

# C2

Industrial USB cameras with CS lens mount and h.264 on-board encoder

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# Overview

Kurokesu industrial USB cameras with Sony Exmo R Starvis IMX290 sensors and internal h.264/MJPEG/YUYV codec is suitable for a wide range of target applications and use cases. Stable and reliable web cameras operate on most modern operating systems (Windows, OSX, Linux, Android) designed to solve vision problems.

## Target applications and use cases

- Remote operated and autonomous vehicles (low latency, low bandwidth streaming, wide range temperature operation -55°C~+85°C)
- Machine vision applications (full manual or auto controls, interchangeable CS or M12 lenses)
- Teleconferencing and virtual meetings (multicamera setup, interchangeable lenses for different view angles)
- Remote teaching/learning (multicamera setup, interchangeable lenses for wide, tele, or close-up scenes)
- Complex scientific equipment (internal process inspection and tracking)

## Customers

- Universities and schools (students and teachers can use as teaching equipment or remote learning tool)
- Machine vision developers and researchers (suitable for RND and final product installation)
- Robot system developers and researchers (suitable for RND and final product installation)
- Vloggers, Gamers (recording video from multiple angles in low light)

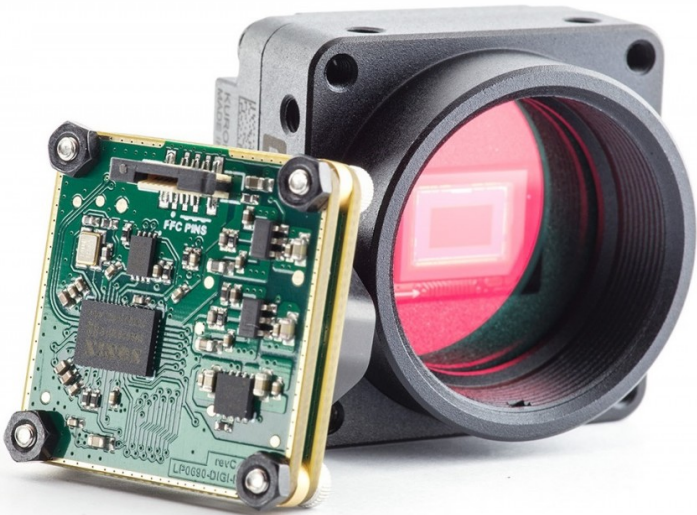
## Long term availability

We produce our cameras until there is demand and we can buy the components. Even if a product is marked on our web as obsolete, it can be produced on demand when the minimum quantity is met.

## Modifications

Camera model	Lens mount	Microphones	Connector	Colors	Note
C2_USBC	CS	No	USB-C	RGB	Boxed camera
C2_USBC_MIC	CS	Yes	USB-C	RGB	Boxed camera with stereo microphones

C2_BOARD_FFC_M12M12		No	FFC 6p 0.5mm	RGB	Board camera
C2_BOARD_HS_FFC_M12M12		No	FFC 6p 0.5mm	RGB	Board camera with heatsink
C2M_USBC	CS	No	USB-C	Mono	Boxed monochrome camera



# Features



- 1"-32TPI CS / M12 lens mount
- Multiple mounting options (all side walls and top has M3 tapped holes) for machine vision or robotics
- Board mount option
- Optional 1/4-20 UNC thread for tripod mounting
- Format: 1/2.8-inch (6.46mm)
- Sensor: Sony IMX290 Color / Mono
- MJPEG/h.264/YUY2 compression
- 1920x1080 @ 30fps
- UVC compatible
- Sensor pixel size: 2.9µm x 2.9µm
- Sensor dynamic range: 66db
- SNR max: 40.5db
- Operation temperature range: -50°C...+85°C
- USB 2.0
- Interchangeable filters (650nm installed by default)
- High quality industrial black anodized aluminum case / lens mount
- Non cropped sensor operation in all resolutions
- Each camera has unique serial number
- RoHS, REACH, CE certified



# Specifications

## Common specifications

Pixels	1920H x 1080V
Sensor size	5.63 x 3.17 mm
Shutter	Electronic Rolling Shutter
Sensor pixel size	2.9µm x 2.9µm
Frame rates	<ul style="list-style-type: none"><li>• h.264 – 30fps in all modes</li><li>• MJPG – 30fps in all modes</li><li>• YUV 4:2:2 (YUYV)<ul style="list-style-type: none"><li>◦ 1920x1080 – 5fps</li><li>◦ 1280x720 – 10fps</li><li>◦ 640x480 – 30fps</li></ul></li></ul>
Output frame sizes	1920×1080, 1280×720, 640×480, 640×360, 320×240, 320×180
Scan	Progressive
Manual control	<div><ul style="list-style-type: none"><li>• Exposure</li><li>• White balance (2800°K – 9300°K)</li><li>• Gain</li><li>• Gamma</li><li>• Backlight compensation</li></ul></div> <div><ul style="list-style-type: none"><li>• Sharpnes</li><li>• Contrast</li><li>• Saturation</li><li>• Hue</li><li>• Brightness</li><li>• Anti-flicker frequency</li></ul></div>
Rated power	<ul style="list-style-type: none"><li>• 2W max</li><li>• 350mA @ 5V – h.264</li><li>• 290mA @ 5V – MJPEG / YUYV</li></ul>
Supported OS	<ul style="list-style-type: none"><li>• Windows</li><li>• OSX</li><li>• Linux</li><li>• Android</li></ul>
Sensor	Sony IMX290



# Boxed camera

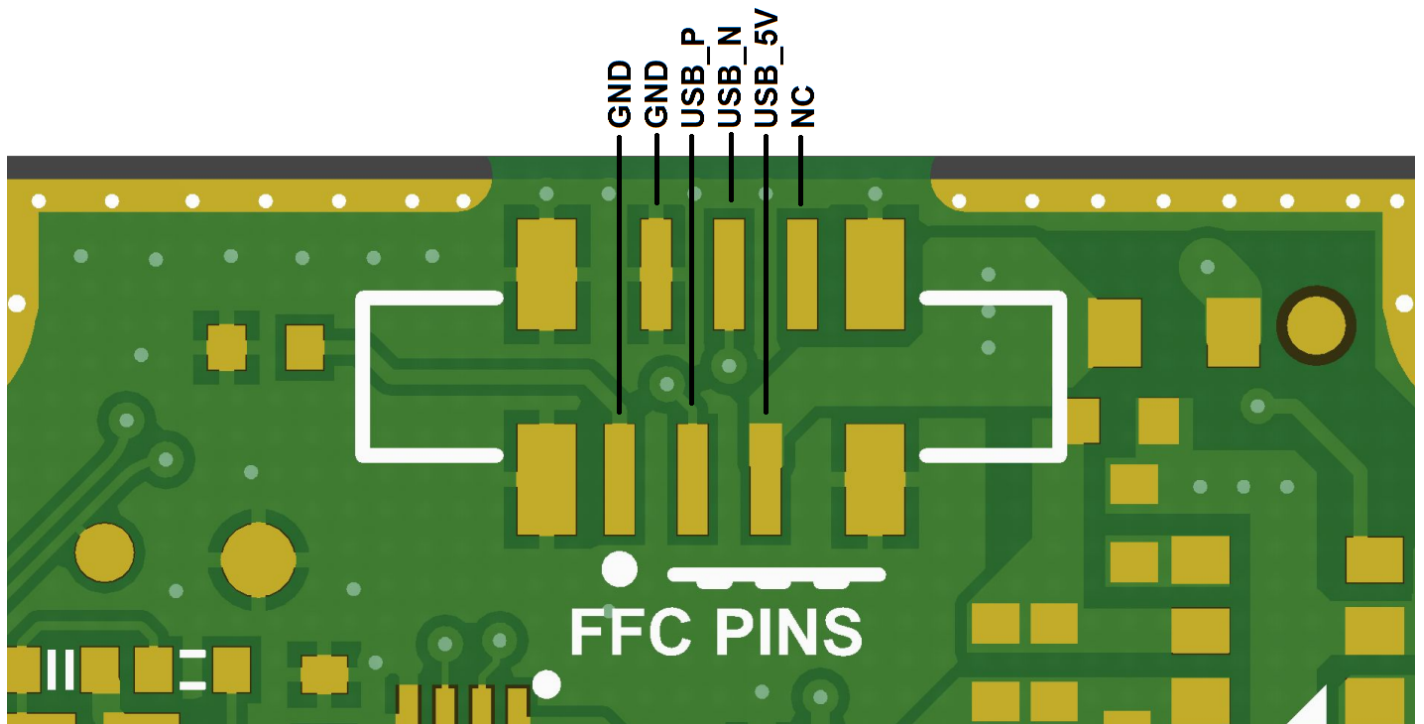
Weight	36g
Dimensions	33×33×24.5mm
Ingress protection	IP40
Lens mount	CS-mount
Operational temperature	-50 ... 85°C (non condensing)

# Board camera

Weight	TBD
Dimensions	TBD
Ingress protection	TBD
Lens mount	M12
Operational temperature	-50 ... 65°C (non condensing)

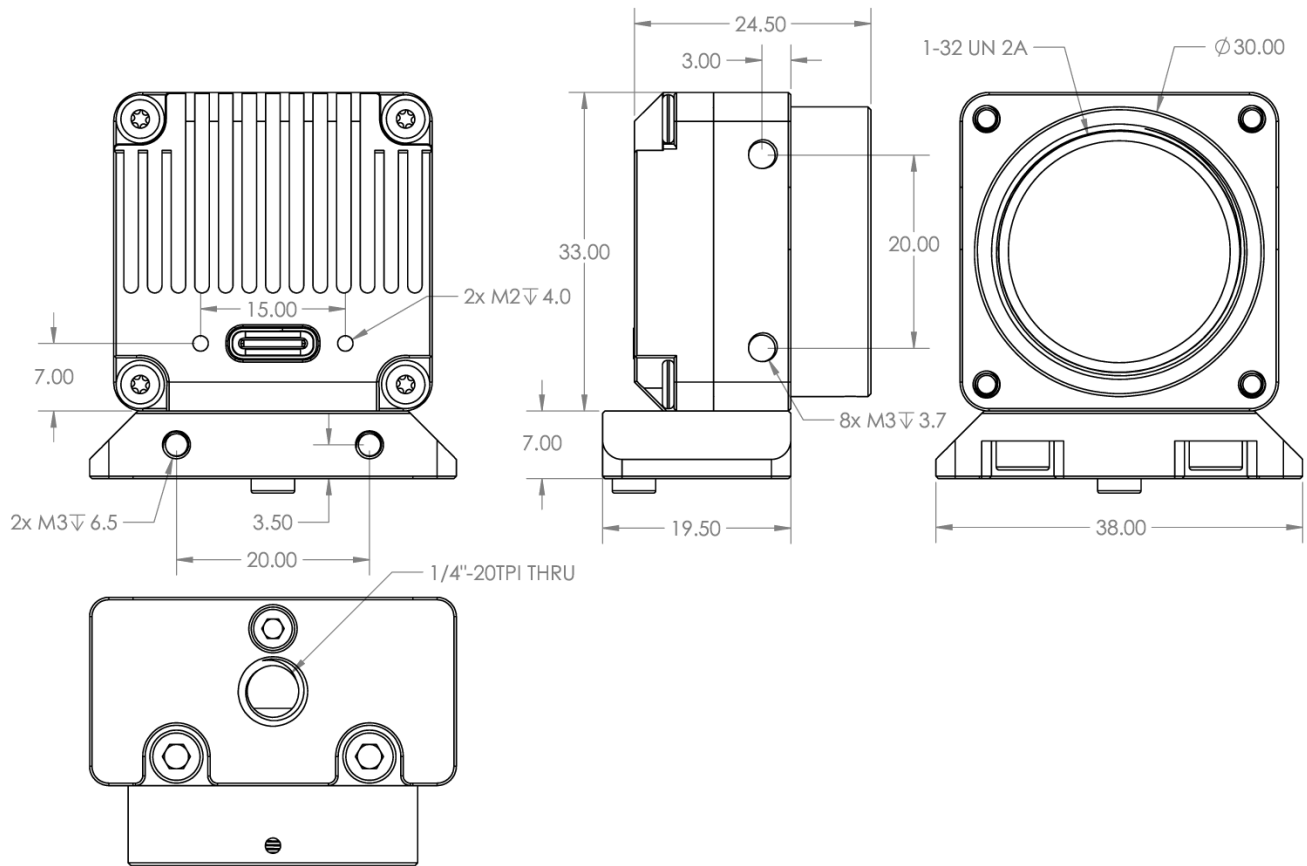
# FFC connector pin-out

C2 FFC board camera should be used with 6 pin 0.5mm pitch FFC cable like 687606050002 from Würth Elektronik



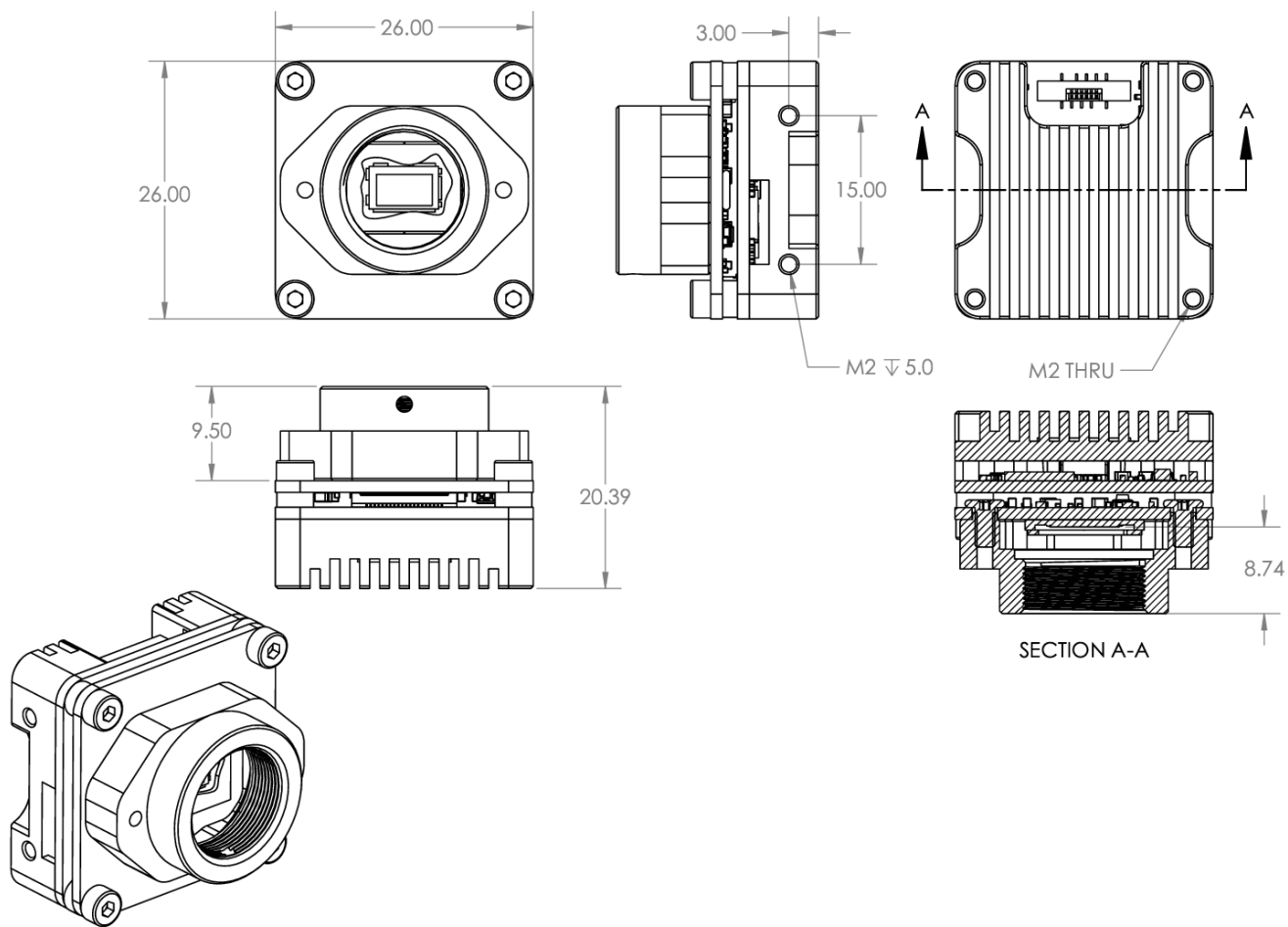
# Dimensions

## Boxed camera



Tripod / Arca Swiss mount plate is optional

## Board camera



Back plate heat-sink is optional