1” progressive scan IT CCD (Kodak KAI-2020)
1600 x 1200 pixels @ 34 fps dual-tap mode
7.4 µm square pixels
SW selectable single-tap mode @ 17 fps
12-bit A/D (linear) or 8-bit/10-bit with look-up table (LUT)
GigE Vision Ethernet output and analog output
100 m with standard CAT 5E or CAT 6 cable
Image center partial scan (600, 300, 150 lines)
User-programmable variable partial scan
2X binning (H & V independently selectable)
Full-frame shutter to 1/32,000 sec.
Asynchronous reset, no-delay, pulse width control shutter
Defective pixel compensation
PIV (particle imaging velocimetry) mode
Extensive software developer’s kit (SDK)
Monochrome or color
Specifications for TM-2040GE/TMC-2040GE

**Sensor**
1" progressive scan interline transfer CCD

**Active area**
11.8mm x 8.8mm

**Active pixels**
1600 (H) x 1200 (V)

**Cell size**
7.4 μm x 7.4 μm

**Readout modes**
- A: 1600 (H) x 1200 (V) @ 34 Hz
- B: 1600 (H) x 600 (V) @ 58 Hz (partial scan)
- C: 1600 (H) x 300 (V) @ 90 Hz (partial scan)
- D: 1600 (H) x 150 (V) @ 122 Hz (partial scan)

**Synchronization**
Internal/External auto switch (HD/VD)

**Pixel clock**
40.00 MHz

**S/N ratio**
35.8 dB

**Sensitivity**
- Mono: 0.2 lux f=1.4 (no shutter) @ 34 fps
- Color: 2.4 lux f=1.4 (no shutter) @ 34 fps

**Video output**
- Analog: 1.0 Vp-p, 75 Ω
- Digital: Gigabit Ethernet (8-bit/10-bit/12-bit)

**Gamma**
Programmable LUT (Gamma 1.0 std)

**Shutter speed**
1/34 to 1/32,000 sec in increments of 24 μs

**Lens mount**
C, F, M42 mount (use >1" format lenses)

**Power Supply**
PD-12UUP series (includes power connector)

**Weight**
216 g (without tripod)

**Dimensions (H x W x L)**
51 mm x 51 mm x 85 mm

**Shock**
70 G, 11 ms, half-sine

**Vibration**
7 Grms (10 Hz to 2000 Hz) Random

**Synchronization**
Internal/External auto switch (HD/VD)

**Dimensions (H x W x L)**
51 mm x 51 mm x 85 mm

**GUI Interface**
A user-friendly graphical user interface (GUI), provided as part of the camera's extensive software development kit (SDK), allows users to control various camera functions, including:
- Shutter control for manual async. and pulse width control
- Gain control
- A/D reference voltage control
- Save settings
- Load settings
- Report settings
- LUT setting and graphic display
- Scanning mode selection and Option selections

The SDK also provides functions for controlling the grabbing of images, and configuring local I/Os, by means of an integrated API and a set of powerful C++ classes. Changes in the camera’s acquisition modes automatically update the API for easy image acquisition. CPU usage is only a few percent, thanks to the TCP/IP offload engine.

Software available for download at www.jai.com

**Ordering Information**

- **Camera**
  - Lead Processing: TM-2040GE (mono), TMC-2040GE (color)
  - RoHS Compliant: TM-2040GE (mono), TMC-2040GE (color)

- **Optional Functions**
  - Internal IR Filter Added: OP3-1
  - Optical Filter Removal: OP3-2 (color only)
  - Glassless CCD Imager: OP21
  - Ultraviolet Imager: OP21-UV (monochrome only)
  - F mount: OP6-6
  - M42 mount: OP6-7
  - M42 mount, 10mm back focus: OP6-8

- **Ordering**
  - Power Supply/2m cable: PD-12UUP/12P-02S
  - Power Supply: PD-12UUP series (includes power connector)

**Spectral Response**

**Connector Pin-out**

**Dimensions**

**Front view**

**Side view**

**Bottom view**

**Rear view**