

## DMK 23GM021.I Monochrome Camera

The Imaging Source "23" Series GigE Camera



**Only 29 x 29 x 57 mm**

Lens not included

The Imaging Source DMK 23GM021.I monochrome camera has a GigE interface and is the perfect solution for many industrial automation, quality assurance, security, surveillance and medical applications. The monochrome camera ships with the very sensitive  $\frac{1}{3}$ " Aptina CMOS MT9M021 sensor. With up to 60 images per second, the DMK 23GM021.I is a low cost, yet highly versatile imaging solution. The camera includes a C to CS mount adapter, making it compatible to C and CS mount lenses. Using the optional CS to M12 board lens adapter, the camera is also compatible to M12 board lenses.

The Imaging Source authors and supports drivers, SDKs, extensions and end-user software for Microsoft Windows, which can be freely downloaded from our web site. Extensions for Microsoft Windows enable the DMK 23GM021.I to be integrated in to common machine vision software libraries, such as LabView and OpenCV. Furthermore, we author and support open source Linux drivers and software (Apache License 2.0) to integrate the camera into popular distributions. Download the Linux source code at GitHub.

### Features

- GigE interface.
- Power over Ethernet.
- Windowing and high-speed readout.
- $\frac{1}{3}$ " Aptina CMOS MT9M021.
- Global shutter.
- 1,280 x 960 (1.2 MP).
- Up to 60 images per second.
- Auto iris control (DC).
- Compatible to C and CS mount lenses.
- Only 29 x 29 x 57 mm.
- Casing compatible to Sony footprint.

### Accessories

- CS to C mount adapter (shipped as standard).
- C and CS mount lenses.
- Standard GigE cable in various lengths.
- External power supply with cable.

### Device Drivers for Microsoft Windows

Device Driver for The Imaging Source GigE Cameras.

### Software Development Kits (SDKs) for Microsoft Windows

IC Imaging Control .NET Component, C++ Class Library, IC Imaging Control C Library, IC Imaging Control ActiveX and IC Imaging Control ActiveX Runtime Setup.

### Extensions for Microsoft Windows

TWAIN Source for IC Imaging Control, Cognex VisionPro AIK Plugin for IC Imaging Control, ActivisionTools Driver for IC Imaging Control, HALCON Extension for IC Imaging Control, LabVIEW Extension for IC Imaging Control, IC Matlab Plugin for Matlab 10.0 R2010 and IC Matlab Plugin for Matlab R2013b.

### End User Software for Microsoft Windows

IC Capture, Image Acquisition, IC Fullscreen Presenter and Footswitch software for IC Capture.

### Software Tools for Microsoft Windows

Processor Idle State Manager and Hot Pixel Correction.

## DMK 23GM021.I Specification

### GENERAL BEHAVIOR

#### Video formats @ frame rate

1,280 x 960 (1.2 MP), Y800 @ 60, 50, 45, 40, 35, 30, 25, 20, 15, 8 FPS
1,280 x 960 (1.2 MP), Y16 @ 30, 25, 20, 15, 8 FPS
1,024 x 768 (0.8 MP), Y800 @ 75, 70, 60, 50, 45, 40, 35, 30, 25, 20, 10 FPS
1,024 x 768 (0.8 MP), Y16 @ 37, 30, 25, 20, 15, 10 FPS
1,280 x 720 (0.9 MP), Y800 @ 80, 70, 60, 50, 45, 40, 35, 30, 25, 20, 10 FPS
1,280 x 720 (0.9 MP), Y16 @ 40, 30, 25, 20, 15, 10 FPS
640 x 480 (0.3 MP), Y800 @ 115, 100, 90, 80, 70, 60, 50, 45, 40, 35, 30, 25, 20, 15 FPS
640 x 480 (0.3 MP), Y16 @ 58, 50, 45, 40, 35, 30, 25, 20, 15 FPS

Sensitivity	0.015 lx
Dynamic range	8 / 12 bit

### INTERFACE (OPTICAL)

IR cut filter	no
Sensor specification	<a href="#">Aptina MT9M021</a>
Shutter	Global
Format	1/3"
Resolution	H: 1,280 pixel, V: 960 pixel
Pixel size	H: 3.75 µm, V: 3.75 µm
Lens mount	C/CS

### INTERFACE (ELECTRICAL)

Interface	GigE
Supply voltage	11 VDC to 13 VDC or PoE: 48 VDC to 56 VDC
Current consumption	approx 400 mA at 12 VDC

### INTERFACE (MECHANICAL)

Dimensions	H: 29 mm, W: 29 mm, L: 57 mm
Mass	65 g

### ADJUSTMENTS (MANUAL)

Shutter	1/20,000 s to 30 s
Gain	0 dB to 9 dB

### ADJUSTMENTS (AUTOMATIC)

Shutter	1/20,000 s to 30 s
Gain	0 dB to 9 dB

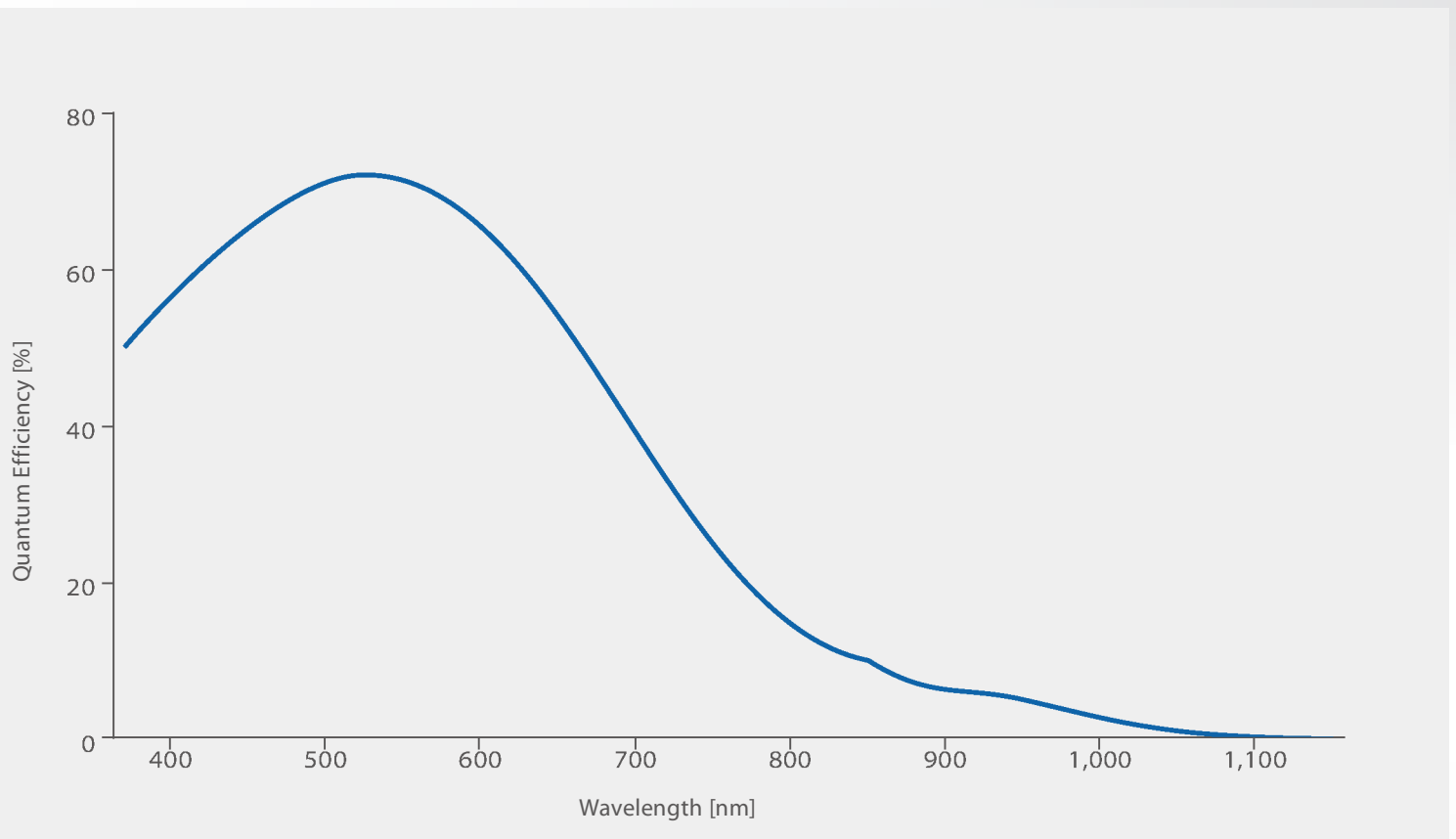
### ENVIRONMENTAL

Temperature (operation)	-5 °C to 45 °C
Temperature (storage)	-20 °C to 60 °C
Humidity (operation)	20 % to 80 % non-condensing
Humidity (storage)	20 % to 95 % non-condensing

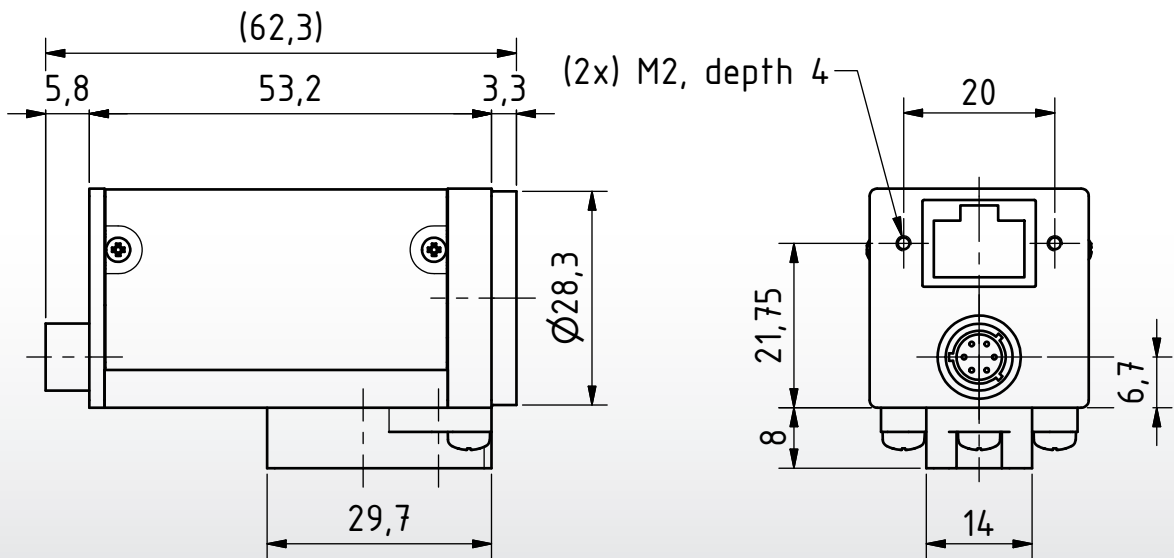
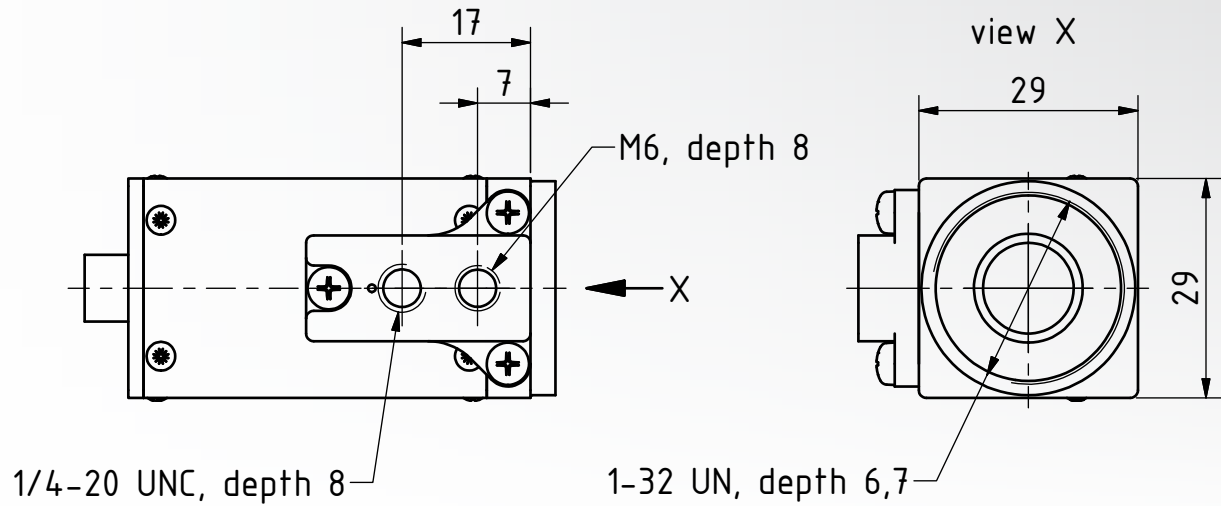
Subject to change

## Aptina MT9M021 Spectral Response Curve

CMOS Sensor in DMK 23GM021.I



## DMK 23GM021.I Dimensional Diagram



Dimensions: mm  
 Tolerances: DIN ISO 2768m



## Machine Vision - Designed in Germany



**Ever since The Imaging Source was founded in 1990, it has been one of the leading manufacturers of industrial cameras, frame grabbers and video converters for automation, quality assurance, logistics, medicine, science and security.**

Our extensive range of industrial cameras ships with USB 3.0, USB 2.0, GigE, FireWire 800 and FireWire 400 interfaces. Thanks to their multi-purpose features and extremely high quality standards, the cameras are commonly used in demanding applications.

The software support offered by the cameras fulfill the requirements of demanding end-users and programmers. The cameras can be put into operation within a few minutes, or integrated into new or existing applications with only a few lines of code. All camera drivers are Microsoft certified. The ease of which the cameras can be integrated, the corresponding low integration costs, and the high quality of the software set the industry standard.

All cameras, frame grabbers and video converters, manufactured by The Imaging Source, are the result of decades of experience, uncompromisingly high quality standards, and continual development. Developers and system engineers prefer The Imaging Source cameras due to their ease of system integration.

## World-Class Software and Customer Care



**What really separates The Imaging Source from its competitors is the comprehensive Windows and Linux software available free of charge with all its products, and the unsurpassed level of customer service.**

The Imaging Source authors and supports device drivers, software development kits (SDKs), programming samples, extensions, end-user software and software tools for Microsoft Windows. All Windows software can be download directly from our web site:

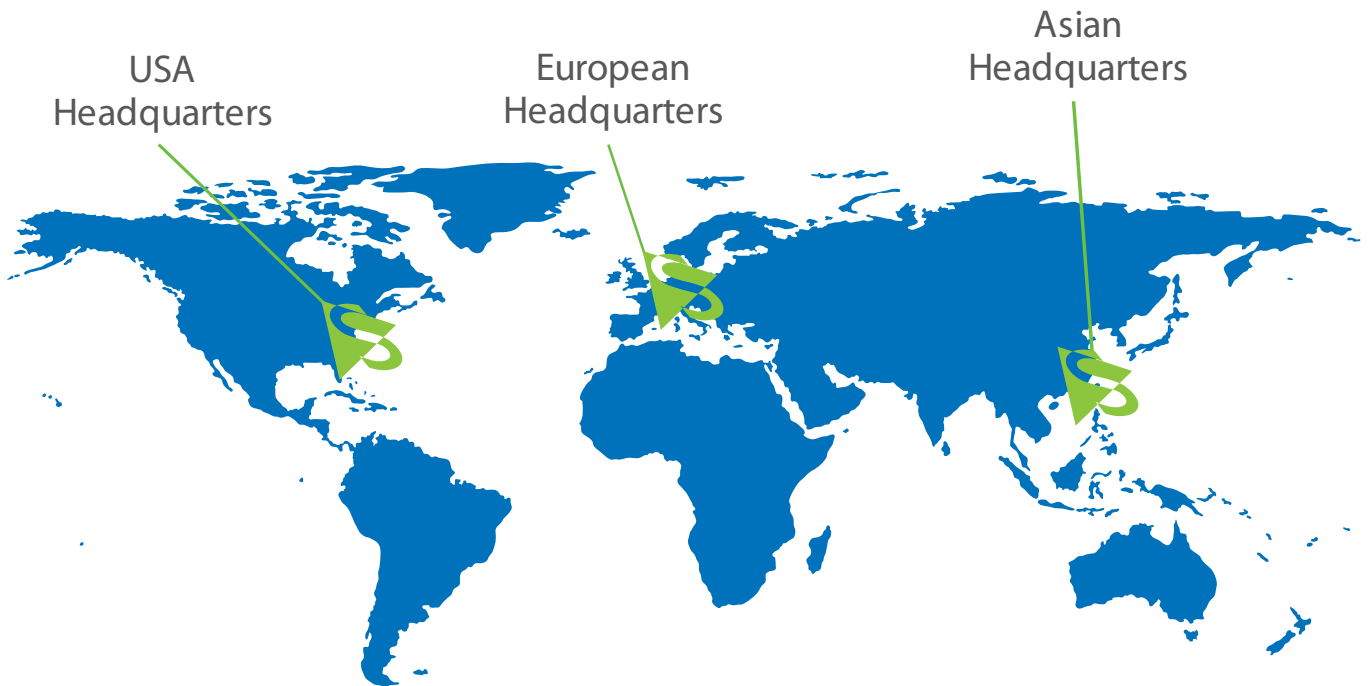
<http://www.theimagingsource.com>

Additionally, The Imaging Source authors and supports open source drivers and end-user software for Linux. The Linux source code, which is released under the Apache License 2.0, enables you to integrate all machine vision cameras into popular Linux distributions. The Open Source code is available to download from GitHub:

<http://www.github.com>

The Imaging Source guarantees fast and efficient customer service for all hardware and software issues via our skilled customer service representatives. Not only will we provide support regarding technical issues, but we will also work with you to implement our components into your project. Contact customer service at:

<http://www.theimagingsource.com>



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All weights and dimensions are approximate. Unless otherwise specified the lenses shown in the context of cameras are not shipped with these cameras.

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