

## SINGLE STAGE INTENSIFIED CCD CAMERA



ICCD125 Intensified CCD Camera with Lens



ICCD125 Intensified CCD Camera without lens adapter

### INTRODUCTION

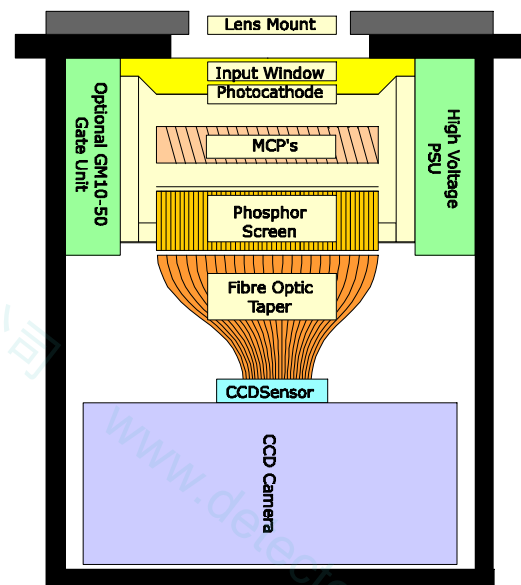
The ICCD118/125/140 is a range of sensitive single stage MCP intensified CCD camera suitable for a wide variety of imaging applications. These compact camera is normally supplied with a 'C' mount lens adapter which allows it to be used with a variety of commercially available camera lenses or for direct connection to a microscope. Flange and 'F' mount options are also available. The ICCD140 camera is not available with the 'C' mount lens adapter.

The camera can be supplied alone or as part of a gated system. A camera power supply and control unit providing manual control of intensifier gain and video gain is supplied as standard with the unit. Optional gating controllers, framer grabbers and software can also be supplied. Full characterisation of the intensifier including spectral response and gain calibration is provided.

Customised versions of this camera with a range of different input windows, photocathodes, phosphors and MCP configurations are also available.

### FEATURES

- High sensitivity image intensifier
- 18, 25 or 40 mm active diameter
- Fibre optic or fused silica input windows
- S20, Low noise S20 or bialkali photocathodes
- Sub 100 ns gating
- Flange or lens mount options
- CCIR or RS170 or non-standard options
- Voltage controlled video and intensifier gain
- Sony ICX083 2/3" interline CCD sensor

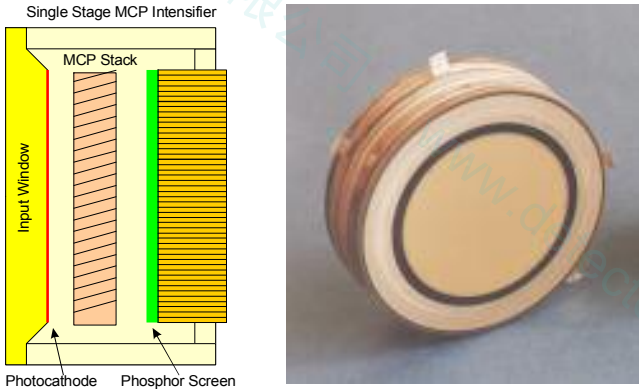


### Image Intensifiers

The image intensifiers used in the cameras are generally single stage MCP device. These offer a gain of up to 10,000 W/W. For applications requiring ultimate sensitivity, multi-stage MCP detectors are also available. Image intensifiers can be customised in a number of ways so as to achieve ultimate performance.

### Intensifier Format

The image intensifiers are available in a range of formats. These include 18 mm, 25 mm and 40 mm. The diagram below shows the typical construction of an image intensifier.



### Input Windows

Both fused silica or fibre optic are provided as standard with this camera. The fused silica windows are designed for applications that require enhanced UV imaging and have response to below 190 nm. Fibre optic input windows have a sharp cut off at around 320 nm, but have the added advantage of allowing direct contact imaging or coupling of a reducing fibre taper to the cathode.

### Camera Options

These cameras are supplied with either a conventional TV camera (CCIR or RS170). Other specialist CCD cameras may be fitted to the camera on request.

### Imaging Area

In general these ICCD cameras can operate in either non interlace (for gated applications) giving an image format of 288x384 pixels or interlaced 576x768 pixels.

Size	CCIR	Area
18 mm	11x14	1.5 cm <sup>2</sup>
25 mm	15.2x19	3 cm <sup>2</sup>
40 mm	24.4 x 31	7.8 cm <sup>2</sup>

### Active imaging area

Camera	Format	18 mm	25 mm	40 mm
CCIR (25Hz)	576x752	36	50	106
CCIR (50Hz)	288x376	18	25	53

### Pixel size at photocathode (microns)

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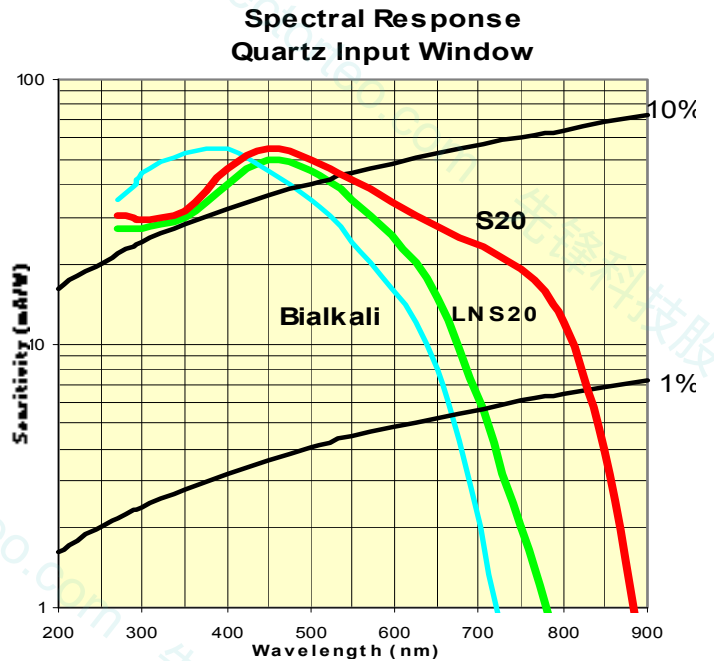
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### Photocathodes

Photek can offer a range of photocathodes including S20, low noise S20 and bialkali. Typical spectral response curves are shown below. For full details see the separate photocathode data sheet.



### Gated Cameras

The GM10-50 gate unit is a small compact gate unit which can be fitted around the image intensifier. The performance of the gate unit is detailed below:

### Features

Input Gate Pulse	TTL & CMOS compatible
Logic Mode	Positive
Pulse Amplitude	+50V / -200V (nominal)
Pulse Width	50 ns - DC
Pulse Rise/Fall Time	<50 ns / <35 ns
Pulse Propagation Delay	<150 ns
Repetition Rate	10 kHz

Other Gate units including the GM150-20 can also be provide.

### Lens Adapters

All cameras can be provided with a variety of input mounts.

These include:

- o Standard 'C' Mount
- o Nikon 'F' Mount
- o Flange Mounting for custom applications.

### Mechanical

Diameter	130 mm
Length	160 mm
Weight	1.5 Kg