

OmniScan 360: Threshold Sampling Waveform Digitising (TSWFD) High Precision Surveying LiDAR

ASTRI's OmniScan 360 revolutionises 3D scanning with breakthrough threshold sampling technology that captures laser signals with exceptional precision. This intelligent laser scanner performs full 360-degree panoramic scanning to reconstruct detailed 3D geometry of any environment up to 100 metres away. By combining advanced optical design with high-speed signal processing, the system delivers professional-grade point cloud data faster which is more affordable than before.

Industry Challenges

- Modern smart cities, construction projects, and infrastructure management urgently require affordable, accurate 3D mapping solutions
- Traditional high-precision LiDAR systems are prohibitively expensive, limiting access to building information modelling and digital twin technologies

Major Benefits

- **Revolutionary Cost-Performance:** Proprietary TSWFD technology digitises laser signals with higher precision
- **Ultra-Fast Processing:** FPGA-accelerated waveform reconstruction delivers real-time 3D data processing
- **Extended Range Coverage:** Optimised full-dome optical design maintains exceptional efficiency, enabling accurate scanning up to 100 meters in all directions simultaneously

Application Areas

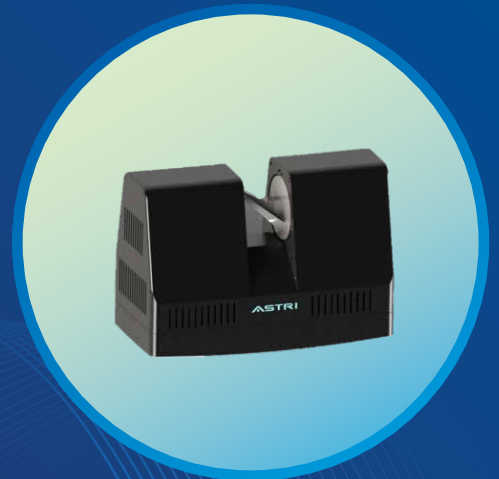
- **Building Documentation:** Complete 3D reconstruction of architectural structures for renovation, preservation, and building information modeling (BIM)
- **Infrastructure Management:** Comprehensive scanning of roads, bridges, utilities, and public facilities for maintenance planning and digital asset management

Collaborator

Software and system solutions provider

Award(s)

International Exhibition of Inventions Geneva,
Asia Exhibition of Innovations and Inventions Hong Kong



With precision laser scanning technology, it can recreate surrounding spaces with millimeter-level accuracy. It can be applied in construction, infrastructure management, and smart city development

