



Diesel Injector Jet, Images taken at 400,000 fps, 20 ns exposures.  
(Courtesy: RWTH, Aachen, Denmark)

Ultra 8 is a high-speed imaging system based on a novel approach to Intensified CCD technology. This allows the user to capture images from a wide range of fast phenomena at framing rates up to 100 million pictures per second.

Programmable exposure and interframe times provide a comprehensive range of capture parameters recording minute detail from widely varying experimental procedures. The eight high-resolution images recorded with this camera system allow accurate analysis of ultra high-speed events. They detail the rapid changes taking place in sub-microsecond timescales.

These features, together with others offered in the Ultra Platform control software, make the Ultra 8 a unique high-speed digital camera system for dual use applications in government or commercial markets. Many universities and government labs use the Ultra 8 as a platform for imaging particular events in time.

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## Features

- 520 x 520-pixel resolution per frame
- 12-bit CCD sensor
- 1,000 - 100,000,000 frames per second
- 10 ns - 1 ms exposure time per frame
- Multiple exposures per frame
- 200Mb/s fiber optic data link
- Through-the-lens periscope focusing
- Full control and analysis software

## Optical

Number of frames	8 frames
Optical input	Single input beam splitter
Lenses	SLR Nikon® mount
System aperture	f4

## Intensifier/CCD

Intensifier	Gated high resolution 40 mm MCP f/o coupled
Photocathode	S20/S25
Gain	Up to 8,000X in 100 steps
Resolution	520 x 520 pixels per frame
Pixel size	14 µm square
Dynamic range	12 bits

## Timing Parameters

System clock	100 Mhz
Inherent delay	100 ns
Exposure times	10 ns to 1 ms in 10 ns steps
Interframe times	10 ns to 1 ms in 10 ns steps
Delay to first exposure	100 ns to 10 ms in 10 ns steps
Preflash timings	1 µs to 1 ms
Framing rates	Up to 100,000,000 fps
Number of exposures	Up to 4 exposures per frame

## Input/Output Signals

Input triggers	TTL (+/-); make/break into 470 Ohms
Monitor pulses	Width and position user programmable
Preflash output	TTL into 50 Ohms pulse width 1 µs
Control	Fiber-optic communications up to 1 km

## Dimensions

Length	660 mm
Width	165 mm
Height	295 mm
Weight	12 kg (26 lbs.)

Specifications subject to change without notice.



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[sales@hadlandimaging.com](mailto:sales@hadlandimaging.com) about ultra high-speed imaging solutions.