

# Applications

- security and surveillance cameras
  - automotive cameras
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## Features

### ■ Automatic controls :

automatic exposure control(AEC), automatic gain control (AGC), automatic black level calibration (ABLC), automatic white balance (AWB), auto flicker detection (AFD)

### ■ Programmable controls :

exposure, gain, frame rate, horizontal mirror, vertical flip, scaling, windowing

### ■ Image adjusting functions :

lens shading correction, color correction, gamma correction, hue and saturation, brightness, contrast, sharpness(edge enhancement), false color suppression, chroma suppression,

■ Efficient denoising coupled with defective pixel correction

- Support for eclipse cancellation
  - Support for flash strobe and output enable
  - Support for serial interface compatible with I<sup>2</sup>C
  - Support for output formats :  
10-bit raw / denoised / ISP Bayer, YUV422, BT656, HREF, RGB565
  - Support for image size :  
720p @ 60fps / 30fps / 15fps  
VGA @ 60fps / 30fps / 15fps
  - Support for input clock : 12/16/24/48MHz
  - On-chip phase locked loop (PLL, 96MHz)
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## Key specifications

■ **Active pixel array** : 1280H X 720V

■ **Optical format** : 1/3 inch

■ **Pixel size** : 4.0um X 4.0um

■ **Scan mode** : progressive

■ **Shutter** : rolling shutter

■ **Maximum image transfer rate** :

720p and VGA (Bayer) : 60fps

720p and VGA (YUV) : 30fps

■ **Output interface** : 10-bit parallel

■ **Output formats** : 10-bit raw / denoised / ISP Bayer, YUV422, BT656, HREF, RGB565

■ **Sensitivity** : 1.8V/Lux.sec

■ **SNR** : 44.8 dB

■ **Dynamic range** : 66.5 dB

■ **Dark current** : 13.7mV/sec@60°C

■ **Input clock frequency** : 12/16/24/48MHz

■ **On-chip phase locked loop (PLL):**96MHz

■ **Power supply** :

analog : 3.3V ± 10%

core : 1.8V ± 5%

I/O : 2.6~3.6V (3.3V Typical)

■ **Power requirement** :

active : 302mW

standby : 511uW (master clock on)

power down : 137uW (master clock off)

■ **Temperature range** :

operating : -40°C ~ 100°C (functional)