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## EHD SCM-E10 Series Microcopy Cameras



EHD imaging GmbH

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# 1 USB 3.2 Gen2 CMOS Camera for Microscopes

## 1.1 EHD SCM-E10 Series USB 3.2 Gen2 CMOS Camera with Hardware ISP

### 1.1.1 The Basic Characteristic of SCM-E10 Series

The SCM-E10 Series is EHD imaging GmbH latest generation of cameras, featuring advanced USB 3.2 Gen 2 technology that delivers up to 10 Gb/s theoretical bandwidth—approximately twice as fast as traditional USB 3.0 cameras. This breakthrough effectively overcomes data transmission bottlenecks, making the series ideal for microscopy imaging, industrial inspection, and scientific research applications that demand high data throughput.

Equipped with a USB Type-C interface that supports reversible plug-in, the E10ISPM series ensures both ease of use and connection stability, while maintaining compatibility with multiple device configurations.

The series integrates Sony IMX high-performance CMOS sensors (IMX472 / IMX383 / IMX585), delivering high sensitivity, low noise, and wide dynamic range performance. It supports 8-bit / 12-bit data formats, accommodating a wide range of use cases from high-speed preview to precision measurement.

The SCM-E10 series is well suited for high-speed microscopy imaging, fluorescence imaging, biomedical research, semiconductor inspection, industrial quality control, and scientific experimentation.

#### Key Features of the [SCM-E10](#) Series

- USB 3.2 Gen 2 interface with 10 Gb/s ultra-high bandwidth, significantly faster than USB 3.0
- USB Type-C connector, supporting reversible plug-in for easy and stable connection
- Sony IMX high-performance CMOS sensors (IMX472 / IMX383 / IMX585) with low noise and high sensitivity
- Selectable 8-bit / 12-bit data output modes for flexible precision control
- High frame rate capture, up to 240 fps @ 1760 × 1318 (8-bit) on certain models
- Ultra-low read noise, as low as 1.07 e<sup>-</sup> (HCG mode)
- Wide dynamic range, up to 72 dB
- Resolution range from 8.3 MP to 21 MP, covering diverse imaging needs
- Multiple hardware and software binning modes supported
- Standard C-mount lens interface, compatible with various microscopes and industrial lenses
- External trigger and GPIO control supported
- Built-in Ultra-Fine hardware ISP engine supporting real-time demosaic, auto exposure, gain control, one-click white balance, and adjustments for color, saturation, gamma, brightness, and contrast—achieving efficient image processing while reducing host CPU load
- Bundled with EHDView software, offering cross-platform SDKs for Windows / Linux / macOS / Android, and supporting multiple APIs including C/C++, C#/VB.NET, Python, Java, DirectShow, and TWAIN
- Compliant with CE / FCC international certification standards



Different Views of the SCM-E10 Series Camera

## 1.1.2 EHS SCM-E10 Series Datasheet

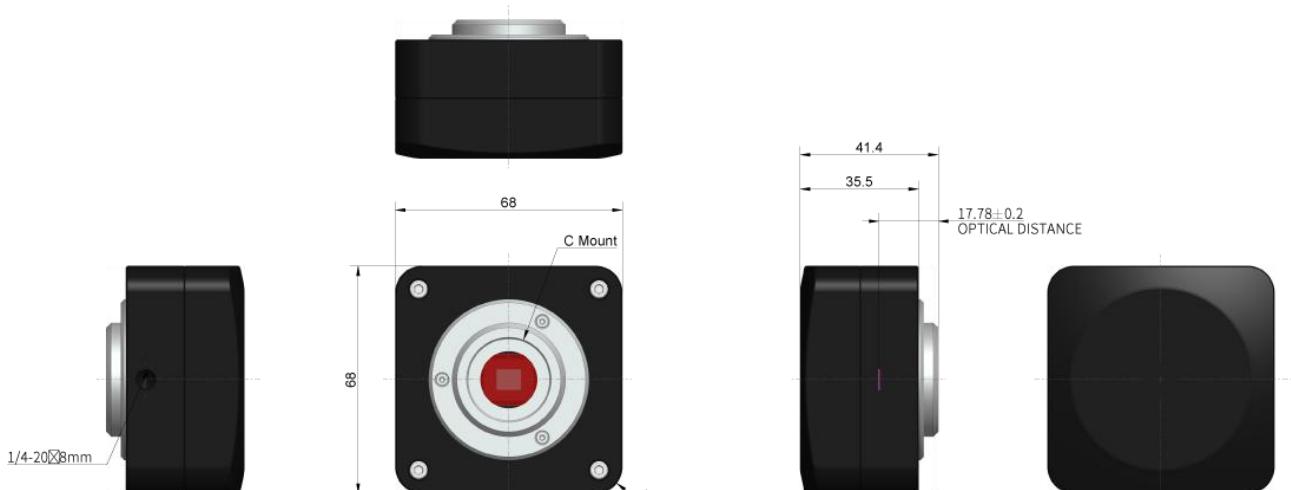
Order Code	Sensor& Size(mm)	Pixel(μm)	GSensitivity DarkSignal	FPS/Resolution	Binning	Exposure
SCM-E10-06A-C	50M/IMX06A(C,RS) 1/0.98"(13.10x9.83)	1.6 x 1.6	3.871e-/ADU 4.63e-	14@8128x6144 19@7680x4320 45@4032x3072 62@3840x2160 10@8128x6144 15@7680x4320 40@4032x3072 62@3840x2160 8 Bit / 12 Bit	1x1	0.35ms~15s
SCM-E10-472-C	21M/IMX472(C,RS) 4/3"(17.4x13.1)	3.3x3.3	982.8 mV @ 1/30s 0.55 mV @ 1/30s	49@5280x3956 115@2640x1978 240@1760x1318 25@5280x3956 55@2640x1978 117@1760x1318 8 Bit / 12 Bit	1x1 1x1 2x2 3x3 9x9	0.1ms~15s
SCM-E10-383-C	20M/IMX383(C,RS) 1"(13.13x8.75)	2.4 x 2.4	4.410e-/ADU 3.48e-	49@5472x3648 49@2736x1824 120@1824x1216 24@5472x3648 24@2736x1824 120@1824x1216 8 Bit / 12 Bit	1x1	0.1ms~15s
SCM-E10-585-C	8.3M/IMX585(C,RS) 1/1.2"(11.13x6.26)	2.9 x 2.9	0.994e-/ADU(HCG) 9.582e-/ADU(LCG) 1.07e- (HCG); 6.69e- (LCG)	88@3840x2160 60@1920x1080 60@3840x2160 60@1920x1080 8 Bit / 12 Bit	1x1	0.1ms~15s

C: Color; M: Monochrome; GS: Global Shutter

Other Specification		
Spectral Range	380-650nm (with IR-cut Filter)	
White Balance	ROI White Balance/ Manual Temp Tint Adjustment/NA for Monochromatic Sensor	
Color Technique	Ultra-Fine HISPV/NA for Monochromatic Sensor	
Capture/Control SDK	Windows/Linux/macOS/Android Multiple Platform SDK(Native C/C++, C#/VB.NET, Python, Java, DirectShow, Twain, etc)	
ADC	8 Bit / 12 Bit	
Recording System	Still Picture and Movie	
Cooling System*	Natural	
Operating Environment		
Operating Temperature(in Centidegree)	-10~ 50	
Storage Temperature(in Centidegree)	-20~ 60	
Operating Humidity	30~80%RH	
Storage Humidity	10~60%RH	
Power Supply	DC 5V over PC USB3.0 Port. Compatible with USB2.0	
Software Environment		
Operating System	Microsoft® Windows® XP / Vista / 7 / 8 / 10 / 11 (32 & 64 bit) OSx(Mac OS X) Linux	
PC Requirements	CPU: Equal to Intel Core2 2.8GHz or Higher	
	Memory: 2GB or More	
	USB Port: USB3.0 High-speed Port	
	Display: 17" or Larger	
	CD-ROM	

### 1.1.3 Dimension of the SCM- E10 Series

The [SCM-E10-Series](#) body, made from tough, CNC aluminum alloy, ensures a heavy duty, workhorse solution. The camera is designed with a high quality IR-CUT to protect the camera sensor. No moving parts included. This design ensures a rugged, robust solution with an increased lifespan when compared to other industrial camera solutions.



Dimension of SCM-E10 Series



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