

Product Document

High-Speed Line Scan Image Sensors

ams.com/4LS



4LS – High-Speed Line Scan Image Sensors

- High speed of up to 120 kLines/s x 4 Lines
- RGB + Clear (no filter) or 4:1 Time Delay and Integrate (TDI) operation
- $5.6 \times 5.6 \mu\text{m}^2$ pixel size
- Resolutions of 10k and 15k

**Sensing
is life.**

General Description

The 4LS series are the newest line scan image sensors from ams. As a family of high-speed line-scan sensors featuring four lines of pixels, 4LS has both monochrome and color versions. Designers can use 4:1 digital TDI (Time Delay and Integration) to get high image quality under lower illuminated environments or perform high-speed object inspection. 4LS also supports True Color applications with extended spectral

range. Each of the four lines of the 4LS sensor can be triggered for exposure and reset independently and can have individual gain settings (CDS and digital gain). Alternatively, all four lines can be read out simultaneously over bit serial LVDS output taps. 4LS features a low noise pixel with true CDS (correlated double sampling) and global shutter, allowing fully pipelined readout and integration.

Features

- Up to four simultaneously and fully independently operated lines
- Configurable output bandwidth
- Configurable full well up to 40 ke-
- COB/Invar package
- $5.6 \times 5.6 \mu\text{m}^2$ pixel size
- 4:1 digital TDI in B&W

Benefits

- Higher machine production speed
- Full RGB color acquisition
- Lower pin count integration for lower speed applications
- Only sensor on the market with 4 simultaneously and fully independently operating lines
- Mechanically robust package providing high mechanical and thermal stability and planarity of the die

Applications

- Document scanner
- Print inspection (i.e. glass, PCB, LCD)
- High end web inspection
- Food sorting / inspection
- Drug inspection
- High quality material inspection
- OCR (optical character recognition)
- Logistics

Block Diagram

