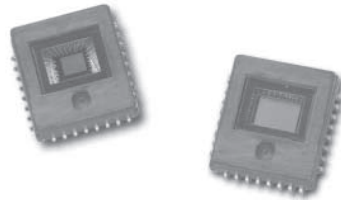


# Agilent CMOS Monochrome Image Sensors ADCS-1120 (CIF) and ADCS-2120 (VGA) Product Brief

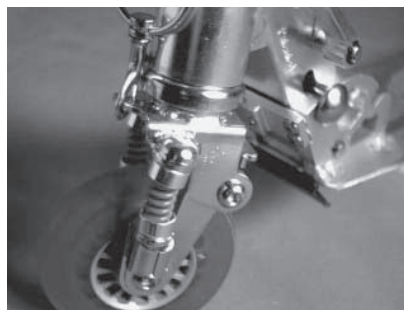


## Description

The ADCS-1120 and ADCS-2120 CMOS Image Sensors capture high quality images while consuming very low power. These parts integrate a highly sensitive active pixel photodiode array with timing control and onboard A/D conversion. Available in either VGA (640x480) or CIF (352x288) resolution image arrays, the devices are ideally suited for low light environment.

The ADCS-2120 and ADCS-1120, when coupled with Agilent's HDCP family of image-processors, provide a complete imaging system to enable rapid end-product development. Designed for low-cost consumer electronic applications, the ADCS-2120 and ADCS-1120 sensors deliver unparalleled performance for mainstream imaging applications.

*All images on this product sheet were produced by Agilent Technologies' sensors and processors.*



## Features

- **High quality, low cost CMOS Image Sensors**

VGA resolution (640H x 480V) –  
ADCS-2120

CIF resolution (352H x 288V) –  
ADCS-1120

- **High frame rates for digital video**

VGA: 15 frames/second

CIF: 30 frames/second

- **High sensitivity, low noise design–**

Ideal for capturing high-quality images in a wide variety of lighting conditions

- **Integrated Analog-to-Digital Converters**

VGA (ADCS-2120): 10 bit, programmable

CIF (ADCS-1120): 8 bit, fixed

- **Parallel and serial output**

- **Synchronous serial or UART interface**

- **Automated, dark response compensation**

- **Still image capability**

## Typical Applications

- **Biometrics**
- **Surveillance**
- **Machine vision**
- **Bar code scanners**



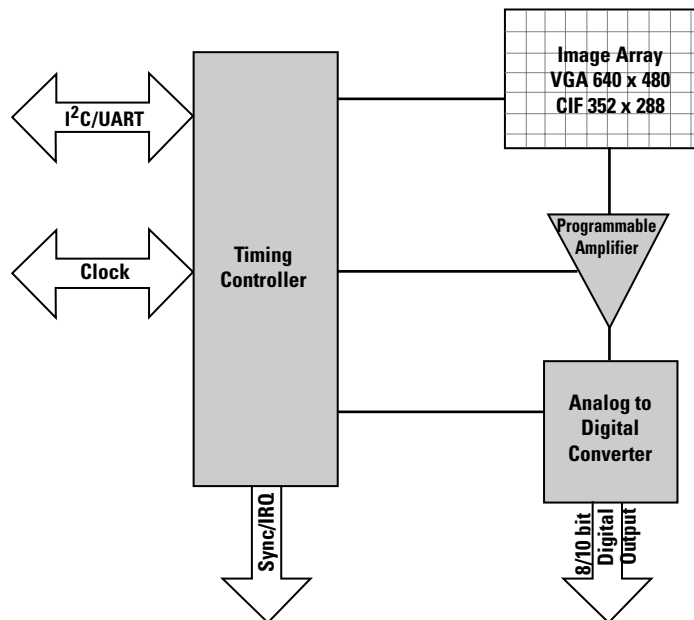
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## Typical Electrical Specifications

Part Number	ADCS-2120 (VGA)	ADCS-1120 (CIF)
Pixel size	7.4 x 7.4 $\mu\text{m}$	7.4 x 7.4 $\mu\text{m}$
Maximum Clock Rate	25 MHz (VGA)	32 MHz (CIF)
Effective Sensor Dynamic Range	65 dB (VGA)	61 dB (CIF)
Effective Noise Floor	43 e-	43 e-
Dark Signal <sup>[1]</sup>	270 e-/s	270 e-/s
Sensitivity <sup>[2,3]</sup>	1.6 V/(Lux-S)	1.6 V/(Lux-S)
Peak Quantum Efficiency <sup>[1,2,3]</sup>	38%	38%
Saturation Voltage	1.22V	1.22V
Full Well Capacity	70,115 e-	70,115 e-
Conversion Gain <sup>[2]</sup>	17 mV/e-	17 mV/e-
Programmable Gain Range	1 – 40 (8 bit resolution)	1 – 40 (8 bit resolution)
Fill Factor	42%	42%
Exposure Control	0.5 $\mu\text{sec}$ minimum, 0.5 $\mu\text{sec}$ increments	0.5 $\mu\text{sec}$ minimum, 0.5 $\mu\text{sec}$ increments
Supply Voltage	3.3V, -5%/+10%	3.3V, -5%/+10%
Absolute Max. Power Supply Voltage	3.6V	3.6V
Absolute Max. DC Input Voltage (any pin)	3.6V	3.6V
Power Consumption (typical)	150 mW operating, 150 $\mu\text{W}$ standby	150 mW operating, 150 $\mu\text{W}$ standby
Power Consumption (max)	200 mW operating, 3.3 mW standby	200 mW operating, 3.3 mW standby
Optical Format	1/3"	1/4"
Operating Temperature	-5 to +65°C	-5 to +65°C
Storage Temperature	-40 to +125°C	-40 to +125°C

### Notes:

1. Specified over complete pixel area
2. Measured at unity gain
3. Measured at 555 nm



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Data subject to change.

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