

Duplex multi channel framing camera

**Up to 1 Billion frames
per second capture speed**

**36lp/mm system
resolution**

**1360 x 1024 pixel,
12-bit sensor
resolution**

**Up to 16
discrete
intensified
optical channels**



The Specialised Imaging SIMD Framing Camera offers up to 32 images without creating shading, or parallax. Highly accurate timing and fully flexible intensified CCD sensors provide almost infinite control over interframe time, gain and exposure to capture even the most difficult ultra-fast phenomena.

Comprehensive triggering adjustment and a wide range of output signals are controlled using the custom software package which also includes measurement and image enhancement functions.

The SIMD has an optional port for the addition of a high-speed video camera to allow longer duration and simultaneous image capture. The Duplex camera configuration allows the number of images captured to be twice the number of channels.

FEATURES

- Fully adjustable interframe time to 1ns
- Fully adjustable exposure down to 3ns
- Gain adjustment up to 10,000X
- Adjustable output triggers
- Nikon lens mount fitting
- Ethernet communications
- Duplex configuration camera

MODELS

Large body models shown

	SIMD8	SIMD16	SIMD20	SIMD24	SIMD32
Number of Channels	4	8	10	12	16
Number of images	8	16	20	24	32

Single and multiple channel upgrades are available up to a maximum of 16 channels.

OPTICAL

Optics	Single input beam splitting optics Channels can be fitted with individual filters
Lenses	Nikon F-Mount
Internal electro-mechanical iris	f2.8 - f22
Shutter	Electro-mechanical
Distortion	Nominally zero
Channel Registration	Within one pixel after software correction
Intensity Variation	Better than 5% across the image
Auxiliary Optical Channel Interface	Nikon F-mount bayonet (Optional)

INTENSIFIER / SENSOR

Image Sensor	ICX285AL
Active CCD Pixel	1360 (H) x 1024 (V)
Pixel Size	6.45 µm (H) x 6.45 µm (V)
Digitisation	12 bits
Intensifier	Gen II 18mm High resolution MCP Input window Fused Silica Output window Fibre Optic Photocathode S25, others available on request Phosphor screen P46 Gen III intensifiers available on request
Gain	Variable up to 10,000
System resolution	>36 lp/mm

MECHANICAL

Dimensions in cm (LxWxH)	57.2 x 43.8 x 31.9 (> 8CH, without lens) 57.2 x 23.8 x 31.9 (< 8CH, without lens)
Mount	3/8-16 UNC Female
Weight	30Kg (> 8CH, without lens) 24Kg (< 8CH, without lens)

TIMING PARAMETERS

System Clock	1GHz quartz crystal controlled
Exposure Mode (each image)	Single exposure or multiple exposures (Max. 8) per channel
Exposure Time	3ns - 10ms in 1ns steps independently variable
Separation Time (multiple exposure mode)	30ns - 20ms in 1ns steps independently variable
Interframe Time	0ns - 20ms in 1ns steps independently variable
Delay to 1st exposure	65ns to 10ms in 1ns steps, independently variable
Flash Outputs	5ns - 1ms in 1ns steps independently variable
Framing rates	up to 1 Billion fps

INPUT / OUTPUT SIGNALS

Trigger 1	Electrical signal (BNC connector) Threshold variable from ± 25V Positive or Negative polarity, Make/Break 50Ω or 1KΩ termination
Trigger 2	Electrical signal (BNC connector) Threshold variable from ± 25V Positive or Negative polarity, Make/Break 50Ω or 1KΩ termination
Timing Monitor Pulses	Pulse width (min. 3ns) and position user programmable TTL into 50Ω
Flash Trigger Outputs	Pulse width (min. 5ns) and position user programmable TTL into 50Ω
Camera control	Data and command transfer via 100Mbps ethernet cable length 10m (standard), other lengths up to 100m
Software	Custom software compatible with Microsoft Windows Operating Systems for camera control, image data archiving in various file formats.
Electrical input	Mains 100-240V AC 50-60Hz

ENVIRONMENTAL

Storage temperature	-10°C to +50°C
Operating temperature	-5°C to +40°C
Humidity	10 - 90% RH non condensing
Vibration shock	10 - 40 Hz Max. 10g in any direction
EMC	Meets all UKCA/EU harmonised standards

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