

# FCi4-14000 High-Resolution CMOS Camera

## FCi4-14000 CMOS Camera



- **14 Megapixel 4560 x 3048 pixels (H x V)**
- **Monochrome and Colour versions available**
- **12 bit digital output**
- **Compact design**
- **3.25 full frames per second**
- **Base Camera Link interface**

The FCi4-14000 camera is a very compact high resolution CMOS camera. The camera is equipped with the IBIS4 14000 rolling shutter image sensor. The user can define a Window Of Interest within the sensor area. Several sub-sampling modes are also available.

The sensor measures 36 x 24 mm and can be used to replace 35mm photographic film cameras.

The absence of micro-lenses reduces the effect of shadowing found on other sensors with a large active area.

The digital camera can operate in single-shot and in continuous mode, which makes it ideal for machine vision applications. In the single-shot mode, the user has the freedom to decide when the camera has to capture an image, not the other way around as is the case with most analogue camera systems.

The camera has 12-bit resolution, a dynamic range of 65 dB and image enhancement by fixed-pattern noise correction,

C-Cam Technologies supply a Base Camera Link, 2 taps of 12-bit, as the standard interface.

A camera management microprocessor, communicating via the Camera Link's serial channel, retains pre-defined operating parameters and makes the camera self-starting after power-up.

The camera can be triggered locally or through the flexible Camera Link interface cable that can be up to 10 metres long.

The FCi4-14000 camera provides a complete solution for system designers who require a rapid solution with little or no involvement at chip level.

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## Sensor Specifications

<b>Imager type</b>	CMOS integrating Active Pixel Sensor with in-camera non-uniformity and gain correction
<b>Sensor types</b>	Monochrome or RGB Bayer colour pattern
<b>Total pixels</b>	13,898,880 (4560 x 3048) (H x V)
<b>Light-sensitive pixels</b>	13,716,864 (4536 x 3024)
<b>Window-of-Interest (WOI)</b>	Rectangular area or line format specified by user
<b>Active image area</b>	36 x 24mm. (H x V)
<b>Optical format</b>	35 mm.
<b>Pixel pitch</b>	8 x 8 $\mu$ m
<b>Spectral response</b>	400 – 1000 nm.
<b>Sensitivity</b>	1250 V.m <sup>2</sup> /W.s
<b>Temporal noise</b>	35e <sup>-</sup> (Dark @ 21°C)
<b>Well capacity</b>	64,865 electrons (1.2 V)
<b>Dark current</b>	223 e <sup>-</sup> / sec (4.13mV/s.)
<b>Fixed Pattern Noise</b>	0.15% Vsat RMS (global)
<b>Standard dynamic range</b>	65.4 dB
<b>Signal / Noise</b>	1871
<b>Grey level resolution</b>	8 bits or 256 grey levels 10 bits, 1024 grey levels 12 bits, 4096 grey levels
<b>MTF</b>	0.55 in X 0.57 in Y (at 600nm.)
<b>PRNU</b>	<1% RMS of signal

## Image Specifications

<b>Pixel rate</b>	60 MHz (typical)
<b>Frame speed</b>	3.25 full frames/second
<b>Frame speed WOI</b>	1024 x 1024 : 28.25 fps 512 x 640 : 60 fps
<b>Maximal Exposure time</b>	( t.b.d. )
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<b>Shutter</b>	Horizontal rolling shutter (column-based)
<b>Shutter synchronisation</b>	Via software and/or via external inputs

## Interface Specifications

<b>Interface type</b>	Base Camera Link 2 x 12 bits
<b>Remote control</b>	Via CL serial interface
<b>Trigger</b>	Input and Output (opto-isolated)
<b>Interface connector</b>	26p Camera Link type with latches and screw fastening
<b>Cable lengths</b>	1, 3, 5, 7 or 10 meters from camera to PC interface

## Mechanical Specifications

<b>Dimensions</b>	70 x 70 x 90 mm. (not incl. lens)
<b>Weight</b>	400 grams (not incl. lens)
<b>Housing</b>	Aluminium, black anodised
<b>Lens adaptor</b>	F-mount (with optional macro adaptor)
<b>Tripod mount</b>	1/4 inch mount (1 off)
<b>Machine mount</b>	M6 (4 off)

## Environmental Requirements

<b>Operating temperature</b>	0°C to +50°C
<b>Storage temperature</b>	-30°C to +80°C in non-condensing conditions

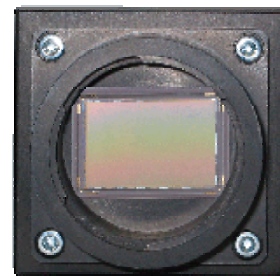
## Power Requirements

<b>Power supply voltage</b>	separate connector 8 - 12 Volts
<b>Power consumption</b>	(estimated) < 10 Watt

## Ordering Information

<b>CameraLink</b>	
<b>B&amp;W</b>	FCi4-14000-CL-M
<b>RGB</b>	FCi4-14000-CL-C

FRONT VIEW



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