfarm)
on Twitter, Instagram, and Facebook
- 3) Read how existing customers are using our products at [MARSfarm Forums](#)



**SEE MARSFARM
IN ACTION!**