Toshiba 41.5 MP sensor exclusive at Raytrix

- 8k Ultra-High Resolution
  41.5 Megapixels @ 7 FPS
- 4k Superspeed Video
  4k@30 FPS, 2k@60 FPS
- Superb Picture Quality
  HDR, BSI, Noise Reduction
- Changeable C-Mount
  Option: OiS & Shift-Lens

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C42 beyond 40 Megapixel
for Professional Applications

Life Science (small pixel size)
Microscopy, Endoscopy, Borescopy

Logistics / Parcel Service Depots
Bar Code Reading / Scanning

Security Monitoring (leightweight)
Quadrocopter, 3D Aerial Imaging

Video Conferencing
Webcam, Eye Tracking

Medical
Ophthalmology, Cornea/Retina-Scan

Machine Vision
Board Inspection, Line-Scan Camera

Automotive, Google-Street-View
Driver Assistance System

Space, Science, Army
Micro Satellites, Drones
## Application
- Machine Vision | Microscopy | Life Science | R&D | Education | Video | Medical

## Image sensor
- CMOS, HDR, color noise reduction, defect pixel correction
- rolling shutter with global start, 2/3" sensor class
- 1.1µm pixel size, back side illuminated (BSI)
- raw mode: Bayer8, total sensor size 7728 x 5368 with 41.5 MP, future work: 12bit pixel depth

## Region of interest (ROI)
- User defined

## Minimum integration time
- 4k: 8µs
- Full resolution: 16µs

## Power consumption
- Powered by USB 3.0 cable
- 350mA (800mA peak)

## Frame rate
- 7 FPS (frames per second) at full resolution (7708 x 5352 pixels)
- >30 FPS video at 4k UHD resolution (3856 x 2168 pixels)
- >60 FPS video at 2k Full-HD

## Body
- dimensions: 39mm (W), 39mm (H), 28mm (D), weight: 71g, case material: aluminium
- award winning design, tripod adaptor

## Interface
- USB 3.0 superspeed (up to 7m cable with micro-B screw lockers, up to 100m with optical USB 3.0 cable)
- optional: external hardware trigger input (TTL)

## Temperature range
- -30°C to 70°C (optimal: 45°C)

## Optics
- changeable C-mount for adapting any industrial or microscopic optics
- optional: without cover glass/IR filter

## Software
- SDK/API programming interface for Microsoft® Windows® 7/8 and for Linux
- MVTec® Halcon®, Cognex® Vision Pro®, Mathworks® Matlab®

## Requirements
- Microsoft® Windows® 7/8, Linux
- OpenGL 3.0, intel® HD5000 or higher
- intel®, Fresco Logic® or Renesas® USB 3.0 controller
### Ultra HR Optics

- **40MP**
- **S-Mount Optics**

#### Optical angle
- 79° angle of view diagonal

#### Focal length
- f=26mm
- 35mm equivalent focal length: 25mm for 16:9, 27mm for 4:3

#### Aperture
- F/2.2

#### Resolution
- >40 MP

#### Sensor class
- 2/3"

#### Distorsion
- Low

#### Mount
- M12x0.5, S-Mount

#### Application
- High resolution optics for action cams (e.g. GoPro, etc.)

#### Optical system
- System of 6 lenses (5 plastic molded high performance plastic, one high precision glass element)

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C42 beyond 40 Megapixel

for Microscopy & Life-Science

- Human cerebellum*
- Recrystallized LCD display border area*
- Alder cone*
- Potassium dichromate
- Maple leaf bud*
- Chondrite*
- Mars meteorite*
- Glucose

* Mikrofotografie by KAGE Mikrofotografie

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### Application
Webcam | Machine Vision | Security | Life Science | R&D | Education | Video | Medical | Computational Photography | 3D

### Image sensor
- CMOS, HDR, color noise correction, defect pixel correction
- Rolling shutter with global start, 2/3" sensor class, 1.1 um pixel size, back side illuminated (BSI)
- Raw mode: Bayer8, total sensor size 7728 x 5368 (41.5 MP)

### Region of interest (ROI)
One user defined window

### Minimum integration time
- 4k: 8µs
- Full resolution: 16µs

### Power consumption
- Powered by USB 3.0 cable
- 350mA with OIS (800mA peak)

### Frame rate
- 7 FPS (frames per second) at full resolution (7708 x 5352 pixels)
- >30 FPS video at 4k UHD resolution (3856 x 2168 pixels)
- >60 FPS video at 2k Full-HD

### Optics
- Integrated ultra high resolution optics
- Software controllable **SHIFT-LENS (X,Y)** and **FOCUS (Z)**
- 79° angle of view diagonal
- Aperture F/2.2
- Focal length f=26mm
- Mechanical optical image stabilizer (OIS)
- Easy system integration, thanks to wide angle lens for short working distances

### Body
- Dimensions: 39mm (W), 39mm (H), 28mm (D), weight: 71g, case material: aluminium
- Award winning design, tripod adaptor

### Interface
- USB 3.0 superspeed (up to 7m cable with micro-B screw lockers, up to 100m with optical USB 3.0m cable)
- Optional: external hardware trigger input (TTL)

### Software support
- **SDK/API programming interface** for **Microsoft® Windows® 7/8** and **Linux**
- **MVTec® Halcon®, Cognex® Vision Pro®, Mathworks® Matlab®**

### Requirements
- Microsoft® Windows® 7/8 (64bit), Linux, OpenGL 3.0, Intel® HD5000 or higher, Intel®, Fresco Logic® or Renesas® USB 3.0 controller
5x5 Camera Matrix for 3D Light Field Photography & Video

Scaleable to any Camera Matrix Size

Compact Camera Dimension for Mobile Use

Astonishing State-of-the-Art 3D (glasses-free) with great pop-out Effect

Eye-Catcher for Promotion Tours, Product Launches, Exhibitions, POS

Customized Real or Rendered 3D-Content for your individual Product Advertising
Lightweight Board Level Camera

Application
- Webcam | Machine Vision | Security | Life Science | R&D | Education | Video | Medical | Computational Photography | 3D

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Optics
- integrated ultra high resolution optics
- software controllable \textit{SHIFT-LENS (X,Y)} and \textit{FOCUS (Z)}
- 79° angle of view diagonal
- aperture F/2.2
- focal length f=26mm
- mechanical optical image stabilizer (OIS)
- easy system integration, thanks to wide angle lens for short working distances

Weight
- Board: 5g
- Camera Module: 5g

Interface
- USB 3.0 superspeed (up to 7m cable with micro-B screw lockers, up to 100m with optical USB 3.0m cable)
- optional: external hardware trigger input (TTL)

Software support
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Requirements
- Microsoft® Windows® 7/8 (64bit), Linux, OpenGL 3.0, intel® HD5000 or higher, intel®, Fresco Logic® or Renesas® USB 3.0 controller
Compact Camera

Side View

Front View

Bottom View

Depth: 4mm

M2x0.4

28.02

39

39

18

28

20
Spectral Response Curves

Chief Ray Angle

Figure 29 Optics CRA
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