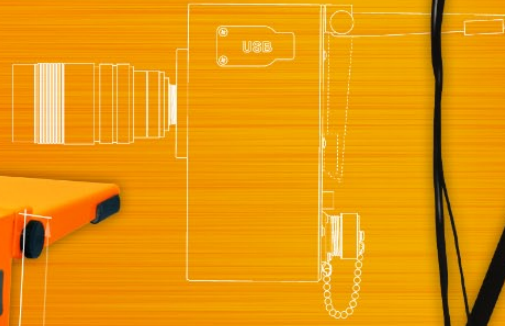


**BLASTER'S RANGER™ HIGH SPEED CAMERA**

- BLASTER'S RANGER™ RESOLUTION: UP TO 640 X 480 PIXELS.
- BLASTER'S RANGER-HR™ RESOLUTION: UP TO 1280 X 1024 PIXELS.
- BLASTER'S RANGER™ SPEED: UP TO 1,000 FRAMES PER SECOND.
- BLASTER'S RANGER-HR™ SPEED: UP TO 16,000 FRAMES PER SECOND.
- TRIGGERING: EXTERNAL TRIGGER.
- FIRING TIMES OF: HOLES, DETONATORS, DELAYS, ETC.
- BLAST EFFECTS ON: ROCK, STRUCTURES, VEHICLES, ETC.



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 under sunny conditions is the Blaster's Ranger™ 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 timing blasts need under your specific blasting conditions. Blastholes firing at incorrect times reduce rock fragmentation, effect blast movement, and can increase blast vibrations. The Blaster's Ranger™ High Speed Camera with the included ProAnalyst® TrackOne Edition software is used to document the actual firing times of blastholes to 1 millisecond accuracy.

**RESEARCHERS OF BLAST EFFECTS**

You are running a sophisticated testing program involving measurement of the effects of energetic materials. The Blaster's Ranger™ 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.

Easy to use: built-in buttons, LCD screen, and on-screen menu.

Convenient CompactFlash Card to save the recorded video.

Video resolutions of up to 1280 x 1024 pixels.

Provided fully equipped in a portable carry case.

Intuitive point & click motion analysis software.

Novel design with attractive pricing.

MREL's 1 year Comprehensive Parts & Labour Warranty

MREL Group of Companies Limited //  
1555 Sydenham Road // Kingston, Ontario K7L 4V4 // Canada //  
Tel: +1.613.545.0466 // Fax: +1.613.542.8029  
www.mrel.com





### BLASTER'S RANGER™ HIGH SPEED CAMERA

Mount the camera onto the Blaster's Ranger™ Tripod. Attach the lens to the camera and insert the pre-formatted CompactFlash (CF) Card provided. Connect the camera to AC or 6 VDC power with the cables provided. Connect the Blaster's Ranger™ 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 127 mm (5 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 in AVI format to the CF Card. After the blast push buttons to play back and save all or part of the video to the CF Card. Transfer the video from the CF Card to the Operator's PC using the CF Card Reader provided. Analyze the video with the ProAnalyst® Software on the Operator's PC running Windows™.

### BLASTER'S RANGER™ TRIPOD

Collapsible, has a rugged mount for quickly connecting the camera to the tripod.

### CONNECTORS

Power-in, Trigger-in, Sync, IRIG, Video-out.

### BLASTER'S RANGER™ HIGH SPEED CAMERA SPECIFICATIONS:

**Models:** Blaster's Ranger™ RA1000ME-O and RA1000CE-O.

Blaster's Ranger-HR™ RAHRMM-O and RAHRM-O.

**Settings:** The Blaster's Ranger™ has an integrated LCD color display with an on-screen menu. The menu allows the operator to make all camera settings in the field including: selection of play and live modes; trigger mode; recording rate; resolution; shutter speed; video save mode; play forward; play reverse; play speed; play frame by frame in step mode.

**Resolution:** Blaster's Ranger™ CMOS sensor 640 (H) x 480 (V) pixels.

Blaster's Ranger-HR™ CMOS sensor 1,280 (H) x 1,024 (V) pixels.

8-bit monochrome or 24 bit color.

**Light Sensitivity:** 250 ASA monochrome, 200 ASA color.

**Recording Speeds:** Blaster's Ranger™ = up to 1000 fps\* at full 640 (H) x 480 (V) pixels resolution. Blaster's Ranger-HR™ = up to 500 fps at full 1,280 (H) x 1,024 (V) pixels resolution, up to 16,000 fps at reduced resolution.

**Recording Times:** Blaster's Ranger™ = 4.4 seconds at 1000 fps at full 640 (H) x 480 (V) pixels resolution. Blaster's Ranger-HR™ = 6.1 seconds at 500 fps at full 1,280 (H) x 1,024 (V) pixels resolution, 6.1 seconds at 1000 fps at 1,280 (H) x 512 (V) pixels resolution.

**Trigger:** Externally by trigger switch or trigger signal.

**Lens:** Blaster's Ranger™ = C-Mount 12.5-75mm f/1.2 (2/3 in. format) Zoom Lens. Blaster's Ranger-HR™ = C-Mount 16-160mm f/2.0 (1 in. format) Zoom Lens. Other Lenses are available as optional accessories.

**Camera Power:** 6 VDC external power supply. 110/220 AC adapter and battery connection cables are provided.

**System Components Provided:** Blaster's Ranger™ High Speed Camera with Lens, ProAnalyst® TrackOne Edition Software which allows auto-tracking of one feature and/or manually tracking of up to 32 features and exporting to Microsoft Excel™ for further analysis and graphing, Blaster's Ranger™ Tripod and Trigger Switch, extremely high speed CF Card and Card Reader, USB-2 Cable, Power Adapters and cables for DC and AC operation, Blaster's Ranger™ Operations Manual, Carry Case.

**Environmental:** Fully operational at +5 to 35 °C (+41 to +95 °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 C-Mount lenses to meet specific requirements.

**PWT™ PORTABLE WIRELESS TRIGGER:** To trigger the camera wirelessly from up to 500 m (1640 ft.) distance.

**PROANALYST® PROFESSIONAL EDITION:** Includes all the analysis features and engines for auto-tracking objects in 1-D and 2-D, data reduction and report generation.

**PROANALYST® 3-D PROFESSIONAL EDITION:** 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.

**PROANALYST® IMAGE STABILIZATION:** A recommended toolkit for the ProAnalyst® Professional Editions which removes unwanted jitter and vibration from a video.

### EXAMPLES OF VIDEO RESOLUTIONS, RECORDING SPEEDS AND RECORDING TIMES

Camera Resolution Setting (H x V pixels)	Blaster's Ranger-HR™ Maximum Recording Speed Available (fps*)	Blaster's Ranger-HR™ Recording Time at Maximum Speed (s)	Blaster's Ranger™ Maximum Recording Speed Available (fps*)	Blaster's Ranger™ Recording Time at Maximum Speed (s)
1280 x 1024	500	6.1	—	—
1280 x 512	1,000	6.1	—	—
1280 x 256	2,000	6.1	—	—
1280 x 128	4,000	6.1	—	—
1280 x 64	8,000	6.1	—	—
1280 x 32	16,000	6.1	—	—
640 x 480	1,000	13.1	1,000	4.4
320 x 240	1,000	52.4	1,000	17.4

### FREE SOFTWARE TRIAL

Contact MREL to apply for your free 21-day trial of ProAnalyst® Software.

\*fps = frames per second.