# ICMOS Basic Characteristic

ICMOS is an industrial CMOS camera and it adopts ultra-high performance CMOS sensor as the image-picking device.USB2.0 is used as the data transfer interface. Dimensions: 29x29x29 mm excluding lens holder, without optics (metal case) is realized to obey the industrial camera standard.

A 8-pin Hirose HR25-7TR-8PA GPIO connector for trigger, strobe(Optional);
Further, the ICMOS comes with advanced video & image processing application ToupView and providing Windows/Linux/OSX multiple platforms SDK;
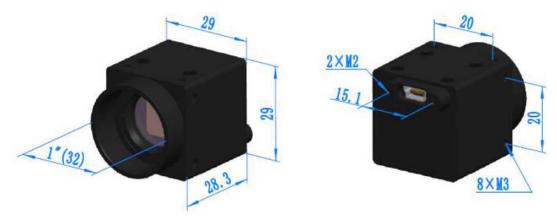Also native C/C++, C#/VB.NET, DirectShow, Twain Control API are provided.
The ICMOS can be widely used in machine vision and on-line inspection.

The basic characteristic of ICMOS cameras are as follows:

☐ C-Mount camera with Aptina or OnSemi CMOS sensor;

☐ Dimensions: 29x29x29 mm excluding lens holder, without optics (metal case);

☐ 8-pin Hirose HR25-7TR-8PA GPIO connector for trigger, strobe(Optional);

☐ USB 2.0 interface with screw locks for camera control, data, and power;

☐ With advanced video & image processing application ToupView;

☐ Providing Windows/Linux/Mac OS multiple platforms SDK;

☐ Native C/C++, C#/VB.NET,DirectShow, TwainControl API;

| Order Code | Sensor & Size(mm) | Pixel(μm) | G Responsivity Dynamic range SNRmax | FPS/Resolution | Binning | Exposure(ms) |
|---|---|---|---|---|---|---|
| ICMOS03100KPA IP603100A | 3.1M/MT9T001(C) 1/2" (6.55x4.92) | 3.2x3.2 | 1.0 V/lux-sec 61dB 43dB | 12@2048x1536 43@1024x768 83@680x510 | 1x1 | 0.128ms~2000ms |
| ICMOS01300KMA IM601300A | 1.3M/MT9M001(M) 1/2" (6.66x5.32) | 5.2x5.2 | 2.1 V/lux-sec 68.2dB 45dB | 30@1280x1024 | 1x1 | 0.64ms~1035.62ms |
| ICMOS10000KPA IP610000A | 10M/MT9J003(C) 1/2.3" (6.44x4.616) | 1.67x1.67 | 0.31v/lux-sec 65.2dB 34dB | 3.7@3584x2748 13@1792x1374 35@896 x684 | 1x1, 2x2, 4x4 | 0.4ms~2000ms |
| ICMOS14000KPA IP614000A | 14M/MT9F002(C) 1/2.3"(6.451x4.603) | 1.4x1.4 | 0.724v/lux-sec 65.3dB 35.5dB | 2.7@4096x3288 10@2048x1644 35@1024 x822 | 1x1, 2x2, 4x4 | 0.4ms~2000ms |

C: Color; M: Monochrome;

## Other Specification for ICMOS Camera

| | |
|---|---|
| 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™ Color Engine/NA for Monochromatic Sensor |
| Capture/Control API | Native C/C++, C#/VB.NET, DirectShow, Twain and Labview |
| Recording System | Still Picture and Movie |
| Cooling System* | Natural |
| Cable Connection | Include Locking Screws |
| User IO | IO with Optocoupler Isolation(Trigger and Flash) |

## Operating Modes

| | |
|---|---|
| Continuous Capture Mode | Video Mode |
| Single Capture Mode | Hard Trigger or Soft Trigger |

## 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 USB Port |

## Software Environment

| | |
|---|---|
| Operating System | Microsoft® Windows® XP / Vista / 7 / 8 /10 (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:USB2.0 High-speed Port |
| | Display:17" or Larger |
| | CD-ROM |

## Standard Camera Packing List

| | |
|---|---|
| A | Carton L:52cm W:32cm H:33cm (50pcs, 12~17Kg/ carton), not shown in the photo |
| B | Gift box L:14cm W:9.7cm H:6cm (0.17~0.18Kg/ box) |
| C | ICMOS series USB2.0 C-mount camera |
| D | High-speed USB2.0 A male to B male gold-plated connectors cable /2.0m |
| E | CD (Driver & utilities software, Ø12cm) |

## Optional Accessory

| | | | |
|---|---|---|---|
| F | Adjustable lens adapter | C-mount to Dia.23.2mm eyepiece tube (Please choose 1 of them for your microscope) | 108001/AMA037<br>108002/AMA050<br>108003/AMA075 |
| | | C-mount to Dia.31.75mm eyepiece Tube (Please choose 1 of them for your telescope) | 108008/ATA037<br>108009/ATA050<br>108010/ATA075 |
| G | Fixed lens adaptor | C-mount to Dia.23.2mm eyepiece tube (Please choose 1 of them for your microscope) | 108005/FMA037<br>108006/FMA050<br>108007/FMA075 |
| | | C-Mount to Dia.31.75mm eyepiece tube (Please choose 1 of them for your telescope) | 108011/FTA037<br>108012/FTA050<br>108013/FTA075 |
| | Note: For F and G optional items, please specify your camera type(C-mount, microscope camera or telescope camera) , ToupTek engineer will help you to determine the right microscope or telescope camera adapter for your application; | | |
| H | 108015(Dia.23.2mm to 30.0mm Ring)/Adaptor rings for 30mm eyepiece tube | | |
| I | 108016(Dia.23.2mm to 30.5mm Ring)/ Adaptor rings for 30.5mm eyepiece tube | | |
| J | 108017(Dia.23.2mm to 31.75mm Ring)/ Adaptor rings for 31.75mm eyepiece tube | | |
| K | Calibration Kit | 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.) | |