

## STRAWBOARD IMAGER TYPE 600 FOR FRAGMENTATION ANALYSIS



When a warhead, or similar fragmenting device is detonated, it is necessary to analyse the pattern of fragment dispersion. This is done typically by assembling large pieces of card into 'stacks' of up to 40 and positioning these stacks around the detonation area. The resulting hole patterns in a given piece of card may be analysed to measure dispersion. However an analysis of the stack provides even more detailed information.

Factors such as depth of penetration, angular dispersion and an indication of energy can be derived from this 3-dimensional analysis. Fragments removed from the card are logged at their respective positions and the mass of the fragments may be recorded automatically by use of electronic scales.

Each card is placed on a reference light source and viewed by a digital camera. The image from the camera is used to measure the hole shape parameters, area and positions. Due to the complex mathematical algorithms being used, sub-pixel accuracy is possible, giving precision measurement over the entire area.

The data from successive cards in the stack is assimilated into a 3-dimensional plot showing the track of each fragment.

In the past, a typical trial would take between 3 and 6 months to analyse. With the Strawboard Imager type 600, such analysis is reduced to a matter of hours.

The unit shown above illustrates the supplied calibration plate that is used to ensure optimum accuracy.

The imager systems have been supplied in various forms to Government research establishments in the UK. Variants for analysis of target plates and other removed-mass situations have also been supplied. X-ray plate analysis is another area of application.

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Image data is captured using a 4 megapixel Area Scan Camera. The imaging device is connected a Frame Grabber capable of capturing data at clock speeds of 85MHz. The data link is established using the Camera Link™ protocol, ensuring an effective and error free method of capturing images.

### SPECIFICATION

<b>PROCESSOR</b>	(minimum)	<b>CAMERA</b>	
Processor	P-4 Dual core 3.0 GHz	Mounting	Wall
Memory	2 GByte	Pixels	2352 x 1728
Hard Drive	500 GByte	Pixel Size	7.4 µm
DVD ROM/RW	DVD/CD-RW Combo	Data Rate	2 x 80 MHz
	(8x8x8x24)	Data Format	8, 10 bit
Printer	HP Laserjet	Output Base	Medium Camera Link™
		Responsivity	14 DN/(nJ/cm <sup>2</sup> ) @ 1x gain
<b>SOFTWARE</b>		<b>FRAME GRABBER</b>	
Operating System	Windows XP Pro	Camera Interface	2 Base or 1 Medium
Application	Image analysis software	Pixel Clock	Up to 85MHz
<b>Light-TABLE</b>		Pixel	8 - 16
Height	800mm	Host Bus	PCI-64/PCI-X 66
Width	1400mm	Buffers	32 MB
Depth	750mm		