



Zebra's 3S80 3D sensors

Unsurpassed 3D resolution and accuracy when capturing dynamic scenes

Leveraging patented Parallel Structured Light technology, Zebra's 3S80 series 3D sensors can scan dynamic and static scenes with submillimeter resolution and accuracy to deliver colorful 3D point clouds in real time of items in motion.

Each 3S sensor can acquire up to 2 million 3D points (1680 x 1200) in a 45 ms scan and render the data in detailed RGB point clouds. This high-speed and high-resolution acquisition means there is no motion blur when imaging objects moving on a conveyor, and the system provides true per-pixel measurement.

Combined with Zebra's powerful vision controllers and Aurora™ software solutions, the 3S80 series offers a full and unique solution to virtually any 3D scanning application in manufacturing or logistics environments.



A wide selection of fields of view (FOVs)

The three models comprising the 3S80 series capture highly accurate 3D data from dynamic scenes within a broad choice of scan volumes to address virtually any 3D inspection or dimensioning application.

- The 3S80-4S delivers the tightest FOV for high-accuracy 3D capture of small scenes
- Model 3S80-4M is optimal for scanning medium-sized objects and scenes
- Model 3S80-4L extends the dynamic scanning range up to 3 m to acquire 3D data for the largest objects and biggest volumes

Fast acquisition

Patented Parallel Structured Light technology enables parallel construction of multiple virtual images within one exposure window. As a result, 3S80 sensors can accurately capture high-resolution 3D images of moving objects without motion artifacts.

Shorter cycle times

Paired with Parallel Structured Light technology, the 3S80's 2 MP CMOS sensor within 3S80 scanners enables real-time dimensioning for logistics, shorter cycle times in robotic bin picking operations, and fast defect detection—even when scanning reflective or transparent surfaces.

Plug-and-play integration

3S80 sensors easily pair with Zebra's powerful 4Sight EV7 vision controller and Aurora software to support quick deployment and configuration. Just point the 3S80 device at a scene to begin capturing accurate high-density point clouds for your application.

The 3S80 series—vision without limits. Experience the difference with Zebra.

For more information, please visit www.zebra.com/3S-series

Sophisticated performance, simple implementation

Though highly advanced in performance, 3S80 3D sensors are as simple to implement as the rest of Zebra's machine vision portfolio. The plug-and-play hardware—comprising a CMOS camera, laser projection unit, and GPU processor—is designed to support AIA's GigE™ Vision standard. Compatible with PoE+ or 24 V pluggability, each device integrates easily with existing machine vision systems. Users simply plug in the camera and point it at a scene to begin capturing accurate high-density point clouds without sacrificing quality or speed.

Powered by Zebra Aurora software and 4Sight EV7 vision controller

Every 3S80 3D sensor includes Zebra's Aurora Design Assistant™ or Aurora Vision Studio™ software for quick configuration and deployment of complex deep learning and traditional machine vision applications. Add Zebra's 4Sight EV7 controller for demanding high-rate single- or multicamera imaging and machine vision applications.

Easy to deploy and run

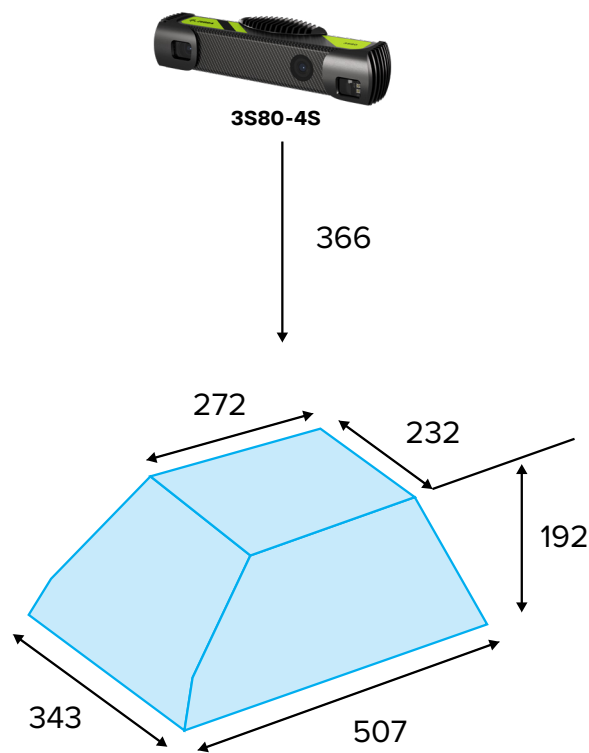
Zebra's Aurora Design Assistant and Aurora Vision Studio software make it easy for users to deploy and run applications without having to learn or implement multiple software environments. Both software platforms enable 3S80 3D sensors to leverage a deep collection of tools for image capture, processing, analysis, annotation, display, and archiving.

Deep learning to further enhance solution quality

Use 3S80 3D sensors with Zebra's advanced deep learning tools to solve difficult machine vision problems that would be impossible to handle with traditional tools. Locate complex and irregular surface defects and perform other challenging 3D vision tasks to improve the quality and operational efficiency of your workflow.

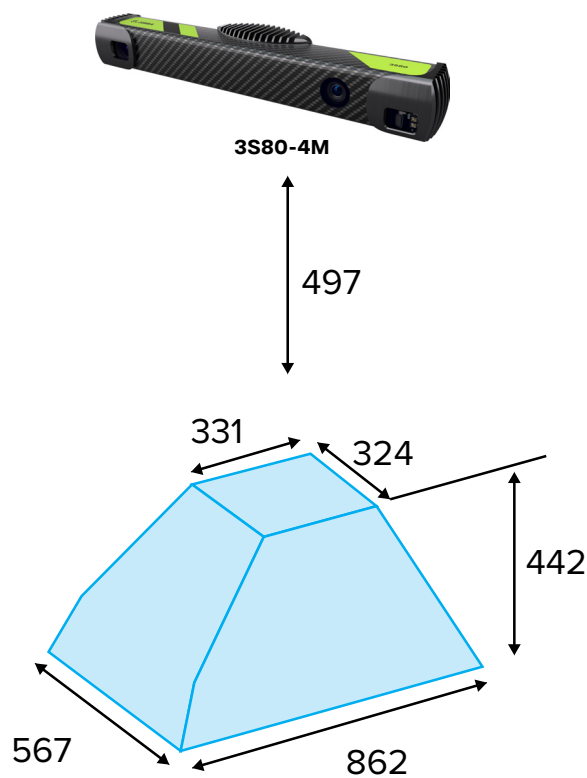
Specifications

3S80-4S		
Device characteristics		
Dimensions	12.1 x 2.7 x 3.4 in. 308 x 68 x 86 mm	
Weight	2.2 lbs./1000 g	
Baseline	9.05 in./230 mm	
Power	PoE or 24 V	
Data connection	1 Gbit Ethernet	
Performance characteristics		
3D sensing technology	Parallel Structured Light	
Output data	3D points (x y z) normals (x y z) depth map (z) color image (RGB) texture (grayscale intensity/RGB) confidence (float) event map (float)	
Scanning range	14.4–21.96 in./366–558 mm	
Optimal scanning distance (sweet spot)	17.48 in./444 mm	
Scanning area (at sweet spot)	16.69 x 12.28 in./424 x 312 mm	
Operation mode/scene	Scanner/static	Camera/dynamic
Resolution	2 million 3D points (1680 x 1200)	up to 2 million 3D points (1680 x 1200)
Color picture resolution	2 MP mapped on 3D data (2D data up to 8 MP)	2 MP mapped on 3D data (2D data up to 8 MP)
Point-to-point distance (at sweet spot)	0.001 in./0.25 mm	0.015 in./0.37 mm at 0.9 MP 0.001 in./0.25 mm at 2 MP
Calibration accuracy (1 σ)	< 0.006 in./ < 0.15 mm	< 0.01 in./ < 0.3 mm
Temporal noise (1 σ)	< 0.002 in./ < 0.05 mm	< 0.003 in./ < 0.1 mm
Maximum fps	2 fps	20 fps at 0.9 MP 5 fps at 2 MP
User environment		
Temperature working range	full: 32°F–104°F/0°C–40°C optimal: 72°F–77°F/22°C–25°C	



Specifications

3S80-4M		
Device characteristics		
Dimensions	16.9 x 2.7 x 3.3 in. 428 x 68 x 85 mm	
Weight	2.3 lbs./1050 g	
Baseline	13.8 in./350 mm	
Power	PoE or 24 V	
Data connection	1 Gbit Ethernet	
Performance characteristics		
3D sensing technology	Parallel Structured Light	
Output data	3D points (x y z) normals (x y z) depth map (z) color image (RGB) texture (grayscale intensity) confidence (float)	
Scanning range	19.6–37 in./497–939 mm	
Optimal scanning distance (sweet spot)	25.7 in./653 mm	
Scanning area (at sweet spot)	23.1 x 17.5 in./588 x 444 mm	
Operation mode/scene	Scanner/static	Camera/dynamic
Resolution	2 million 3D points (1680 x 1200)	up to 2 million 3D points (1680 x 1200)
Color picture resolution	2 MP mapped on 3D data (2D data up to 8 MP)	2 MP mapped on 3D data (2D data up to 8 MP)
Point-to-point distance (at sweet spot)	0.015 in./0.37 mm	0.021 in./0.55 mm at 0.9 MP 0.015 in./0.37 mm at 2 MP
Calibration accuracy (1 σ)	0.009 in./0.25 mm	0.02 in./0.5 mm
Temporal noise (1 σ)	0.002 in./0.05 mm	0.003 in./0.1 mm
Maximum fps	2 fps	20 fps at 0.9 MP 5 fps at 2 MP
User environment		
Temperature working range	full: 32°F–104°F/0°C–40°C optimal: 72°F–77°F/22°C–25°C	



3S80-4L		
Device characteristics		
Dimensions	24.7 x 2.7 x 3.4 in. 628 x 68 x 85 mm	
Weight	2.5 lbs./1150 g	
Baseline	21.7 in./550 mm	
Power	PoE+ or 24 V	
Data connection	1 Gbit Ethernet	
Performance characteristics		
3D sensing technology	Parallel Structured Light	
Output data	3D points (x y z) normals (x y z) depth map (z) color image (RGB) texture (grayscale intensity) confidence (float)	
Scanning range	30.6–119.4 in./778–3034 mm	
Optimal scanning distance (sweet spot)	49.3 in./1252 mm	
Scanning area (at sweet spot)	40.4 x 32.9 in./1027 x 836 mm	
Operation mode/scene	Scanner/static	Camera/dynamic
Resolution	2 million 3D points (1680 x 1200)	up to 2 million 3D points (1680 x 1200)
Color picture resolution	2 MP mapped on 3D data (2D data up to 8 MP)	2 MP mapped on 3D data (2D data up to 8 MP)
Point-to-point distance (at sweet spot)	0.03 in./0.72 mm	0.04 in./1.05 mm at 0.9 MP 0.028 in./0.72 mm at 2 MP
Calibration accuracy (1 σ)	0.035 in./0.9 mm	0.05 in./1.25 mm
Temporal noise (1 σ)	0.004 in./0.1 mm	0.006 in./0.15 mm
Maximum fps	2 fps	20 fps at 0.9 MP 5 fps at 2 MP
User environment		
Temperature working range	full: 32°F–104°F/0°C–40°C optimal: 72°F–77°F/22°C–25°C	

