

VIZIONCAM-AR0144

- onsemi AR0144 1MP global shutter image sensor.
- Captures high-speed dynamic targets clearly within an ultra-short exposure time.
- Optimized ISP Technology inside.
- Convenient C-Mount and S-Mount (M12) interchangeable lens.
- Solution with Image Signal Processing function, tied in with UVC USB 3.2 Gen 1x1 Type-C connector.
- Plug-and-Play camera (UVC compliant) for Windows, Linux, and MacOS.



Specifications

Camera Information

CMOS Sensor	onsemi AR0144
Active Pixels	1280 (H) × 800 (V) = 1.0 Mp
Pixel Size	3.0 μm x 3.0 μm
Optical Format	1/4" (Diagonal 4.5 mm)
Shutter Type	Global Shutter
Chromaticity	Mono / Color
Maximum Frame Rate (Sensor)*	Full Resolution: 60 fps (Parallel, MIPI 2-lane, 12-bit) 44 fps (MIPI 1-lane, 12-bit) 52 fps (MIPI 1-lane, 10-bit) 720P: 60 fps (Parallel, MIPI 2-lane, 12-bit)
Maximum S/N Ratio	38 dB
Dynamic Range	71.4 dB
Input Clock Range	6 - 48 MHz (Default 48 MHz)
Output Format	YUV422, YUV420, 888RGB, 565RGB, 555RGB, JPEG, RAW8, RAW10, RAW12, MJPEG

Lens - S-Mount

Focus Type	Fixed Focus
Focal Length	2.85 mm
Aperture	F2.8
D-FOV	84°
H-FOV	75°
V-FOV	58°
TTL	20 mm
MOD	0.3 m
IR-Filter	650 nm

Camera Interface

Data Transmission	MIPI CSI-2, up to 4 lanes
Communication Interface	I ² C
Connector	USB 3.2 Gen 1x1 Type C

* The number of the calculated FPS is according to the result of testing the sensor based on ISP from the Host. The actual measured value may vary from different types of data link.

ISP

ISP Functions	Auto White Balance Auto Exposure Auto Flicker Detection Color Calibration (Color Mode) Smooth digital zoom and panning Gamma
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Power

Supply Voltage	5V
Power Consumption	≈0.83 W

Support

Platform	Plug-and-Play camera (UVC compliant) for Windows, Linux, MacOS
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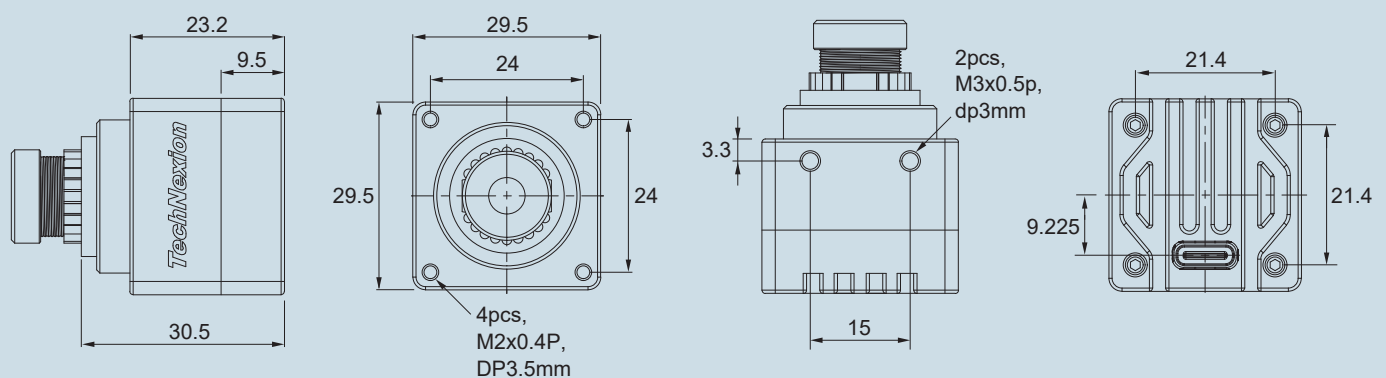
Other

L x W x H	24.5 (W) x 24.5 (H) x 30.5 (D) mm
Weight	44 grams ±5%
Operating Temperature	-30°C to +70°C (Module Ambient Temperature)

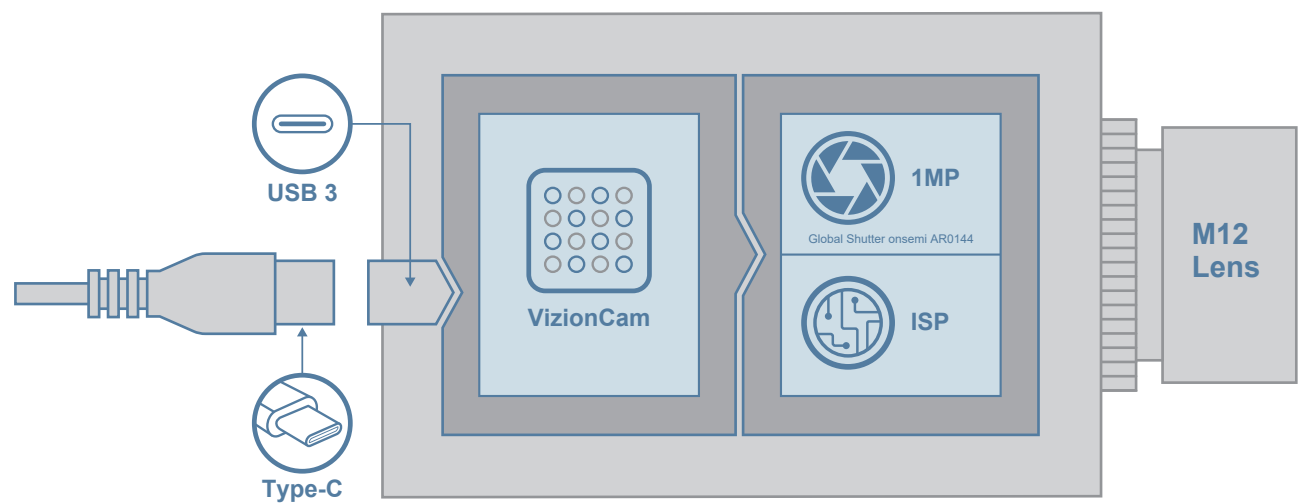
Certification and Compliance

Certification	Compliant with CE / FCC / RoHS / REACH directives
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Dimensions (units in mm)



Block Diagram

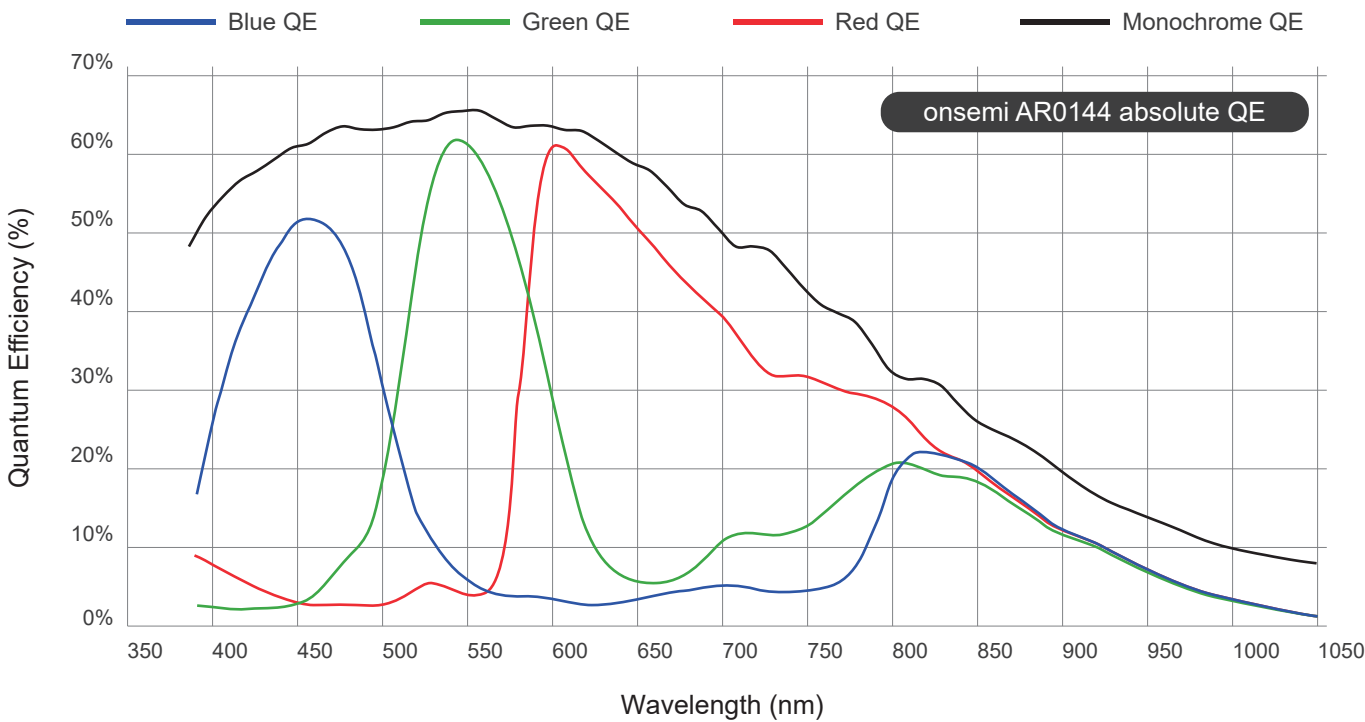


Connector Pin Definition



A1	GND	B12	GND
A2	TXP1	B11	RXP1
A3	TXN1	B10	RXN1
A4	VBUS1	B9	VBUS3
A5	CC1	B8	SBU2
A6	DP1	B7	DN2
A7	DN1	B6	DP2
A8	SBU1	B5	CC2
A9	VBUS2	B4	VBUS4
A10	RXN2	B3	TXN2
A11	RXP2	B2	TXP2
A12	GND	B1	GND

Spectral Characteristics



Order Information

VCI-AR0144x-xxx-xx

	Code	Description
Chromaticity	C	Color
	M	Mono
Lens	-	-
	S84	S-Mount D-FOV 84°
Filter	-	-
	IR	IR Cut 650nm

Standard Product Lens Information

	VCI-AR0144C-S84-IR	VCI-AR0144C-S84
Focus Length	2.85 mm	2.85 mm
F/No.	2.8	2.8
FOV (Diagonal)	84°	84°
TTL	20 mm	20 mm
Range	30 cm to Infinity	30 cm to Infinity
IR Cut Filter	650nm	NA

*TechNexion provides customized lens solutions depending on customer application requirements.