

## 10.7 SCMOS Series USB2.0 CMOS Eyepiece Camera

### 10.7.1 SCMOS Characteristic

ToupTek SCMOS is an economic version with simple and compact structure CMOS eyepiece camera. So here, the S means simple and compact. USB2.0 is used as the data transfer interface.

The SCMOS comes with high-speed USB2.0 interface and high frame rate video display keep the screen smooth without interruption;

Also the SCMOS comes with advanced video & image processing application ToupView;

The SCMOS can be widely used to transfer the mono or binocular student microscopes to digital microscope.

With 23.2 to 30mm or 23.2 to 30.75 convert ring, the SCMOS camera can also change the stereo microscope to digital stereo microscope.

- Microscope eyepiece camera with 23.2 diameter and compact size;
- Easy to extend to C or CS- Mount camera with high quality lens(optional);
- High-quality camera with Aptina CMOS sensor;
- Auto white balance and auto-exposure; Brightness, contrast, chroma, and saturation can be adjusted;
- High-speed USB2.0 interface and high frame rate video display keep the screen smooth without interruption;
- With advanced video & image processing application ToupView;
- Providing Windows/Linux/Mac OS multiple platforms SDK;
- Native C/C++, C#/VB.NET, DirectShow, Twain Control API;



## 10.7.2 SCMOS Datasheet (15)

| Order Code  | Sensor & Size(mm)                     | Pixel(μm) | G Responsivity<br>Dynamic range<br>SNRmax | FPS/Resolution   | Binning           | Exposure    |
|---|---------------------------------------|-----------|---|--|-------------------|-------------|
| <b>The New SCMOS after Jan. 2020</b>                                  |                                       |           |   |  |                   |             |
| <b>SCMOS12000KPA</b><br><b>TP512000A</b><br>Available after Apr. 2020 | 12M/IMX577(C)<br>1/2.3" (5.95x4.71)   | 1.55x1.55 | 250LSB<br>70dB<br>43dB                    | 15@3840x3040<br>15@1920x1520<br>15@960x760                 | 1x1<br>1x1<br>1x1 | 0.1-2000 ms |
| <b>SCMOS08300KPA</b><br><b>TP508300A</b>                              | 8.3M/IMX274(C)<br>1/2.5" (6.22x3.50)  | 1.62x1.62 | 236mV<br>70dB<br>43dB                     | 30@3840x2160<br>30@1920x1080<br>30@1280x720<br>30@960x540  | 1x1<br>1x1<br>1x1 | 0.1-2000 ms |
| <b>SCMOS05100KPA</b><br><b>TP505100A</b>                              | 5.1M/AR0521(C)<br>1/2.5" (5.70x4.28)  | 2.2x2.2   | 18.8ke-/lus<br>73dB<br>40dB               | 30@2592x1944<br>30@1280x960<br>30@640x480                  | 1x1<br>1x1<br>1x1 | 0.1-1000 ms |
| <b>SCMOS05100KPB</b><br><b>TP505100B</b><br>Available after Feb. 2020 | 5.1M/IMX335(C)<br>1/2.8" (5.18x3.89)  | 2.0x2.0   | 505mV<br>70dB<br>43dB                     | 25@2592x1944<br>25@1280x960<br>25@640x480                  | 1x1<br>1x1<br>1x1 | 0.1-2000 ms |
| <b>SCMOS03100KPA</b><br><b>TP503100A</b>                              | 3.1M/Aptina(C)<br>1/2.5" (5.73x4.3)   | 2.8x2.8   | 18.8ke-/lus<br>73dB<br>40dB               | 30@2048x1536<br>30@1024x768                                | 1x1<br>1x1        | 0.1-1000 ms |
| <b>SCMOS02100KPA</b><br><b>TP502100A</b>                              | 2.1M/IMX307(C)<br>1/2.8" (5.73x4.3)   | 2.9x2.9   | 1300mV<br>73dB<br>43dB                    | 38@2048x1536<br>38@1024x768                                | 1x1<br>1x1        | 0.1-2000 ms |
| <b>The SCMOS before Dec. 2019</b>                                     |                                       |           |   |  |                   |             |
| <b>SCMOS05000KPA</b><br><b>TP505000A</b>                              | 5.0M/Aptina(C)<br>1/2.5" (5.70x4.28)  | 2.2x2.2   | NA  | 2@2592x1944<br>3@2048x1536<br>5@1600x1200<br>7.5@1280x1024 | N/A               | Auto        |
| <b>SCMOS05000KPB</b><br><b>TP505000B(NEW)</b>                         | 5.0M/SC5033(C)<br>1/2.7" (5.18x3.89)  | 2.0x2.0   | 2.0V/lux-sec<br>64dB<br>35dB              | 20@2592x1944<br>20@2048x1536<br>20@1600x1200<br>30@800x600 | N/A               | Auto        |
| <b>SCMOS03000KPA</b><br><b>TP503000A</b>                              | 3.0M/Aptina(C)<br>1/2.7" (4.51x3.38)  | 2.2x2.2   | NA  | 3@2048x1536<br>5@1600x1200<br>7.5@1280x1024                | N/A               | Auto        |
| <b>SCMOS03000KPB</b><br><b>TP503000B(NEW)</b>                         | 3.0M/SmartSens(C)<br>1/3" (4.10x3.07) | 2.0x2.0   | 2.0V/lux-sec<br>64dB<br>35dB              | 20@2048x1536<br>20@1600x1200<br>30@800x600                 | N/A               | Auto        |
| <b>SCMOS02000KPA</b><br><b>TP502000A</b>                              | 2.0M/Aptina(C)<br>1/3.2" (4.48x3.36)  | 2.8x2.8   | NA  | 5@1600x1200<br>7.5@1280x1024<br>20@800x600<br>22@640x480   | N/A               | Auto        |
| <b>SCMOS02000KPB</b><br><b>TP502000B(NEW)</b>                         | 2.0M/OV2710(C)<br>1/2.7" (5.76x3.24)  | 3x3       | 3.3V/ Lux-sec<br>69dB<br>39dB             | 25@1920x1080<br>30@1280x1024<br>30@1280x720                | N/A               | Auto        |
| <b>SCMOS01300KPA</b><br><b>TP501300A</b>                              | 1.3M/Aptina(C)<br>1/3" (4.60x3.70)    | 3.6x3.6   | NA  | 7.5@1280x1024<br>12.5@1024x768<br>12.5@800x600             | N/A               | Auto        |
| <b>SCMOS00920KPA</b><br><b>TP500A(NEW)</b>                            | 0.92M/BG0703(C)<br>1/2.7" (5.80x3.28) | 4.5x4.5   | 5.8V/ Lux-sec<br>65dB<br>43dB             | 25@1280x720<br>25@640x480                                  | N/A               | Auto        |
| <b>SCMOS00350KPA</b><br><b>TP500350A</b>                              | 0.35M/Aptina(C)<br>1/4" (3.58x2.69)   | 5.6x5.6   | NA  | 30@640x480   | N/A               | Auto        |

SCMOS05000KPB and SCMOS03000KPB have fast speed than SCMOS05000KPA and SCMOS03000KPA

C: Color; M: Monochrome;

#### Other Specification for SCMOS Camera

|                     |  |
|---------------------|--|
| Spectral Range      | 380-650nm (with IR-cut Filter)   |
| White Balance       | Auto/ROI/Manual White Balance(New Model)<br>Auto(Products before 2020)   |
| Color Technique     | N/A  |
| Capture/Control SDK | Windows/Linux/macOS/Android Multiple Platform SDK(Native C/C++, C#/VB.NET, Python, Java, DirectShow, Twain, etc) |
| Recording System    | Still Picture and Movie  |
| Cooling System*     | Natural  |

#### Operating Environment

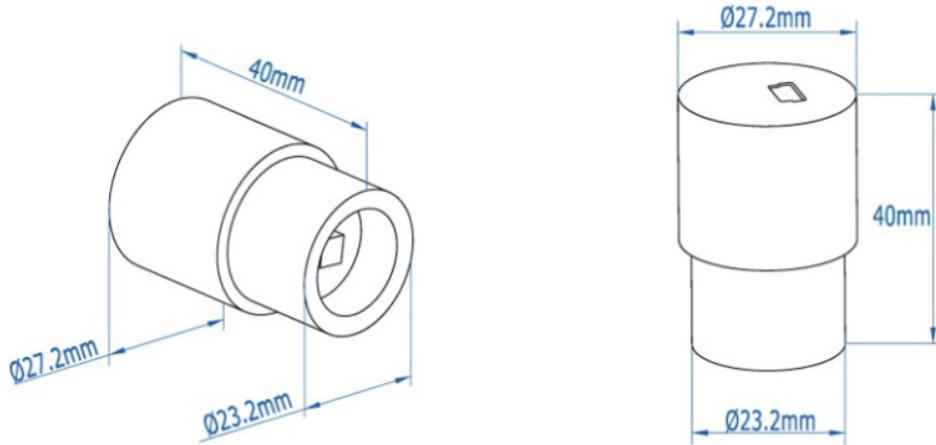
|                                       |         |
|---------------------------------------|---------|
| Operating Temperature(in Centidegree) | -10~ 50 |
| Storage Temperature(in Centidegree)   | -20~ 60 |

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|                             |  |
|-----------------------------|--|
| Operating Humidity          | 30~80%RH   |
| Storage Humidity            | 10~60%RH   |
| Power Supply                | DC 5V over PC USB Port   |
| <b>Software Environment</b> |  |
| Operating System            | Microsoft® Windows® XP / Vista / 7 / 8 /10 (32 & 64 bit)<br>OSx(Mac OS X)<br>Linux |
| PC Requirements             | CPU: Equal to Intel Core2 2.8GHz or Higher   |
|                             | Memory:2GB or More   |
|                             | USB Port:USB2.0 High-speed Port  |
|                             | Display:17" or Larger  |
|                             | CD-ROM   |

### 10.7.3 Dimension of SCMOS

The SCMOS body, made from aluminum alloy blackening, ocular housing: Dia.27.2 X 40mm ensures a heavy duty, workhorse solution. The camera is designed with a high quality IR-CUT filter to filter the infrared light and 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 SCMOS

## 10.7.4 Packing Information for SCMOS



Packing Information of SCMOS

| <b>Standard Camera Packing List</b> |   |
|-------------------------------------|---|
| A                                   | Carton L:52cm W:32cm H:33cm (50pcs, 12~17Kg/ carton), not shown in the photo  |
| B                                   | Gift box L:14.5cm W:9.5cm H:6.0cm (0.15~0.16Kg/ box)  |
| C                                   | SCMOS series USB2.0 eyepiece camera   |
| D                                   | High-Speed USB2.0 A male to mini B 5-pin male gold-plated connectors cable /1.5m  |
| E                                   | CD (Driver & utilities software, Ø8cm)  |
| <b>Optional Accessory</b>           |   |
| F                                   | C-Mount Adapter Housing:108027(HS502)   |
| G                                   | 108015(Dia.23.2mm to 30.0mm Ring)/Adapter rings for 30mm eyepiece tube  |
| H                                   | 108016(Dia.23.2mm to 30.5mm Ring)/ Adapter rings for 30.5mm eyepiece tube   |
| I                                   | 108017(Dia.23.2mm to 31.75mm Ring)/ Adapter rings for 31.75mm eyepiece tube   |
| J                                   | Calibration kit<br>106011/TS-M1(X=0.01mm/100Div.);<br>106012/TS-M2(X,Y=0.01mm/100Div.);<br>106013/TS-M7(X=0.01mm/100Div., 0.10mm/100Div.) |