

# 3D Depth RDK

SOLUTIONS FOR ROBOTICS, SLAM AND ACCESS CONTROL APPLICATIONS

The Oclea™ 3D Depth Reference Design Kit removes the risk and friction from developing your vision-based object-recognition and location aware robot.

Robotics are moving from the industrial environment and into the home. As machines are moving in the same spaces that people live and work in, machine awareness of environments and surroundings becomes more important.

The Oclea 3D Depth RDK ships with fully functional hardware and software - specifically designed to accelerate the entry into this emerging market.

The included Oclea™ OS provides demonstration software and an easy pathway for implementing your custom application. Together with our industry-leading partner ams Osram we provide a platform for object recognition and SLAM.

Our validated design integrates sensors, computing power and software to ensure all components of your final product work together to accelerate time-to-value for your innovation.

KEY FEATURES

**Oclea CV25 μSoM**

Powerful Ambarella™ CV25 ISP with H.264/H.265 encoding performance, and integrated Quad-ARM Cortex-A53 Cores @ 1GHz

**ams OSRAM SERES 5**

Built for 940nm photonics. Integrates stereo vision, structured light projection, Time of Flight sensors and IR flood illumination.

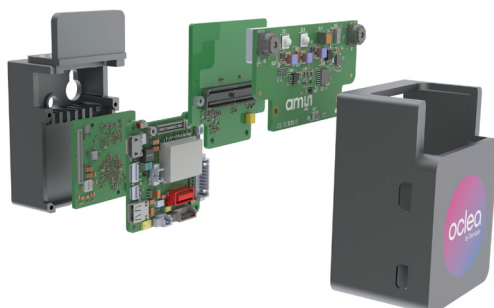
**Proven Hardware**

Accelerate time-to-market and reduce development effort by using a modular approach to hardware and software.

Small form factor, low power, high speed peripherals and networking hardware on-board.

**Included SDK**

Software Development Kit (SDK) is shipped with example applications for depth mapping, point cloud streaming, object detection, facial recognition, streaming, segmentation, WebRTC and more.



**Oclea Depth RDK**

Size 57mm x 75mm x 31mm • Weight 106g

**ams OSRAM SERES 5 Sensor Board**

- 2x MIRA Image Sensors
- 1x Direct Time of Flight Sensor
- 1x BELAGO Dot-Pattern Illuminator
- 2x OSLON BLACK Flood LEDs



**Oclea CV25 μSoM**

- 8GB eMMC
- 2GB LPDDR4 SDRAM

**Small Form factor**  
Actual Size shown

**INTERCONNECTING PCBs**

- Oclea CV25  $\mu$ SoM
- ams OSRAM SERES 5.x Sensor Board
- Oclea OEM Baseboard
- Oclea / ams OSRAM Sensor Adapter

**POWER**

- 12VDC Input

**NETWORKING**

- 10/100 Mb/s Ethernet
- 802.11 a/g/b/n Wi-Fi

**PERIPHERALS**

- HDMI VOUT
- $\mu$ SD Card
- USB 2.0
- GPIO

**SOFTWARE**

- Custom build your Oclea OS using the Yocto Project® build tools
- GStreamer framework
- 3D Depth example applications
- ML / CNN example applications
- SDK Support for ams OSRAM SERES board

**SDK SYSTEM REQUIREMENTS**

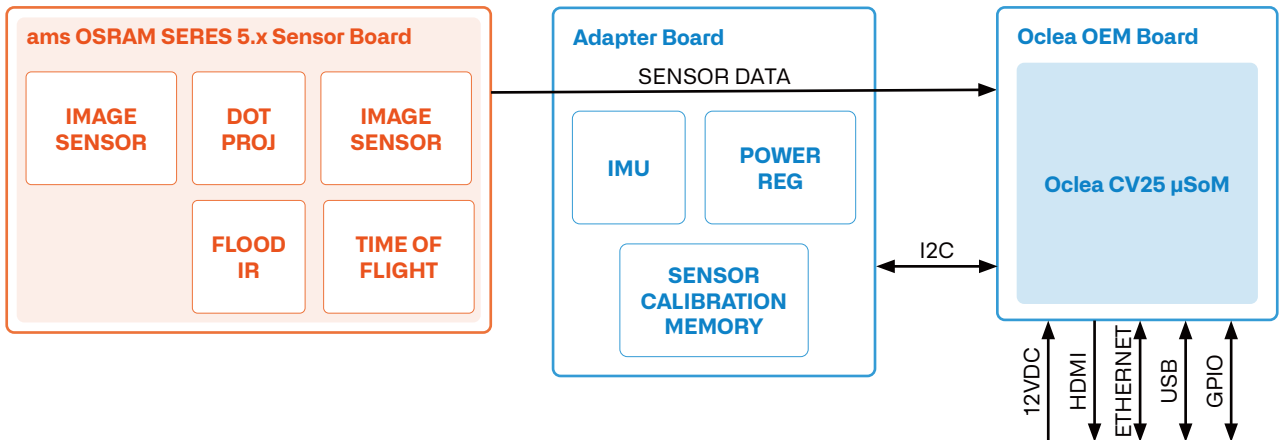
- PC with x86-64 architecture
- Ubuntu Linux 20.04 LTS
- 1TB free disk space

**WHAT'S IN THE RDK**

- Oclea Depth Device
- ams OSRAM SERES 5.x board
- Oclea SDK
- Getting Started Guide

- Schematics and PCB Design files
- 12VDC Power Supply
- Engineering and design support via [support.oclea.com](http://support.oclea.com) online portal

**Oclea Depth RDK Block Diagram**



**SERES Sensor board**

Configuration options - Specify at time of order



	IMAGE SENSOR	DOT-PATTERN ILLUMINATOR	FIELD OF VIEW	IR FLOOD LIGHT	ToF SENSOR
<b>SERES 5.0.11</b>	2x MIRA130 1.3MPx 940nm IR	BELAGO1.1 5k random dots	Portrait 40° x 60°	2x OSLOM BLACK SFH4725 940nm	TMF8828 8x8 Multizone dToF
<b>SERES 5.1.12</b>	2x MIRA220 2.2MPx 940nm IR	BELAGO1.2 15k random dots			
<b>SERES 5.1.21</b>		BELAGO 2.1 40k random dots (Wide FOV)	Landscape 100° x 70°	2x OSLOM BLACK SFH41847 940nm	
<b>SERES 5.1.12</b>	2x MIRA220 2.2MPx 940nm IR + RGB	BELAGO1.2 15k random dots	Portrait 40° x 60°	2x OSLOM BLACK SFH4725 940nm	
<b>SERES 5.2.11</b>	MIRA050 0.5MPx 940nm IR	BELAGO1.1 5k random dots			

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