

Features

- Sony IMX487 BSI CMOS Pregius S Imager
- UV through VIS operation [220 – 1100nm]
- Peak QE \approx 56% at $\lambda = 500\text{nm}$ (estimated)
- $2.74\mu\text{m} \times 2.74\mu\text{m}$ pixels with Global Shutter
- Exposure Range of 30 μs -to-15s
- Compatible with 2/3" C-mount Optics
- 2840(H) x 2840(V) pixels at up to 45 Frames/sec
- 8-bit or 12-bit Digital Output
- USB3.0 (USB3.1 Gen1) Interface
- Compatible UV lenses are also available
- Flexible Operation: Gain, Binning and ROI Control
- Triggering: via Software or Hardware; cable included
- Non-isolated and Optically coupled isolated I/O
- ToupView Image Capture & Control Software/SDK
- Windows/WinRT/Linux/macOS/Android
- C/C++, C#/VB.NET, Python, Java, DirectShow, Twain
- 3rd Party Software: Matlab, LabVIEW, Micro-manager
- CE / FCC Certified



SONY
Pregius S



Description

The UV-IUA8000KMA is a non-cooled, USB3.0 camera based on Sony's back-illuminated IMX487 CMOS image sensor from the Pregius S family. This camera can capture images in the invisible (UV: Ultraviolet) *and* visible regions of the spectrum. With its 2840 x 2840 x 2.74 μm pixels users can acquire high-resolution UV & VIS images using readily-available and cost-effective 2/3" C-mount optics. The camera operates in Global Shutter mode: all pixels begin and end exposure at the same instant - ideal for imaging fast changes or rapid motion in the Field-of-View.

Applications (a partial list)

- Inspection of semiconductors
- Inspection of glass, and other transparent objects
- Materials Sciences and Physical Sciences
- Bacterial Inspection
- Non-destructive testing
- Anti-counterfeit measures
- Corona detection
- Skincare and Wound healing
- Quality Control
- Laser Beam Alignment, Profiling, M² Estimation
- Machine Vision

Specifications

IUA8000KMA

Imager

Sony IMX487 UV + VIS, BSI CMOS

Active Pixels	2840 x 2840
Pixel Size	2.74 μm X 2.74 μm
Imager Size	7.78mm (H) x 7.78mm (V) 11 mm (diagonal)
Aspect Ratio	1:1
Exposure Range	30μs to 15sec.
* Peak QE	56% @ λ = 500nm (see graph)
Shutter Type	Global Shutter
Gain e-/ADU, 12 bit	1.0x 2.42 3.13x 0.77 10.06x 0.24 32.12x 0.08
Full Well Capacity	9.9Ke ⁻ 3.16Ke ⁻ 0.98Ke ⁻ 0.31Ke ⁻
Read Noise	2.66e ⁻ 2.09e ⁻ 1.68e ⁻ 1.28e ⁻
Max. Dyn Range	71.4dB 63.6dB 55.4dB 47.6dB
* Dark Current	0.12 e ⁻ /p/s @ 20°C

* These estimated values are provided for the purposes of reference. However, they are not specified by manufacturer, and thus not guaranteed.

Digital Video

A/D Conversion	8-bit or 12-bit															
Host Interface	USB3.0 [USB3.1 Gen 1], USB3 Cable included															
Binning	Hardware: 1X1 2X2 Software: 2X2 3X3 4X4															
Frame rate & ROI [Selected Examples]	<table border="1"> <thead> <tr> <th></th> <th>8-bit</th> <th>12-bit</th> </tr> </thead> <tbody> <tr> <td>2840 X 2840</td> <td>45 f/sec</td> <td>22.5 f/sec</td> </tr> <tr> <td>1420 X 1420</td> <td>83 f/sec</td> <td>41.5 f/sec</td> </tr> <tr> <td>1280 X 1024</td> <td>115.8 f/sec</td> <td>57.9 f/sec</td> </tr> <tr> <td>640 X 512</td> <td>205.4 f/sec</td> <td>102.7 f/sec</td> </tr> </tbody> </table>		8-bit	12-bit	2840 X 2840	45 f/sec	22.5 f/sec	1420 X 1420	83 f/sec	41.5 f/sec	1280 X 1024	115.8 f/sec	57.9 f/sec	640 X 512	205.4 f/sec	102.7 f/sec
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Image Buffer	512MBytes (4Gb) DDR3 for stable frame delivery															

Electrical

Input Voltage	USB3.0
Power	< 3.8 Watts

Thermal and Mechanical

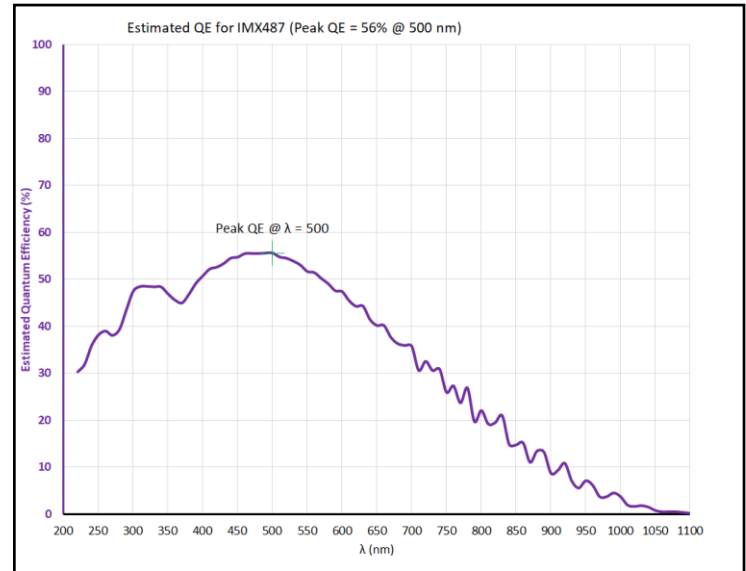
Optical Format	2/3"
Size [L X W X H]	68mm X 68mm X 28.1mm 2.68" X 2.68" X 1.1"
Weight	227 grams (without lens)
Lens Mount	C-mount M42 option is available
Camera Mount	Standard Tripod Mount, 1/4" x 20 and 2 x M4

Camera Control

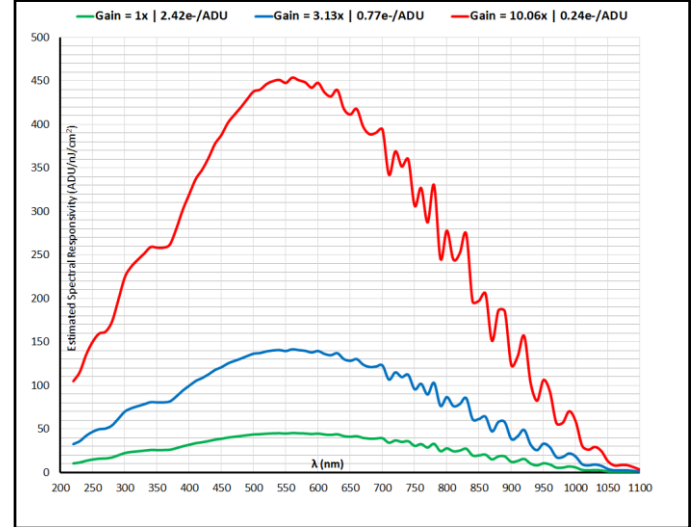
ToupView/SDK

Operating System	Windows/WinRT/Linux/macOS/Android
Software Support	C/C++, C#/VB.NET, Python, Java, DirectShow Matlab, LabVIEW, Micro-manager

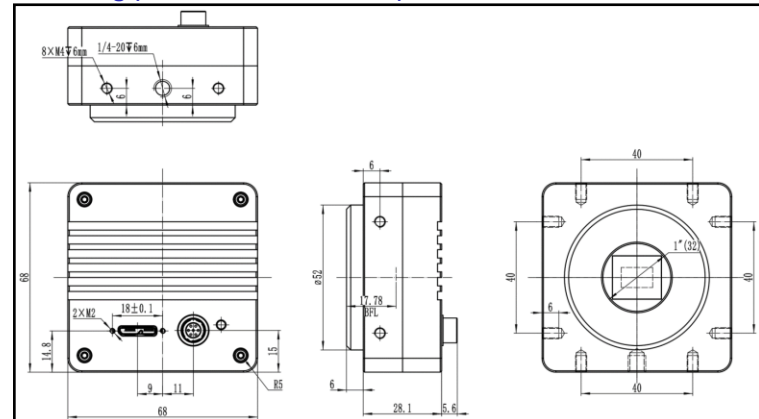
* Quantum Efficiency (Est. %)



* Estimated Spectral Responsivity (as a function of gain)



Housing (dimensions are in mm)



I/O Connector Pinout A 7-pin to unterminated Aux cable is included to facilitate I/O & hardware triggering

Color	Pin	Signal	Signal description	
			Color	Pin
White	1	GND	White	1
Red	2	5V	Red	2
Blue	3	OPTO_GND	Blue	3
Yellow	4	DIR_GPIO0	Yellow	4
Black	5	DIR_GPIO1	Black	5
Green	6	OPTO_IN	Green	6
Pink	7	OPTO_OUT	Pink	7