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Data Sheet

All domestic customers are required to sign an End Use Statement. All international customers need an Export License.

Ultracam7

Intensified High-Speed (>**6688** fps) Camera

The **Ultracam7** is a very high sensitivity high-speed camera capable of acquiring images at 6688fps at a light level as slow as $2x10^{-6}$ fc. Exposure time as low as 50 ns can be achieved. Maximum frame-rate is **190,476** fps.

The spectral response ranges from 350 to 900 nm with an average of 35 to 40% quantum efficiency. The camera can be used for special scientific imaging of rapid events where only low ambient light is available. Through external control multiple exposures per frame can be achieved. Utilizing the ability to achieve short exposure times the camera can achieve a dynamic range of over 5 million. UV response from 200 to 700 nm is available as an option.

The camera is controlled by software through a Gigabit Ethernet connection. The camera software provides full manual control of camera operation and built-in linear and angular velocity/displacement measurement tools. The intensifier is also computer controlled through a serial port connection (RS-232). The user can manually set intensifier gain, gate and gate delay.

Applications Include:

- ✓ **Microscopy**
- ✓ **Time Resolved Imaging**
- ✓ **Flow Visualization**
- ✓ **Combustion Research**
- ✓ **Munitions Studies**
- ✓ **Other Scientific High-Speed Low Light Level Imaging**

Features:

- ✓ **Low Light Level imaging at 6688 fps**
- ✓ **Extended Blue Response from 350 to 900nm with 50% QE at 500nm**
- ✓ **Optional UV Response: 200 to 700nm**
- ✓ **Fast exposure time as short as 50 ns**
- ✓ **Over 500 TVL resolution**
- ✓ **No need for external light source**
- ✓ **Save as Cine file or individual images**
- ✓ **Computer control of all functions**

Specifications:

- Image Sensor: **800 x 600 CMOS**
- Active Area: **13.2 x 17.6 mm (22mm diagonal)**
- Sensitivity: **<2.0 x 10^{-7} FC on the faceplate @ 2854K**
- Frame Rate (full frame): **up to 6688 fps**
- Intensifier Type (Visible): **Generation III MCP Image Intensifier with Extended Blue Photocathode (350 to 900nm)**
- Intensifier Type (UV): **Generation II Image Intensifier with S-20 Photocathode (200 to 700nm)**
- Input Window: Standard-**Glass**
  UV-**Quartz**
- Response:
  - Visible: **40 to 50% QE at 500nm**
  - UV: **15 to 20% from 200 to 400nm**
- Input Window: **Glass** (visible)
  Quartz (UV)
- Input Format: **1**”
- Phosphor: **P-24: 1 μs persistence for up to 190,476 fps (limited by camera, reduced format) operation**

Mechanical:

- Dimensions: **284 x 122 x 76 mm**
- Camera Mounting: **1/4-20 (X1) and 10-32 (X4) Threaded Holes**
- Weight: **10 lbs**

Electrical:

- Input Voltage: **110V/220V**
- 12VDC Supply Included

- Output Format: **Digital Display on a Computer Monitor and RS170/CCIR to a closed circuit B/W Monitor**
- External trigger: **user defined TTL Pulse** (or use internal trigger)
- Gating Range/Exposure Control: **50ns to 1ms (in 20ns increments)**
- Gating Delay Range: **0ns to 2ms (in 20ns increments)**
- Intensified Camera Resolution: **>500 TVL/PH**
- Input Lens Mount: **C-Mount**
- Control: **Intensifier Gain, Gate and Gate Delay set via Computer (RS-232) control (Windows™ Operating System; Camera controlled via Gigabit Ethernet**
- Image Processing: **Smooth, Sharpen, Negative Image, Edge Detection, Brightness, Contrast & Gamma adjustment;**
- File Management: **Organize, save, compress, and export cines or single images (JPEG/TIFF/BMP)**
- Measurement: **Linear and Angular Velocity/Displacement Calculation**

Ultracam7 Available Photocathode Selection