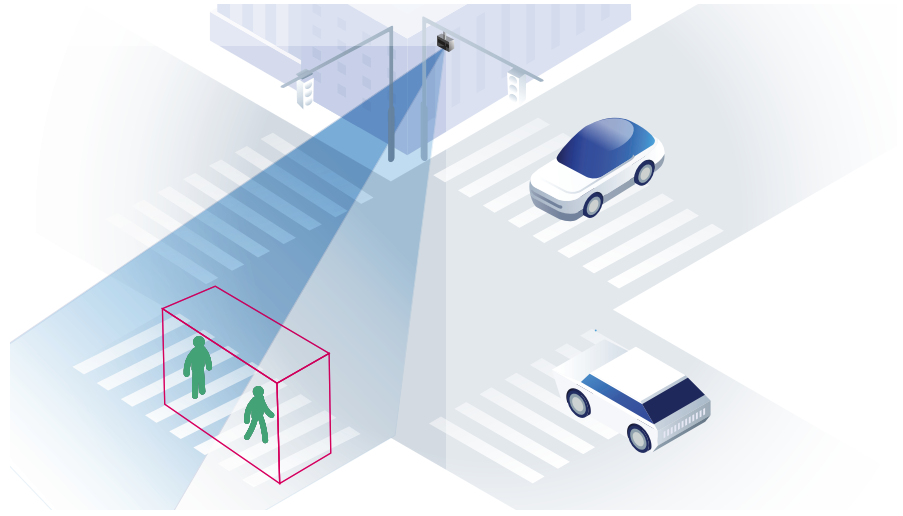




Software-Defined Lidar Solution for Smart Intersections

Smart Intersections are designed to reduce congestion, pollution, and fuel consumption, while ensuring maximum safety for pedestrians and road users. However, legacy sensors such as cameras, radars, and loops, have severe limitations. Cameras struggle to detect vehicles at long range, in low luminosity and adverse weather, and do not provide privacy to pedestrians. Radars cannot effectively detect vehicle class in high traffic environments. Legacy sensors lack the versatility to effectively support and deliver dilemma zone protection, signal priority, signal phase extension and other advanced Smart Intersection applications.



AEye's 4Sight™ M Addresses Perception Sensor Challenges

AEye's 4Sight™ M is a software-defined lidar sensor that leverages AEye's Intelligent Sensing Platform to enable perception to better locate, identify and track objects over time. It is specifically designed to complement the use of existing cameras, radars, and loops in Smart Intersection applications, improving data collection and overall safety for road users and pedestrians.

- ✓ **Enables** faster, more accurate and reliable perception up to 300m
- ✓ **Performs** in all lighting and weather conditions
- ✓ **Extends** sensing capabilities of existing Smart Intersection applications - improving pedestrian safety and traffic flow
- ✓ **Provides** high density data in heavy traffic conditions - enhancing traffic controller efficiency

AEye's 4Sight™ for Smart Intersections

The 4Sight™ perception engine provides accurate, real-time detection generating the most actionable and precise data to support a wide range of Smart Intersection applications.

Vehicle type classification	Vehicle statistics and turn counting	Proactive detection of cyclists and pedestrians	Vehicle and pedestrian detection zones
Vehicle speed	Near miss and accident detection	Lane occupancy and queue	Up to 300m per sensor

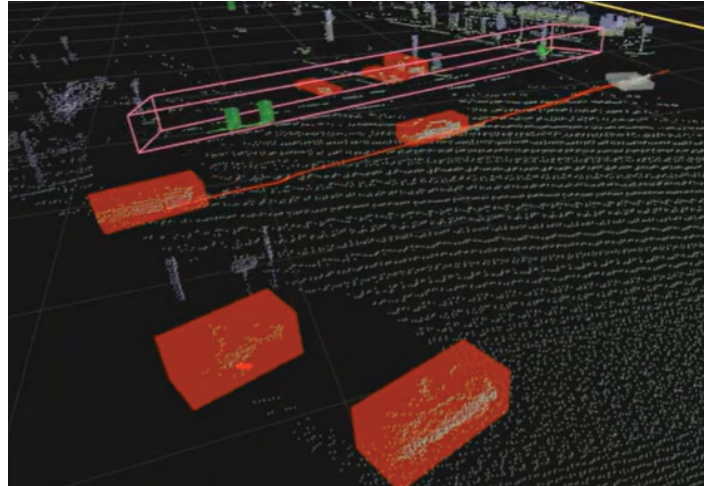
Unique Features

- ✓ Library of unique performance modes specifically designed and optimized for any Smart Intersection application
- ✓ Up to four returns to greatly improve data collection in all environments
- ✓ High confidence data in all lighting, weather, and traffic conditions
- ✓ Ability to dynamically change performance modes to focus perception where it matters most

Optimized for Smart Intersections

AEye's 4Sight™ perception solution defines the future of Smart Intersection performance.

- ✓ **Easy to use and deploy** – Easy to operate, low maintenance cost, simple installation, and commissioning.
- ✓ **Avoid development uncertainty** – Software-defined lidar sensor optimized for Smart Intersection application requirements.
- ✓ **Optimized for intersection management** – Provides optimal data and design to scale down existing sensing solutions.
- ✓ **Flexible integration** – High versatility regarding sensor height, pitch angle, number of lanes, traffic density, road geometry and type of data to extract.



4Sight™ M + perception monitoring intersection with safe pedestrian zone activated

System Architecture



4Sight™ M Key Specifications (Smart Intersections)

- Detection range: 5m – 300m
- Angular resolution: 0.1° x 0.1° vertical (H&V)
- Field of view: 60° x 30° (H&V)
- Pre-configured frame rate: 10 / 20 FPS
- Certification: IP66K+ IP67, IEC 60825-1,
- Operating temperature: -20°C to 65°C
- Power consumption: 40W @25°C
- Operating voltage: 12V-32V

Note: Specifications are configuration dependent. The AEye 4Sight™ M performance mode specifications shown here are for Smart Intersection applications only. For different applications, the sensor will have different specifications. For more information, please see the 4Sight™ M sensor datasheet.

Interfaces

- 4Sight™ M Sensor:** Ethernet connection utilizing UDP packets.
- 4Sight™ Perception Unit:** Serial connection utilizing SDLC protocol and RJ45 Ethernet connection utilizing NTCIP protocol.

Perception Hardware Specifications

- NVIDIA® Jetson Xavier™ NX with Volta™ GPU architecture with 384 NVIDIA CUDA® cores
- High AI computing performance for GPU-accelerated processing
- 8GB 128bit LPDDR4 memory
- 16GB eMMC storage
- 1 x M.2 Key M 2280 with PCIe x4 NVMe SSD slot
- 1x LAN Ethernet port 100Mbps – POE enabled
- 12 VDC power input

Note: Specifications listed are for the AEye 4Sight™ advanced perception unit. For other specifications or more information, please contact AEye.