Baumer

Quick Start Guide
MX Board Level Cameras (USB3 Vision™)

Latest software version and technical documentation available at:

www.baumer.com/vision/login

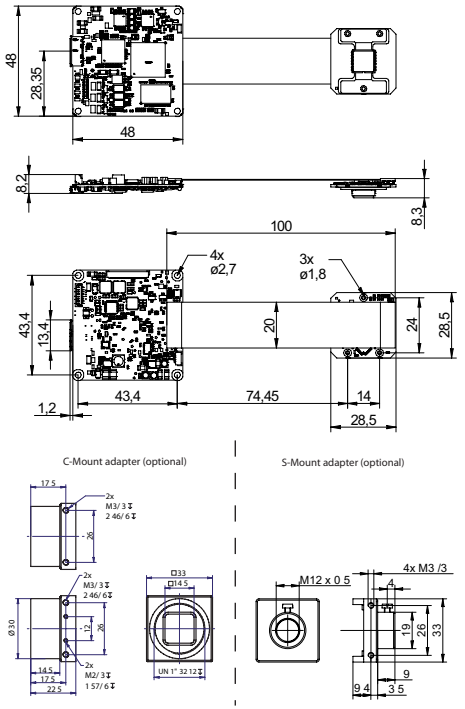
Product Specification

MXU series – Innovative functionality / flexible installation

- Flexible assembly
- Requires little space
- RGB and YUV interpolation algorithms on board
- Reliable transmission at 5000 Mbit/sec according to USB 3.0 standard
- Single cable solution for data and power
- Baumer driver for reliable image transfer

Camera Type	Sensor Size	Resolution	Full Frames [max. fps]
CCD Sensor (monochrome / color)			
MXU02 / MXU02c	1/4"	656 x 490	160
MXU12 / MXU12c	1/3"	1288 x 960	42
MXU20 / MXU20c	1/1.8"	1624 x 1228	27
CMOS Sensor (monochrome / color)			
MXUC20 / MXUC20c	2/3"	2044 x 1084	55
MXUC40.2 / MXUC40c.2	1"	2044 x 2044	29

Dimensions



Safety

CE

Baumer MX board level cameras are delivered without housing. The housing design is critical to a camera's electromagnetic interference characteristics.

For this reason, no CE certification tests regarding electromagnetic interference have been performed on MX board level cameras.

Users who add MX board level cameras into their systems should perform appropriate tests for electromagnetic interference.

Safety Precautions

Notice

See the User's Guide for the complete safety instructions!

Caution

Observe precautions for handling electrostatically sensitive devices!

- Protect the sensor from dirt and moisture.
- Do not allow the camera to become contaminated with foreign objects.

Environmental Requirements

Storage temp.	-10°C ... +70°C
Operating temp.	see Heat Transmission
Humidity	10 % ... 90 % Non-condensing

Further Information

For further information about our products, please visit www baumer.com
For technical issues, please contact our technical support:
support.cameras@baumer.com Phone +49 (0)3528 4386-0 Fax +49 (0)3528 4386-86

Technical data has been fully checked, but accuracy of printed matter is not guaranteed.
Subject to change without notice. Printed in Germany 12/13. v1.0 11121334

System Requirements

	Single-camera system Recommended	Multi-camera system Recommended
CPU	DUAL-Core, Intel® Xeon® W3503	DUAL-Core, Intel® Xeon® W3503
Clock	2.4 GHz	2.4 GHz
RAM	4 GB	4 GB
Opera ing system (OS)	Microsoft® Windows® 7 32 / 64 bit systems (required for USB 3.0) Microsoft® Windows® 8 32 / 64 bit systems (required for USB 3.0)	

Notice

Further technical details are available on the respective data sheets.

USB3 VISION

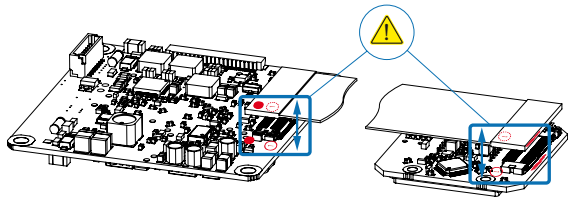
GENICAM

Installation

Connecting the flexprint cable

Notice

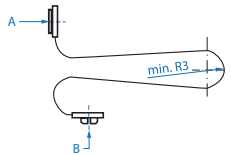
Observe the markings when connecting the flexprint cable.



Mechanical Mounting

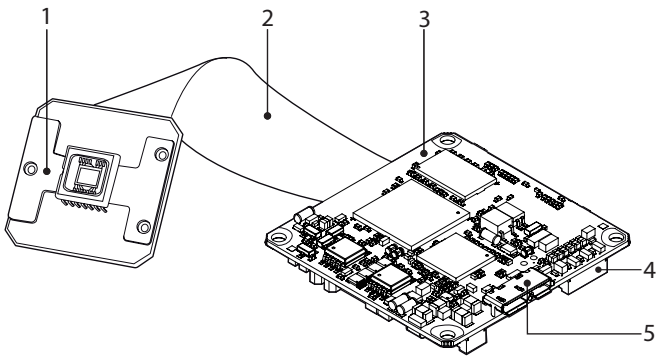
Caution

Incorrect bending radius for the flexprint cable.
An incorrect bending radius can damage the flexprint cable.
Only bend the flexprint cable to a radius of up to 3 mm!



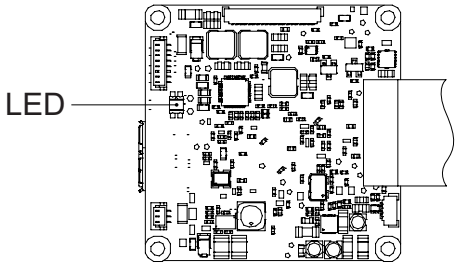
Length from A to B = 94 mm

General Description



No.	Description	No.	Description
1	Print sensor	4	Digital IOs
2	Flexprint cable	5	USB 3.0 port
3	System print		

LED signals



	Signal	Meaning
LED	green	USB 3.0 connection
	yellow	USB 2.0 connection (settings possible, no image)

Heat Transmission

Caution

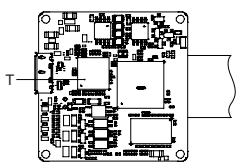
Heat can damage the camera. Heat must be dissipated adequately to ensure that the temperatures do not exceed the values in the table below.

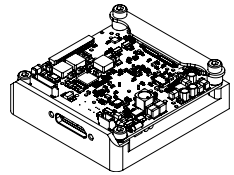
As there numerous options for installation, Baumer does not specify a specific method for proper heat dissipation.

For applications with enough free space, the use of the Baumer heat sink (No. 11118288) is recommended.

Caution

Device heats up during opera ion.
Skin irritation possible.
Do not touch the camera and/or heat sink during operation.





Measurement Point	Maximum Temperature
T	80°C (176°F)

Data Interface / Digital IOs

USB 3.0 Micro B

1	VBUS	6	MicB_SSTX-
2	D-	7	MicB_SSTX+
3	D+	8	GND_DRAIN
4	ID	9	MicB_SSRX-
5	GND	10	MicB_SSRX+

Caution

The General Purpose IOs (GPIOs) are not potential-free and do not have an overrun cut-off. Incorrect wiring (overvoltage, undervoltage or voltage reversal) can lead to defects within the electronics system.
GPIO Power V_{CC}: 3.3 V DC
IOUT: max. 8 mA

The GPIOs are configured as an input through the default camera settings. They must be connected to GPIO_GND if not used or not configured as an output.

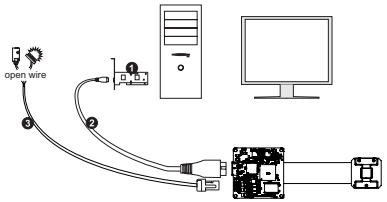
Digital IOs

1	Shielding	5	GPIO1
2	IN1	6	GPIO2
3	IO GND	7	IO Power VCC
4	OUT 1	8	GPIO_GND

Installation

Installing the camera:

- Connect the camera to the USB connection on your PC using an appropriate cable.
- If required, connect a trigger and / or flash to the digital IOs.



Installation example
1 - PCI USB board
2 - USB cable
3 - Cable for trigger and flash

Troubleshooting

1. Check camera operation using the LED signals.

→ If LED is yellow:
- Camera is connected to USB 2.0 (settings possible, no image).

→ If LED is green:
- Check if camera is being used by another application.
- Otherwise reconnect camera / restart software.

2. Check connection using Windows Device Manager:

→ If device is not listed:
- Check the host controller power supply.
- Check USB 3.0 cable and connection.

→ If device is regularly not listed
- Check USB 3.0 driver installation.