MREL
BLASTING INSTRUMENTATION

BLASTER'S RANGER II™ HIGH SPEED CAMERA

RESOLUTION: UP TO 2560 X 2048 PIXELS.
SPEED: UP TO 29,090 FRAMES PER SECOND.
MEMORY: 8 GB.
MULTIPLE STORAGE OPTIONS: SDHC CARD, USB, OPTIONAL SOLID STATE DRIVE.
TRIGGERING: EXTERNAL TRIGGER.
FIRING TIMES OF: HOLES, DETONATORS, DELAYS, ETC.
BLAST EFFECTS ON: ROCK, STRUCTURES, VEHICLES, ETC.

- Easy to use: built-in buttons, LCD touchscreen, and on-screen menu.
- Convenient SDHC card to save the recorded video.
- Video resolutions of up to 2560 x 2048 pixels.
- Novel, rugged design with attractive pricing.
- Provided fully equipped in a portable carry case.
- Motion analysis software for automatic tracking of targets.
- MREL's 1 Year Comprehensive Parts & Labour Warranty.

BLASTER'S RANGER II™ HIGH SPEED CAMERA

Blasts and their effects occur too quickly to be captured with standard speed video cameras. To see what you've been missing - you must record your blasts with high speed video.

If you want to determine the effects of blasts on structures or vehicles or determine the actual firing times of your blastholes and the nature of the rock movement, the digital video camera with the speed and resolution to accurately capture these events is the Blaster's Ranger II™ High Speed Camera. It is a complete high speed video recording system with a built-in LCD screen and easy-to-use operator interface.

EXPLOSIVES CONSUMERS AND MANUFACTURERS

Your delay detonators must provide the correct timing for your specific blasting conditions. Incorrect timing reduces rock fragmentation, affects blast movement, and can increase blast vibrations. The Blaster's Ranger II™ High Speed Camera with the included ProAnalyst® Introductory Edition software can document the actual firing times of blastholes to sub-millisecond accuracy, as well as quantify face velocity, blowouts, stemming ejection, flyrock trajectory, and more.

RESEARCHERS OF BLAST EFFECTS

You are running a sophisticated testing program involving measurement of the effects of energetic materials. The Blaster's Ranger II™ High Speed Camera is a portable, affordable alternative to expensive high speed digital video cameras traditionally used by corporate, university and government researchers to video record the effects of blasting on structures and vehicles. The use of multiple cameras provide researchers the ability to record events from multiple camera angles for time base correlation and accurate 3-D motion analyses using the optional ProAnalyst® 3-D Professional Edition software available from MREL.

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GROUP OF COMPANIES

BLASTER'S RANGER II™ HIGH SPEED CAMERA

Mount the camera onto the Blaster's Ranger II™ Tripod. Attach the lens to the camera and insert the SDHC card provided. Power the camera from internal battery or connect to AC or 12 VDC power with the cables provided. Connect the Blaster's Ranger II™ Trigger Switch for triggering by the Operator, or connect the optional PWT™ Portable Wireless Trigger for remote triggering. Turn on the camera and use the built-in 178 mm (7 in.) LCD to display the camera's field of view. Use the push buttons and on-screen menus to control all functions of the camera. Set the camera's triggering and recording parameters. If desired, set automatic saving of the recorded video to the SDHC card. After the blast, push buttons to play back and save all or part of the video to the SDHC card. Transfer the video from the SDHC card to the Operator's PC using the SD Card Reader provided. Analyze the video with the ProAnalyst® Software on the Operator's Windows™ PC.

BLASTER'S RANGER II™ TRIPOD

Collapsible tripod with rugged Grip-Action Ball Head for positioning Camera.

FREE SOFTWARE

Contact MREL to apply for your free copy of PROANALYST® Essential Software.

		Normal Mode		Long Record Mode	
	Resolution	Max Frame Rate (FPS)	Recording Time (sec.)	Max Frame Rate (FPS)	Recording Time (min.)
BRII-TS5QC8-B	2560 x 2048 (QSXGA)	253	6.3	91	34.9
	2560 x 1440 (QHD)	359	6.3	130	34.7
BRII-TS5HC8-B	1920 x 1080 (HD:1080p)	634	6.5	231	34.7
	1440 x 1080	634	8.5	308	34.7
	1280 x 1024 (SXGA)	991	6.4	366	34.7
	1280 X 1014	1001	6.4	369	34.7
	1280 x 720 (HD:720p)	1403	6.5	520	34.7
	1000 x 1000	1015	8.2	478	34.7
	1024 x 768 (XGA)	1316	8.1	610	34.7
	800 x 600 (SVGA)	1677	10.4	993	34.7
	800 x 450	2221	10.5	1331	34.7
	768 x 576	2764	6.8	1084	34.7
	640x480 (VGA)	3289	8.3	1562	34.7
	512 x 384	4061	10.5	2441	34.7
	320 x 240	6267	17.4	5000	42.8

BLASTER'S RANGER II™ HIGH SPEED CAMERA SPECIFICATIONS:

BRII-TS5QC8-B: Monochrome or Colour, 2560 x 2048 pixels maximum resolution, maximum record rate of 253 fps at maximum resolution, up to 29,090 fps at reduced resolution, 8 GB standard memory.
BRII-TS5HC8-B: Monochrome or Colour, 1920 x 1080 pixels maximum resolution, maximum record rate of 634 fps at maximum resolution, up to 29,090 fps at reduced resolution, 8 GB standard memory.
Settings: The Blaster's Ranger II™ has an integrated LCD touchscreen colour display with an on-screen menu. The menu allows the operator to change all camera settings in the field including: record and playback modes; trigger mode; record rate; resolution; shutter speed; play controls; video save controls with start and stop position select. **Shutter:** 3µsec to 41.654ms.
Pixel Size: 12-bit CMOS sensor with 5µm square pixels, color or monochrome.
Light Sensitivity: : 1600 to 12,800 ISO monochrome, 800 to 6400 ISO color
Removable Storage: SD card (SDHC: 32GB maximum); USB flash drive.
Ports: USB, SD, GigE. **Lens Mount:** C-Mount or F-Mount.
File Formats: Stacks – BMP, DNG, JPEG, TIFF (processed or raw); Video – AVI, CAP (raw)
Built-in Monitor : Ultra bright, 178 mm (7 in.) diagonal WVGA LCD.
Control Software: FasMotion (PC/Mac application), web interface (browser on all platforms).
Trigger: Externally by trigger switch or TTL trigger signal.
Sync: External sync inputs via BNC. **Video Out:** HDMI.
Power: Internal rechargeable battery pack (3 hrs.), 10-26 VDC external power supply, 110/220 AC adapter and external 12 VDC battery connection cables are provided.
System Components Provided: Blaster's Ranger II™ High Speed Camera with Zoom Lens, ProAnalyst® 2023 Blaster's Custom Toolbox Software which allows auto-tracking of one feature and/or manual tracking of up to 32 features and exporting to Microsoft Excel™ for further analysis and graphing, Tripod and Trigger Switch, high speed SDHC Card and Card Reader, Power Adapters and cables for DC and AC operation, Blaster's Ranger II™ Operations Manual, Carry Case.
Environmental: Fully operational at +5 to 40 °C (+41 to +104 °F).
Warranty: MREL's 1 Year Comprehensive Parts and Labour Warranty.
Technical Support: MREL's Unlimited Technical Support Program by secure customer portal, email, and telephone.

ACCESSORIES:

OTHER LENSES: A wide variety of lenses to meet specific requirements.
PWT™ PORTABLE WIRELESS TRIGGER: To trigger the camera wirelessly from up to 500 m (1640 ft.) distance.
PROANALYST® 2023 SOFTWARE (PROFESSIONAL ANALYST TOOLBOX): This edition is the Professional Analyst which includes all available 2-D toolkits: Full Parametric Feature Tracking (includes Adaptive Feature Tracking), Constrained Edge Tracking, Particle Tracking, Contour Tracking, Orthonormal Calibration, Perspective Calibration, Image Processing, Image Stabilization, Advanced Data Graphing, Reports and Presentation.
PROANALYST® 2023 SOFTWARE (PROFESSIONAL ANALYST 3-D TOOLBOX: Includes all the features of the Professional Edition, plus the 3-D Manager. Analyze events captured by multiple cameras to reconstruct and display motion in 3-D with accuracy.