

# **MegaPlus™ ES 1.0**

The MegaPlus ES 1.0 is a high-resolution CCD camera, setting new standards in real time digital imaging technology by capturing up to 30 images per second with a spatial resolution over one million pixels.

The MegaPlus ES 1.0's interline transfer CCD with a progressive scan readout system and microlenses provide high sensitivity without sacrificing speed. The camera outputs 8 or 10 bit digital images with up to 1024 gray levels per pixel resulting in excellent detail contrast.

The MegaPlus ES 1.0 also features a built-in electronic shutter with exposure times as short as 127 microseconds for maximum flexibility and performance when imaging fast moving objects. A special triggered double-exposure mode captures two images microseconds apart. A tethered head option allows image capture in tight spots.

With it's outstanding speed and resolution, the MegaPlus ES 1.0 is ideal for machine vision, PIV, medical imaging, industrial inspection, and other applications requiring real-time image capture.



## **S N A P S H O T**

### **Speed and Resolution**

The MegaPlus ES 1.0 captures 30 images per second with a spatial resolution over one million pixels.

### **Exposure Flexibility**

A full selection of exposure options is available. Electronic shutter exposure times can be as short as 127 microseconds. Triggered and double-exposure modes are also provided.

### **Ease of Use**

With a comprehensive command set and bundled control software, the MegaPlus ES 1.0 provides the ease of use expected with all MegaPlus cameras.

**MegaPlus™...**  
for imaging excellence  
when quality counts





## MegaPlus™ ES 1.0

### PERFORMANCE SPECIFICATIONS

#### CCD Imager

Imaging Device	Kodak KAI-1010M solid-state CCD with microlens
Sensor Readout	Interline, progressive scan
Pixel Size	9 $\mu\text{m}$ (square format)
Resolution	1008 H x 1018 V (1,026,144)
Pixel Spacing	9 $\mu\text{m}$ , vertical and horizontal
Active Area	9.1mm horizontal x 9.2mm vertical
Fill Factor	55%

#### Image Quality

Bit Depth	8 or 10 bits
Dynamic Range	>58dB (10-bit) 56dB (8-bit)
Temporal Noise	<3% rms
Linearity	>95%

#### Camera Exposure and Control

Camera Output	Digital Video (two channels: single and dual modes)
Saturation Illumination	.037 $\mu\text{J}/\text{cm}^2$ @ 550nm
Responsivity	5020 8-bit counts/ $\mu\text{W}/\text{cm}^2$ -second @ 550 nm 20900 10-bit counts/ $\mu\text{W}/\text{cm}^2$ -second @ 550 nm
Anti-Blooming	100:1
Pixel Clock Rate	20 MHz/channel
Frame Rate	Continuous mode: 15 fps single channel, 30 fps dual channel Single-frame capture available via user-provided trigger pulse
Exposure Settings	Electronic shutter, 127 $\mu\text{s}$ to 33 ms in dual channel, continuous mode
Interface	RS-232, RS-422, ERS-485 Multi-Drop
Operation Modes	Continuous, Controlled, Triggered, and Double exposure
Gain Settings	3 digital gain modes: x1, x2, x4

#### Mechanical Description

Lens Mount	C type
Dimensions	2.0" H x 2.7" W x 6.0" L (50.8 x 68.6 x 152.4mm)
Weight	1.5 lbs (0.65 kg)

#### Environmental Requirements

Operating Temp	0° to 40°C (32° to 104°F), non-condensing
Vibration	3G, sinusoidal from 5 to 150 Hz
Shock	20G, non-operating

#### Power Requirements

Input Voltage	12 to 28 VDC
Power Consumption	8 watts, typical



Note: Specifications are typical and subject to change. 1100-02



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