LaVision

We count on Photons

IRO Intensified Relay Optics

upgrades cameras to „high speed gating“, UV-sensitive, intensified imaging systems

IRO is an intensified gated Relay Optics System equipped with an extremely fast high precision shutter control. Digital setting allows variable exposure times down to 10 ns. All settings (gain, delay and width of exposure) can be controlled by LaVision's DaVis software. **IRO** can be mounted before almost every imaging system, e.g. „slow-scan“, video and photo cameras. Your camera becomes a „high speed gating“, light intensified imaging system. Thus **IRO** is an ideal solution for taking rapid events and low light level imaging, like discharges, fluorescence phenomena or explosions.

Two versions with different optical couplings are available, depending on the size of the CCD camera chip.

Applications

- fast events
- low light level imaging
- discharges
- fluorescence phenomena
- explosions

Features

- Single Shot Triggering
- Wide Range of Exposure and Trigger Delay Times (10 ns to 80 ms)
- Easy coupling to your Imaging System
- Wide Spectral Response
- Distortion free Imaging due to MCP - Image Intensifier
- Detached Control Unit with EMI - shielding
- Local control via LCD keypad/display or remotely controllable by DaVis Software
- Appropriate mounting consisting of 500 mm optical rail with 3 clamps, posts and holders available

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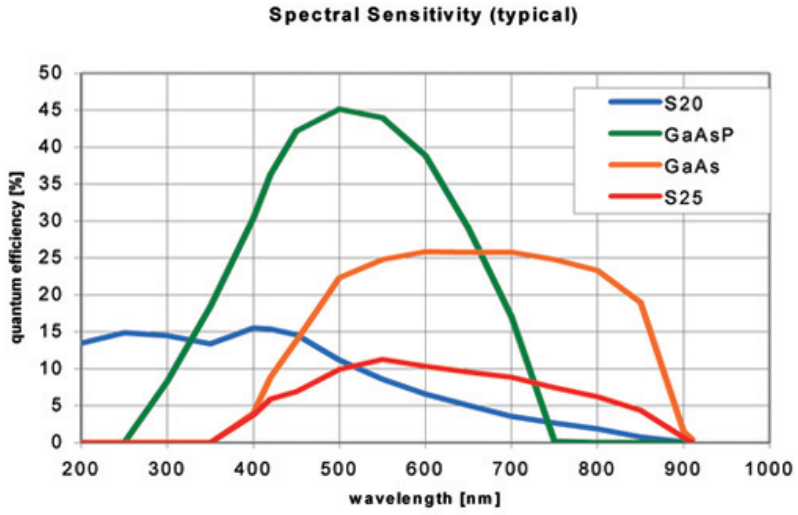
General System Specification	
Spectral range	190 – 900 nm (see photo cathode curves)
Min. exposure time	10 ns (5 ns with external gate)
Repetition rate	max. 2 kHz
Input adapter	Nikon F-mount or C-mount
Lens coupling	depending on camera chip size; to be used 1:1 or 2.17:1
Camera mount	M42 (other on request)

Image Intensifier	
Intensifier type	single stage MCP
Diameter	25 mm (others on request)
Photo cathode	S20, S25, GaAs, GaAsP
Phosphor screen	P43 (others on request)
Uniformity	66,7%



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Intensifier Quality

Allowed Spots

maximum number of spots in zone (contrast over 30 %)		Specified Zone (13,5mm x 10.0 mm Area)
Spot diameter (µm)	> 150	0
	100 – 150	2
	75 – 100	8
	< 75	minimum

Note:
Spot size is defined as the diameter of the circle, with the area equal to the area of the spot.

Electronics

Gating (exposure)	10 ns – 80 ms, error 1ns
Delay	60 ns – 80 ms, error 5 ns
Delay/gate resolution	5 ns steps
Control	a) local via LCD keypad/display b) remote from PC via DaVis program:
Trigger input	TTL
Connection cable	USB
Power supply	230 V or 110 V

Ordering Information:

part number	Description
1102060	IRO, 25 mm, P43, S20, 2:1
1102061	IRO, 25 mm, P43, S25, 2:1
1102062	IRO, 25 mm, P43, GaAs, 2:1
1102063	IRO, 25 mm, P43, GaAsP, 2:1
1102080	IRO, 25 mm, P43, S20, 1:1
1102081	IRO, 25 mm, P43, S25, 1:1
1102082	IRO, 25 mm, P43, GaAs, 1:1
1102083	IRO, 25 mm, P43, GaAsP, 1:1
1108189	Rail mount for camera and IRO

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