

# Mega Speed<sup>®</sup> MS120K

**Your Best Choice For Speed, Productivity And Image Size  
1280 x 800 at 4000fps**



**Our Mega Speed high speed cameras continue to offer the world's high speed imaging customers with some of the most productive high speed camera designs available. A camera design providing the customer with the very best features and prices available.**

**Mega Speed cameras are suitable for a wide range of applications. These high-speed cameras are suitable on the test range, in the R&D test lab or for use in that critical application where a dependable camera is needed to capture that all important test video. A camera with automatic high speed file back-up to it's on-board removable solid state drive. Permanently saving the recent test video.**

**Mega Speed high speed cameras have several standout features such as high write speed removable solid state drives which are accessible through the camera's rear media bay. The removable drives offer data security as well as easy drive removal when replacements are required.**

**The onboard multi channel data acquisition module is ready to synchronize test data with your high speed image data offering a clear understanding and interpretation of the test video.**

**Contact us today to arrange a demonstration of our outstanding high speed camera models.**

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## Best In-Class Performance And Proven Design

Convenient and sturdy “grab and go” ergonomic handle provides a sure grip on your investment while positioning the camera and also preventing accidental drops.

Sync in/sync out, event triggers, frame markers multi channel ADC, SDI, and IRIG-B I/O options are all available.

A well equipped and dependable camera for your test site.



Tough anodized aluminum natural finish for a clean look inside your lab and also provides a low solar load for outside field use.

A convenient “C” mount is included so that you can use all your favorite “C” mount lenses. An optional “F” mount or “C” to “F” adapter is in stock and can be added at the time of ordering.

Tapped with ¼ x 20 tpi mounting holes located on the camera’s top and bottom plate gives you plenty of options for securely locking the camera in place preventing unexpected camera movement.

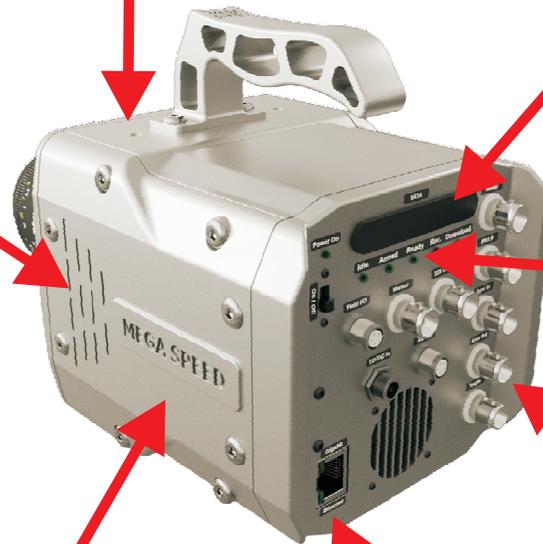
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## Fast Workflow, Huge Solid State Drive Options

Additional ¼ x 20 tpi mounting hole locations on the camera's top plate for attaching extra accessories.

The rear media bay is available on most models. Removable solid state drives offer speedy repetitive saves of over 25 GB per minute for the fastest video back-up of your critical event.

The cool running design extends the cameras service life and optimizes the camera performance for the best image quality and longest service life possible.



Multiple status LEDs confirm your settings so that you get it right on your first shot.

Quick connect BNCs and multi pin connectors for your frequently used I/Os to get you up and running fast.

Available internal lithium batteries keep you recording when a power failure hits or when no mains power is available.

1 Gige, 2.5GBASE-T or 10 Gige are all available for PC camera control to accommodate your download speed requirements.

# MEGA SPEED MS120K SPECIFICATIONS

<b>Sensor Specifications And Exposure Control</b>	<ul style="list-style-type: none"> <li>▪ CMOS image sensor. 17mm x 13mm. 21mm diagonal. Available in either monochrome or color versions</li> <li>▪ 1280 x 850 pixels maximum resolution</li> <li>▪ 1280 x 8 pixels minimum resolution</li> <li>▪ 4000 fps maximum speed at 1280 x 800 pixels</li> <li>▪ Image size is software adjustable with 64 x 2 segments</li> <li>▪ 14 μm x 14um pixel format</li> <li>▪ Software adjustable global shutter down to 2 μs in 1 μs step</li> <li>▪ Automatic electronic exposure control or manual exposure control</li> <li>▪ Spectral Response is 400nm to 1000nm peaking at 550nm</li> <li>▪ Forced air cooled sensor</li> <li>▪ ISO comparative value is 12,000 for monochrome sensors</li> <li>▪ ISO comparative value is 6,000 for color sensors</li> <li>▪ 8 bit and 10 bit pixel bit depth</li> <li>▪ Average full well capacity 21,000e</li> </ul>
<b>Trigger Options</b>	<ul style="list-style-type: none"> <li>▪ 3.3 VDC to 24 VDC via BNC trigger jack. <b>Optional 3.3VDC to 48 VDC extended range</b></li> <li>▪ 3.3 VDC Mega Speed trigger box. <b>Optional equipment</b></li> <li>▪ Dry contact trigger control. <b>Optional</b></li> <li>▪ Software controlled manual trigger</li> <li>▪ Software controlled automatic trigger</li> <li>▪ Multiple start / stop trigger mode with auto stop when camera memory is full</li> <li>▪ Pre / post trigger mode with full scale pre and post segment adjustment</li> <li>▪ Segmented trigger mode with exposure, frame rate, file length &amp; next segment control</li> <li>▪ Single sequence trigger mode</li> </ul>
<b>Time Source And Synchronization</b>	<ul style="list-style-type: none"> <li>▪ By internal PC clock</li> <li>▪ By external IRG time clock - user supplied to camera IRIG BNC</li> <li>▪ Sync in to BNC connector from external clock source or master camera</li> <li>▪ Sync out from BNC connector from pass through sync source or exposure time</li> <li>▪ Sync in to BNC connector from external IRIG source - user supplied</li> <li>▪ 10 ns accurate time propagation delay</li> <li>▪ 3.3 VDC ready out signal when camera is in armed status via ready BNC</li> </ul>
<b>Camera Inputs</b>	<ul style="list-style-type: none"> <li>▪ IRIG BNC connector</li> <li>▪ Sync in BNC connector</li> <li>▪ Multi Channel data acquisition analog to digital connector for 0 to 10 VDC levels</li> <li>▪ Multi channel field input connector for field data .</li> <li>▪ DC power supply jack</li> <li>▪ Marker BNC connector for frame tagging</li> <li>▪ 1 Gigabit 45 jack for Gigabit camera control. <b>Optional NBASE2.5 Ethernet connection</b></li> </ul>
<b>Camera Outputs</b>	<ul style="list-style-type: none"> <li>▪ Ready out BNC connector</li> <li>▪ Sync out BNC connector</li> <li>▪ SDI video out BNC connector</li> <li>▪ Idle status LED</li> <li>▪ Armed status LED</li> <li>▪ Ready status LED</li> <li>▪ Recording status LED</li> <li>▪ Download status LED</li> <li>▪ Power on status LED</li> <li>▪ Battery charge status LED. <b>Optional when equipped with internal battery backup</b></li> </ul>
<b>Video Output</b>	<ul style="list-style-type: none"> <li>▪ Live stream to PC VIA gigabit connection</li> <li>▪ 1280 x 720 SDI 60 FPS. <b>Optional</b></li> </ul>
<b>Camera Input Protection</b>	<ul style="list-style-type: none"> <li>▪ Reverse input voltage protection</li> <li>▪ Optically isolated camera inputs</li> <li>▪ ESD circuitry protection</li> <li>▪ EMI shielding</li> <li>▪ Camera temperature watch dog</li> <li>▪ Camera voltage level watch dog</li> </ul>

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	<ul style="list-style-type: none"> <li>Auto re-boot and re-arm on power failure</li> </ul>
<b>Memory</b>	<ul style="list-style-type: none"> <li>32GB internal SD RAM recording buffer</li> <li>High Speed re-moveable solid state drive. <b>Optional. 256 GB, 512 GB or 1TB</b></li> </ul>
<b>Camera Firmware</b>	<ul style="list-style-type: none"> <li>Remote on-site firmware upgrade feature</li> </ul>
<b>Record Times</b>	<ul style="list-style-type: none"> <li>8.2 seconds at 1280 x 850 , 8 bit depth</li> <li>Stream time length to camera SSD are frame rate and image size dependant</li> </ul>
<b>PC Software Control</b>	<ul style="list-style-type: none"> <li>Mega Speed Camera Control</li> <li>Windows, 7 to 10</li> <li>Software control for all camera functions ( frame rate, exposure time, image size etc)</li> <li>Download rate control</li> <li>Auto-download and re-arm for next event</li> <li>Frame time, event and settings stamping</li> <li>Trigger glitch detection</li> </ul>
<b>Video Editing Software</b>	<ul style="list-style-type: none"> <li>Mega Speed AVI Player</li> <li>Video playback and review</li> <li>Video file clipping and merging</li> <li>vertical and horizontal cross hair reticules</li> <li>Thumbnail view</li> <li>MP4 video compression engine</li> <li>Gamma, white balance</li> <li>image cropping</li> <li>image rotation</li> <li>Image export to jpeg, bmp, tiff, DNG, AVI, H.264, MP4, RAW, MSV, PDF</li> <li>Compatible with other vendors software</li> <li>Video playback time base adjustment</li> <li>Basic object tracking , velocity and distance measurement</li> <li>multi channel data analysis tools synchronized to video file</li> <li>Image grid</li> </ul>
<b>PC Requirements</b>	<ul style="list-style-type: none"> <li>Modern day PC running Windows 7 to 10</li> <li>500GB minimum hard drive</li> <li>8 GB PC RAM</li> <li>1 GB Ethernet chip-set</li> <li>1 RJ 45 connection for GB connection to camera</li> <li>USB 2.0 / 3.0 USB ports for SATA dock cable</li> <li>CAT6 cable for camera connection</li> <li>17" 1920 x 1080 monitor resolution</li> </ul>
<b>Lens Mount</b>	<ul style="list-style-type: none"> <li>C mount. <b>Optional F mount, Canon, Pentax, etc.</b></li> </ul>
<b>Camera Size</b>	<ul style="list-style-type: none"> <li>4.5" x 4.98 x 6"</li> </ul>
<b>Camera Weight</b>	<ul style="list-style-type: none"> <li>3.5 lbs.</li> </ul>
<b>Camera Body / Structure</b>	<ul style="list-style-type: none"> <li>Machined Aluminum frame anodized hard coat natural finish for low solar load.</li> <li>Compact efficient modern design</li> <li>Vented side ribs</li> <li>Heat sink and forced air cooling</li> <li>Convenient top mount handle</li> <li>Convenient quick attach BNC and multi-pin rear connections</li> <li>Full function camera status LED indicators</li> </ul>
<b>Camera Mounts</b>	<ul style="list-style-type: none"> <li>5 -bottom 1/4 x 20 tpi, threaded 0.250 . 2 top 1/20 tpi both threaded 0.250 down</li> </ul>
<b>Camera Power Requirements</b>	<ul style="list-style-type: none"> <li>12 VDC 23 watts</li> <li>10 VDC to 36 VDC. <b>Optional</b></li> <li>Internal battery. <b>Optional</b></li> </ul>
<b>Temperature / Shock Rating</b>	<ul style="list-style-type: none"> <li>-5°C - to +40°C. 50G, 10ms, half sine wave, 4 axis, repeated. <b>Optional 100G</b></li> </ul>
<b>Frame Rates</b>	<ul style="list-style-type: none"> <li>3720 fps @ 1280 x 864. 8.2 seconds record time.</li> <li>4014 fps @ 1280 x 800 8.2 seconds record time.</li> <li>4455 fps @ 1280 x 720 8.2 seconds record time.</li> <li>6238 fps @ 640 x 480 17.8 seconds record time.</li> </ul>

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	<ul style="list-style-type: none"> <li>▪ 13,080 fps @ 320 x 240      34 seconds record time.</li> <li>▪ 23,852 fps @ 128 x 128      87.2 seconds record time.</li> <li>▪ * Note: Maximum speed is only affected by image height. 1280x128 can also be captured at 23,852 FPS</li> </ul>
<b>Included In the Box</b>	<ul style="list-style-type: none"> <li>▪ Camera</li> <li>▪ Camera handle</li> <li>▪ BNC patch cables and tees</li> <li>▪ 15' CAT 6 Ethernet cable</li> <li>▪ Camera brick power supply</li> <li>▪ Camera control software</li> <li>▪ AVI player software</li> <li>▪ Training Videos</li> <li>▪ Foam lined hard protective and storage case</li> <li>▪ Installation CD with install software and owner's manual</li> </ul>
<b>Available As An Option</b>	<ul style="list-style-type: none"> <li>▪ Color or monochrome image sensor</li> <li>▪ Extended 3.3VDC to 48 VDC trigger input range</li> <li>▪ 3.3 VDC Mega Speed trigger box</li> <li>▪ dry contact trigger control.</li> <li>▪ NBASE 2.5 Ethernet connection</li> <li>▪ Internal battery and charge status LED</li> <li>▪ 1280 x 720 SDI 60 FPS</li> <li>▪ Solid state drive size ( 240 GB, 512GB or 1TB )</li> <li>▪ F mount for Nikon, Canon, Pentax</li> <li>▪ Internal battery back up</li> <li>▪ 10VDC to 36 VDC supply voltage</li> <li>▪ Internal battery</li> <li>▪ ADC patch cable</li> <li>▪ Lenses with various focal lengths</li> <li>▪ Tri-pod</li> <li>▪ LED work lights</li> <li>▪ Hi G-Force cables and connectors</li> </ul>
	Specifications and option availability subject to change without notice. Confirm with your sales rep before placing an order

**Notes:** Available options are high-lighted in **GRAY** color.

# MEGA SPEED MS120K SPECIFICATIONS

## Mechanical Dimensions

