

## Compact image intensifier/converter

**Range of Intensifier tube options**

**Up to 40lp/mm resolution**

**Gate times down to 10ns**

**Comprehensive triggering  
for High-speed video  
and other cameras**



The Specialised Imaging SIL3 image intensifier is the latest generation of intensifier that can be synchronised to almost any high-speed video, conventional video or stills camera.

Maximum equivalent frame rates ranging from 100,000fps to 1,000,000fps and minimum gate (exposure) time of 10ns.

All Intensifier tube options use fused silica input windows as standard. The two possible output window diameters, Phosphor decay times and Wavelength responses options (inc. UV) allows the SIL3 to be configured as a unique enhancement to any camera.

Intuitive custom control software allows gain, gate/exposure and delay adjustment via Ethernet.

### FEATURES

- 18mm and 25mm Intensifier tube options
- Fully adjustable gating times down to 10ns
- Gain adjustment up to 500,000X
- Nikon lens mount fitting
- Optical camera coupling
- Ethernet communications
- UV wavelength conversion option

| BASE UNIT           | AVAILABLE OPTION      | PHOTO-CATHODE | RESPONSE (>10% QE) | MINIMUM GATING TIME | SYSTEM GAIN   | MAX FREQUENCY | LIMITING RESOLUTION |                    |
|---------------------|-----------------------|---------------|--------------------|---------------------|---------------|---------------|---------------------|--------------------|
|                     |                       |               | nm                 | ns                  | X             | kHz           | Stated lp/mm        | Equivalent $\mu$ m |
| <b>SIL3 18NG-50</b> |                       | <b>S25</b>    | <b>450 - 875</b>   | <b>50</b>           | <b>7,000</b>  | <b>100</b>    | <b>40</b>           | <b>12.5</b>        |
|                     | Short Gating          | -             | -                  | 10                  | -             | -             | -                   | -                  |
|                     | UV Sensitive          | S20           | 200 - 550          | -                   | -             | -             | -                   | -                  |
|                     | High Gain 40K         | -             | -                  | -                   | 70,000        | 100           | 30                  | 16.7               |
|                     | FAST                  | -             | -                  | -                   | 7,000         | 1,000         | 40                  | 12.5               |
|                     | FAST + High Gain 40K  | -             | -                  | -                   | 70,000        | 1,000         | 30                  | 16.7               |
| <b>SIL3 25NG-50</b> |                       | <b>S25</b>    | <b>450 - 875</b>   | <b>50</b>           | <b>10,000</b> | <b>100</b>    | <b>40</b>           | <b>12.5</b>        |
|                     | Short Gating          | -             | -                  | 20                  | -             | -             | -                   | -                  |
|                     | UV Sensitive          | S20           | 200 - 550          | -                   | -             | -             | -                   | -                  |
|                     | High Gain 100K        | -             | -                  | -                   | 100,000       | 100           | 36                  | 13.9               |
|                     | High Gain 500K        | -             | -                  | -                   | 500,000       | 100           | 36                  | 13.9               |
|                     | FAST                  | -             | -                  | -                   | 10,000        | 1,000         | 36                  | 13.9               |
|                     | FAST + High Gain 100K | -             | -                  | -                   | 100,000       | 1,000         | 32                  | 15.6               |
|                     | FAST + High Gain 500K | -             | -                  | -                   | 500,000       | 1,000         | 32                  | 15.6               |

### OPTICAL

|                  |         |
|------------------|---------|
| Front Lens mount | F-mount |
| Optical Coupling | F-mount |

### MECHANICAL

|                      |   |
|----------------------|---|
| Dimension mm (w/d/h) | 17.8cm x 18.5cm x 19.7cm<br>(7.0" x 7.3" x 7.8") without lenses |
| Mount                | 3/8-16UNC Female (standard tripod)                              |
| Weight               | 4.8Kg (10.6lbs) without lenses                                  |
| Lens/Camera Support  | Option available  |

### ENVIRONMENTAL

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

### TIMING PARAMETERS

|                             |   |
|-----------------------------|---|
| System Clock                | 200MHz, quartz crystal controlled.                              |
| Inherent Delay (5ns jitter) | 60ns  |
| Exposure Time               | 50ns—DC in 5ns steps independently variable                     |
| Inter Exposure Time         | 50ns—25ms in 5ns steps independently variable                   |
| Number of exposures         | Up to 64 in pulsed mode.<br>Unlimited in REP (synchronous) mode |

### INPUT / OUTPUT SIGNALS

|                   |  |
|-------------------|--|
| Triggers          | Electrical signal (BNC connector)<br>Maximum Input level 50V<br>Threshold variable from $\pm$ 25V<br>Positive or Negative polarity, Make/Break<br>50 $\Omega$ or 1K $\Omega$ termination |
| Aux Outputs       | Pulse width and position user programmable (min. 5ns)<br>TTL into 50 $\Omega$  |
| Control Interface | Remote control via Standard 100Mbps Ethernet   |
| Inhibit Input     | 5V TTL (user input brightness protection)  |
| Software          | Custom software compatible with Microsoft Windows Operating Systems for control  |
| Electrical input  | Mains 100-240V AC 50-60Hz  |

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FM87429