SIM Intensified Framing Cameras

SPECIALISED IMAGING

Up to 1 Billion frames per second capture speed

MULTI-SPECTRAL

The Specialised Imaging SIM Framing Camera range offers from 16 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 SIM has an optional port for the addition of a high-speed video, or streak camera to allow simultaneous long duration or ultra high temporal resolution capture.

FEATURES BOTH MODELS

- ☐ 1360 x 1024 pixel sensor resolution
- ☐ Up to 16 discrete intensified optical channels
- ☐ Adjustable inter-frame time in 1ns steps
- ☐ Fully adjustable exposure down to 3ns
- ☐ Gain adjustment up to 10,000X
- ☐ Programmable output triggers
- ☐ Nikon lens mount (standard)
- ☐ Canon lens mount (optional)
- ☐ Gigabit Ethernet communications
- ☐ High system resolution configuration
- ☐ User interchangeable filters

International sales +44 (0) 1442 827728 USA & Canada +1 951-296-6406 specialised-imaging.com

SIM

Intensified Framing Cameras

SPECIALISED IMAGING

HIGHER RESOLUTION

SIMX

	SIMX4	SIMX8	SIMX10	SIMX12	SIMX16
Number of Channels	4	8	10	12	16
Number of images	4	8	10	12	16

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

MORE IMAGES

SIMD

	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.

SPECIFICATION BOTH MODELS

OPTICAL

Optics	Single input beam splitting optics
Lenses	Nikon F-Mount (Standard) Canon Mount (Optional)
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

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 SIMD Phosphor screen P46 SIMX Phosphor screen P43

Other Image Intensifier options available. Please contact us to discuss.

Gain	Variable up to 10,000
System resolution	>50 lp/mm (SIMX) >36 lp/mm (SIMD)

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	37.5Kg (< 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 (BNC)	Electrical signal Threshold variable from ± 25V Positive or Negative polarity, Make/Break 50Ω or 1KΩ termination
Trigger 2 (BNC)	Electrical signal Threshold variable from ± 25V Positive or Negative polarity, Make/Break 50Ω or 1KΩ termination
Timing Monitor Pulses (BNC)	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 Gigabit ethernet cable length 10m (standard), other lengths up to 100m. Optional Fibre Optic ethernet link (up to 2Km)
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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FM 87429

As part of our on-going commitment to improvement we reserve the right to alter specifications, designs or figures, without prior notice. All dimensions and weights are approximate.