



USB3.0 12M Camera Module IMX577

Key Properties

IMX577 Image Sensor
USB3.0 MJPEG/YUV2 Format
Frame Rate: 18fps for 12M(4000(H)x3000(V))
Max Frame Rate: 30fps for 4K 3840(H)x2160(V)
S-mount M12 Lens Holder
Lenses Type -Standard: FL3.24mm
-Optional: FL2.7/FL3.9/FL4.3/FL8
-Autofocus Optional: FOV(D)100°



Application

Industrial AOI / Machine Vision / Digital Microscopy / Laboratory Research / High Resolution Photography / Digital Still Capture

Feature

- ◆ 12M(3264x2448) SOC image sensor IMX577
 - The IMX577 is a high-performance 1/2.3" CMOS sensor delivering 12MP resolution with exceptional clarity and high-speed data throughput, optimized for professional imaging.
- ◆ M12 lenses of 1/2.3" 12M image optional
 - Standard: FL3.24mm FOV(D)100°
Optional: FL2.7/FL3.9/FL4.3/FL8
Autofocus Optional: FOV(D)100°
- ◆ MJPEG compressed format output support
- ◆ UVC support, plug and play for Windows and Linux

Introduction

CM12M30M12QU3 is a 12MP (4000×3000) USB 3.0 camera module featuring the high-sensitivity Sony IMX577 sensor. Engineered for high-precision imaging, it leverages a SuperSpeed USB 3.0 interface to ensure stable, high-bandwidth data transmission, making it an ideal and cost-effective solution for industrial inspection, laboratory research, and automated optical systems. With its integrated S-mount (M12) lens holder, this module offers exceptional flexibility for users to customize their optical setup with specialized lenses or spectral filters to meet diverse technical requirements.



Specifications

Model	CM12M30M12QU3
Sensor	IMX577
Image Size	1/2.3 inch
Pixel Size	1.55 μm
Image Area	6.29 mm x 4.71 mm
Image Pixels & Resolution	12M / 4000(H) x 3000(V)
Image Formats	MJPEG / YUY2 (YUYV)
Image Transfer Rate	4000x3000 MJPEG@18fps / 3840x2160 MJPEG@30fps 2592x1944 MJPEG@30fps / 2048x1536 MJPEG@30fps 1920x1080 MJPEG@30fps / 1280x720 MJPEG@30fps 800x600 MJPEG@30fps / 640x480 MJPEG@30fps 4000x3000 YUY2@8fps / 3840x2160 YUY2@15fps 2592x1944 YUY2@15fps / 2048x1536 YUY2@30fps 1920x1080 YUY2@30fps / 1280x720 YUY2@30fps 800x600 YUY2@30fps / 640x480 YUY2@30fps
Max S/N Ratio	40dB
Max Dynamic Range	83dB
Sensitivity	700mV/lux-sec@550nm
Mini illumination	0.1 lux
Shutter Type	Electronic rolling shutter / Frame exposure
Connecting Port	USB3.0 (Type A)
Plug & Play	UVC(USB Video Class) Compliant support
Auto Exposure Control (AEC)	Support
Auto White Balance (AWB)	Support
Adjustable Parameters	Brightness, Contrast, Saturation, Hue, Sharpness, Gamma, Gain, White Balance, Backlight Contrast, Exposure
Lens Parameters	Standard: FL3.24mm Optional: FL2.7/FL3.9/FL4.3/FL8 Autofocus Optional: FOV(D)100°
Lens Holder	Standard M12 lens holder
LED Power	2P x2 support
Power Supply	USB BUS POWER
Operating Voltage	DC 5V
Operating Current	480mA
Operating Temperature	-20 ~ 60°C
Storage Temperature	-20 ~ 85°C
PCBA Dimensions	38x38mm
Weight	~30g



Cable Length	Standard 1m, Optional 1.5m, 2m
Operating System Request	Win8/Win10/Win11 Linux with UVC (above linux-2.6.26) MAC OSX El captain10.11.4 or later Android 4.0 or above with UVC

Specifications are subject to change without notice.

Sensor Board Drawings

