Solutions on a chip for enjoying the digital life style

# PixelCam™ C1300/M1300
# 1/3 inch 1.3Mp CMOS Image Sensor

## ZR32312-PLC/ZR32312-MLC
Product Brief

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ZORAN®

## Description

The Zoran ZR32312 is a high performance 1.3 megapixel CMOS image sensor for digital still and video imaging products.

The ZR32312's unique architecture results in an extremely uniform pixel array. The result is a sensor with extremely low "fixed-pattern noise" without the need for off-chip "background frame subtraction" circuitry.

The bank of analog front-end circuits digitizes each pixel to 10-bit resolution. This highly parallel approach eases speed requirements on individual analog circuits and reduces overall power consumption.

The flexibility of the ZR32312 output image format permits the trade-off between resolution and frame rate. The image output window may be reduced to increase frame rates, subsampled to scan the entire array at reduced resolutions thus increasing frames rates, and may also be horizontally "mirrored" and vertically "flipped".

## Applications

- Digital still cameras
- Security and surveillance cameras
- Video conferencing systems
- Biometrics and machine vision
- Cellular phone applications
- Medical and dental imaging
- Mobile consumer appliances

## Features

- No dark frame subtraction required
- Shuttered and shutterless operation
- Brightness conversion correction
- Adjustable analog gain
- High resolution still or motion video
- Programmable exposure control
- Movable and sizable output window
- Mirrored and flipped scan modes
- No fixed-pattern noise
- Wide dynamic range
- Anti-blooming control
- Decimation by 2 or 4 subsampling
- 4 pixel border for 5x5 convolution
- Optically black reference rows and columns
- Standard SMBus control interface
- Single 3.3 volt power supply

## Specifications

| | | | |
|---|---|---|---|
| Array Resolution | 1304 x 968 | Exposure Time | 1-1/10K of frame period |
| Active Pixels | 1288 x 968 (non-black) | Saturation Level | 1.1 VDC |
| Array Format | 1/3 inch (5.37mm diag.) | Dynamic Range | 59dB |
| Pixel Size | 3.33um x 3.33um | Analog Gain | 0-12dB |
| Color Filter Array | RGB Bayer | ADC Resolution | 10 bits |
| Scanning Mode | Progressive | A/D Linearity | $\pm$ 1/2 LSB |
| Maximum Pixel Rate | 27MHz. | Supply Voltages | 3.3V $\pm$ 10% |
| Frame Rate | Up to 16.8 fps (full array) | Power Dissipation | 180mW |
| Frame Rate | Up to 33.8 fps (VGA) | Chip Package | 32 LCC |

## Ordering Information

| | |
|---|---|
| RGB Color | ZR32312-PLC |
| Monochrome | ZR32312-MLC |

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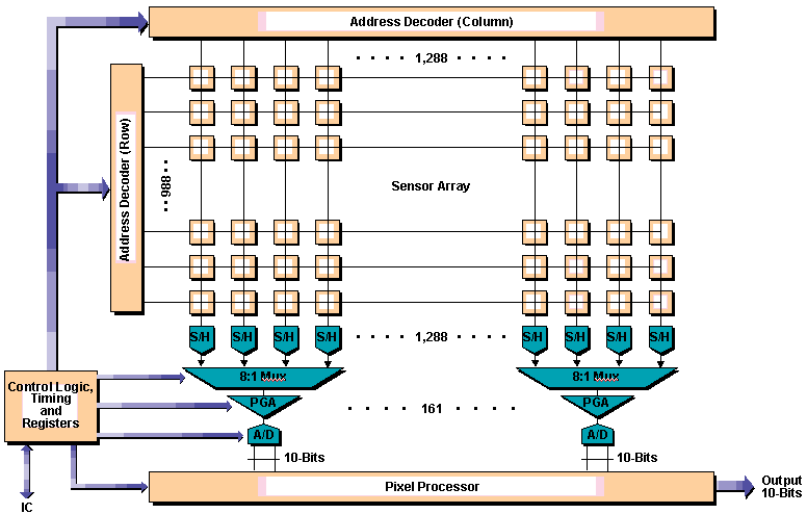
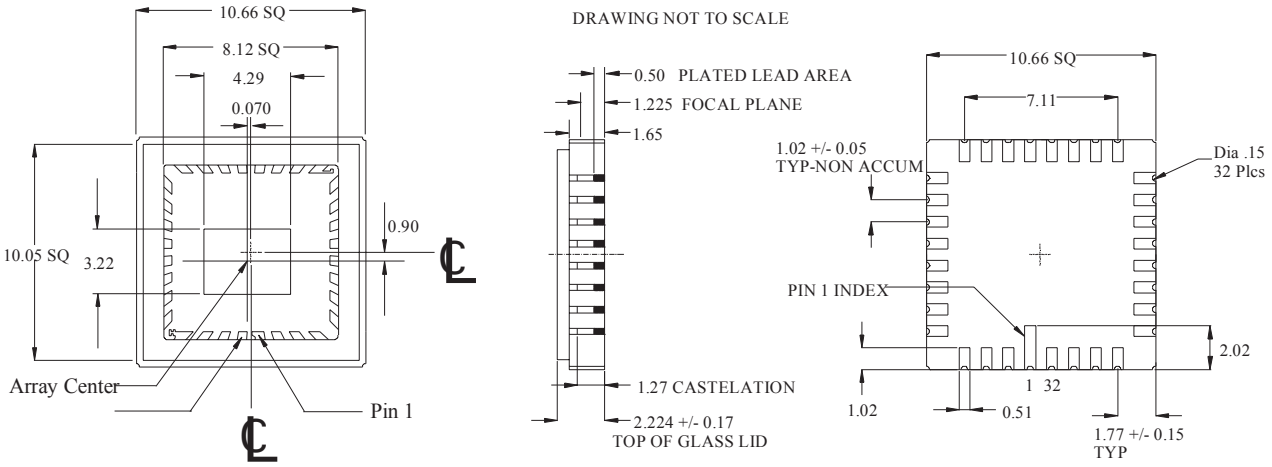
### Sensor Architecture




### Package Diagram

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