



# OP03050

## LCOS product brief



### OMNIVISION Single Chip LCOS Panel for Next-Generation Smart AR/XR/MR Glasses

The OP03050 is a low-power, small form factor liquid crystal on silicon (LCOS) panel that integrates the LCOS array, driving circuit, framebuffer and interface in a single chip. The OP03050 LCOS panel provides a high-resolution, immersive experience for real-time video conferencing and streaming when used in augmented reality (AR), extended reality (XR) and mixed reality (MR) glasses and head-mounted displays.

The OP03050 LCOS panel has a 3.0-micron pixel pitch; it features 1560 x 1200 display resolution at 120 Hz with low-latency. It comes in a 0.23-inch optical format in a small FPCA package and supports a 4-channel MIPI-DSI interface.

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



### Applications

- AR/XR/MR glasses
- head mount display
- pico projectors

### Technical Specifications

- power supply:**
  - core: 1.5V ± 5%
  - MIPI: 1.5V ± 5%
  - I/O: 1.8V/3.3V ± 10%
  - pixel array: 3.3~4.0V ± 10%
  - DRAM: 3.3V ± 10%
- power requirements:**
  - active: TBD
  - standby: TBD
- LC operational temperature range:**
  - +10°C to +70°C
- active native area:**
  - 4.776 mm x 3.696 mm
- native resolution:** 1560 x 1200
- native device diagonal:** 0.232"
- pixel pitch:** 3.0 µm
- package dimensions:**
  - 8.30 x 35.62 x 1.99 mm

### Product Features

- 4-channel MIPI DSI receiver, color sequential RGB888
- internal PLL for clock generation
- outputs enable/disable control signals to external solid state light sources
- standard 100% digital CMOS technology
- no spacers in active area
- digital interface
- high aperture ratio
- supports horizontal and vertical flipping
- insensitive to photo-induced carrier generation
- designed for color field sequential operation
- 32 pixels for horizontal alignment
- 32 lines for vertical alignment

### Functional Block Diagram

