THE IMAGINGSOURCE
TECHNOLOGY BASED ON STANDARDS

DFK AFUX178-M12 Color Autofocus Camera

The Imaging Source "AF" Series USB 3.0-Autofocus Camera

Only 36×36×30 mm

Lens not included

The Imaging Source DFK AFUX178-M12 color camera has a USB 3.0 interface and is the perfect solution for many industrial automation, quality assurance, security, surveillance and medical applications. The color camera ships with the very sensitive 1/1.8 inch Sony CMOS IMX178LQJ sensor. With up to 22 images per second, the DFK AFUX178-M12 is a low cost, yet highly versatile imaging solution. The camera has an integrated focus unit for M12 board lenses, which can be adjusted manually, using the shipped SDK or end-user software. In addition, the driver is able to adjust the focus unit automatically.

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 DFK AFUX178-M12-M12 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

- USB 3.0 interface
- $^{1}/_{1.8}$ inch Sony CMOS sensor (IMX178LQJ)
- 22 fps @ Full HD
- 3,072×2,048 (6.3 MP)
- Up to 22 images per second
- Rolling shutter
- Only 36×36×30 mm
- Autofocus total stroke of 1.3mm (1.1mm effective)
- Stepping rotation of 12.5 µm/step

Accessories

- M12 board lenses
- Lens holder in various lengths (6 mm to 20 mm) for M12 board lenses
- Standard USB 3.0 cable in various lengths
- 3 m USB 3.0 cable with fixing screws

Device Drivers for Microsoft Windows

Device Driver for USB Cameras

Software Development Kits (SDKs) for Microsoft Windows

IC Imaging Control .NET Component for C#, VB.NET, C++ Class Library for C++ projects, IC Imaging Control C Library, IC 3D SDK - C, C++ library for stereo depth estimation, IC Imaging Control ActiveX, IC Imaging Control ActiveX Runtime Setup

Extensions for Microsoft Windows

TWAIN Source for IC Imaging Control, Cognex VisionPro AIK Plugin for IC Imaging Control, LabVIEW Extension for IC Imaging Control, IC Matlab Plugin for Matlab 10.0 R2010, IC Matlab Plugin for Matlab R2013b and higher versions, IC NeuroCheck Driver for NeuroCheck 6.0, IC NeuroCheck Driver for NeuroCheck 6.1

End User Software for Microsoft Windows

IC Capture - image acquisition, IC Measure - manual on-screen image measurement and image acquisition, IC 3D - User friendly stereo calibration, depth estimation and 3D visualization, IC Fullscreen Presenter, IC Line Profiler, Footswitch software for IC Capture, Scan2Docx, Scan2Docx OCR, Scan2Voice

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DFK AFUX178-M12 Specification

GENERAL BEHAVIOR	
Dynamic range	8/12 bit
Video formats @ frame rate (maximum)	3,072×2,048 (6.3 MP) Y800 @ 22 fps 3,072×2,048 (6.3 MP) Y16 @ 22 fps 3,072×2,048 (6.3 MP) RGB32 @ 11 fps

INTERFACE (OPTICAL)	
IR cut filter	✖
Sensor type	CMOS
Sensor specification	Sony IMX178LQJ
Shutter	rolling
Format	$^{1}/_{1.8}$ inch
Pixel size	H: 2.4 µm, V: 2.4 µm
Lens mount	M12x0.5 (motorized mount)

INTERFACE (ELECTRICAL)	
Interface	USB 3.0
Supply voltage	4.5 VDC to 5.5 VDC
Current consumption	approx 250 mA @ 5 VDC
Auto iris control	✖
Trigger	✖
I/Os	✖

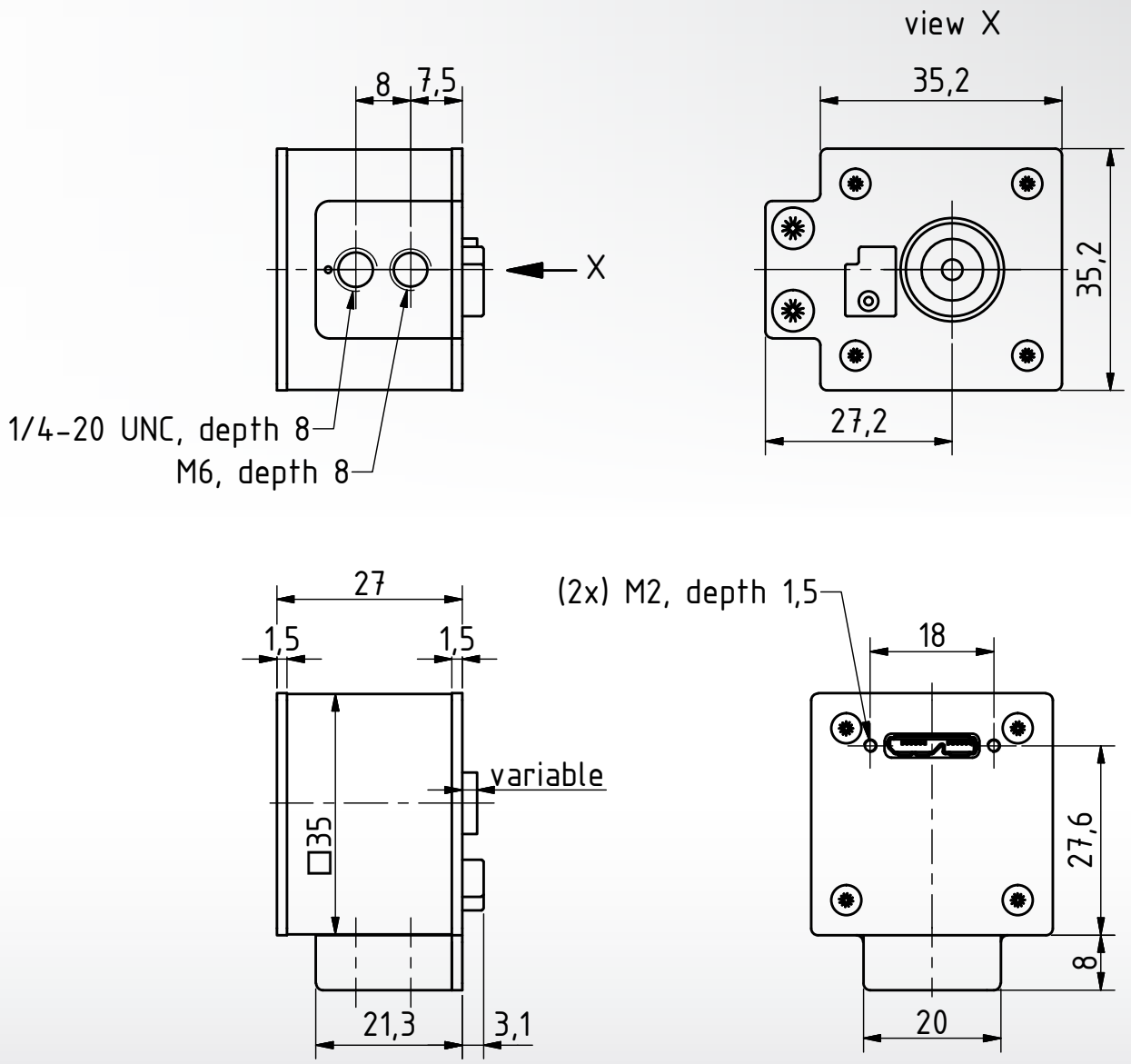
INTERFACE (MECHANICAL)	
Dimensions	H: 36 mm, W: 36 mm, L: 30 mm
Mass	70 g

ADJUSTMENTS	
Shutter	15 µs to 30 s
Gain	0 dB to 36 dB
White balance	-2 dB to 6 dB

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

Subject to change

DFK AFUX178-M12 Dimensional Diagram



Dimensions: mm
Tolerances: DIN ISO 2768m

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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 easy 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:

https://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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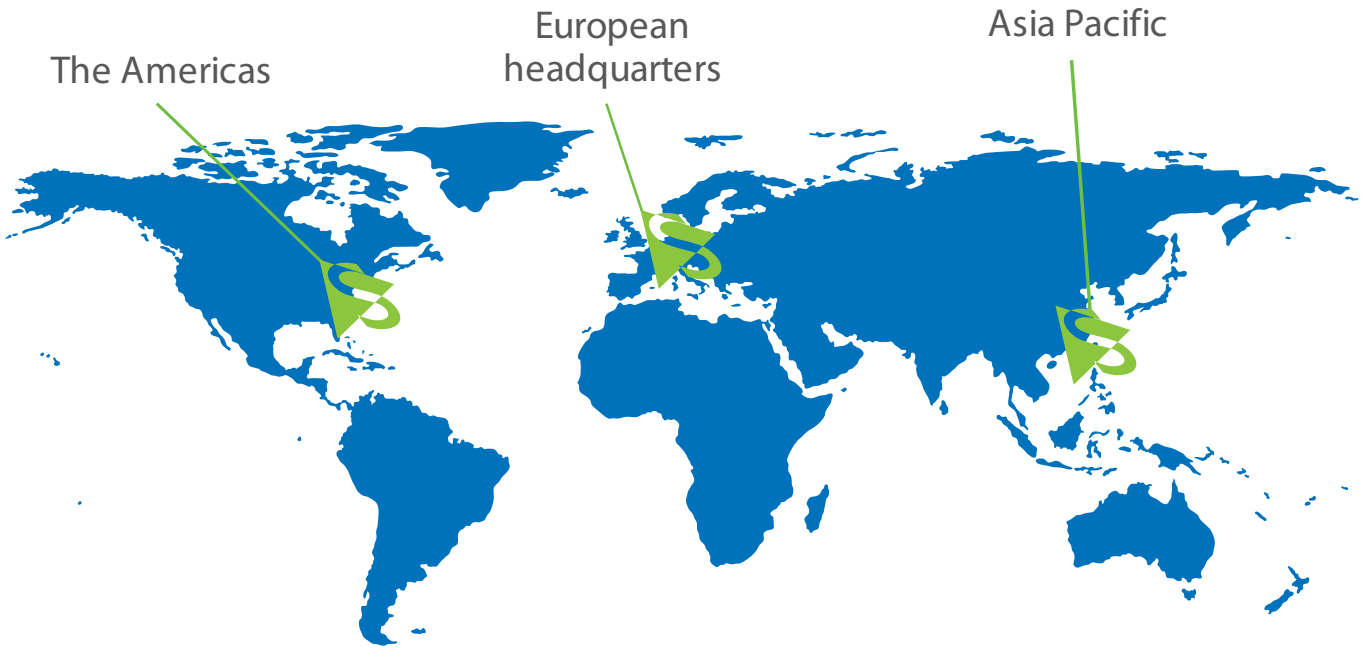

PRESENT ALL OVER THE WORLD

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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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