Rocket Science Technologies

Picture for reference only, subject to actual product.

AgniBaan Ultra (अग्निबाण)

MULTI-LANE FREE FLOW LiDAR

Data Sheet - v1.1 - 2026

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Rocket's AgniBaan Ultra is a new-generation, high-performance LiDAR sensor engineered for smart cities, smart high speed road & smart transportation. It **can monitor up to 4 lanes**, regardless of vehicles running in parallel, the height of each vehicle can be accurately detected. Combining advanced Time-of-Flight technology, precise optics, and robust multi-echo capabilities, it delivers reliable performance in all conditions - rain, fog, snow, or shine.

Key Features

- **Ready-to-Deploy Intelligence — inbuilt classification engine means zero coding or integration hassles for System Integrators**
- 3D | 360° Scanning Angle | Max Range: 300m
- Works at speed range from 10 km/h – 220 km/h
- One LiDAR covers 4 Lanes
- Works in Tandem with 4 Cameras (one per each lane) to provide Number of Axles
- Integrated design, compact structure
- High resolution, high detection accuracy, long detection distance
- Stable and reliable, can work stably in the environment of -40°C ~ 80°C
- Horizontal 360°, vertical 40.5° FOV focused downward
- Ultra-Fast Scanning: 5Hz / 10Hz / 25Hz
- Resolution: 0.25° / 0.5°
- Multi-Echo Support: Up to 3 echoes
- IP68 Rated | Rugged & Waterproof
- Working Temp: -40°C to 80°C
- Safe Laser Class 1 (905nm)

** Product information is subject to change without prior notice.*

Visual Intelligence in Action

- Point cloud output: Detailed 3D outlines
- Ideal for Multi-Lane Free Flow AVC Classification, tunnels, and urban smart city roads
- Integrates seamlessly with ANPR & tolling systems

Primary Applications

Traffic Data Collection

- Real-time vehicle count, speed, headway & occupancy
- Supports multi-lane detection (up to 4 lanes)
- Operates 24/7 in all weather and lighting conditions
- Easy installation on gantries or roadside poles
- Accuracy: Traffic Count: ≥98%, Speed: ≥95%, Classification: ≥95%

Automatic Vehicle Classification (AVC)

- Real-time classification
- Classifies vehicles by size, shape, axle & tyre type
- Works seamlessly with toll systems and ANPR
- Classification Accuracy: Vehicle type: ≥99%, Axle count: ≥99% (when installed alongside 01 Camera per lane + 01 Unit LiDAR to cover all 4 lanes

Vehicle Dimension Detection System (VDDS)

- Measures vehicle length, width & height
- Prevents defined over-sized vehicles from entering sensitive zones
- Supports free-flow, high-speed detection
- Accurate in complex scenarios (cross-lane, parallel driving)

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Technical Specifications

Basic Parameters	
Scanning principle	TOF
Ranging capability	200m (200m @ 10% reflective surface)
Ranging accuracy	±3cm (typ.)
Horizontal field of view	360°
Horizontal angle resolution	0.1° / 0.2° / 0.4°
Vertical angle resolution	40.5° (-1.5° ~ - 42°)
Vertical angle resolution	0.1° ~ 4°
Frequency	5Hz / 10Hz / 25Hz
Return model	Single Return/Dual Return

Eye safety	Class1
Mechanical/Electrical	
Laser wavelength	905nm
Eye safety level	Class1 （Eye safety）
Communication interface	Ethernet
Operating voltage	24±4V DC
Power consumption	20W （Under heating 50W ）
Ingress protection	IP68
Dimension	Φ162mm × 126.2mm
Weight	2.6kg
Operating temperature	-50°C ~ 80°C
Storage temperature	-50°C ~ 85°C
Data (Input/Output)	
Communication interface	UDP/IP
Output data	Distance, horizontal azimuth, signal intensity, reflectivity
Time source	GPS/NTP/PTP
GPS synchronization accuracy	≤10ms
GPS clock offset	≤10ms/s
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Integration and Software

- Compatible with Windows and Linux
- Dual TCP ports for simultaneous multi-device access
- Real-time point cloud display, waveform, and parameter control
- Supports dynamic IP and gateway settings
- Built-in factory reset, diagnostics, and calibration

What's Inside the Box

- Rocket AgniBaan Ultra LiDAR Sensor
- Power & Signal Cables
- Instruction Manual

Why Choose Rocket – AgniBaan Ultra?

- **Proven On-Site Expertise** — backed by multiple LiDAR deployments across diverse applications including traffic-flow surveys, vehicle sizing, and classification. Our team brings extensive experience in **algorithm development using LiDAR point-cloud data**
- Monitors up to 4 Lanes, accurately detecting the height of vehicles with less headway.
- Superior protection grade of IP68
- Performs under extreme weather conditions operating temperature range is -50°C ~ +80°C
- Superior ranging capability, can cover a larger detection range of 200m @ 10% reflective surface
- Proven performance in diverse conditions
- Minimal maintenance, quick installation
- Flexible SDK & API integration

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