

0.36M pixels
USB2.0 COLOR(BW) CMOS CAMERA

ARTCAM-022MINI (Enclosed Type)
ARTCAM-022MINI-OP (Board Level)

INSTRUCTION BOOKLET

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1. Description

ARTCAM-022MINI, ARTCAM-022MINI-OP is a 1/2" CMOS color(BW) camera developed for built-in.

Image can be saved directly to your PC with high-speed transfer via USB2.0 interface.

2. Main Features

* High sensitivity
752 x 480 pixels

* Frame rate

640x480 (Color) : 50FPS

* Gain

"Gain" can be controlled from the PC.

* Brightness

"Brightness" can be controlled from the PC.

3. List of Items

- | | |
|---|---|
| 1) Camera (Enclosed Type : 8mm lens included) | 1 |
| 2) User Instruction | 1 |
| 3) Software CD | 1 |

《Option》

1) Filing & 2D measuring system

2) SDK(ARTCCM-SDK)

3) 5m USB2.0 cable

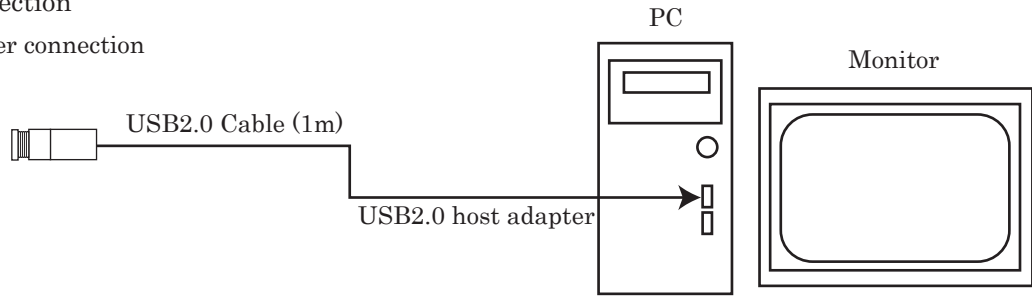
4. Functions and Operation

4-1 Selection of lenses

Board lens (M12, f=8mm) is used. Except f=8mm, we also provide f=6mm and f=12mm optional.

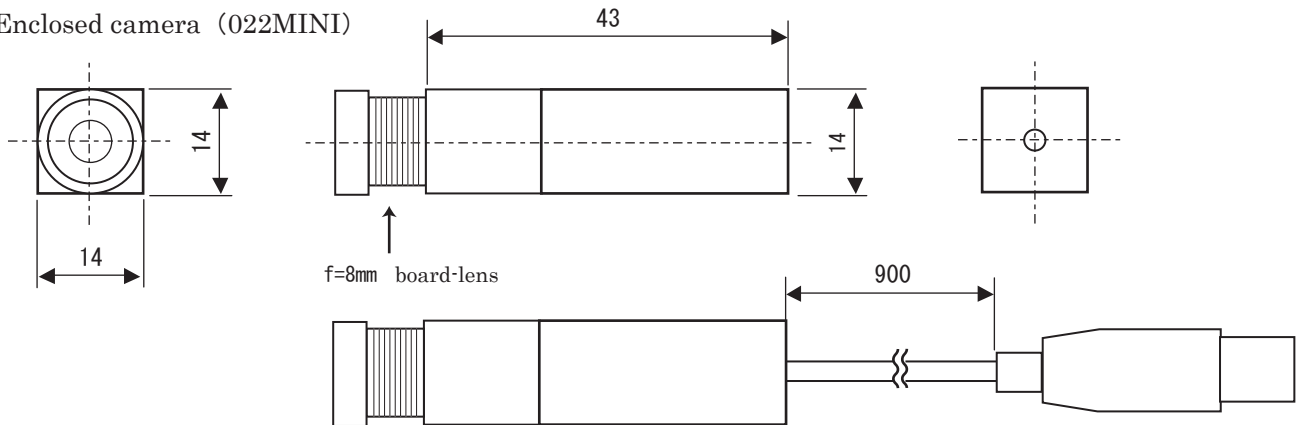
4-2 Camera connection

Image output & power connection



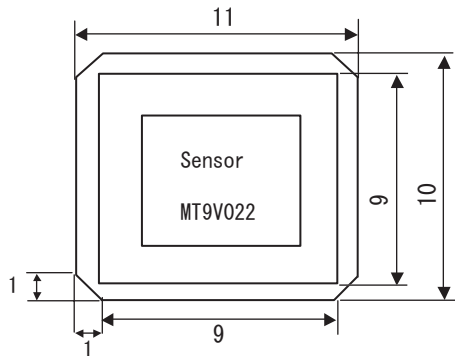
5. Dimension

① Enclosed camera (022MINI)

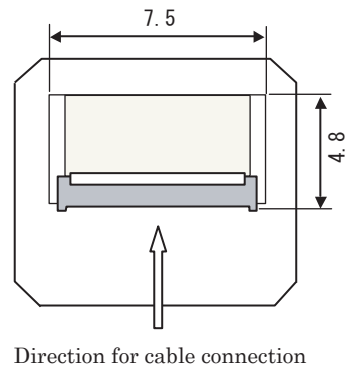


② Board Level (022MINI-OP)

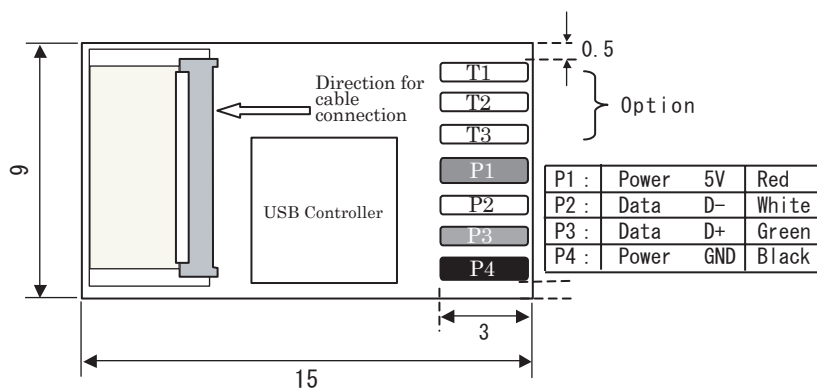
Sensor-Board-top



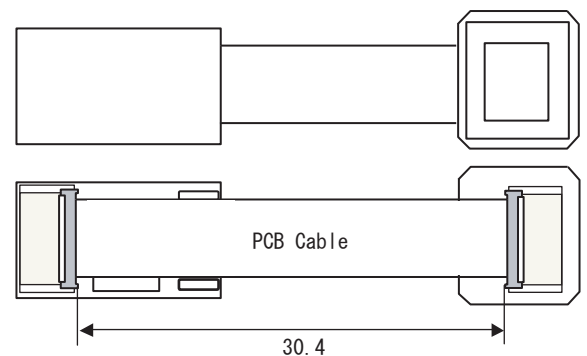
Sensor-Board-Back



Usb-Board-top



Usb-Board-Back



Remark:

Outer dimension may be modified without prior notification

5. Specifications of camera

	ARTCAM-022MINI / ARTCAM-022MINI-OP
1. Image pick up device	1/3"CMOS
2. Color method	Single-panel CMOS color(BW) method
3. Max. resolution	0.36M pixel
4. Lens size	1/3"format
5. Scan mode	Progressive
6. Pixel size	6.0 μ m x 6.0 μ m
7. S/N ratio	45dB
8. Sensitivity	4.8V/Lux-sec(550nm)
9. Electric shutter mode	Manual 1/30-1/1800
10. White balance	Manual/auto, switchable
11. Synchro system	Internal synchro
12. Shutter Type	Global Shutter
13. Lens mount	M=12 f=8mm Board Lens
14. Offset	Manual adjustment
15. Gain	Manual adjustment
16. Power supply	DC5V(USB port)
17. Power condensing	2.0W approx
18. Ambient temperature and humidity	0-35 C° (recommended), 80%(non-condensing)
19. Dimension (Enclosed Type)	ϕ 14.0 x 42.0mm
20. Dimension and weight (Board Level)	Sensor board 11.0 x 10.0 x 2.0(H)mm (Lens not included) } 1 g Controller board 15.0 x 9.0 x 3.0(H)mm } (Cable/Lens not included)

Electric characteristics

NO	Parameter	SPEC	Comment	Remark
1	Power	DC5V		supplied by USB port
2	Shutter control	Manual adjustment		software control
3	Gain control	Manual adjustment		software control
4	S/N ratio	45dB		
5	Y characteristics	1.0 fixed		
6	Power consumption	<2.0W		
7	Image interface	USB2, digital output		

Image pick up device

NO	Parameter	SPEC	Comment	Remark
1	Imager	MT9V022		
2	Optical size	Equivalent to 1/3"		
3	Total resolution	752 x 480		
4	Max resolution	752 x 480		
5	Pixel size	6.0 x 6.0 μ m		
6	Sensitivity	4.8V/Lux-sec(550nm)		
7	IR cutting filter	color:have	Glass filter	

Physical specifications

NO	Parameter	SPEC	Comment	Remark
1	Lens	Board lens		
2	Max weight	Enclosed Type : 45g (with cable)		
3	Dimension	ϕ 7.5mm		

Operating environment

NO	Parameter	SPEC	Comment	Remark
1	Operating temperature	-10-50°C (10-95%RH、non-condensing)		
2	Storage temperature	-35-80°C (10-95%RH、non-condensing)		
3	MTBF			
4	EMI	EN61000-6-4		
5	EMS	EN61000-6-2		
6	Vibration	Acceleration:29.4M/S Frequency:5-200Hz Sweep cycle:10min Test time: Ups and down 2h Left and right 2h Back and fourth 2h Test OK		
7	Impulse	【Acceleration of impulse】 Tested OK when 3 consecutive impulses are applied for all 3 axes at peak speed of 981m/s ²		

Technical standard

NO	Parameter	SPEC	Comment	Remark
1	UL approved	Materials used in wiring are compliant with UL. Storage temperature (10-95%RH, non-condensing)		
2	CE			

<<System requirements>>

PCs which use south-bridge of ICH4, ICH5 and ICH6 are recommended

*CPU: Pentium4 1.7GHz or higher

Embedded USB2.0 port (PCI/PCMCIA USB2.0 ports are not compliant)

*Memory 512MB or higher

*OS Windows XP(SP2)/ VISTA

Refer to the restrictions below when using ARTCAM/ARTCNV

1. USB host chip

Use the USB host chip which is Intel authorized USB2 host controller.

Make sure if you find "Intel®82801DB/DBM USB2 ENHANCED HOST CONTROLLER" on USB Controller window according to the following procedure.

"Control Panel" -> "Hardware" -> "Device Manager" -> "USB Controller"

NOTICE: We cannot guarantee the proper operation of this camera/converter when you use the external USB host card due to its design and its transfer rate. The transfer speed is slow because it is connected to host via PCI bus. In case of using ARTCNV, color transfer is not available. (Only Monochrome.)

2. Hyper Thread Bios

Disable this function in case of PC with a built-in Intel hyper thread.

3. With the other USB2.0 hardware

You may be unable to use the other USB2.0 hardware such as Memory stick, External HDD, External DVD, CDROM and etc. when you use this camera/converter due to bulk transfer mode of this camera/converter.

It is because bulk transfer device is not recognized, especially in case of Cypress control chip, due to handshaking of USB port and PC bios.

It is hard to solve this matter for the reason that it is related to the lower firmware of control chip and PC bios.

As a recommended measure, add PCI USB host card on PC and use its USB ports for the external USB hardware.

4. Extension of USB2.0 cable

We cannot guarantee the proper operation of the extension cable even though it is compatible with USB2.0 except the extension cables below we have confirmed its proper operation because USB transfer frequency of this camera is 192MHz.

For the recommended extension cable, we refer you to our sales dep't.

In case of the trouble using the extension cable, you may have "Camera error", "Disappearance of Device driver", " Operation error in high-speed mode", "Unknown USB device" and etc.