

Software comparison chart

	BeamGage	LBA	BeamStar
Features Overview	User selectable for either best "accuracy" or "ease of use"	Applications where "accuracy" is most important	Applications where "ease of use" is most important
	Supports our patented Ultracal algorithm plus Auto-setup and Auto-exposure capabilities	Patented Ultracal technique for accuracies better than 1/8 of 1 digital count, pixel by pixel	Operates in either manual setup or Auto-exposure modes
	Extensive set of ISO quantitative measurements	Extensive set of quantitative measurements, many ISO compliant	Quantitative measurements, many ISO compliant
	Statistical analysis on all calculated results displayed in real time	Statistical analysis on all calculated results displayed in real time	Limited statistical results
	Support for USB, Firewire, Gig-E ⁺ , and Pyrocam III	! Frame grabber style Analog and Digital cameras, plus USB, Firewire, and Pyrocam... 4 camera input option on Frame grabber models.	Supports the FX (Firewire) and SP (USB 2.0) lines of cameras
	New Beam Maker [™] beam simulator for algorithm self validation. See below for more detailed description.		
	Simultaneous 2D and 3D displays	2D or 3D displays	Simultaneous 2D and 3D displays
	Multi-instance multi-camera use	Multi-instance single camera use	Single instance single camera use
	* Supports camera sharing		
	** Supports networked cameras		
	Results synchronised to select models of Ophir power/energy meters		
	Supports Satellite windows on multiple monitors	Standard child window design	Standard child window design
	Continuous zoom scaling in both 2D and 3D	Fixed zoom scaling in both 2D and 3D	Fixed 2D zoom settings, continuous 3D scaling
	*Window partitioning to allow analysis of multiple beams on a single camera		
	Camera ROI support on USB, Firewire, and Gig-E cameras	Camera ROI support on USB and Firewire cameras	Limited ROI support
	Manual and Auto-aperturing to reduce background effects	Manual and Auto-aperturing to reduce background effects	Manual Aperturing
	Pass-Fail on all results items, w/multiple alarm options	Pass-Fail on most items, not including statistics or pointing stability, w/multiple alarm options	Pass-Fail on most results items, not including statistics
	Beam Pointing Stability scatter plot and stripchart results	Beam Pointing Stability scatter plot and stripchart results	Beam Pointing Stability scatter chart and results
	*Expanded beam stability results in the form of strip chart and scatter plots		
	Full featured logging capabilities that are reloadable	Full featured logging capabilities, only logged data is reloadable	Logging limited to results only
	Industry std data file format	Proprietary data file format	Proprietary data file format
	Configurable Report Generator that allows cut and paste of results, images and settings.		Somewhat configurable Report Generation using MHT format
	NET Automation interface that allows for full remote control.	Limited ActiveX controls with data and results access	Limited ActiveX controls with data and results access
	Open accessibility for Visual Studio Tools customization	Closed application	Closed application
	LabVIEW virtual instruments sample library	ActiveX sample library for LabVIEW, VB6 and Excel	ActiveX sample library for LabVIEW, VB6 and VB.NET
	Windows Vista-32/64 compatible	Windows XP Pro, and Vista-32 compatible	Windows XP SP2 and Vista-32 compatible
Quantitative Calculations; Basic Results	(per ISO 11145, 11146-1/-3, and 13694)	(per ISO 11145, 11146-1/-3)	(per ISO 11145, 11146-1/-3)
Power/Energy Results	Total power or energy (Can be calibrated or sync'd to an external power/energy meter)	Total power or energy (Can be calibrated to an external power/energy meter)	Total power (Can be calibrated to an external power meter)
	Peak power/energy density	Peak power/energy density	Peak power density
	Average pulse power		
	Peak pulse power		
	Device efficiency		
	% in Aperture	% in Aperture	Peak to average

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Beam Profile Wavelength

OEM Products

	BeamGage	LBA	BeamStar
Spatial Results	Peak and Centroid locations	Peak and Centroid locations	Peak and Centroid locations
	Beam width	Beam width	Beam width
	• Second Moment ($D4\sigma$)	• Second Moment ($D4\sigma$)	• Second Moment ($D4\sigma$)
	• Knife Edge 90/10	• Knife Edge 90/10	• Knife Edge 90/10
	• Knife Edge (User selectable level)	• Knife Edge (User selectable level)	
	• Percent of Peak (User selectable)	• Percent of Peak (User selectable)	• 13.5% & 50% of peak
	• Percent of Total Energy (User selectable)	• Percent of Total Energy (User selectable)	
	• Encircled power smallest slit @ 95.4		
	Beam diameter	Beam diameter	Beam diameter
	• Average diameter (based on x/y widths)	• Average diameter (based on x/y widths)	
	• Second Moment ($D4\sigma$)		
	• Encircled power smallest aperture 86.5		
	• Encircled power smallest aperture (User selectable level)		
	Elliptical Results	Elliptical Results	Elliptical Results
	• Elliptical orientation	• Elliptical orientation	• Elliptical orientation
	• Ellipticity	• Ellipticity	• Ellipticity
	• Eccentricity		
	Distance Measurement	Distance Measurement	Distance Measurement
	• Cursor to Crosshair	• Cursor to Crosshair	• Multiple Manually drawn ruler lines on 2D display
	• Centroid to Crosshair	• Centroid to Crosshair	
	Area Results		
	Beam cross-sectional area		
Divergence	Focal Length method	Focal Length method	
	Far-field two-point method	Far-field two-point method	
	Far-field Wide Angle method		
Gaussian Fit	2D whole beam fits	2D whole beam fit	
	1D line fits	1D line fits	1D line fits
	Height	Height	Height
	Width X/Y	Width X/Y	Radius, Width, FWHM
	Centroid	Centroid	
	Goodness of fit	Correlation of fit	Correlation of fit
	Roughness of fit	Deviation of fit	
			Peak to Average Modulation
Tophat Results	2D and 1D	2D and 1D	2D and 1D
	Flatness	Tophat Factor	Tophat Fit
	Effective Area	Effective Area	Effective Area
	Effective Power/Energy	Effective Diameter	Effective Diameter
	Fractional Effective Power/Energy		
	Effective Average Fluence	Tophat Mean	Tophat Mean
	Uniformity	Tophat Deviation	Tophat Deviation
	Plateau Uniformity		Std Dev/Mean
	Edge Steepness		1D surface inclination
	1D or 2D surface inclination		
Other Quantitative Items	Scalable Intensity Histogram, exportable	Scalable Intensity Histogram	
	#Row and Column summing with results, printable and loggable	Row and Column summing (Log Data only)	Row and Column summing with results, printable
	Frame Averaging	Frame Averaging	Frame Averaging
	Frame Summing	Frame Summing	
	Frame Reference Subtraction	Frame Reference Subtraction	Frame Reference Subtraction
	Image Convolution	Image Convolution	
	Camera signal/noise calculator		Camera signal/noise calculator

	BeamGage	LBA	BeamStar
Beam Stability Displays and Results	(per ISO 11670)		
	Pointing Stability of Centroid (# Peak in a future release)	Pointing Stability of Centroid and Peak	Pointing Stability (Beam Wander) of Centroid
	<ul style="list-style-type: none"> Utilizes advanced hardware accelerated graphics engines. All display windows can be floated to utilize multiple display monitors. 	<ul style="list-style-type: none"> Scatter Plot display with histogram and Stripchart 	<ul style="list-style-type: none"> Scatter Plot display
	<ul style="list-style-type: none"> Mean Centroid 	<ul style="list-style-type: none"> Centrod and Peak 	<ul style="list-style-type: none"> Last Centroid
	<ul style="list-style-type: none"> Azimuth angle of the scatter 	<ul style="list-style-type: none"> Radius 	<ul style="list-style-type: none"> Mean Centroid
	<ul style="list-style-type: none"> Stability (M'/m'/S) 	<ul style="list-style-type: none"> Max Radius 	<ul style="list-style-type: none"> Centroid Std Dev
	<ul style="list-style-type: none"> Max Radius 	<ul style="list-style-type: none"> Average Radius 	<ul style="list-style-type: none"> Distance to Mean Centroid
	<ul style="list-style-type: none"> X/Y centroid/peak Strip chart plots 	<ul style="list-style-type: none"> Std Dev of Radius 	<ul style="list-style-type: none"> Maximum wander
	<ul style="list-style-type: none"> Sample/Time controlled 	<ul style="list-style-type: none"> Avg X/Y position 	<ul style="list-style-type: none"> Auto scaling
	<ul style="list-style-type: none"> Pass/Fail limits 	<ul style="list-style-type: none"> Std Dev X/Y 	<ul style="list-style-type: none"> Sample/Time controlled
	<ul style="list-style-type: none"> Auto scaling 	<ul style="list-style-type: none"> Sample/Time controlled 	
	*Beam Width/Diameter Strip Charts with Results		
	<ul style="list-style-type: none"> X/Y M/m beam widths plots 		
	<ul style="list-style-type: none"> Beam Diameter plot 		
	<ul style="list-style-type: none"> Mean/Std Dev/Min/Max results displayed 		
	*Power/Energy Strip Charts		
	<ul style="list-style-type: none"> Total Power/Energy plot 		
	<ul style="list-style-type: none"> Peak fluence plot 		
	<ul style="list-style-type: none"> Avg Power plot 		
	<ul style="list-style-type: none"> Mean/Std Dev/Min/Max results displayed 		
	*Elliptical Results Strip Chart		
	<ul style="list-style-type: none"> Elliptical orientation plot 		
	<ul style="list-style-type: none"> Ellipticity plot 		
	<ul style="list-style-type: none"> Eccentricity plot 		
	<ul style="list-style-type: none"> Mean/Std Dev/Min/Max results displayed 		
Beam Profile Display Options	Utilizes advanced hardware accelerated graphics engines. All display windows can be satellited to utilize multiple display monitors.		
	Can open one each simultaneous 2D and 3D beam display windows	Can veiw one diplay window in either 2D or 3D	Can open multiple 2D and 3D display windows
	Common color palette for 2D and 3D displays	Common color palette for 2D and 3D displays	2D and 3D may render in different colors
	Can open X and/or Y 1D beam slice profiles overlaid onto the 2D or 3D displays or in separate windows.	Can overlay 1D slice profiles in the 2D display window	Can open X and/or Y 1D beam slice profiles in separate windows.
	Continuous software zooming in both 1D, 2D and 3D displays	Software Zoom Magnification fixed to powers of 2x in all displays	Continuous software zooming in both 1D and 3D displays but fixed scaling in 2D displays
	Pan to any detector location	Pan to any detector location	Pan to any detector location
	Continuous Z axis display magnitude scaling	Z axis display magnitude scaling fixed to powers of 2x	
	Multiple 128 color palettes user selectable	Multiple 128 color palettes user selectable	Single rainbow color palette, different in 2D and 3D
	*Able to partition the camera imager into multiple partitions with separate results.		
1D Features	Available overlaid with 2D and 3D or in separate windows	Overlaid onto 2D beam display only, not scalable	Separte windows for each display and results
	X and Y plots on separate or combined displays	1D Gaussian fit to the profile with results	X any Y plots on separate or combined displays
	1D displays with basic results and column row summing option	1D Tophat results on a line thru a drawn aperture	1D displays with basic results and column row summing option
	Tophat 1D displays with Tophat results	Profile display of the Gauss fit results	1D Gaussian fit to the profile with results
	Gaussian 1D displays with Gaussian fit results		1D Tophat results on a line thru a drawn aperture
	1D Profile display of the Gauss fit results on 1D, 2D and 3D displays		

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OEM Products

	BeamGage	LBA	BeamStar
2D Features	Continuously zoomable and resizable displays in floatable window	Continuously resizable and 2x power zoomable child window	Continuously resizable and preset scaleable child window
	Continuous Z axis display magnitude scaling	Software Zoom Magnification fixed to powers of 2x in all displays	Beam is always auto scaled to the display palette
	Zoomable to subpixel resolution for origin and cursor placements	Superimposed display of reference beam or Gaussian fit	Multiple Point-to-point distance measurements
	Pixel boundaries delineated at higher zoom magnifications	Overlay grid for coarse measurements	
	Adjustable Cursors that can track peak or centroid	Adjustable Cursors that can track peak or centroid	Adjustable Cursors that can track peak or centroid
	Adjustable Crosshairs that can track peak or centroid	Crosshairs for precise point-to-point distance measurements	Crosshair that can track peak, X that can track centroid
	Adjustable manual apertures	Adjustable manual apertures	Adjustable manual aperture (called ROI)
	Viewable Auto-aperture placement		
	Displayed beam width marker	Overlaid aperture shows graphical representation of beam width calculation	Displayed beam width marker
	Integrated Mouse actuated pan/zoom controls	Pan/Zoom window controls in separate child window	Zoom controlled in tab, panning controlled in slider bars
	Separate 2D pan/zoom window to show current view in 2D beam display		
	Manual or fixed origin placement	Manual or fixed origin placement	Origin fixed at center of display
	*Ability to create partitions using the manual aperture controls		
3D Features	3D graphics utilize solid surface construction with lighting and shading effects	3D graphics utilize wire frame construction with hidden line removal	3D Solid surface
	Integrated Mouse actuated pan/zoom/tilt/rotate controls	Rotate/Tilt controls in separate child window	Integrated Mouse actuated pan/zoom/tilt/rotate controls
	Selectable Mesh for drawing speed vs resolution control	Selectable wire frame density	Selectable wire frame density
	Continuously zoomable and resizable displays in floatable window	Secondary display of reference beam or Gaussian fit	
	Continuous Z axis display magnitude scaling		
	User enabled backplanes with cursor projections		User enabled backplanes with beam projections
*Partitioning	Allows the user to subdivide the imager into separate beam measurement regions. All enabled results are computed inside of each partition.		
	The manual aperture is used to define and create rectangular partions.		
	Partitions must be aligned parallel with the X and Y axes.		
	When partitioning is enabled some results items will no longer be permitted while some new results items will be enabled.		
	Centroid measurements between beams in each partition can be performed.		
	Partioned imagers must have a single origin common to all partitions. All coordinate results are globally referenced to this single origin.		
	Individual partitions can be viewed in the 2D display window one at a time or all at once. The 3D display only operates globally.		
Statistical Analysis	Performed on all measurement functions with on-screen display	Performed on all measurement functions with on-screen display	Limited to select results in Tophat and Beam Wander results items
	Choices of intervals	Choices of intervals	
	• Manual start/stop	• Manual start/stop	
	• Time from 1 second to 1000 hours	• Time from 1 second to 1000 hours	
	• Frames from 2 to 99,999	• Frames from 2 to 99,999	
	Measurements reported	Measurements reported	
	• Current frame data, Mean, Standard Deviation, Minimum, Maximum of each calculation performed	• Current frame data, Mean, Standard Deviation, Minimum, Maximum of each calculation performed	
	Controls integrated with beam stability results, scatter and strip chart plots	Separate acquisition controls for pointing stability results	

	BeamGage	LBA	BeamStar
File types	Industry Standard HDF5 data and setup file format which are compatible in third party applications such as MatLab and Mathematica	Proprietary Data and Setup format	Proprietary Data and Setup format
	Math program and Excel compatible csv results files	Math program and Excel compatible csv results files	Math program and Excel compatible csv results files
	Graphics in jpg, gif, tif, png, bmp	Graphics in bmp	Graphics in jpg, gif, tif, png, bmp
	#Legacy file compatibility with LBA formats		
	PDF Reports (a single file which allows the copy and paste of results, images and BeamGage settings to external applications)		Microsoft HTML Format (MHT a single file which shows results, images and BeamStar settings)
Printing	Images, reports, results, graphs, charts, statistics, setup information	Images, results, statistics and setup information	Images, reports, results, and setup information
	Option to print many frames in a single operation	Option to print many frames in a single operation	Single frame printing
	WYSIWYG images		WYSIWYG images
Pass/Fail	Set Maximum/Minimum limits on all calculations and statistics	Set Maximum/Minimum limits on most calculations	Set Maximum/Minimum limits on most calculations
	Red/Green font color indication on result items	Red/Green font color indication on result items	Red/Green font color indication on result items
	Multiple choices for indication of failed parameters, including TTL pulse for external alarm.	Multiple choices for indication of failed parameters, including TTL pulse for external alarm.	
	Master pass/fail which triggers alarm on any failure	Master pass/fail which triggers alarm on any failure	
	USB signal, beep, stop, and log alarm options	USB signal, beep, stop, and log alarm options	
Logging	Video Data Logging Formats: HDF5, csv, math program ASCII	Video Data Logging Formats: proprietary binary, math program ASCII	
	Result Logging Formats: Math program and Excel compatible csv results	Result Logging Formats: Math program and Excel compatible cma (csv)	Result Logging Formats: Math program and Excel compatible csv results
	Picture Logging Formats: jpg, tif, gif, bmp, png	Picture Logging Formats: bmp	
	Chart Formats: csv, math program		Beam Wander Results: csv
	Cursor Data	Cursor Data	
	#Column & Row Sums	Column & Row Sums	
	#Reports		
	Continuous Logging	Continuous Logging	
	Time Interval Logging	Time Interval Logging	
	Frame Count Logging	Frame Count Logging	
	Periodic Sampling	Periodic Sampling	
	Pass/Fail Sampling	Filter Passed or Failed Frames	
	Burst Sampling, after a user specified time interval, sample a user specified number of frames		
Exporting	Convert frame buffer data to third party format	Convert frame buffer data to third party format	
	Export a user specified number of frames from the buffer	Export a user specified number of frames from the buffer	
	Export Video Data Formats: HDF5, csv, math program	Export Video Data Formats: math program	
	Export Result Formats: csv, math program	Export Result Formats: cma(csv), math program	
	Export Picture Format: jpg, tif, gif, bmp, png	Export Picture Format: bmp	
	Cursor Data	Cursor Data	
	#Column & Row Sums	Column & Row Sums	
Automation Interface (ActiveX)	Fully functional Automation Interface with examples in LabVIEW, Excel, Visual Studio.Net C# & Visual Studio.Net VB	Limited Automation Interface with examples in LabVIEW, Excel & VB6	Limited Automation Interface with examples in LabVIEW, VB.NET & VB6
	Automate launch and termination of the application		Automate launch and termination of the application
	Automate start, stop, Ultracal, Auto-X, Auto Setup	Automate start, stop, Ultracal	
	Automate the loading of application setups	Automate the loading of application setups	
	Automate control of all camera settings		
	Automate a majority of the application features and controls	Automate select application controls	
	Automate the capture of Binary Video Data	Automate the capture of Binary Video Data	Automate the capture of Binary Video Data

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	BeamGage	LBA	BeamStar
	Automate the acquisition of application results	Automate the acquisition of application results	Automate the acquisition of application results
	Automate the acquisition of application Images	Automate the acquisition of application Images	
Integrated Help	PDF Operators Manual	PDF Operators Manual	PDF Operators Manual
	Context Sensitive Help		
	Context Sensitive Hints	Context Sensitive Hints	Context Sensitive Hints
Signal Conditioning for Enhanced Accuracy	Spiricon's patented Ultracal enables more accurate beam measurement and display. Ultracal takes a multi- frame average of the baseline offset of each individual pixel to obtain a baseline accurate to approximately 1/8 of a digital count. This baseline offset is subtracted from each frame, pixel by pixel, to obtain a baseline correction accurate to 1/8 digital count. Spiricon's Ultracal method retains numbers less than zero that result from noise when the baseline is subtracted. Retaining fractional and negative numbers in the processed signal can increase the beam width measurement accuracy by up to 10X over conventional baseline subtraction and clip level methods. Spiricon's Ultracal conforms to the best method described in ISO 11146-3:2004.	Spiricon's patented Ultracal enables more accurate beam measurement and display. Ultracal takes a multi- frame average of the baseline offset of each individual pixel to obtain a baseline accurate to approximately 1/8 of a digital count. This baseline offset is subtracted from each frame, pixel by pixel, to obtain a baseline correction accurate to 1/8 digital count. Spiricon's Ultracal method retains numbers less than zero that result from noise when the baseline is subtracted. Retaining fractional and negative numbers in the processed signal can increase the beam width measurement accuracy by up to 10X over conventional baseline subtraction and clip level methods. Spiricon's Ultracal conforms to the best method described in ISO 11146-3:2004.	Background Subtraction
Frame Averaging	Up to 256 frames can be averaged for a signal-to-noise ratio, S/N, improvement of up to 16X. (Noise is averaged up to 1/256th [8 fractional bits]) Data is processed and stored in a 32bit format.	Up to 256 frames can be averaged for a signal-to-noise ratio, S/N, improvement of up to 16X. (Noise is averaged up to 1/32nd [5 fractional bits] and the 32 bit processing memory is used to retain large sums before division.)	Frame averaging
Frame Summing	Up to 256 frames can be summed to pull very weak signals out of the noise.	Up to 256 frames can be summed to pull very weak signals out of the noise.	
	Due to the precise nature of Ultracal baseline setting, (i.e., a retention of both positive and negative noise components) summing of frames can be performed without generating a large offset in the baseline.	Due to the precise nature of Ultracal baseline setting, (i.e., a retention of both positive and negative noise components) summing of frames can be performed without generating a large offset in the baseline.	
Convolution (Adjacent Pixel Averaging)	Choice of 5 convolution algorithms for spatial filtering for both display and calculations. Spatial filtering improves the visual S/N.	Choice of 5 convolution algorithms for spatial filtering for both display and calculations. Spatial filtering improves the visual S/N.	
Beam Maker™	BeamMaker allows the user to model both Laguerre-Gaussian and Hermite-Gaussian laser beams in various modal configurations. With these models you have verification and validation tools that allow not only OSI but also the end user to verify BeamGage's basic beam width measurement algorithms. It can also be used to model laser beams with special input conditions such as signal-to-noise, background offset, and bits per pixel resolution. This allows the user to better understand the accuracy of measurements made under both optimum and adverse conditions. This tool provides the user with a method to validate algorithms against current ISO standards and methods. It can also be used to validate third party algorithms by making the output data available for use in third party applications.		
Camera Features	Camera features are governed by the capabilities of the various cameras that will interface with these software products, and second by which of these camera features are implemented in the software. This section will describe typical camera features supported in the application.	Frame grabber models of LBA support additional external trigger and strobe output modes connected to the frame grabber and not the camera. Frame grabber products are in "end of life" phase and are not covered in this comparison.	
	Black Level Control (used by Ultracal and Auto-X and Auto-setup)	Black Level Control (used by Ultracal)	Black Level Control (manual or auto control)
	Gain Control (used by Auto-X and Auto-setup)	Gain Control	Gain Control (manual or auto control)
	Exposure Control (used by Auto-X and Auto-setup)	Exposure Control	Exposure Control (manual or auto control)
	User Programmable ROI	User Programmable ROI	User Programmable ROI

	BeamGage	LBA	BeamStar
	Pixel Binning	Pixel Binning	
	Pixel Sampling	Pixel Sampling	
	Bits per pixel setting	Bits per pixel setting	Bits per pixel setting
	External Trigger Input	External Trigger Input	External Trigger Input
	Trigger Delay	Trigger Delay	
	Strobe Output	Strobe Output	Strobe Output
	Strobe Delay	Strobe Delay	
	External Trigger Probe	External Trigger Probe	External Trigger Probe
	Internal Trigger Probe		
Camera related features in the applications	These are features related to but not generally dependant upon the camera design.		
	Gamma Correction	Gamma Correction	
	Gain Correction	Gain Correction	
	Bad Pixel Correction		
	Lens Applied Option	Lens Applied Option	
	Pixel scale settings	Pixel scale settings	
	Magnification settings	Magnification settings	Magnification settings
	Frame buffer settings	Frame buffer settings	Frame buffer settings
	Ultracal	Ultracal	
	Enable Auto-X (auto exposure control)		Enable auto-, exposure/gain/black level
	Perform an Auto-Setup		
	8/10/12/14/16 bits per pixel	8/10/12/14 bits per pixel	8/10/12 bits per pixel
	Select Format or ROI	Select Format or ROI	Select Format
	Measure S/N ratio		Measure S/N ratio
Trigger, Capture and Synchronization Methods	Capture methods are features related to the application while Synchronization methods relate more to the abilities of the specific camera. NOTE: Frame capture rates are determined by many factors and are not guaranteed for any specific operating configuration.		
	Trigger modes	Trigger modes	Trigger modes
	• CW - captures continuously, see Continuous below	• CW - captures continuously at the camera frame rate	• CW - captures continuously at the camera frame rate
	• Trigger-In from laser: Trigger pulses supplied to the camera	• Trigger-In from laser	• Trigger-In from laser
	• Strobe-Out to laser: Strobe pulses output from the camera	• Strobe-Out to laser	• Trigger-Out to laser
	• Video Trigger: Frame captured and displayed only when the camera sees a signal greater than a user set level	• Video Trigger. Display and calculations update only when the camera captures a signal greater than a user set level	• Video Trigger. Display and calculations update only when the camera captures a signal greater than a user set level
	Capture options	Capture options	Capture options
• Capture options are redefined and are approached in a different manner than older products. The items listed below will allow for all of the previous methods but with more flexibility than ever before.	• Continuous	• Continuous	
• Results Priority: Results priority will slow the capture rate to be in sync with the computational results and display updates.	• Single shot	• Single shot	
• Frame Priority: Frame priority will slow results and display updating to insure that frames are collected and stored in the frame buffer as fast as possible. (replaces block mode)	• Live Video (Displays at camera rate without calculations or storage of frames)		
• Stop After: Will collect a set number of frames and then stop (replaces Single-Shot mode)	• Block Mode (Captures frames at camera rate without display)		
• Periodic: Will collect frame at a programmed periodic rate.	• Post processing (Processes a block of frames previously captured)		
• Periodic Burst: Will collect frames in a Burst at programmed periodic rates			

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	Post processing is still available but is done via a different mechanism and is limited to only data file sources.		
Video Playback	Video playback, post processing and post analysis	Data file playback, post processing and post analysis	Video playback with post analysis
	User customizable playback rates		User customizable playback rates
	Video file quick pan/search controls		
	Whole video file playback looping with sub-selection looping	Frame buffer one pass playback with sub-selection options	Whole video file playback looping only
	Playback Video produced by logging	Playback data files produced by logging	
	Almost all measurements can be performed on video files	Almost all measurements can be performed on data files	Almost all measurements can be performed on video files
System Requirements	PC computer running Vista-32 or -64, Laptop or Desktop	PC computer w/Windows 2000, XP Pro, or Vista-32, Laptop or Desktop	PC computer w/Windows XP Pro, or Vista-32, Laptop or Desktop
	GHz Pentium style processor, dual core recommended	GHz Pentium style processor	GHz Pentium style processor
	Minimum 2GB RAM for standard and 3-4GB for Professional and Enterprise versions	Minimum 1GB RAM for XP, 2GB for Vista-32	Minimum 1GB RAM for XP, 2GB for Vista-32
	Accelerated Graphics Processor	Plug & Play compatible	Plug & Play compatible
	Hard drive space suitable to hold the amount of video data you expect to store. (50-100 GB recommended)	Hard drive space suitable to hold the amount of video data you expect to store. (50-100 GB recommended)	Hard drive space suitable to hold the amount of video data you expect to store. (50-100 GB recommended)
	Provision for PCI-Express, Firewire, or USB2 input depending on camera	Provision for PCI, PCI-Express, Firewire, or USB2 input depending on camera	Provision for Firewire or USB2 input depending on camera

* features in Professional version

** features in Enterprise version

future releases

Ordering Information		
Item	Description	P/N
USB2 Beam Profiler Systems (camera and software)		
BG-USB-SP503	BeamGage software, software license, ½" format 640x480 pixel camera with 4.5mm CCD recess. Comes with USB cable and 3 ND filters	SP90197
LBA-USB-SP503	Same as above, except with LBA software	SP90152
BS-USB-SP503	Same as above, except with BeamStar software	SP90153
BG-USB-SP503-1550	BeamGage software, software license, ½" format 640x480 pixel camera with 4.5mm CCD recess. Phosphor coated to 1550 nm. Comes with USB cable and 3 ND filters	SP90198
LBA-USB-SP503-1550	Same as above, except with LBA software	SP90179
BG-USB-SP620	BeamGage software, software license, 1/1.8" format 1600x1200 pixel camera with 4.5mm CCD recess. Comes with USB and cable and 3 ND filters	SP90199
LBA-USB-SP620	Same as above, except with LBA software	SP90154
BS-USB-SP620	Same as above, except with BeamStar software	SP90155
BG-USB-SP620-1550	BeamGage software, software license, 1/1.8" format 1616x1216 pixel camera with 4.5mm CCD recess. Phosphor coated to 1550 nm. Comes with USB and cable, 3 ND filters	SP90200
LBA-USB-SP620-1550	Same as above, except with LBA software	SP90180
BG-USB-L11058	BeamGage software, software license, 35mm format 4008x2672 pixel CCD camera. Comes with universal power supply, USB and trigger cable, 3 ND Filters	SP90201
LBA-USB-L11058	Same as above, except with LBA software	SP90182
Firewire Beam Profiler Systems (camera and software)		
BG-FWB-GRAS20,DESKTOP	BeamGage software, software license, 1/1.8" format 1600x1200 1394b camera with 17.5mm C-mount recess. Comes with 1394b and trigger cable, PCI-Express interface card and 3 ND filters. Desktop model	SP90202D
LBA-FWB-GRAS20,DESKTOP	Same as above, except with LBA software. Desktop model	SP90162D
BG-FWB-GRAS20,LAPTOP	BeamGage software, software license, 1/1.8" format 1600x1200 1394b camera with 17.5mm C-mount recess. Comes with 1394b and trigger cable, Laptop PCI-Express interface, power supply and 3 ND filters. Laptop Model	SP90202L
LBA-FWB-GRAS20,LAPTOP	Same as above, except with LBA software. Laptop model	SP90162L
BG-FWB-GRAS20-1550,DESKTOP	BeamGage software, software license, 1/1.8" format 1600x1200 Phosphor coated 1550nm sensor, 1394b camera with 17.5mm C-mount recess. Comes with 1394b and trigger cable, PCI-Express interface card and 3 ND filters. Desktop model	SP90203D
LBA-FWB-GRAS20-1550,DESKTOP	Same as above, except with LBA software. Desktop model	SP90163D

Ordering Information		
Item	Description	P/N
BG-FWB-GRAS20-1550,LAPTOP	BeamGage software, software license, 1/1.8" format 1600x1200 Phosphor coated 1550nm sensor 1394b camera with 17.5mm C-mount recess. Comes with 1394b and trigger cable, PCI-Express interface card and 3 ND filters. Laptop Model	SP90203L
LBA-FWB-GRAS20-1550,LAPTOP	Same as above, except with LBA software. Laptop model	SP90163L
Phosphor Coated RS-170 Cameras		
SP-1550M	½" format 640x480 pixel camera with 1550 Phosphor coated NIR sensor 17.5mm CCD recess. Comes with power supply and 3 ND filters.	SP90051
PC Accessories for Cameras		
PCI-Express Firewire 1394a/b Desktop Card	PCI-Express, IEEE 1394a/b Firewire card for installation to desktop PC's. Compatible with all BeamGage and LBA Firewire systems.	SP90164
CardBus Firewire 1394a/b Adapter	CardBus (PCMCIA) IEEE 1394a/b Firewire card for installation on a laptop. Compatible with all BeamGage and LBA Firewire systems.	SP90165
PCI-Express/34 Firewire 1394b Laptop Card	PCI-Express/34, IEEE 1394b Firewire card for installation in Laptop PC's. Card has two 1394b compatible ports. Includes power supply. Compatible with all BeamGage and LBA Firewire systems	SP90206
1394b Firewire Cable	1394b Firewire cable, 4.5 meter length	SP90166
1394a/b Adapter Cable	1394a-6 to 1394b-9 adaptor cable, 4.5 meter length	SP90207
1394b Firewire Power Supply	External Wall cube power supply for 1394b CardBus and PCI-Express/34 Laptop Adapters.	SP90167
USB A-B Cable	USB Cable with A to B connectors, 5 meter length	SP90204
USB A-mini B Cable	USB Cable with A to mini-B connectors, 5 meter length	SP90205
Optical Synch for Pulsed Lasers		
Optical Trigger for FX and SP Cameras	Optical trigger assembly which can be mounted on camera or separately to sense laser pulses and synchronize FX and SP cameras with pulses. Comes with a BNC cable to for mounting on camera and a stand for mounting separately.	SPZ17005
Pyrocam III Beam Profiler Systems		
PY-III-P-A	Pyroelectric array detector, pulsed only, Grade A, two Firewire ports, and basic viewer software. LBA-PC-PIII software included. To complete this order, you must add an Interchangeable Window part number to accompany this system (see below).	SP90090
PY-III-P-B	Pyroelectric array detector, pulsed only, Grade B, two Firewire ports, and basic viewer software. LBA-PC-PIII software included. To complete this order, you must add an Interchangeable Window part number to accompany this system (see below).	SP90091
PY-III-C-A	Pyroelectric array detector, chopped and pulsed, Grade A, two Firewire ports, and basic viewer software. LBA-PC-PIII software included. To complete this order, you must add an Interchangeable Window part number to accompany this system (see below).	SP90092
PY-III-C-B	Pyroelectric array detector, chopped and pulsed, Grade B, two Firewire ports, and basic viewer software. LBA-PC-PIII software included. To complete this order, you must add an Interchangeable Window part number to accompany this system (see below).	SP90093
LBA-PC-PIII	Full-featured Laser Beam Analysis software for Pyrocam III	SP90086
Interchangeable Windows for Pyrocam III (one included free with the purchase of a Pyrocam III Beam Profiler System)		
PY-III-W-BK7-1.064	Pyrocam III Window BK7 A/R coated to 1064nm	SP90101
PY-III-W-Si-1.05-2.5	Pyrocam III Window Silicon A/R coated to 1.05 – 2.5µm	SP90102
PY-III-W-Si-2.5-4	Pyrocam III Window Silicon A/R coated to 2.5 – 4µm	SP90103
PY-III-W-Ge-3-5.5	Pyrocam III Window Germanium A/R coated to 3 – 5.5µm	SP90104
PY-III-W-Ge-10.6	Pyrocam III Window Germanium A/R coated to 10.6µm	SP90105
PY-III-W-Ge-8-12	Pyrocam III Window Germanium A/R coated to 8 – 12µm	SP90106
PY-III-W-ZnSe-10.6	Pyrocam III Window Zinc Selenide A/R coated to 10.6µm	SP90107
PY-III-W-ZnSe-2-5	Pyrocam III Window Zinc Selenide A/R coated to 2 – 5µm	SP90108
PY-III-W-Poly-THz	Pyrocam III Window Polyethylene uncoated for Tera-Hz wavelengths	SP90208

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Displays

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