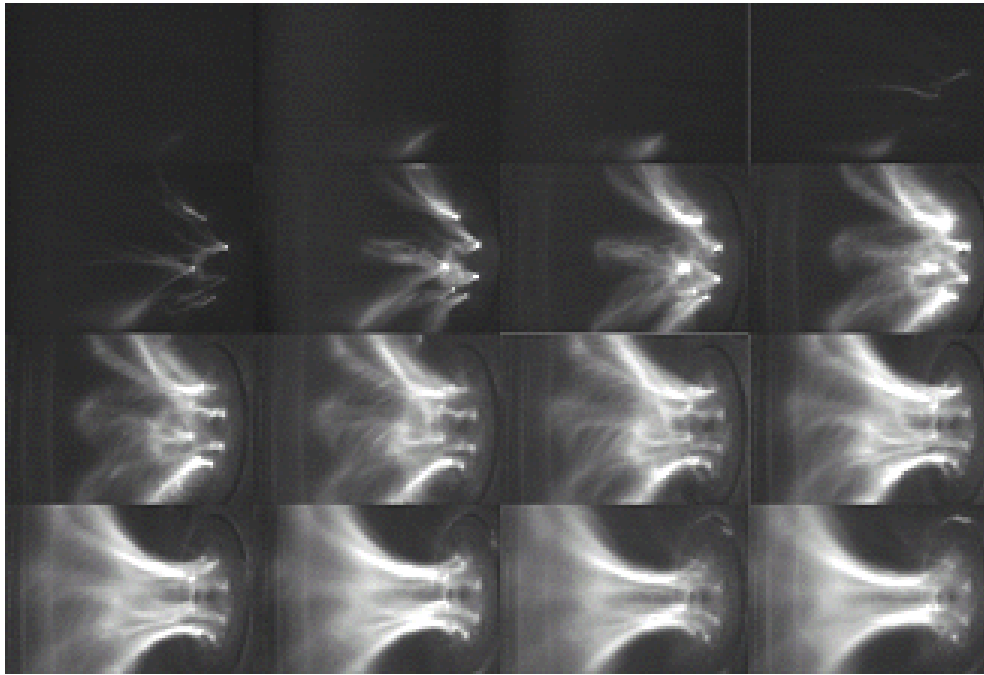


# IMACON 200

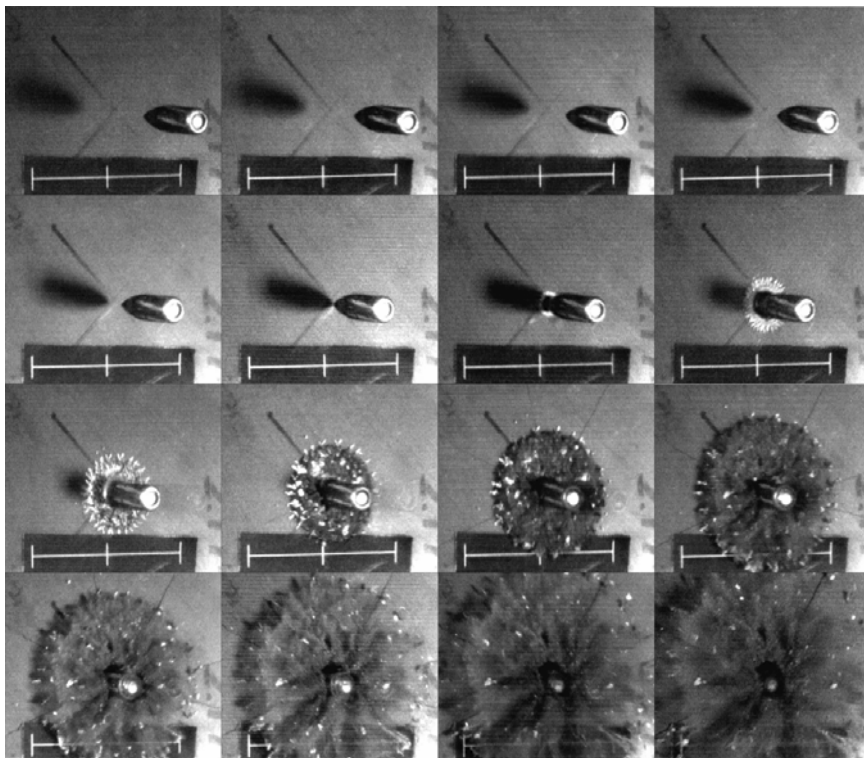


## Description

The IMACON 200 is an ultra high speed digital imaging system based on multiples of intensified CCD modules providing simultaneous framing and streak recording through a single optical axis. High spatial and temporal accuracy, combined with flexible operation, provides the user with a versatile recording system ideally suited for ultra fast events. All operational parameters are managed by a dedicated computer offering finger tip control for reliable image capture and quantitative data extraction.



Plasma Discharge, in Argon. 50 Million FPS, 5 nsec. Exposures.



308 Cal. Bullet impacting Body Armor. 500,000 FPS, 50 nsec. Exposures.

## Specifications

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### Optical

|                       |  |
|-----------------------|--|
| Number of Frames:     | 4, 6, 8, 10, 12, 14 or 16.<br>Optional Streak: 1 or 2 - Factory upgradeable. |
| Optical input:        | Single input beam splitting optics with integral iris.                       |
| Lenses:               | Nikon mount 50-600mm focal lengths and 105mm UV Nikon.                       |
| System aperture:      | f2.  |
| Capping shutter:      | Electro mechanical.  |
| Channel Registration: | Within one pixel with software correction.                                   |
| Distortion:           | Nominally zero.  |
| Intensity variation:  | Better than 5% across the image.   |

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### Intensifier/CCD

|                     |   |
|---------------------|---|
| Intensifier:        | Gated high resolution 18mm MCP F/O coupled.                   |
| Photocathode:       | S25 for visible response, (others available)                  |
| Gain:               | Maximum to exceed 7000 times. Variable in steps over 7 stops. |
| Dynamic Resolution: | Greater than 30 lp/mm at 25% max gain over entire image area. |
| Image Sensor:       | Sony ICX085 monochrome.                                       |
| CCD pixels:         | 1280 x 1024.  |
| Pixel size:         | >6.7microns square.   |
| Dynamic Range:      | To exceed 500: 1 when digitized to 10 bits.                   |

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### Timing Parameters

|                        |  |
|------------------------|--|
| System Clock:          | 200MHz quartz crystal controlled.                  |
| Inherent Delay:        | <50ns.   |
| Exposure Times:        | 5ns to 10msec in 5ns steps independently variable. |
| Interframe times:      | 5ns to 20ms in 5ns steps independently variable.   |
| Delay to 1st exposure: | 50ns to 100ms in 5ns steps independently variable. |
| Preflash timings:      | 20ns to 1ms in 5ns steps.                          |
| Framing rates:         | 100 to 200,000,000 fps                             |
| Slow Streak window:    | 100ns to 100 $\mu$ s.                              |
| Fast streak window:    | 10ns to 1 $\mu$ s.                                 |
| Image transfer time:   | <100ms per image.                                  |
| Number of exposures:   | Maximum 6 per channel.                             |

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### Input/Output Signals

|                       |   |
|-----------------------|---|
| Triggers:             | Variable 2-50v +/-, make/break 50 or 1K ohms. TTL compatible.   |
| Monitor pulses:       | Pulse widths and position user programmable minimum width 5ns.  |
| Output monitor pulse: | TTL into 50 ohms.   |
| Preflash output:      | TTL into 50 ohms pulse width 1 $\mu$ s. (8 individual outputs). |

## Environmental

|                        |                                    |
|------------------------|------------------------------------|
| Storage temperature:   | -10 deg C to + 74 deg C.           |
| Operating temperature: | - 5 deg C to + 40 deg C.           |
| Humidity:              | 10 - 90% RH non condensing.        |
| Vibration shock:       | 10-40Hz max 10g in any direction.  |
| EMC:                   | Meets all EC harmonized standards. |

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## Dimensions for Framing Cameras

|         |                             |
|---------|-----------------------------|
| Length  | 640mm excluding lens.       |
| Width:  | 325mm.                      |
| Height: | 500mm including base plate. |
| Weight: | 28 Kg.                      |

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## Software Functions

|             |   |
|-------------|---|
| File:       | Image control and storage.  |
| Grey Ops:   | Modification and colorization of stored images, filters and enhancements. |
| Binary Ops: | Segmentation for area calculations  |
| Analysis:   | Calculation functions: Velocity, Distance, Angle & Area.                  |
| Utilities:  | Trace and intensity profiles.   |

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## Operational Functions

|           |   |
|-----------|---|
| Arm:      | Sets camera ready for recording.            |
| Test:     | Provides confirmation of set-up parameters. |
| Focus:    | Allows remote image composition and focus.  |
| Set-up:   | Displays recording and timing parameters.   |
| Transfer: | Allows image storage and output.            |



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### For more information

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**sales@hadlandimaging.com** about ultra high-speed imaging solutions.