# Camera Module Pros,
# Ready to partner with the best?

By leveraging our specialized expertise in optics, mechanics, circuitry and manufacturing processes, NAMUGA delivers high-resolution, ultra-compact camera solutions tailored to meet the precise needs of our customers.

**Miniaturization Lightweighting**

**Intrinsic Calibration**

**Active Align High-end OIS**

**Iris & Facial Recognition**

## Core Competencies since 2004

**Stable Financial Position**
Expanding the scale of investment every year through efficient business operations.

**Customer-tailored Design Capability**
Designing and producing top-quality products that meet customer specifications.
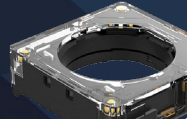
**Vision Technology**
Extensive experience in camera module and 3D sensing technology.

## Our business

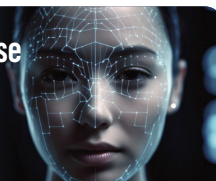**Camera Module**

**Micro Actuator**

**AR/VR**

**Vehicle/Mobility**
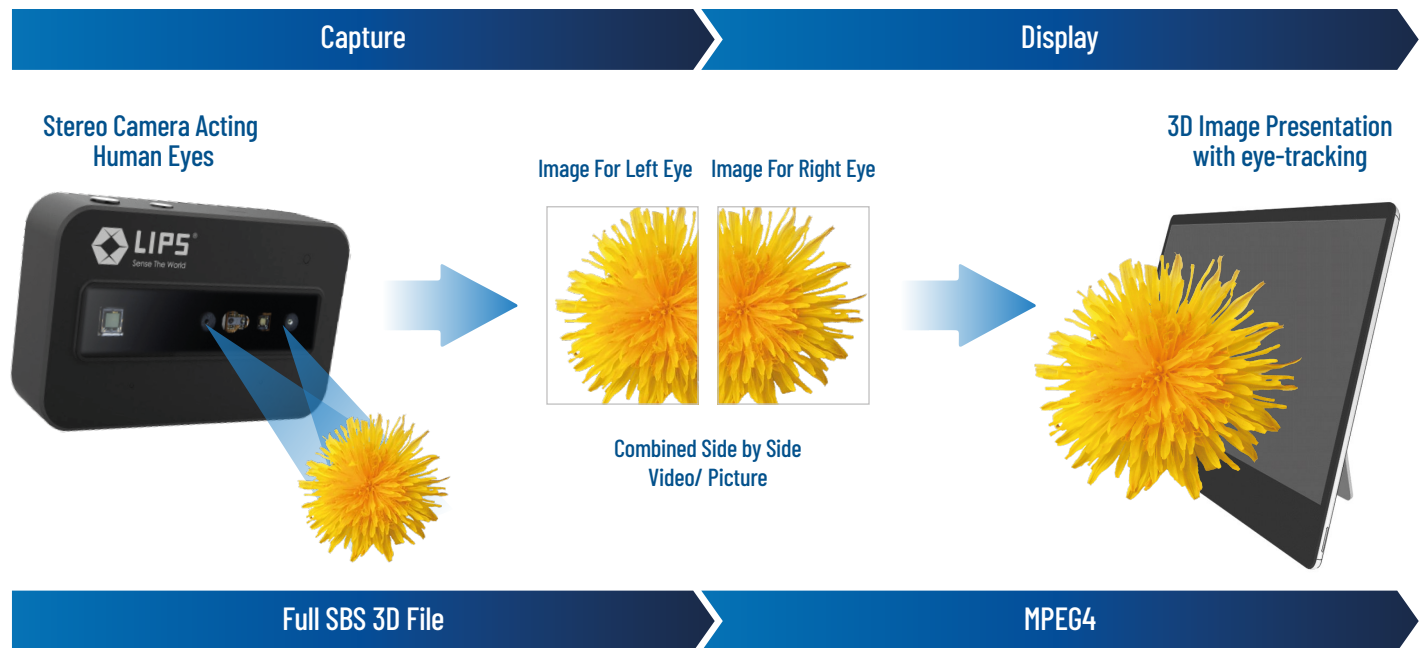
**Security/Defense**

**Bio-Medical/Healthcare**

# 3D Display Solution

LIPS bring you the ultimate all-in-one solution for next-generation glasses-free 3D experiences from 3D content capture, to immersive 3D display with the 3D world.

| Capture | Display |
|---|---|

Stereo Camera Acting Human Eyes

Image For Left Eye   Image For Right Eye

3D Image Presentation with eye-tracking

Combined Side by Side Video/ Picture

| Full SBS 3D File | MPEG4 |
|---|---|

### Real-Time 3D
**Real-Time 3D Content Creation**
Capture 3D photos and videos with dual-lens stereo camera systems.
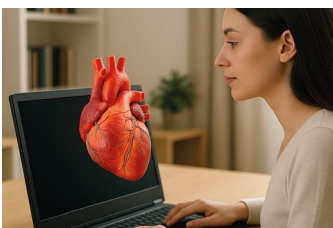
**Eye-Tracking for Perfect Perspective**
Eye-tracking technology follows the viewer's gaze and dynamically adjusts the 3D content, delivering the best viewing experience for every angle.

### WIDE
**Multi-view Lenticular 3D Display**
Enjoy wide and no dizziness view from 3D display technology.

## Real-world Applications

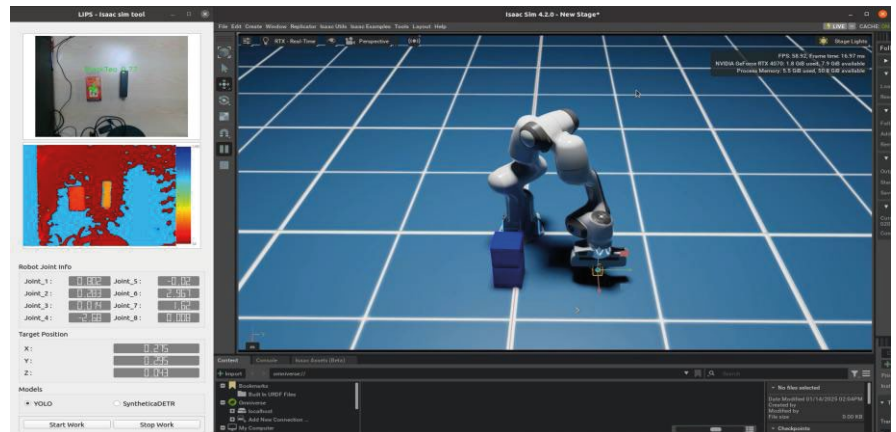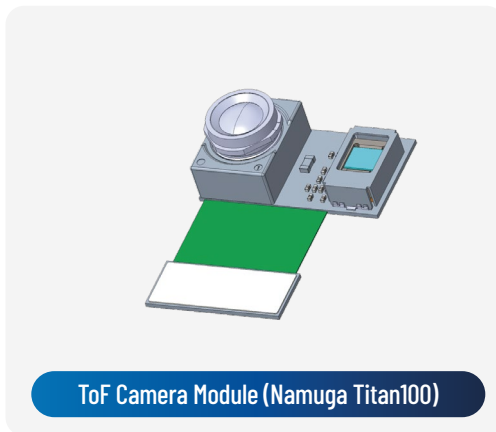Education

Industrial Design

Entertainment

Retail

# Robot Arm – Gripping Deep Learning Solution

- Fast & effective Deep Learning Solution with MR-based software that transforms real-world scenes into actionable 3D data.
- Accurate 3D sensing with ToF enhances robot arm's spatial awareness.

ToF Camera Module (Namuga Titan100)

### Rapid prototyping & integration
Development platform designed for robotic arm applications

### Precise Motion
Provide multiple degrees of freedom, enabling them to perform complex, precise tasks in confined or dynamic environments
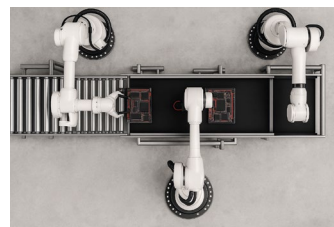
### Automation
Adaptable to various applications, from industrial automation to research, and can easily integrate with tools, sensors and AI systems
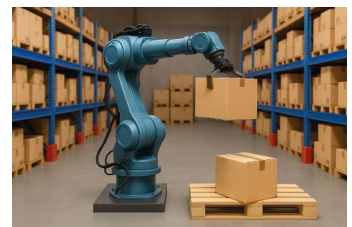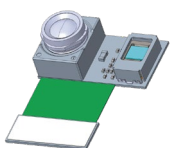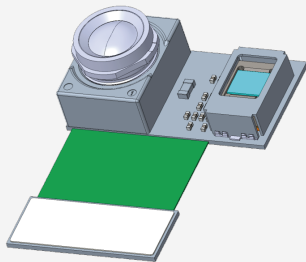
Pick and Place  Bin Picking  Assembly  Load stacking

| Product | Sensor | Lens | Distance Range | Depth Accuracy |
|---------|--------|------|----------------|----------------|
| Titan100 | QVGA | 85°(H), 69°(V), 100°( ) f1.3 | 0.3~7.5m | ±3%@500mm |

**NAMUGA Co., Ltd.**
7F, U Space 2-B, 670 Daewang Pangyo-Ro, Bundang-Gu, Seongnam 13494, R.O. Korea
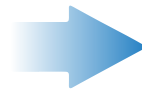Email: info@namuga.com

NAMUGA.COM

# Vision Metric Solution

Powered by Namuga's advanced Titan100 ToF camera, the solution combines high-speed depth sensing and precision measurement — enabling fast, reliable logistics automation.
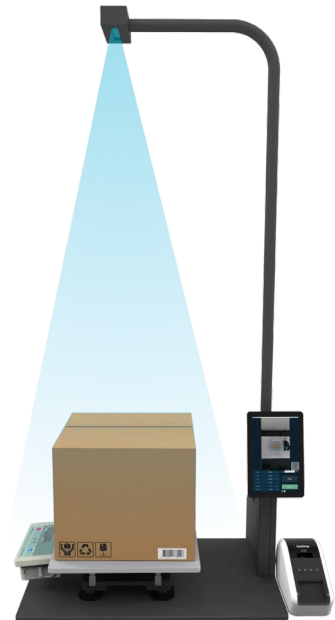


ToF Camera Module (Namuga Titan100)

Depth-sensing camera

→

embedded into system



Used in Dimensioning System

### Support Various Shapes
Accurately measure boxes, tubes, envelopes, and irregular items.

### Handle Tough Surfaces
Maintain precision on glossy, reflective, and wrapped materials.
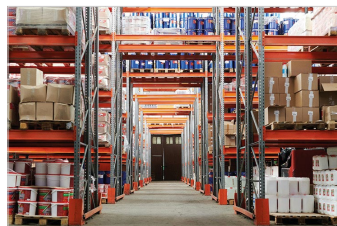
### Low-Light Ready
Deliver reliable measurement in dark or low-light environments.
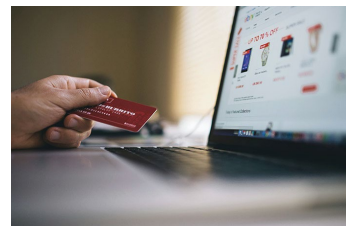
## Real-world Applications



Logistics Operations



Warehouse Automation



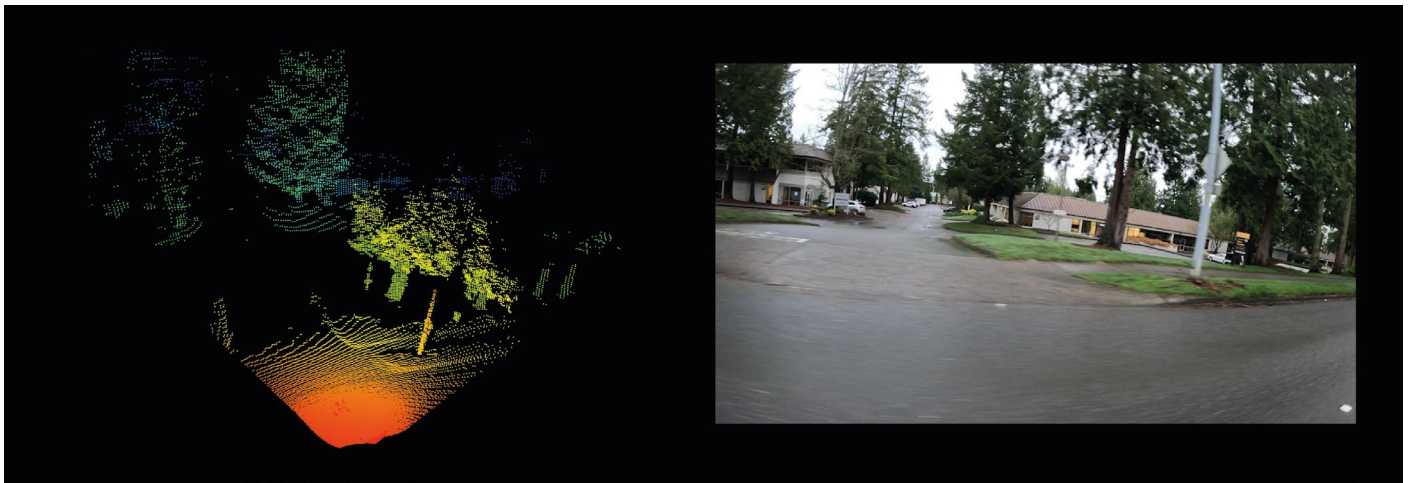Retail Management



E-commerce Fulfillment

# NAMUGA
## VISION CONNECTIVITY



# Stella 2

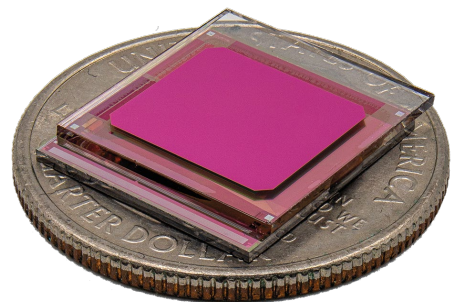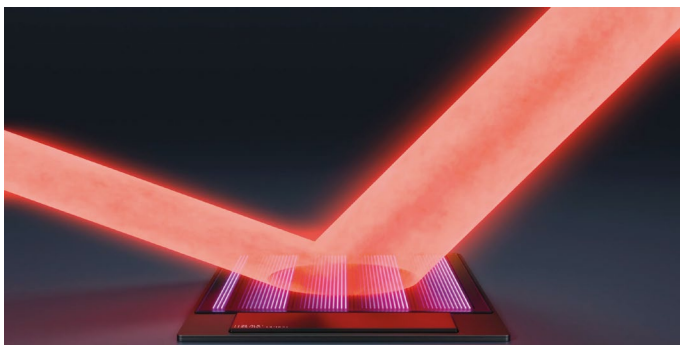Super Compact Solid-State Lidar with Extended Range Co-developed with **LUMOTIVE**

## Minimal Emitters, Maximum Efficiency

Fewer laser components, yet outstanding performance. Stella2 captures high-resolution spatial data with a simplified architecture—compact, cost-effective and power-efficient.



## Extended Range, Maximum Efficiency

- 80-meter range, 20 Hz frame rate
- LCM chip powered by Lumotive, no mechanical inertia, enable shaping of light in any pattern across the field of view. Switch between any angle in 50 µs.
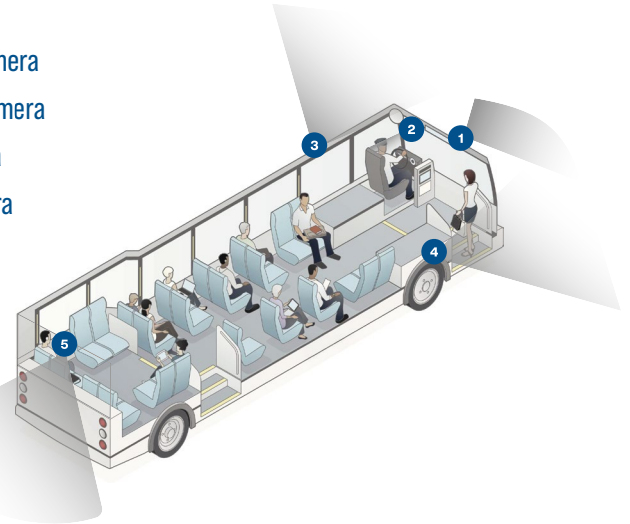


Co-developed with Lumotive

| Product | Max Range | Range (10% R @ 100klux) | FoV (H x V) | Resolution (H x V) | Pixels | FPS |
|---------|-----------|--------------------------|-------------|---------------------|--------|-----|
| Stella 2 | 80m | 40m | 120° x 90° | 0.47° x 0.47° | 256 x 192 | 10 – 20Hz |

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# AI- Powered Bus Solution

The AI-Powered Bus Solution enhances driving safety and operational efficiency by integrating advanced driver monitoring, real-time hazard detection, and cloud-based video management for comprehensive fleet protection.



1. Front-Facing Camera
2. Driver-Facing Camera
3. Left Side Camera
4. Right Side Camera
5. Rear Camera

**Live Streaming**

**On Demand**
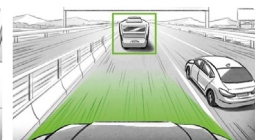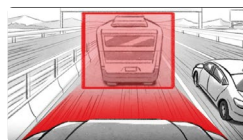
**Cloud Storage**

**Emergency Record**

## Pedestrian Safety
Warn drivers instantly when people are detected in blind spots to prevent accidents.



## Driver Distraction Warning
Keep drivers focused by alerting them when they are distracted or using their phone.



## Lane Change Safety
Help drivers switch lanes safely by warning about blind spots and nearby vehicles.