C2 Camera

Automotive-grade cameras for autonomous mobility and robotics applications

TIER IV

Overview

The C2 Camera is a 5.4 MP GMSL2 camera engineered for automotive applications, with a variety of lens options to suit diverse system requirements. Powered by a Sony Semiconductor Solutions IMX490 stacked CMOS SoC and an Indie Semiconductor GW5300 ISP, it features 120 dB HDR, LED flicker mitigation (LFM), and artifact-free 30 fps capture. Delivering both high sensitivity and high resolution for advanced object and signal recognition, the C2 Camera is built to withstand extreme environments. Designed to meet AEC-Q100 Grade 2, Q101, and Q200 standards, it is a reliable, deployment-ready vision solution for autonomous driving systems.

Key features

High dynamic range

Captures high-contrast scenes without crushed shadows or blown-out highlights using a 120 dB dynamic range.

High sensitivity, low noise

The C2 Camera maintains the high-sensitivity and low-noise features of the C1 Camera, with a higher 5.4 MP resolution, enabling extended-range object recognition and wide-angle capture.

LED flicker mitigation

Effectively mitigates flickering from LED light sources like traffic signs, headlights, and taillights.

GMSL2 interface

Enables long-distance signal transmission (up to 15 m) and power supply over a single cable.

Automotive grade

Built with automotive-grade components to operate reliably in temperatures ranging from -40°C to 85°C.

Standard compliance

CE, FCC, RoHS certified.

Autoware compatibility

Fully compatible with Autoware, the world's leading open-source software for autonomous driving.

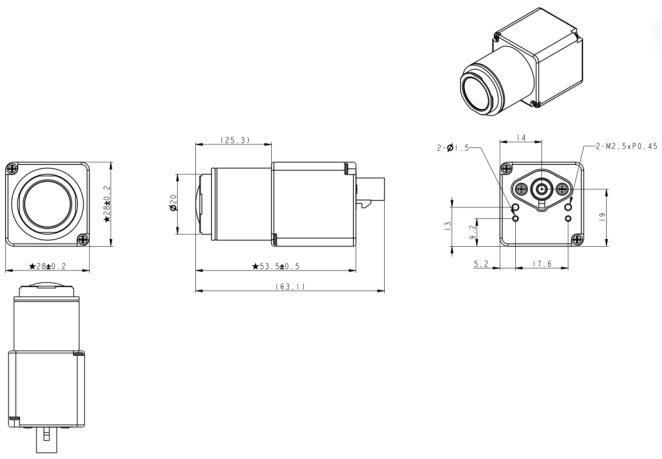
Applications

Autonomous driving

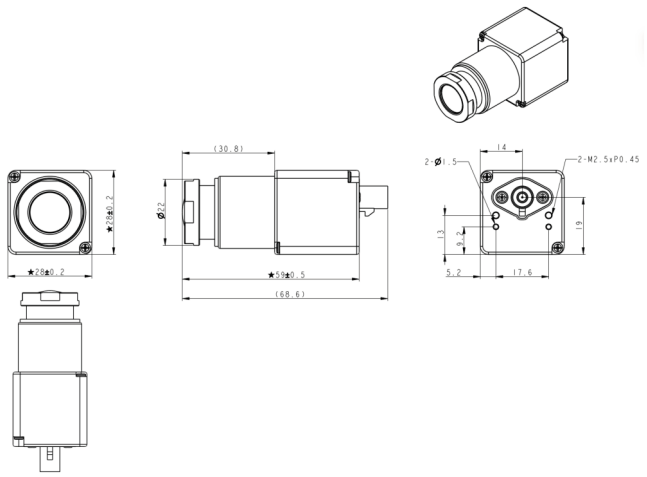
Traffic light recognition
Object recognition
Remote monitoring
Visual SLAM

Mechanical drawings

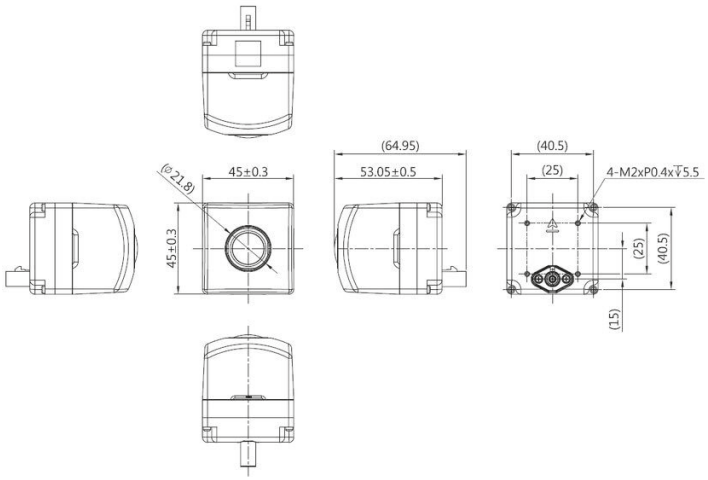
C2-030MP



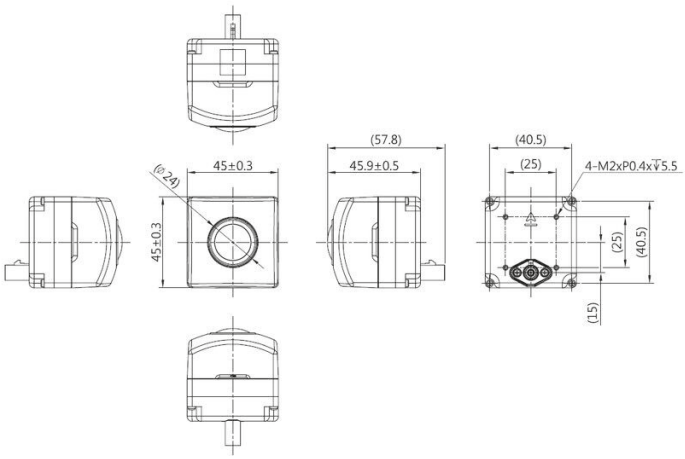
C2-062MP



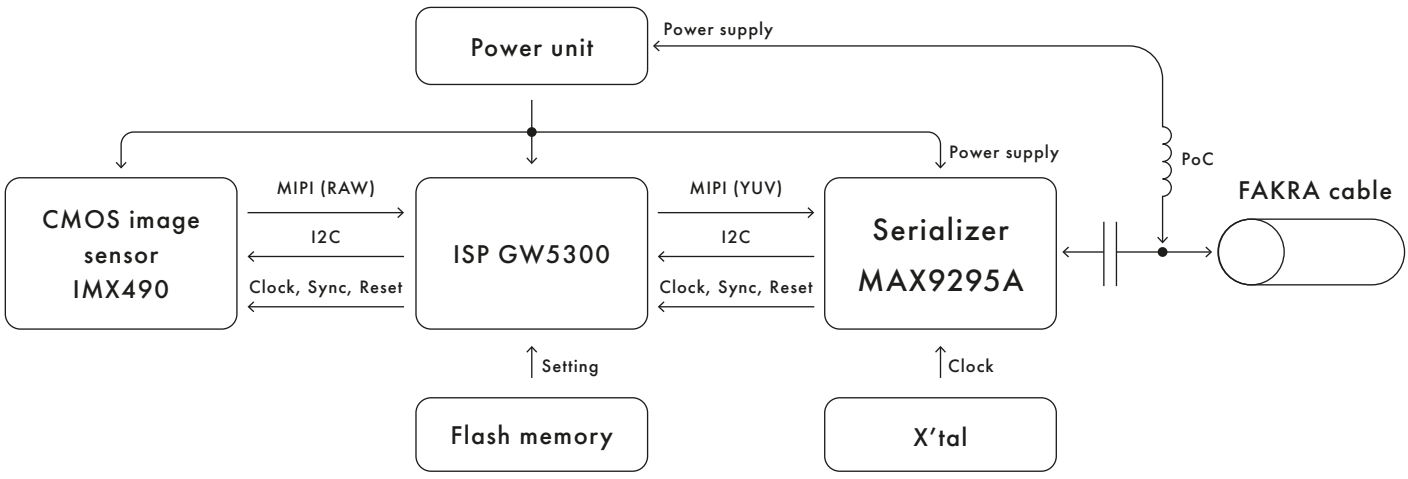
C2-120



C2-176



Block diagram



Technical specifications

	C2-030MP	C2-062MP	C2-120	C2-176
Mechanical				
Dimensions	28 mm x 28 mm x 53.5 mm	28 mm x 28 mm x 59 mm	45 mm x 45 mm x 53.04 mm	45 mm x 45 mm x 45.9 mm
Connector	FAKRA Z			
Lens				
Lens mount	Glued, active alignment applied			
Field of view (FOV) H/V	30°/19.5°	62.5°/40°	120°/73°	175.3°/105.3°
F#	1.6	1.7	1.6	1.8
Infrared cut-off filter (IRCF)	650 nm	650 nm	650 nm	650 nm
Depth of field (DOF)	28 m – ∞ Focus peaking distance: ∞	610 cm – ∞ Focus peaking distance: ∞	250 cm – ∞ Focus peaking distance: 400 cm	45 cm – ∞ Focus peaking distance: 90 cm
Power supply				
Power supply method	Power over coax			
Power supply level	9 V – 12 V			
Power consumption	2.8 W		4.6 W	
Key components				
Image sensor	Sony Semiconductor Solutions IMX490			
Optical format	Diagonal 10.36 mm, Type 1/1.55"			
Pixel size	3.0 µm			
High dynamic range (HDR)	✓			
LED flicker mitigation (LFM)	✓			
Serializer	Analog Devices MAX9295A			
Image signal processor (ISP)	Indie Semiconductor GW5300			
Camera function				
Output interface	GMSL2, up to 6 Gbps			
Output frame rate	Up to 30 fps			
Output image format	YUV422 8 bit			
Output image size	2880 x 1860			
Shutter type	Rolling shutter			
Synchronization	Triggering over GMSL2			
Image signal processing				
ISP functions	HDR composition, demosaicing, autoexposure, auto white balance, IQ adjustment (hue, color saturation, brightness, contrast, sharpness)			
Environmental				
Operating temperature	-40°C – 85°C			
Storage temperature	-40°C – 95°C		-40°C – 105°C	
EMI	CE, FCC, CAN ICES-3, UKCA, RCM, KC			
Vibration	ISO 16750-3:2012 (4.1)			
Shock	ISO 16750-3:2012 (4.2.2)			
Safety	LVD			
RoHS	Compliant			
Ingress protection	IP69K			
Software support				
Drivers	V4L2 driver, ROS2 driver			