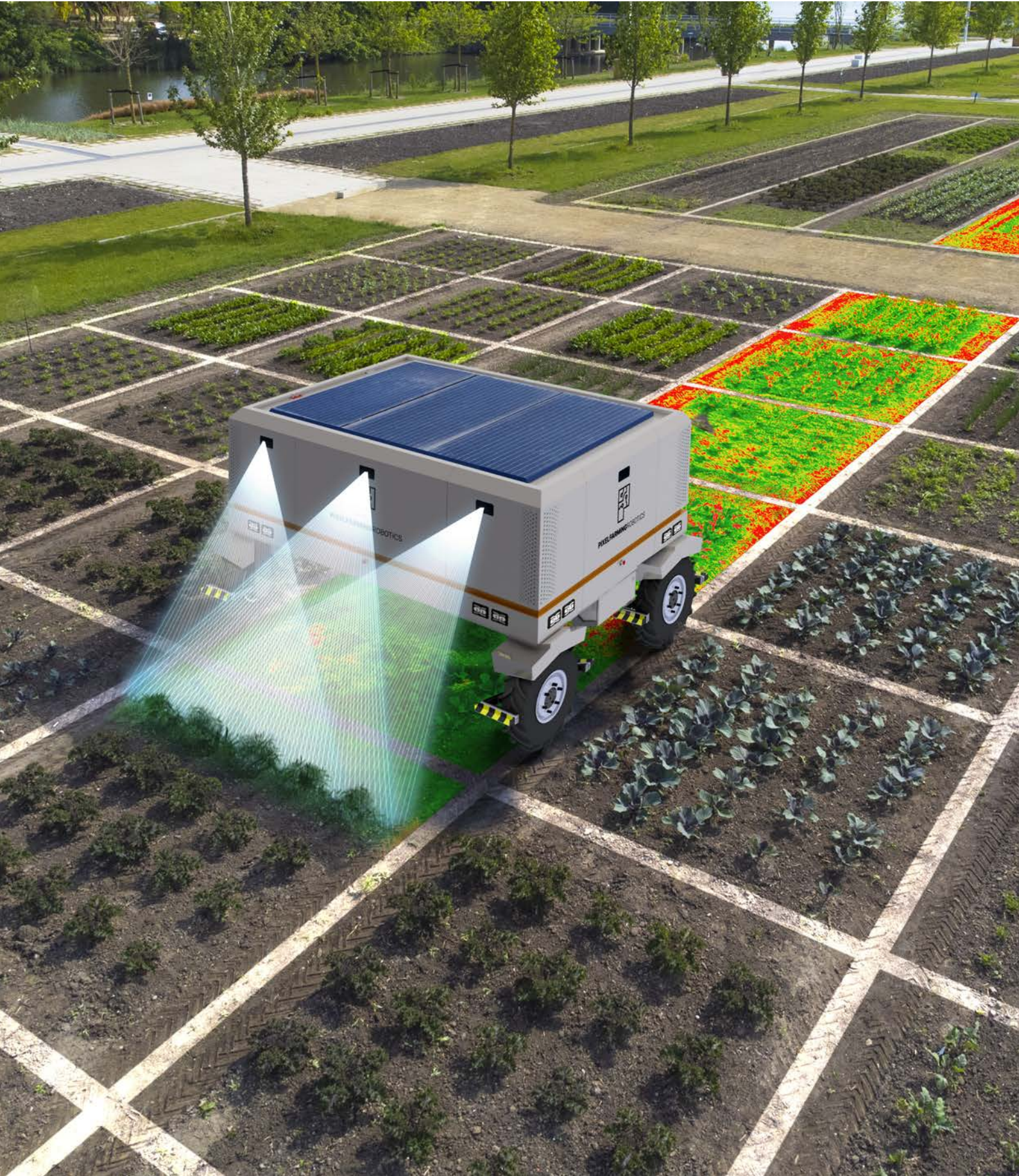


# Robot One

## Brochure



# Robot One

## About Robot One



# Robot One

A smart agricultural robot for biodiverse farming, designed to control weeds without the use of pesticides.

Robot One is a cutting-edge agricultural robot designed for smart farming. Equipped with 14 advanced depth sensing camera's and dual GPS antenna's it is ideal for large-scale and biodiverse environments.

10 controllable arms can be equipped with various tools and are independently adjustable in row width and working depth and accurate up to 2 millimeters. This allows for plant specific crop treatment and chemical-free weed control by using smart biology and in-depth plant knowledge.

Robot One helps farmers transition to regenerative farming. This is achieved through practices such as cover cropping, reduced tillage with our specialized tools and smart crop rotation. This not only increase soil fertility, but also improve water retention, reduce erosion, and promote biodiversity. In addition to improving the health of the soil, regenerative farming can also lead to more resilient crops and higher yields.



**Weight**  
2000 kg



**Top speed**  
3,5 km/h



**Battery**  
13 kWh



**Connectivity**  
Dual RTK-GPS + Ntrip



**Capacity**  
1 ha/h

# Hardware upgradability

Robot One is designed to be modular at its core. This hardware upgradability is an important feature for professional use.

Hardware upgradability refers to the ability to upgrade or replace components of a computer or other electronic device, such as the main processing unit, onboard GPU's for machine learning, mechanical arms and tools or its stereoscopic camera units. Hardware upgradability is an important feature for professionals who want to stay ahead of the curve.

## **Prolonging the operational lifespan**

As technology advances, upgrading components can keep it up-to-date and operational for a longer period of time, reducing the need for frequent unit replacements.

## **Customization and flexibility**

Professionals have different requirements and workloads, and hardware upgradability allows you to choose and upgrade specific components based on your needs and budget.

## **Improved performance**

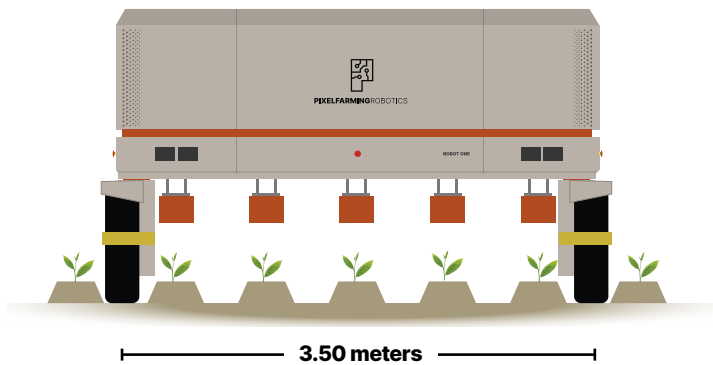
Upgrading to newer components can significantly enhance performance and efficiency.

## **Cost-effectiveness**

Upgrading components is often more cost-effective than buying a new device, as it only requires the cost of the upgraded component rather than the cost of a whole new device.

# Supported track widths

Robot One with its flexible layout and wheel orientation is able to adapt to all commonly used row widths and bed types.

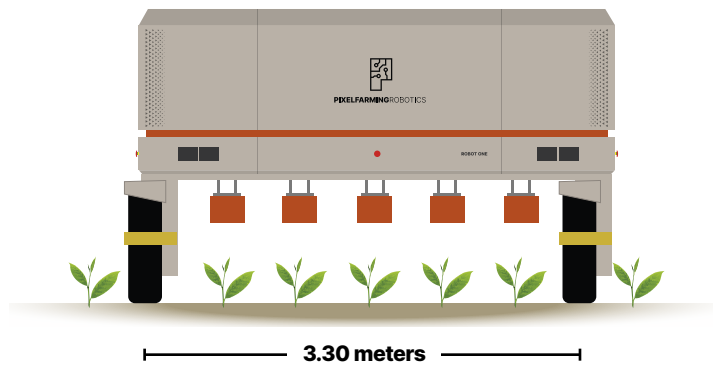


## 3.50 meters

Supports interdistance 50 cm, 75 cm

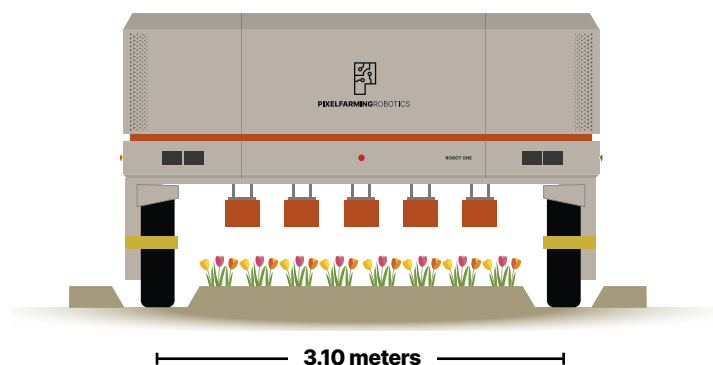
## 3.30 meters

Supports interdistance 50 cm, 75 cm



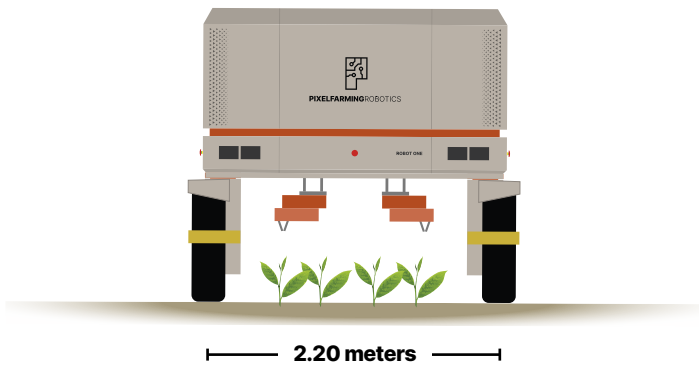
## 3.10 meters

Supports bed sizes up to 285 cm



# Alternate drive

Robot One can also alter its driving mode to support even smaller bed sizes and row widths with the L-Bow tools attached.

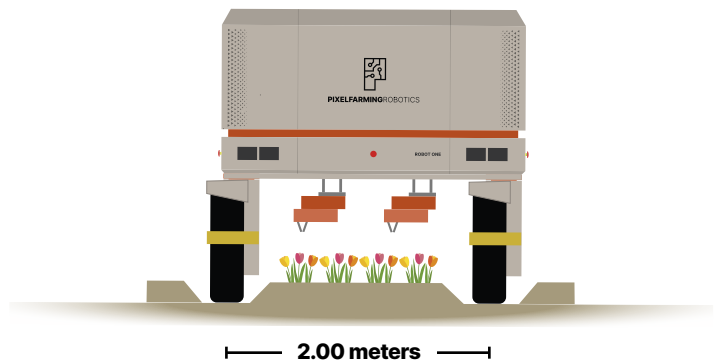


## 2.20 meters

Supports interdistance 37.50 cm, 50 cm, 75 cm

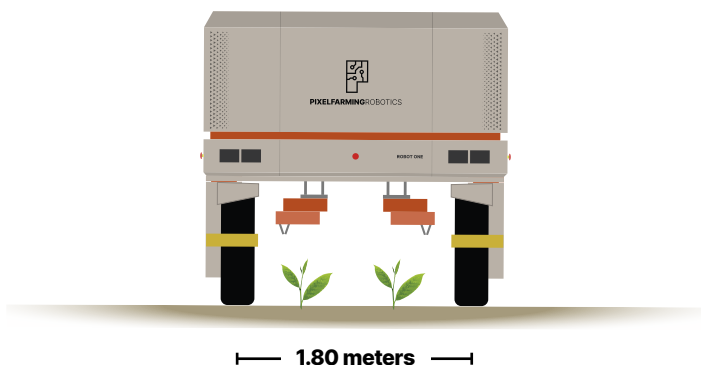
## 2.00 meters

Supports bed sizes up to 180 cm



## 1.80 meters

Supports interdistance 37.50 cm, 50 cm, 75 cm

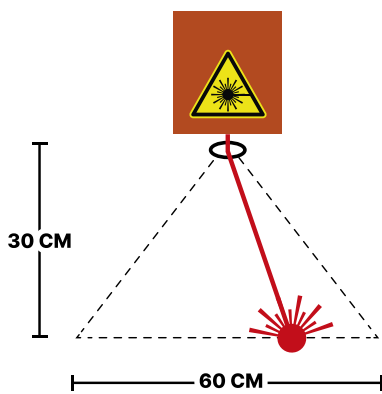




# Custom tools

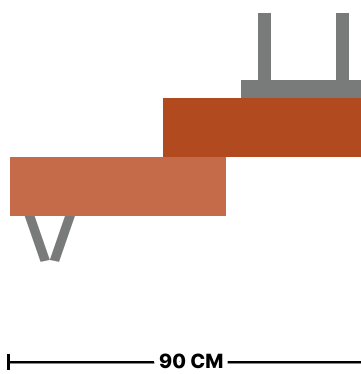
Working closely with our clients to develop tools that meet their specific needs.

At Pixelfarming Robotics, we believe in working closely with our clients to develop tools that meet their specific needs. We understand that every cultivation has its own set of challenges and requirements. That's why we work closely with our clients to create customized solutions that are tailored to their individual needs.



## Laser

One of the main benefits of using a laser to control weeds is its precision. A laser can target specific weeds without harming surrounding plants. Additionally, laser weed control is a highly effective method that can eliminate weeds quickly and with minimal effort.



## Gripper

The gripper gracefully plucks weeds from the soil with precision and ease. The arm can freely move on its axis, allowing for quick and efficient removal of weeds in any area. In the future this same technology can be used to plant pre-grown seedlings with millimeter accuracy.



## Streamer

The use of a streamer can improve the overall health and productivity of the soil, as using cover crops can help to prevent erosion, improve soil structure, and increase nutrient uptake. The use of streamers can provide a cost-effective and efficient way to improve soil health and productivity.



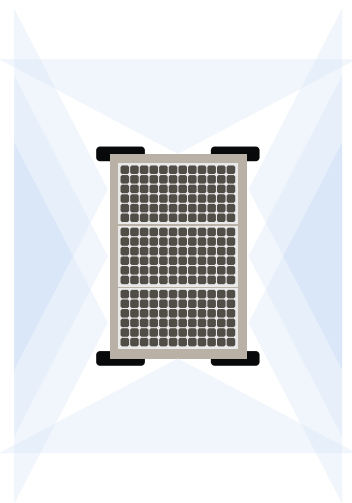


# Easy to operate

With our intuitive controller with integrated display.

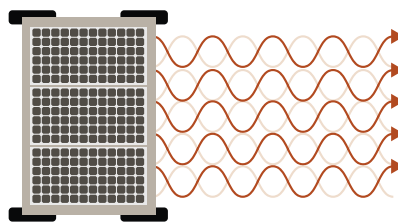
Robot One is designed with ease of use in mind and can be easily operated with our controller with integrated display. The display screen provides intuitive navigation through the robot's various functions and settings, allowing for quick adjustments to be made on the fly.

Robot One is user-friendly and requires minimal training to operate, making it a great choice for professionals.



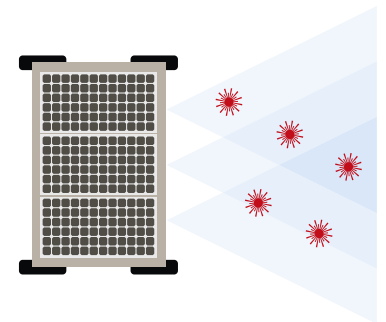
## Obstacle avoidance

Vision based obstacle avoidance uses cameras and image processing algorithms to analyze the environment and identify potential hazards. Robot One uses this information to calculate a safe path and navigate around the obstacle.



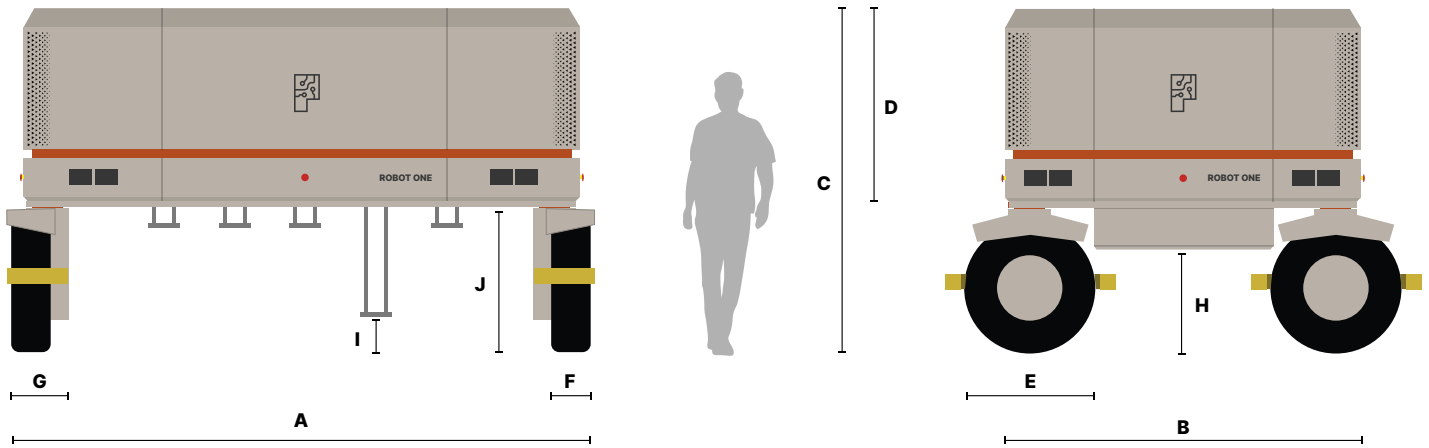
## Scan and act

After the first detection run is complete you can start planning which actions need to be done. Use a laser to combat weed stems or use a finger-weeder to clear weeds from within the plant row. Our vision-based approach offers maximum tool flexibility.



## Fine-tuning the detection model

With every operation, Robot One collects new images which can be used to fine-tune your plant detection model. This increases its accuracy and its value. As a new revenue model you can make your detection model available for sale.



Specs			
A	Overall width	3700 mm	145,7 inch
B	Overall length	2300 mm	90,6 inch
C	Overall height	2230 mm	87,8 inch
D	Body height	1267 mm	49,9 inch
E	Wheel Base	860 mm	33,9 inch
F	Wheel width	250 mm	9,8 inch
G	Wheel with axle	350 mm	13,8 inch
H	Ground Clearance battery	700 mm	27,6 inch
I	Ground Clearance arms	295 mm	11,6 inch
J	Ground Clearance frame	963 mm	37,9 inch
	Weight	2000 kg	
	Maximum mechanical horsepower	32 hp	

Internals	Processing Unit	AI Performance	275 TOPS (INT8)	
		GPU	NVIDIA Ampere architecture with 2048 NVIDIA CUDA® cores and 64 tensor cores	
		Max GPU Frequency	1.3GHz	
		CPU	12-core Arm® Cortex® A78AE v8.2 64-bit CPU 3MBL2+6MBL3	
		CPU Max Frequency	2.2 GHz	
		Memory	64GB 256-bit LPDDR5 204.8GB/s	
		Storage	64GB eMMC 5.1	
		Video Encode	2 × 4K60, 4 × 4K30, 8 × 1080p60, 16 × 1080p30 (H.265), H.264, AV1	
		Camera's	12 Stereographic camera's	Dimensions
RGB sensor	DFOV / HFOV / VFOV			81° / 69° / 54°
	Resolution			13MP (4208×3120)
	Focus		50cm – ∞	
	Focus type		Fixed focus	
	Max Framerate		60 fps	
	Stereographic sensor		DFOV / HFOV / VFOV	86° / 73° / 58°
Resolution			480P (640×480)	
Focus			6.5cm – ∞	
Focus type			Fixed focus	
Max Framerate			120 fps	



We believe in robotic technologies in agriculture. Pixelfarming Robotics was founded in 2019 to support the robotics transition in agriculture. We design and manufacture advanced agricultural robots to support regenerative and biodiverse farming.

### **Pixelfarming Robotics**

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