**alhua** TECHNOLOGY

# DH-MV-A7300M/CU90E
# Area Scan Cameras



· 3.2MP USB area scan
· Sony IMX252
· Max 90fps
· 128MB on-board frame buffer
· Mono/color optional
· Mechanical dimension:29x29x29(mm)
· Conforms to USB 3.0 vision protocol and GenlCam vision
· CE&FCC

| Area Scan | 3.0 | Multi Trigger | HFR | WDR | Mono / Colour |

## System Overview

As we all know machine vision is a mature technology widely used in condition monitoring and product inspection.It not only provides more consistent and reliable consequents resulting in improved product quality but also higher yields and lower production cost.As the core component of the machine vision system, industrial camera requires high image quality, high transmission rate, standard interface and reliable & stable performance. As one of the worlds' best security product suppliers, Dahua is able to provide serialized industrial cameras with excellent image, high frame rate and related software. Our area scan cameras portfolio includes matrix cameras in color and monochrome versions as well as with 3.2MP resolution, which enables customers to flexibly integrate the camera with general standard interfaces with USB vision.

## Functions

### CMOS Area Sensor

Dahua MV-A7300M/CU90E area scan camera embeds 3.2MP global shutter and 3.45 x 3.45 pixel size CMOS sensor that can provide high quality and original image. Every pixel in CMOS sensor has its own amplifier and there are multiple A/D converters so each picture element can be read out individually, which means that pixels can be randomly addressed and accessed with AOI (automated optical inspection) and realize lower power dissipation than the CCD cameras. Combined with the advantage of the words' leading image processing technology we can effectively overcome the noise issue and output excellent picture equivalent to CCD camera.

### USB Vision

USB 3.0 vision is a plug and play interface standard that provides secure and cost-effective transmission of image data. Industrial cameras with high resolution image sensor need a high data throughput interface. USB 3.0 vision is the best choice to satisfy the requirement by providing high bandwidth up to 5 Gbit/sec. On the other hand USB 3.0 vision can drive 900mA current which is equal to total power supply of 4.5 Watts. Meanwhile it is recommended to connect cable with max length of 7m for the USB 3.0 vision according to our recent tests, which guarantees effective signal transmission and power supply.

### Global Shutter

An imaging sensor is consisting of lots of pixels .For knowing the whole image all of them have to be readout via A/D conversion by the ADC in once shutter. By global shutter mode all of the pixels will be readout simultaneously instead of in parallel. This difference makes the output from an industrial camera with global shutter sensor will not change with the fluctuating environmental brightness and capture the high speed moving object easily.

### Multi Trigger Modes

In the application field of the machine vision, Dahua industrial camera is capable of capturing image via signal trigger and exposure frequency set on SDK. Besides, image capture will not be affected in case of induced network load and processing time of machine vision system.

### High Capacity Buffer

With the stable 128MB on-board frame buffer, the camera leaves more time for the host computer to process pictures and realizes no frame loss. 128MB buffer is able to store different number of pictures according to specific sensor.

### Rich SDK Functions

Embedded with industry leading SDK software programming and debugging capability, original pictures can still be clearly captured even in harsh and low light industrial environment by adjusting the sharpness/noise reduction/gamma correction/LUT(look-up-table:make adjustments to the picture within the camera)/black level correction/brightness/contrast and other ISP functions which are set in the SDK.

### Several Image Formats Output

Dahua industrial cameras output raw data with wide spectral range such as mono, color and RGB8 packed etc. Different types of format is equipped with corresponding data capacity which makes it suit various application scenarios.

## Camera

| Specification \ Model | DH-MV-A7300MU90E | DH-MV-A7300CU90E |
|---|---|---|
| Lens Interface | C-mount | |
| Sensor | Sony IMX252 | |
| Sensor Spec | CMOS 1/1.8" global shutter | |
| Resolution | 3.2MP 2048(H) x 1536(V) | |
| Framerate | 90fps | |
| Pixel Size | 3.45 x 3.45 | |
| Interface | USB 3.0 | |
| Mono/Color | Mono | Color |
| S/N Ratio | >38dB | |
| WDR | 70dB | |
| GPIO Interface | 6-pin Hirose connector: 1 opto-isolated input, 1 opto-isolated output, 2 configurable inputs/outputs without opto-isolation | |
| Image Format | Mono:mono8/10/10packed | Color:bayerRG8; bayerGB8 |
| Gain | 0dB~48dB | |
| Gamma | Range:0~4, supports LUT | |
| Exposure Time | 33.6μs~1s | |
| Image Buffer | Supports 64MB | |
| User Set | Supports two sets of user-defined configurations | |
| Dimension | 29mmx29mmx29mm(Not including the lens mount and the rear case connectors) | |
| Net Weight | 60g(0.132lb) | |
| Power Supply | Power supply via USB connector | |
| Power Consumption | 3.91w | |
| Operating Conditions | -30° C ~ +50° C (-22° F ~ +122° F) / Less than 95% RH | |
| Storage Conditions | -30° C ~ +80° C (-22° F ~ +176° F) / Less than 95% RH | |

## Ordering Information

| Type | Part Number | Description |
|---|---|---|
| DH-MV-A7300M/CU90E USB Cameras | DH-MV-A7300MU90E | 3.2 Megapixel mono 90 framerate USB area scan camera |
| | DH-MV-A7300CU90E | 3.2 Megapixel color 90 framerate USB area scan camera |
| Lens | DH-MV-MH5028ME | 2/3" Image circle with 200lp/mm(2.4μm pixel size) 50mm focal length F2.8 |
| | DH-MV-MH3520ME | 2/3" Image circle with 200lp/mm(2.4μm pixel size) 35mm focal length F2.0 |
| | DH-MV-MH2520ME | 2/3" Image circle with 200lp/mm(2.4μm pixel size) 25mm focal length F2.0 |
| | DH-MV-MH1620ME | 2/3" Image circle with 200lp/mm(2.4μm pixel size) 16mm focal length F2.0 |
| | DH-MV-MH1220ME | 2/3" Image circle with 200lp/mm(2.4μm pixel size) 12mm focal length F2.0 |
| | DH-MV-MH0824ME | 2/3" Image circle with 200lp/mm(2.4μm pixel size) 8mm focal length F2.4 |

## Dimensions (mm)