

REV8 Ouster BlueCity Data Sheet

Solution Overview

Ouster BlueCity is a complete traffic management solution that combines 3D lidar with proprietary AI detection for actuation, alerts, and analytics. With privacy-enhancing feature technologies at the edge, the system sets a new standard with the world's first native color lidar that provides 360° long-range detection and tracking of multimodal road users up to 500 feet / 150 meters to optimize traffic signals and deliver real-time safety alerts. The same deployment automates 24/7 data collection with performance and safety analytics via edge and cloud options. The analytics include

heatmaps, graphs, and data downloads, alongside 3D event recordings for near-misses, wrong-way driving, and outside-of-crosswalk events. Following a fast and simple installation, the system seamlessly connects with traffic controllers and V2X infrastructure. The open API architecture ensures ecosystem integration and data sharing with leading ATMS platforms and industry partners. With Ouster BlueCity, municipalities and transportation agencies enhance multimodal mobility, drive operational efficiency, and improve safety across intersections, corridors and highways.

Key Components of Ouster BlueCity

- Ouster 3D digital lidar sensor (long and mid-range) with optional native color 3D point cloud and 2D image featuring RGB-Depth data
 - Proprietary AI detection software
 - Edge computer (with integrated SDLC supporting TS2 BIUs and ATC SIUs)
- PoE splitter, mounting and cable accessories
 - Real-time safety alerts
 - Ouster BlueCity portal
 - Edge and cloud analytics

Features

- AI-powered detection and tracking
 - Classification of people, two-wheelers, cars, trucks (w and w/o trailer), buses, trams, and user-defined size-based classification
 - 2D and 3D digital twin visualization with optional native color 3D point cloud and 2D image featuring RGB-Depth data
 - Integration with traffic controllers over SDLC, NTCIP or dry-contact
- Dry-contact triggers for alerts, flashing beacons or warning signs
 - Cloud and edge portal interface to configure, manage, and view multiple deployments and analytics
 - Vehicle-to-Everything (V2X) integration
 - Complies with NEMA TS2 and ISO 27001

Key Applications

Actuation

- Multimodal traffic signal actuation (customizable actuation logic based on count, speed, and class of objects, including transit, for a better priority and optimization)
- Includes VRU detection for pedestrian walk-time extension, dilemma zone detection, dynamic flashing yellow arrow, and no-right-turn-on-red

Alerts

- V2X Basic and Personal Safety Messages, and Standardized Data Sharing Messages (BSM, PSM and SDSM)
- High-priority alerts for WWD and stopped vehicle detection sent as email notification, flashing beacons triggers, and via ATMS integration (text, email). For details on alert specifications and third party materials, refer to Ouster BlueCity documentation

Analytics

- Safety analytics
- Zone analytics
- Turning movements
- Signal performance measures
- ATMS integration

Ouster BlueCity Portal

Features

- Edge (local) or cloud access
- Live 3D digital traffic twin visualization with optional native color point cloud and 2D image featuring RGB-Depth data. Includes privacy-enhancing VRU blurring technology
- Remote configuration
- Unlimited 3D virtual loops
- Event recordings and analytics review
- Diagnostics, system health, and OTA updates

Optional 24/7 edge and cloud-based analytics

- Performance
 - Zone analytics (count, speed, dwell, queue etc.)
 - Turning movements
 - Signal performance measures (OCR, PI, split trends and failure, approach delay, green allocation)
 - Safety
 - Near-miss using PET, PET rate, red-light violations, OCW

- Analytics License
 - Hardware-bound perpetual analytics license and SaaS-based options
- Varied edge and cloud options
- 12 months data retention

Browsers: Chrome, Firefox, Safari, Edge
 System Requirements: Any standard desktop, laptop, notebook or mobile device

Technical Specifications

Ouster REV8 OS1 Max and OS1 Digital Lidar

Sensor	OS1 Max (long-range advance detection) Optional native color point cloud featuring RGB-Depth data	OS1 (Mid-Range) Optional native color point cloud featuring RGB-Depth data
Ouster BlueCity Detection Range	Up 150 m / ~500 ft radius	Up 60 m / ~200 ft radius
Field of View	Vertical: 43.9° (+21.95° to -21.95°) Horizontal: 360.0°	Vertical: 44.0° (+22.0° to -22.0°) Horizontal: 360.0°
Vertical Resolution	256 Channels of Resolution	128 Channels of Resolution
Power Consumption	115 - 25 W, 19 W Nominal, 28 W peak at startup if operating at -40°C	10 W to 20 W, 15 W nominal, 22 W peak at startup if operating at -40°C
Certifications	IP68/69K	IP68/69K
Mean Time to Failure (MTTF)	250K+ hours	250K+ hours

Ouster BlueCity Detection System

Application	AI detection software to detect, classify, and track objects	Storage Temperature	-40°C to +85°C
Operating System	Ubuntu 24.04 LTS or later	Operating Temperature	-34°C to +74°C with 0.7 m/s airflow (30W AGX Orin mode)
Classification Types	People, two-wheelers, cars, trucks (w and w/o trailer), buses, and user-defined size- based classification	V2X messages	Integrates to Roadside Unit (RSU). SAE standards with BSM/PSM (J2735) and SDSP (J3224) protocols
Detection Range	Up 150 m / ~500 ft radius	Certifications	Complies with NEMA TS2 and ISO 27001
Edge Computer Specifications	CPU: NVIDIA 8-core ARM® Cortex® GPU: 1024-core NVIDIA Ampere™ architecture Storage: 64GB eMMC and 128GB NVMe Power: Built-in PoE injector with 6kV surge protection Certification: NEMA TS2 Certified (Compliance with TS2-2021 sections 2.2.7, 2.2.8, and 2.2.9 Connectivity: Integrated Internal SDLC supporting TS2 and ATC controllers	Software License Term	Hardware-bound perpetual AI detection & actuation software license
		Application	Browser-based user interface to view, setup, and configure Ouster lidar sensors and Ouster BlueCity software. Accessed on any standard desktop and laptop
		Browsers	Chrome, Firefox, Safari, Edge

Ouster Digital Lidar Accessories

Sensor Mount		POE+ Splitter	
Application	For single mounting with a sunshade	Compliance Safety Approvals	CE, FCC, EMI / EMS (FCC CFR47 Part 15, EN55032, EN55035)
Mounting Color	White powder coat	Electrical	Input :40-57Vdc, 1.0A, 802.3at PoE+ 30W; Output: 24Vdc, 1.07A
Mounting Options	Traffic pole or sign	Operating Temperature	-34 °C to 74 °C
Mounting Height	13 - 15 ft (~20ft for highway applications)	Mounting	Single splitters
Sensor Tilt	-15° to -20°	Mounting Scheme	Pole mount
Material	5052 Aluminum		



Complies with:
NEMA TS2



Complies with:
ISO 27001

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