

Product Specifications

ScaleCam™ Thermal

ScaleCam Thermal leverages Foresight's advanced stereoscopic technology to transform depth maps into high-resolution 3D point clouds, offering precise per-pixel information for critical applications like obstacle detection and terrain analysis. Designed for industrial and agricultural use, this industrial-grade long-wave infrared (LWIR) system thrives in demanding outdoor environments, boasting an IP66 rating and an extended operating temperature range.

Optimized for adverse weather and lighting conditions, ScaleCam Thermal ensures reliable performance by detecting heat signatures, making it indispensable for imaging in fog, darkness, and heavy rain.



Auto Calibration

Foresight's groundbreaking automatic calibration technology tackles the key challenge in stereo vision — achieving precise depth maps. By leveraging a dedicated algorithm, it ensures accurate relative pose estimation, critical for creating precise stereoscopic 3D perception. This innovation enhances the accuracy and reliability of systems using thermal LWIR cameras, advancing stereo vision technology for more sophisticated applications.



Optimized for Adverse Weather and Lighting

Our thermal LWIR technology excels in conditions where conventional sensors perform poorly. By detecting heat emitted by objects, including pedestrians and animals, LWIR cameras provide reliable imaging in fog, darkness, and heavy rain. This ensures enhanced safety and effectiveness in challenging environments across various applications.



3D Point Cloud

Foresight's technology converts accurate depth maps into high-resolution 3D point clouds, providing detailed per-pixel data for applications like obstacle detection, terrain analysis, and sensor fusion. Using cost-effective, passive stereoscopic methods, this approach is ideal for advanced imaging in thermal long-wave infrared (LWIR) systems.



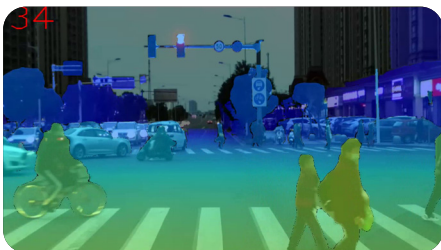
Industrial-grade all outdoor

Tailored for industrial and agricultural settings, our thermal LWIR technology is built for all outdoor applications. With an IP66 rating and extended operating temperature range, it delivers robust performance in harsh weather and dusty environments, ensuring durability and reliability in extreme conditions.



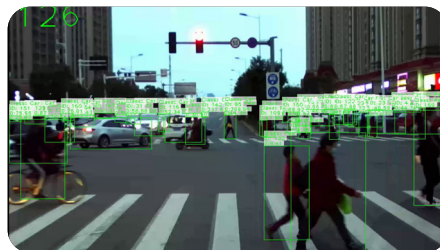
Object Detection

Detecting objects within an image. Leveraging depth sensing and 3D data, ScaleCam Thermal sensor kit offers both 2D and 3D positional information for objects within the scene.



Depth Map

Depth maps captured by the ScaleCam Thermal sensor kit calculate the distance value (Z) for each pixel (X, Y) in the image. The distance is expressed in metric units and is calculated from the focal point of the left-side camera to the object.



Classifications Stereo

ScaleCam Thermal supports classifications of known objects like cars, trucks and pedestrians.



Drivable Area

ScaleCam Thermal supports segmentation of regions detected by the stereovision sensor and algorithms, identifying areas where a vehicle can safely drive.



ScaleCam Thermal

Specifications	30° FOV	90° FOV
OPTICAL		
Field of View:	Max. 32 (H)	Max. 95 (H)
Focal Length:	14mm	4mm
Camera Resolution:	640 × 512 - dual 0.3Mp LWIR bolometric cameras	640 × 512 - dual 0.3Mp LWIR bolometric cameras
Pixel Size:	12um x 12um	12um x 12um
Operating Spectrum:	8 - 14 um	8 - 14 um
Shutter Type:	Rolling Shutter	Rolling Shutter
TECHNICAL		
Baseline (cm):	40	40
Accelerometer:	Up to 12g	Up to 12g
Gyroscope:	Up to 1000°/S	Up to 1000°/S
PHYSICAL		
Dimensions (mm):	500 × 130 × 90	500 × 130 × 90
Weight (gr):	5200 gr	5200 gr
Interface:	USB 2.0	USB 2.0
Mounting Options:	Adapter bracket	Adapter bracket
Ingress Protection Rating:	IP66	IP66
Operating Temperature:	-20 to 60 °C	-20 to 60 °C
Power:	5V DC	5V DC
PERFORMANCE		
Detection Range (Car 1.5m x 2m):	3 - 150m	1 - 50m
Detection Range (Pedestrian 1.5m x 0.5m):	3 - 65m	1 - 30m
Point Cloud Accuracy:	7.5% @ 150m ; 4% @ 65m	6% @ 50m ; 4% @ 30m
TECHNOLOGY FEATURES		
Auto Calibration:	✓	✓
Depth Map:	✓	✓
3D Point Cloud:	✓	✓
Object Detection:	✓	✓
Classifications:	✓	✓
Drivable Area:	✓	✓
SYSTEM REQUIREMENTS		
ECU:	NVIDIA® Jetson Orin™ Nano 8G	NVIDIA® Jetson Orin™ Nano 8G
Point Cloud Resolution:	640 × 512	640 × 512
Output FPS:	10	10
Client OS:	Linux - Ubuntu 20.04	Linux - Ubuntu 20.04
CPU Utilization:	23%	23%
GPU Utilization:	80.7%	80.7%
ORDERING INFORMATION		
P/N:	STIR-03040U-K02	STIR-09040U-K02
Warranty:	1 year	1 year

*Specifications are subject to change without notice