

Product Specifications

QuadSight®

QuadSight utilizes Foresight’s advanced stereoscopic technology with automatic calibration to generate precise depth maps, converted into high-resolution 3D point clouds. This non-emitting, cost-effective multi-spectral vision solution supports both visible-light and thermal infrared cameras and excels in obstacle detection, terrain analysis, and sensor fusion for autonomous vehicles.

Designed for tough industrial and agricultural environments, QuadSight is IP66-rated and operates reliably in harsh weather conditions.



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 innovative approach to automatic calibration ensures that long-wave infrared (LWIR) systems and visible light (VIS) cameras can achieve unparalleled accuracy and reliability in depth perception, paving the way for more advanced applications in stereo vision technology.



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 both VIS and LWIR cameras.



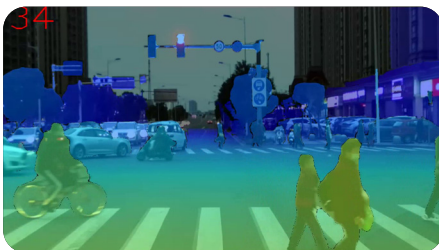
Industrial-grade all outdoor

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.



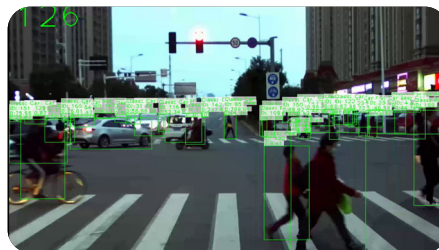
Object Detection

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



Depth Map

Depth maps captured by the QuadSight 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.



Object Classification

QuadSight supports classifications of known objects like cars, trucks, pedestrians.



Drivable Area

QuadSight supports marking of obstacles over the 3D point cloud which allow detection of barriers and obstacles.



QuadSight

30° FOV

90° FOV

Specifications

OPTICAL

	30° FOV		90° FOV	
	Visible Light Cameras	Thermal Cameras	Visible Light Cameras	Thermal Cameras
Field of View:	36 (H)	32 (H)	95 (H)	90 (H)
Camera Resolution:	1280 × 720 - Dual 1Mp RGB cameras	640 × 512 - dual 0.3Mp LWIR bolometric cameras	1280 × 720 - Dual 1Mp RGB cameras	640 × 512 - dual 0.3Mp LWIR bolometric cameras
Pixel Size:	4um x 4um	12um x 12um	4um x 4um	12um x 12um
Shutter Type:	Rolling Shutter	Rolling Shutter	Rolling Shutter	Rolling Shutter

TECHNICAL

	30° FOV		90° FOV	
	Visible Light Cameras	Thermal Cameras	Visible Light Cameras	Thermal Cameras
Baseline (cm):	30	40	30	40
Accelerometer:	Up to 12g	Up to 12g	Up to 12g	Up to 12g
Gyroscope:	Up to 1000°/S	Up to 1000°/S	Up to 1000°/S	Up to 1000°/S

PHYSICAL

	30° FOV		90° FOV	
	Visible Light Cameras	Thermal Cameras	Visible Light Cameras	Thermal Cameras
Dimensions (mm):	500 × 130 × 90	500 × 130 × 90	500 × 130 × 90	500 × 130 × 90
Weight (gr):	5200 gr	5200 gr	5200 gr	5200 gr
Interface:	USB 3.0	USB 3.0	USB 3.0	USB 3.0
Mounting Options:	Adapter bracket	Adapter bracket	Adapter bracket	Adapter bracket
Ingress Protection Rating:	IP66	IP66	IP66	IP66
Operating Temperature:	-20 to 60°C	-20 to 60°C	-20 to 60°C	-20 to 60°C
Power:	5V DC	5V DC	5V DC	5V DC

PERFORMANCE

	30° FOV		90° FOV	
	Visible Light Cameras	Thermal Cameras	Visible Light Cameras	Thermal Cameras
Detection Range (Car 1.5m x 2m):	3 - 150m	3 - 150m	1 - 50m	1 - 50m
Detection Range (Pedestrian 1.5m x 0.5m):	3 - 65m	3 - 65m	1 - 30m	1 - 30m
Point Cloud Accuracy:	7.5% @ 150m ; 3% @ 65m	7.5% @ 150m ; 4% @ 65m	6% @ 50m ; 3.5% @ 30m	6% @ 50m ; 4% @ 30m

TECHNOLOGY FEATURES

	30° FOV		90° FOV	
	Visible Light Cameras	Thermal Cameras	Visible Light Cameras	Thermal Cameras
Auto Calibration:	✓	✓	✓	✓
Depth Map:	✓	✓	✓	✓
3D Point Cloud:	✓	✓	✓	✓
Object Detection:	✓	✓	✓	✓
Classifications:	✓	✓	✓	✓
Drivable Area:	✓	✓	✓	✓

SYSTEM REQUIREMENTS

	30° FOV		90° FOV	
	Visible Light Cameras	Thermal Cameras	Visible Light Cameras	Thermal Cameras
ECU:	NVIDIA® AGX Orin™ 64G	NVIDIA® AGX Orin™ 64G	NVIDIA® AGX Orin™ 64G	NVIDIA® AGX Orin™ 64G
Point Cloud Resolution:	960 X 544	640 × 512	960 X 544	640 × 512
Output FPS:	10	20	10	20
Client OS:	Linux - Ubuntu 20.04	Linux - Ubuntu 20.04	Linux - Ubuntu 20.04	Linux - Ubuntu 20.04
CPU Utilization:	50%	50%	50%	50%
GPU Utilization:	80%	80%	80%	80%

ORDERING INFORMATION

	30° FOV		90° FOV	
	Visible Light Cameras	Thermal Cameras	Visible Light Cameras	Thermal Cameras
P/N:	STQS-030U-K01	STQS-030U-K01	STQS-090U-K01	STQS-090U-K01
Warranty:	1 year	1 year	1 year	1 year

*Specifications are subject to change without notice