

Next Generation Machine Vision Image Sensors

ams.com/area-scan-sensors

CSG Area Scan Sensors

- New pipelined global shutter sensors
- 14Mpixels for 1" optical format and 8Mpixel for 1/1.1" optical format
- Excellent shutter efficiency and high dynamic range
- High-speed frame rate for demanding professional and industrial applications



**Sensing
is life.**

General Description

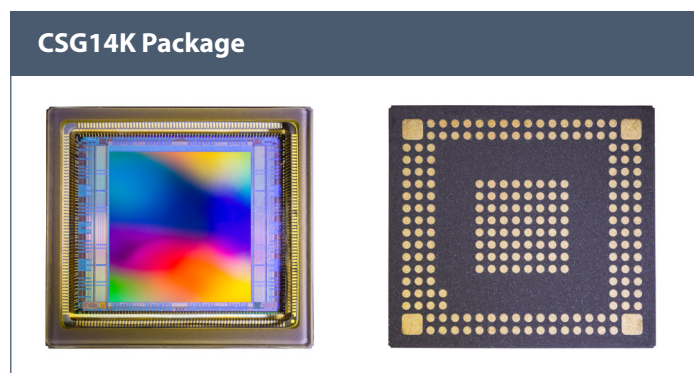
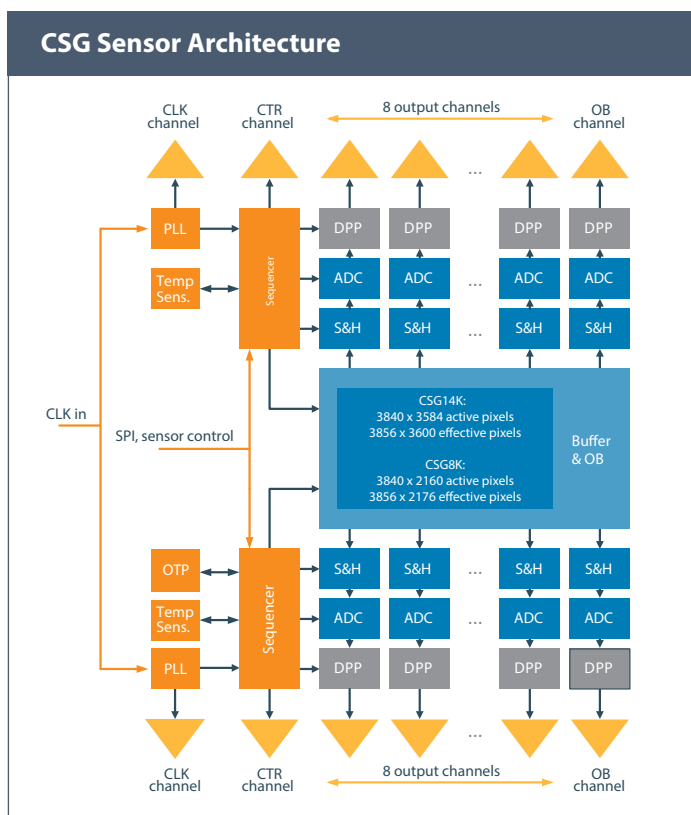
With the CSG product family, ams offers a new generation of global shutter area scan sensors, featuring 3.2µm charge domain pixels for the most demanding machine vision applications.

The CSG family features a fast 12bit column based ADCs to achieve industry- leading high frame rates at full resolution enabling faster inspection and higher data throughputs. Data throughput can be reduced by subsampling or binning enabling even higher frame rates. A 14bit mode to improve image quality is available as well.

Optical black pixels are used for automatic black level calibration and row noise correction. Computation in the ISP pipeline can be streamlined by the histogram and

image statistics that are calculated on-chip. Binning of pixels is possible to improve FWC, DR and SNR. HDR modes operate with dual exposure. Exposure and read-out can be externally triggered.

The CSG family comes in a 218-pin LGA package with 22x20x3.3 mm for ultra-compact (C-Mount) designs. Typical applications include 4K video, factory automation, intelligent transportation systems (ITS) and general machine vision.



Specification	Unit	CSG8K	CSG14K
Resolution	MP	8,3	13,8
Optical Format	inch	0.88"	1.05"
HxV Pixels		3840 x 2160	3840 x 3584
Pixel Size	µm	3,2	3,2
Frame Rate 12b	fps	154	93
Frame Rate 10b	fps	231	140
Full Well Charge (FWC)	ke-	10,5	10,5
Dark Noise	e-	3,9	3,9
OB Pixel		Yes	Yes
Interface		subLVDS	subLVDS
LVDS speed	Gbps	16 x 1,25	16 x 1,25

CSG14K Eval Kit

- USB3 vision compliant
- HDMI output (4K @ 30fps)
- Record full resolution at full speed
- GUI for control and recording
- ZIF socket for easy sensor replacement

CSG14K Features

- External trigger and exposure control
- OB pixels for on-chip offset and noise corrections
- Subsampling and windowing
- Binning for higher FWC, DR and SNR
- Dual exposure HDR mode
- Compact design with 16 channels

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