



# OVA0B

## 100-megapixel product brief

### 100MP Resolution Image Sensor with Small 0.612 $\mu\text{m}$ Pixel Size for Smartphone Wide and Ultrawide Cameras

OMNIVISION's OVA0B is a high-performance 100-megapixel (MP) image sensor featuring the 0.612  $\mu\text{m}$  pixel size for smartphone camera designs targeting wide and ultrawide mobile imaging. Built on OMNIVISION's PureCel®Plus-S stacked-die technology, the OVA0B provides leading edge still image capture and exceptional 4K video performance.

The OVA0B delivers a wide range of features, such as high gain mode, staggered high dynamic range (HDR), and a C-PHY interface for greater throughput using fewer pins, making it ideal for the main rear-facing camera in multicamera configurations. This sensor can use 4-cell binning to output a 25MP image with 4x the sensitivity,

offering 1.22  $\mu\text{m}$  equivalent performance for previews and still captures. In addition, OVA0B supports upscaling function so that it can output 100MP as well.

The OVA0B offers type-2, 2x2 microlens phase detection autofocus (ML-PDAF) to boost autofocus accuracy, especially in low light. The sensor provides options for multiple resolutions and frame-rate configurations, including 100MP at 15 frames per second (fps), 25MP video at 30 fps, 4K video at 90 fps. Additionally, the OVA0B supports 2- or 3-exposure staggered HDR timing for up to 4K video modes.

Find out more at [www.ovt.com](http://www.ovt.com).



- OVA0B40-GA5A-002A  
(color, chip probing, 150 μm backgrinding, reconstructed wafer with good die)

## Applications

- mobile wide camera
- mobile ultrawide camera
- video conferencing

## Technical Specifications

- **active array size:** 11584 x 8688
- **maximum image transfer rate:**
  - 100MP (11584 x 8688): 15 fps
  - 25MP (5792 x 4344): 30 fps
- **power supply:**
  - core: 1.15V
  - analog: 2.8V
  - I/O: 1.8V or 1.2V
- **power requirements:**
  - active: 405 mW (25MP @ 30 fps)
  - XSHUTDOWN: <50 μA
- **output formats:** 10-bit RGB RAW
- **temperature range:**
  - operating: -30°C to +85°C junction temperature
  - stable: 0°C to +60°C junction temperature
  - temperature sensor: ±5°C between 0°C to +80°C (for higher resolutions: ±2°C between +50°C to +80°C)
- **lens size:** 1/1.8"
- **lens chief ray angle:** 34.55° non-linear
- **scan mode:** progressive
- **pixel size:** 0.612 μm x 0.612 μm
- **image area:** 7128.576 μm x 5356.224 μm

## Product Features

- automatic black level calibration (ABLC)
- programmable controls for:
  - frame rate
  - mirror and flip
  - binning
  - cropping
  - windowing
- support for dynamic DPC
- supports output formats: 10-bit RGB 4-cell pattern
- supports horizontal and vertical subsampling
- supports typical images sizes:
  - 11584 x 8688
  - 5792 x 4344
  - 5760 x 3240
  - 3840 x 2160
  - 1920 x 1080
  - 1280 x 720
- standard serial SCCB interface
- up to 4-lane MIPI TX interface with speed up to 3.0 Gbps/lane
- 2/3 trio C-PHY interface, up to 2.6 Gbps/trio
- supports type-2 2x2 ML-PDAF
- 4-cell support:
  - 4-cell binning
  - 4-cell bin and upscale to full
- HDR support: stagger HDR 2/3 exposure
- digital upscaler and downscaler
- supports fast switch mode (fast switch between different modes)
- three on-chip phase lock loops (PLLs)
- programmable I/O drive capability
- built-in temperature sensor
- 0.612 μm pixel

## Functional Block Diagram

