Machine Vision Catalog

Advanced Image Acquisition, Processing and Analysis

DALSA CORECO
A Division of DALSA Corporation

FRAME GRABBERS CAMERAS SOFTWARE PROCESSORS VISION SOLUTIONS

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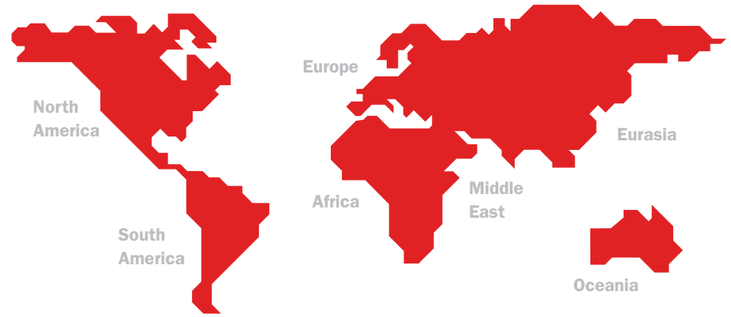
THE NEED TO MAXIMIZE YIELD IN TODAY'S COMPETITIVE MANUFACTURING MARKETS IS GREATER THAN EVER. DALSA CORECO IS DEDICATED TO HELPING OEMS APPLY VISION TECHNOLOGY TO MEET THEIR CUSTOMER'S DEMAND FOR RELIABLE THROUGHPUT AND INCREASED YIELD. WE MAINTAIN OUR INDUSTRY LEADERSHIP THROUGH OUR EXTENSIVE AND ONGOING INVESTMENT IN THE DEVELOPMENT OF ADVANCED IMAGE ACQUISITION, PROCESSING AND ANALYSIS TECHNOLOGIES INCLUDING FRAME GRABBERS, CAMERAS, SOFTWARE, PROCESSORS AND VISION SYSTEMS.

Headquartered in Montreal, DALSA Coreco is a division of DALSA Corporation. DALSA Corporation is an international high performance semiconductor and electronics company that designs, develops, manufactures and markets digital imaging products and solutions, in addition to providing semiconductor products and services.

For more than 25 years DALSA has been successful in delivering the world's most advanced digital imaging solutions.

DALSA is publicly traded on the Toronto Stock Exchange (TSX) under the symbol **DSA**.



For product information, application support, or to find a distributor in your country visit our web site at:
www.imaging.com

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Tel: +1 514.333.1301
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Tel: +1 978.670.2000

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FRAME GRABBERS CAMERAS SOFTWARE PROCESSORS VISION SOLUTIONS

OEM Partnership™ / Comprehensive Service & Support

ADVANCED TECHNOLOGY, QUICKER TIME TO MARKET, SATISFIED CUSTOMERS /
FINDING THE RIGHT OUTSOURCING PARTNER FOR YOUR MACHINE VISION SYSTEM COMPONENTS IS CRITICAL TO ACHIEVING THESE OBJECTIVES. DALSA CORECO IS THAT PARTNER - DELIVERING THE STATE-OF-THE-ART IMAGING COMPONENTS YOU NEED TO GROW YOUR BUSINESS WHILE, AT THE SAME TIME, MANAGING THE RISK AND COMPLEXITY ASSOCIATED WITH IMPLEMENTING NEW TECHNOLOGY.

Supply Chain Management /
We understand the importance of having a timely and reliable supply of the components you need.

Long Term Product Availability (technology migration path)
With the rapid evolution in technology, many design engineers are rightfully concerned that the components they've specified into their vision system today may become discontinued or supplanted by newer technology, leaving them scrambling to redesign and retrofit. DALSA Coreco is committed to supporting our legacy products and providing an efficient migration path when products are discontinued.

Advanced Replacements (fast repair turnaround)
Your vision systems are critical to your customer's bottom line. A downed inspection system can cost your customer thousands of dollars in production yield and potentially lost business. We can work with you to ensure you and your customers have the back up components ready and waiting for you when you need them most.

Delivery and Scheduling Modifications
As an OEM partner, DALSA Coreco will work with you to develop a priority delivery and order tracking program designed to give you 100% visibility on order fulfillment. We can also build into the program the flexibility to modify delivery schedules, holding back or accelerating shipments to meet your dynamic business environment.

Technical Service and Support /

Priority Vision System Engineering Support
Our OEM partners benefit from priority technical support, ensuring a quick response and "front of the queue" access to experienced technical/ applications support staff who understand that every machine vision application is unique.

On-site Product Training
DALSA Coreco offers comprehensive training to support your front line staff. OEM partners can take advantage of both hardware and software training programs that can be conducted either here at our training facility or easily suitcased to a location of your choice.

Custom Hardware and Software Engineering
DALSA Coreco extends to our OEM partners the ability to modify existing components to meet unique application requirements. Not all machine vision applications are suited for off-the-shelf components. Our highly trained staff of image acquisition, processing and analysis engineers can work closely with your design staff to custom develop proprietary solutions.

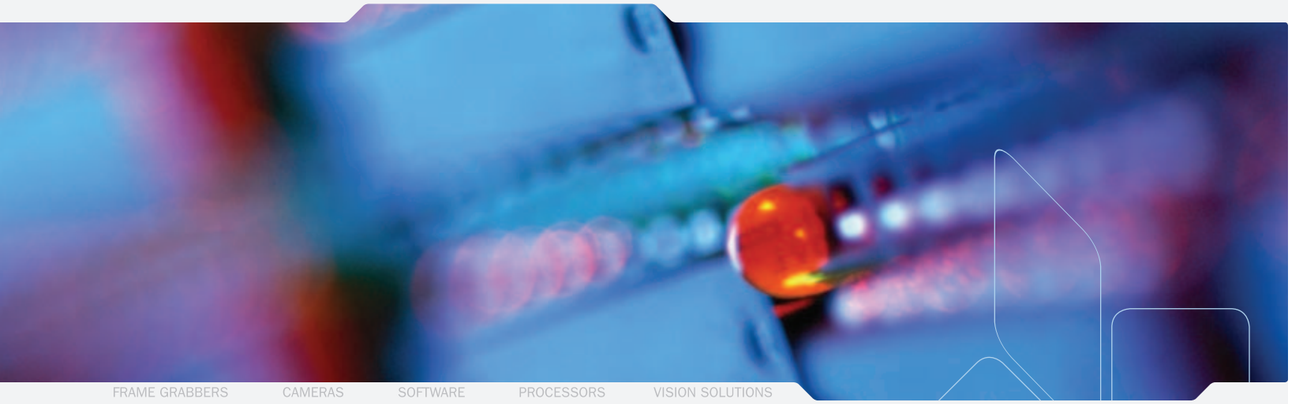
On-line 24/7 VIP Access /

Logistical Support
OEM partners have 24/7 access to on-line, web-based tools for order tracking, account management, and technical support. These tools give OEMs unprecedented visibility and control over the supply chain allowing them to respond quickly to customer demands.

Comprehensive Knowledge Base
DALSA Coreco has compiled a comprehensive knowledge base that includes hundreds of white papers, articles, and tutorials written by our qualified staff and independent vision experts. OEM partners have unlimited access to this in-depth knowledge base to enhance their understanding of computer vision components, subsystems and systems.

Find out more download our "Building Partnership" fact sheet.
www.imaging.com/oemfactsheet

FIGURE 1 / OEM partnership program framework



FRAME GRABBERS CAMERAS SOFTWARE PROCESSORS VISION SOLUTIONS

Trigger-to-Image Reliability™ / T2IR

WORKING TO INNOVATE RELIABILITY AND EASE OF USE / OEM'S IN INDUSTRIAL IMAGING HAVE BEEN RELYING ON DALSA CORECO TO SUPPLY IMAGING COMPONENTS FOR OVER 25 YEARS. OVER THAT TIME THE COMPANY HAS DEVELOPED SEVERAL AREAS OF EXPERTISE INCLUDING THE RELIABLE ACQUISITION OF IMAGES, THEIR TREATMENT (PROCESSING) AND THEIR INTERPRETATION (ANALYSIS). THIS COMMITMENT TO RELIABILITY IS EMBODIED IN THE COMPANY'S TRIGGER-TO-IMAGE RELIABILITY FRAMEWORK. DALSA CORECO'S MACHINE VISION SOLUTIONS HAVE BEEN SUCCESSFULLY DEPLOYED IN MANY HIGH SPEED IMAGING APPLICATIONS INCLUDING WEB AND SURFACE INSPECTION, HIGH SPEED MOTION ANALYSIS, AND HIGH FRAME RATE INDUSTRIAL INSPECTION.

Trigger-to-Image Reliability /
Trigger-to-image Reliability is a design framework that ensures the reliability of the image acquisition system and as such it provides the following benefits; improved image acquisition quality; higher yields due to increased uptime and continuous image acquisition process management; promotes innovation by enabling developers to focus on core image processing logic for their own domain. Trigger-to-Image Reliability contributes to efficient machine vision system design and operation by supplying the key design elements needed to: 1) secure the image acquisition process, 2) permit error identification, and 3) provide recovery mechanisms when errors do occur. Trigger-to-Image Reliability is important because it enables vision experts to use a wide variety of device platforms to quickly create compelling solutions to deliver the best price/performance ratios in their market segments.

To learn more, download our white paper "Trigger-to-Image Reliability Improves Manufacturing Yields".
www.imaging.com/articles/t2ir

FIGURE 1 / Acquisition

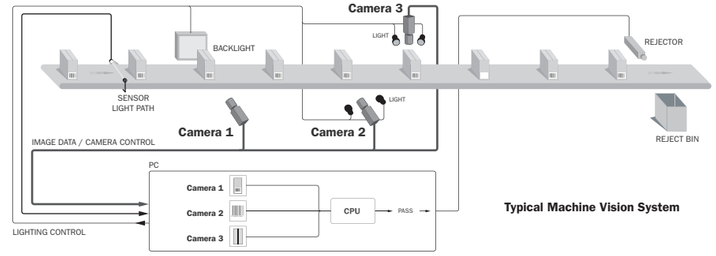


FIGURE 2 / Monitoring

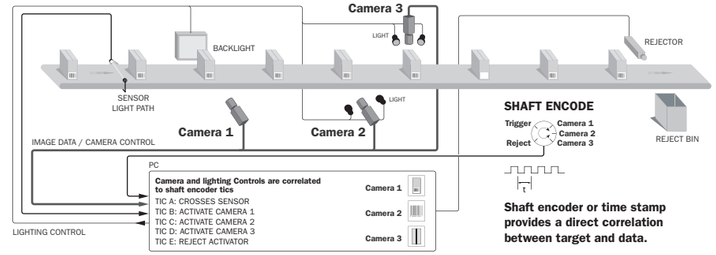


FIGURE 3 / Recovery

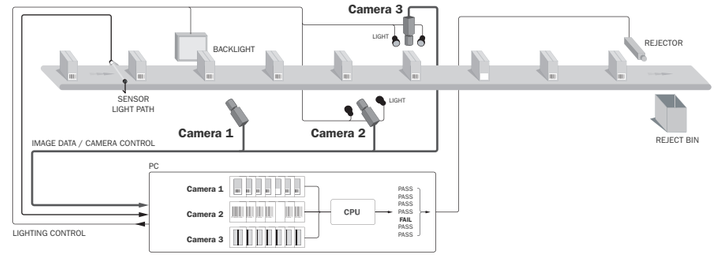


Image Acquisition / Frame Grabbers

ADVANCED DIGITAL AND ANALOG FRAME GRABBERS / MEET THE INDUSTRY'S MOST RELIABLE AND VERSATILE FAMILY OF FRAME GRABBERS. WITH THE ABILITY TO ACQUIRE IMAGES FROM MULTIPLE CAMERAS AND FORMATS AND PERFORM ON-BOARD PROCESSING OUR FAMILY OF IMAGE ACQUISITION BOARDS ARE EXTREMELY VERSATILE AND USED IN A WIDE VARIETY OF APPLICATIONS. BOARD-LEVEL INNOVATIONS DELIVER TRIGGER-TO-IMAGE RELIABILITY SIGNIFICANTLY INCREASING SYSTEM PERFORMANCE AND ULTIMATELY HELPING TO INCREASE YIELD.

Versatile Camera Interface /
DALSA Coreco frame grabbers support monochrome and color applications and are available in a wide variety of camera interfaces including both analog-to-digital and as well as direct from digital. DALSA Coreco image acquisition boards support common interface standards including Camera Link®, LVDS and more recently GigE Vision.

Support PCI, PCI-X and PCI Express Bus Interconnect /
DALSA Coreco frame grabbers support conventional Peripheral Component Interfaces (PCI and PCI-X) based on the standard 32- and 64-bit parallel buses in addition to supporting 3rd generation interconnect - PCI Express. PCI Express uses high speed serial link technology similar to that found in Gigabit Ethernet, Serial ATA (SATA), and Serial-Attached SCSI (SAS) to deliver high speed point-to-point serial buses.

Camera Link to Ethernet Capability /
DALSA Coreco now offers the ability to deploy Gigabit Ethernet technologies while at the same time preserving your investment in your existing Camera Link camera equipment.

The X64-CL GigE series is ideally suited for high performance machine vision applications where the host computer can't be located near the existing Camera Link cameras and/or distributed processing is desired and/or data concentration is necessary. This powerful interface allows for continuous data streams at rates of up to 1GB/s over point-to-point connections of 100 meters per network segment using inexpensive CAT-5e or CAT-6 cables.

On-board Processing /
As a part of its standard features set, a number of DALSA Coreco frame grabbers are equipped with on-board Field Programmable Gate Array (FPGA) based image processing. Fast and efficient, this embedded processing capability frees up the host CPU by performing tasks such as shading correction and Bayer decoding at the board level, delivering images that can be readily used by demanding vision applications without further pre-processing.

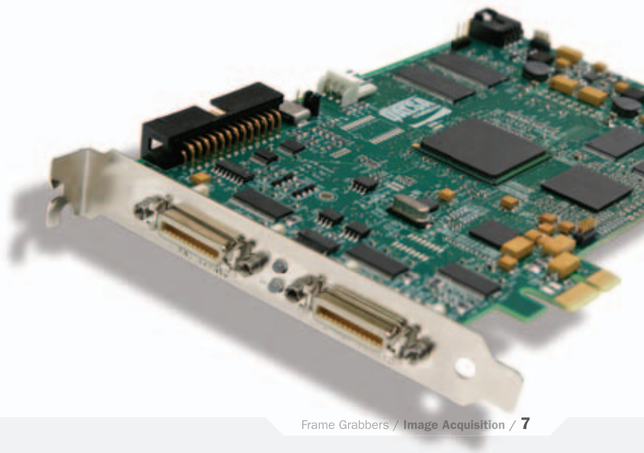
Extensive Camera Support /
Our image acquisition boards have been field tested and approved for use with more than 200 cameras covering a wide range of characteristics, requirements and specifications, including:

- Digital (Camera Link, LVDS, RS422) and analog video source
- NTSC/RS170, PAL/CCIR, and non-standard cameras
- Monochrome and Color – composite video, Y/C and RGB
- Area and Linescan cameras
- Variable length acquisition using linescan cameras
- Custom formats – analog and digital

CamExpert™Camera Configuration Utility /
DALSA Coreco has developed one of the industry's most efficient and easy to use proprietary camera configuration utilities specifically designed to leverage the power of DALSA Coreco's image acquisition boards. Sapera LT's CamExpert is a Windows® based utility providing an interactive environment to create a new, or modify an existing, configuration file for area and linescan applications.

For more detailed information see page 21 or visit our web site at www.imaging.com/saperalt

X64-CL iPro Lite Express
For a comprehensive list of frame grabbers see pages 8 & 9.



You have high expectations of your machine vision components and zero tolerance for failure. At the same time, you know that deploying extremely reliable image acquisition technology is challenging and choosing the right hardware is critical. Download a copy of our white paper "Choosing the Right Image Acquisition Technology" a useful guide to increasing system reliability and improving yield.

Download the white paper
www.imaging.com/framegrabber/mvc









	ANALOG		DIGITAL						
Attribute	**PC2-Vision**	**X64-AN Quad**	**X64-CL Full**	**X64-CL iPro**	**X64-CL iPro Lite**	**X64-CL iPro Lite Express**	**PC2-CamLink**	**X64-LVDS**	**X64-CL GigE\Lite**
Camera Interface			Camera Link® – Full/Medium/Base	Camera Link® – 2 x Base/	Camera Link® – 1 Base	Camera Link® – 2 x Base/	Camera Link® – 1 Base	LVDS/RS422	Camera Link® – 1 Base
Camera Inputs	6 monochrome 2 RGB	4 monochrome	1 8 Taps[3]	2 2x3 or 4 Taps[3]	1 3 Taps[3]	2 2x3 or 4 Taps[3]	1 3 Taps[3]	1 8 Taps[3]	1 2 Taps[3]
Camera Grouping	2 banks of 3 synchronized inputs	4 independent channels							
Acquisition Format	Progressive or interlaced	Progressive or interlaced							
Display	System VGA	System VGA							
Pixel Clock	Variable up to 40MHz	Variable up to 50MHz/input	Variable up to 85MHz	Variable up to 85MHz	Variable up to 85MHz	Variable up to 85MHz	Variable up to 66MHz	75MHz	Variable up to 85MHz
Bus Interface	PCI-32	PCI-64/PCI-X 66[1]	PCI-64/PCI-X 66[1]	PCI-64/PCI-X 66[1]	PCI-64/PCI-X 66[1]	PCI-Express x1	PCI-32	PCI-64/PCI-X 66[1]	1000BaseT (GigE)
Frame Buffer	8MB FIFO	128MB	32MB – 256MB	32MB	32MB	32MB	8MB FIFO	32MB	32MB
Image Processing	Input Lookup Tables (ILUTs)	Input Lookup Tables (ILUTs)	Input Lookup Tables (ILUTs)	Input Lookup Tables (ILUTs) Flat Field Correction Flat Line Correction Dead Pixel Correction Bayer	Input Lookup Tables (ILUTs)	Input Lookup Tables (ILUTs) Flat Field Correction Flat Line Correction Dead Pixel Correction Bayer	Input Lookup Tables (ILUTs)	Input Lookup Tables (ILUTs) Flat Field Correction Flat Line Correction Dead Pixel Correction Bayer	Input Lookup Tables (ILUTs)
Software	Sapera LT, IFC	Sapera LT	Sapera LT	Sapera LT	Sapera LT	Sapera LT & LT 64-Bit	Sapera LT	Sapera LT	Sapera LT
OS Support	Windows XP Professional, Windows 2000, Linux[2] RedHat 9.0, Mandrake 9.2, Fedora 4.0	Windows XP Professional, Windows 2000,	Windows XP Professional, Windows 2000, Linux[2] RedHat 9.0, Mandrake 9.2, Fedora 4.0	Windows XP Professional, Windows 2000, Linux[2] RedHat 9.0, Mandrake 9.2, Fedora 4.0	Windows XP Professional, Windows 2000, Linux[2] RedHat 9.0, Mandrake 9.2, Fedora 4.0	Windows XP Professional, Windows 2000, Windows XP Professional x64 (64-Bit OS)	Windows XP Professional, Windows 2000, Linux[2] RedHat 9.0, Mandrake 9.2, Fedora 4.0	Windows XP Professional, Windows 2000,	Windows XP Professional, Windows 2000, Linux[2] RedHat 9.0, Mandrake 9.2, Fedora 4.0
Trigger-to-Image Reliability™ Features									
Acquisition	Trigger in, Strobe out WEN	Trigger in, Strobe out WEN	Trigger in, Strobe out Encoder in	Trigger in, Strobe out Encoder in	Trigger in, Strobe out Encoder in	Trigger in, Strobe out Encoder in	Trigger in, Strobe out Encoder in	Trigger in, Strobe out Encoder in	Trigger in, Strobe out Encoder in
Monitoring	Camera loss LEDs Events	Events LEDs Events	Camera loss LEDs Events	Camera loss LEDs Events	Camera loss LEDs Events	Camera loss LEDs Events	LEDs Events	Camera loss LEDs Events	Camera loss LEDs Events
Recovery	Trigger Debounce Data Overrun	Trigger Debounce Data Overrun	Camera Hotplug Trigger Debounce Data Overrun	Camera Hotplug Trigger Debounce Data Overrun	Camera Hotplug Trigger Debounce Data Overrun	Camera Hotplug Trigger Debounce Data Overrun	Trigger Debounce Data Overrun	Trigger Debounce Data Overrun	Camera Hotplug Trigger Debounce Data Overrun

[1] Compatible [2] List of supported features may vary with the Linux version and board model [3] As per Camera Link specifications

All product specifications and attributes are certified accurate at the time of publishing (March 2006). DALSA Coreco reserves the right to make changes at any time without notice.

Image Acquisition / Cameras

COMPACT, DIGITAL CAMERA FOR INDUSTRIAL IMAGING / DALSA CORECO'S GENIE™ GIGABIT ETHERNET CAMERAS ARE AFFORDABLE, EASY TO USE DIGITAL CAMERAS SPECIFICALLY ENGINEERED FOR INDUSTRIAL IMAGING APPLICATIONS. THE GENIE SERIES COMBINES STANDARD GIGABIT ETHERNET TECHNOLOGY WITH DALSA CORECO'S TRIGGER-TO-IMAGE RELIABILITY FRAMEWORK TO DEPENDABLY CAPTURE AND TRANSFER IMAGES FROM THE CAMERA TO THE HOST PC.

The DALSA Coreco Genie cameras are compact, rugged digital cameras designed specifically for industrial imaging applications. Their compact size allows easy integration into most image processing systems. The cameras are based on high quality, highly sensitive CCD and CMOS sensors and are available in variety of resolutions ranging from VGA to 1600 x 1200 in both color and monochrome. Color Genie cameras feature white balancing and advanced Bayer conversion to produce crisp and accurate color images.

The Digital Advantage /

Digital camera technology delivers superior image quality enabling enhanced measurement accuracy. All image sensors generate a charge which is analogous to the number of photons striking the sensor surface.

The benefits of in-camera digitization include; less noise induction through cables and thus better signal-to-noise ratios; superior image accuracy from a common sensor-A/D pixel clock and the ability to use standard digital connectivity between the camera and host computer.

The GigE Vision Advantage /

Gigabit Ethernet (GigE) technology delivers a new paradigm to machine vision and imaging applications; among the advantages are longer cable lengths, lower costs, and simplified system set-up. Using GigE, images are transmitted over standard, low-cost CAT-5e or CAT-6 cables which are widely available for networking applications. Furthermore, gigabit Ethernet cables can be up to 100 meters long, beneficial for industrial applications when the computer must be located far away from the camera head. Distances longer than 100 meters can also be achieved with the use of gigabit network switchers and routers.

Additionally, by using industry standard networking components, commonly found as standard on many host computers, setting up an imaging system based on GigE is greatly simplified.

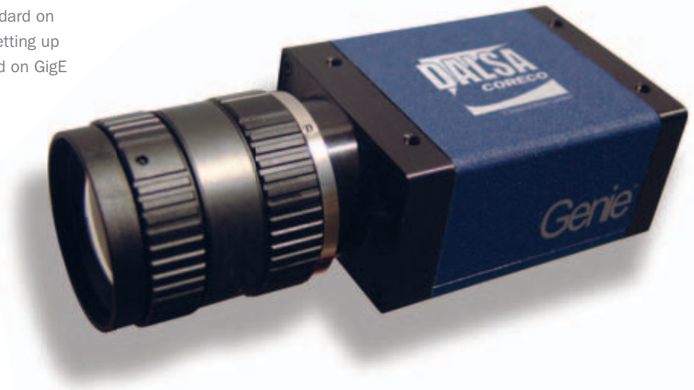
Software Support /

Image Acquisition and Control

Genie cameras are supported by DALSA Coreco's Sapera™ LT software libraries for image acquisition and control. Sapera LT has been field proven in ten's of thousands of high speed industrial installations worldwide. Sapera LT is hardware independent, delivering the same reliable performance regardless of the image acquisition device being used. This unique feature allows OEM's to start using the Genie without a major re-write of the application.

Compatible with Microsoft® Visual Studio 6.0 and .NET development environments, Sapera LT applications can be developed using C++ classes or ActiveX controls under Windows® 2000 and Windows® XP platforms. An integral part of DALSA Coreco's stringent Trigger-to-Image Reliability technology framework, Sapera LT includes powerful diagnostics and set-up utilities for application development, custom camera configurations and system deployment.

Genie Digital Camera
For a comprehensive list of Genie cameras see pages 12 & 13.



Genie Camera Features /

All Genie cameras feature value added functionality designed specifically for imaging and machine vision applications. All features are easily accessible from DALSA Coreco's Sapera LT and CamExpert to deliver superior image capture performance.

Global Shutter

Image quality is critical for machine vision applications, a requirement complicated by the fact that objects being captured are rarely motionless. Genie cameras utilize sensors with global shutter to ensure the entire sensor is exposed at exactly the same time, eliminating any image blur due to motion.

Partial Scan

For applications that require a faster frame rate, Genie cameras support partial scan modes. In partial scan mode the number of horizontal lines is reduced as the vertical scan rate is increased. This permits the capture of objects at rates faster than the standard frame rate of the sensor.

Triggered Capture

Genie cameras feature several modes of image capture control. Image capture can be free-running, or can be synchronized to external events through hardware (an external input), an internal timer or through software. For instantaneous object capture, all Genie cameras support asynchronous reset.

Lookup Tables

Genie cameras feature lookup tables (LUT) for both color and monochrome sensors. The LUT can be dynamically loadable and are fully user programmable. The LUT can be used for image thresholding, gamma correction or basic pixel format conversion, simplifying subsequent image processing steps.

Real Time Shading Correction

To overcome image artifacts caused by non-uniform illumination Genie cameras feature real time shading correction. The shading correction engine is user configurable and comes bundled with a calibration utility to generate gain and offset pixel maps.

Image Buffers and Image Sequences

Genie cameras feature internal buffer memory that can be used to store captured images and image sequences before they are transmitted over the gigabit Ethernet network. Internal buffer memory is part of the Trigger-to-Image Reliability framework that ensures reliable and repeatable image capture and transmission.

Inputs and Outputs

Genie cameras feature a convenient set of I/O's: 2 opto-isolated inputs (including a camera trigger) and 2 outputs using solid-state relays (including a strobe), permitting local control over image acquisition and activation.

Visual Status LED

For easy set-up and use, Genie cameras feature visual status LEDs, mounted on the cameras back to simplify system installation and set-up. A status indicator LED provides visual feedback when the correct camera connection is made and when a grab is in progress. These visual indicators allow developers to instantly recognize if cabling has been correctly set up, greatly facilitating the diagnostic process.

Ease of use and Set-up /

For easier system set-up, as soon as a Genie camera is connected to the system, it is automatically identified and supported feature sets are communicated to the Sapera LT environment (auto discovery). Camera set-up and configuration is performed using CamExpert (which is also used to configure 3rd party cameras in addition to DALSA Coreco's frame grabbers). Genie cameras also feature an embedded test image to ensure the network viability and simplify system set-up.

Key Features:

- Uses standard PC and server Ethernet ports & hardware
- Facilitates cable lengths up to 100m (CAT-5e or CAT-6)
- Simplified set-up with field proven Sapera LT software featuring CamExpert
- Engineered within DALSA Coreco's Trigger-to-Image Reliability framework

Genie M640

Genie M1400

Genie M1600

Genie C640

GENIE / Camera Models (C=Color / M=Monochrome)

Camera	Sensor Size[1]	Resolution	Pixel size[2]	fps
Genie M640-1/2	1/2	659 x 494	9.90 x 9.90	60
Genie M640-1/3	1/3	659 x 494	7.40 x 7.40	60
Genie M1024	1/3	1034 x 779	4.65 x 4.65	30
Genie M1400	1/2	1392 x 1040	4.65 x 4.65	15
Genie M1600	1/1.8	1600 x 1200	4.40 x 4.40	15
Genie C640-1/3	1/3	659 x 494	7.40 x 7.40	60
Genie C1024	1/3	1034 x 779	4.65 x 4.65	30
Genie C1400	1/2	1392 x 1040	4.65 x 4.65	15
Genie C1600	1/1.8	1600 x 1200	4.40 x 4.40	15

[1] In inches. [2] In µm

*Note that some camera models are planned for future release. Contact a DALSA Coreco camera specialist for a list of currently available models and for detailed product specifications.

Specifications subject to change without notice.

Image Processing / Vision Software

COMPREHENSIVE IMAGE PROCESSING AND ANALYSIS / IT'S IMPORTANT THAT YOUR VISION SOFTWARE PACKAGE BE VERSATILE, FLEXIBLE, AND INTUITIVE. A PACKAGE THAT PROVIDES ACCESS TO PROGRAMMING WIZARDS TO FACILITATE RAPID PROTOTYPING WHILE BEING ROBUST ENOUGH TO ALLOW FINE TUNING OF CRITICAL PERFORMANCE PARAMETERS. DALSA CORECO OFFERS DEVELOPERS A COMPREHENSIVE SET OF SOFTWARE TOOLS INCLUDING VERSATILE, EASY TO USE CONTROLS FOR SET-UP AND IMAGE CAPTURE ALONG WITH A COMPREHENSIVE IMAGE PROCESSING LIBRARY AND A SUITE OF POWERFUL TOOLS FOR PATTERN FINDING, OCR AND BARCODE READING APPLICATIONS.

Sapera™ LT /

Acquisition and Control Software

Sapera LT is a suite of hardware-independent C and C++ software libraries for image acquisition, display and control that supports all DALSA Coreco hardware platforms. Sapera LT is compatible with Microsoft Visual Studio C/C++, Net, Visual Basic 6.0 and Borland C++ Builder and supports Windows XP, 2000 and NT platforms.

Key features

- Controls, monitors and corrects the entire image acquisition process
- Enables more efficient and reliable machine vision inspections
- Immune to false triggers
- Multi-threading and multi-processing compliant
- Built-in support for pixel format conversion
- Powerful Bayer filter decoding algorithms
- Simplified programming interface
- High-level C++ classes simplify application development
- Application wizard quick-starts the development process
- Single API across hardware platform
- Ability to create custom camera configuration files
- Supports DirectDraw and ActiveX Controls
- TWAIN and DirectShow support

CamExpert /

Camera Configuration Utility

Sapera LT comes bundled with DALSA Coreco's advanced CamExpert, a proprietary camera configuration utility specifically designed to leverage the power of DALSA Coreco's image acquisition boards. This Windows® based utility provides an interactive environment within which to create a new or modify an existing configuration file for area and linescan applications.

Key features

- Enhanced graphical user interface with camera-centric parameters
- Live grab and display window for online parameter tweaking
- Sophisticated waveform view improves understanding of signal inter-relationships
- Interactive waveform tools allows precise timing parameter set-up

CAMEXPERT

Sapera Software
Advanced image acquisition, processing and analysis

Sapera Processing /
Maximize the potential of your vision system by choosing the software package that gives you unprecedented control and performance capability. DALSA Coreco offers developers a highly-optimized imaging library with a common API across our entire hardware line. The Sapera library includes over 300 image processing functions and offers powerful pattern matching, optical character recognition, barcode decoding and blob analysis tools.

Sapera Processing is a Windows® based comprehensive programming library for image processing and analysis designed to simplify vision application development. Sapera Processing offers a comprehensive set of powerful tools, as a suite or standalone. While Sapera Processing is optimized for use with DALSA Coreco's boards, it is hardware independent to facilitate portability across 3rd party platforms. Sapera uses high-performance C++ classes and MMX, SSE (streaming SIMD Extensions) and SSE2 to meet the challenging operational requirements of today's imaging systems.

Key features

- Optimized performance using MMX, SSE and SSE-2 instruction sets
- High level C++ classes simplify application development
- Hardware independent
- Modular and easy to use
- Few parameters to adjust (automatic calculation)

For detailed information on our complete line of vision software solutions visit:
www.imaging.com/sapera

SEARCH TOOL

Pattern Matching – Search Tool /
Sapera Processing's highly advanced pattern matching SEARCH tool quickly and accurately recognizes multiple objects and patterns, regardless of their orientation and scale. This high-level image analysis tool locates arbitrary user-specified models at very high speeds and with accuracy. Even under poor or uneven lighting conditions, the Search tool's fast, robust and accurate algorithms make it easy to find what you're looking for.

Key Features

- Position accuracy up to 1/50th of a pixel
- Angle accuracy up to 1/80th of a degree
- Simplifies multi-model training using automatic feature extraction
- Integrated support for area or geometric based algorithms

OCR TOOL

Optical Character Recognition (OCR) Tool /
Sapera Processing's high speed Optical Character Recognition (OCR) tool is scale and contrast invariant. The OCR tool supports both solid and dot matrix fonts and can be trained on user fonts. Its robust recognition algorithm is optimized for speed and accuracy. The ability of the OCR tool to operate on significantly degraded images makes it ideal for the electronics and semiconductor industries.

Key Features

- User-trainable fonts
- Solid & dot matrix fonts (+ italic)
- Scale invariant (up to 400%)
- Tolerant to background variations
- Integrated morphological preprocessing

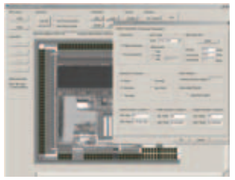
BARCODE DECODING TOOL

Barcode Decoding Tool /
Sapera Processing's BARCODE tool decodes 1-D and 2-D barcodes and provides support for a variety of standard codes commonly used in the industry. This image-based barcode tool is significantly faster than a laser based scanner and is specifically designed to operate on degraded images or even in poorly illuminated environments.

Key Features

- Fully rotational and scale invariant
- Local adaptive threshold mitigates lighting variations
- Supports Data matrix ECC200 and QR Codes, and more

BLOB ANALYSIS TOOL



Blob Analysis Tool /
Sapera Processing includes a reliable BLOB ANALYSIS tool. This tool allows for the separating (segmenting) of objects in a scene from the background and then computes a series of geometric and grayscale features. The Blob Analysis tool is ideal for defect detection in the electronics and semiconductor industries.

Key Features

- Computes more than 50 spatial and grayscale blob features
- Calculates basic features at speeds of up to 60,000 blobs/sec
- Integrated and versatile thresholding techniques
- User access supports custom features extraction

Image Processing / Vision Processors

HIGH SPEED, REAL TIME PROCESSING / DALSA CORECO OFFERS SEVERAL POWERFUL VISION PROCESSORS TO MEET A WIDE RANGE OF APPLICATIONS FROM GENERAL PURPOSE, TO THOSE REQUIRING MORE COMPLEX EMBEDDED FPGA BASED PROGRAMMING SOLUTIONS. OUR VISION PROCESSING TECHNOLOGY INTEGRATES HIGH BANDWIDTH ACQUISITION, REAL TIME SCALABLE PROCESSING, AND AUTONOMOUS OPERATION. VISION PROCESSORS DESIGNED SPECIFICALLY FOR DEMANDING SEMICONDUCTOR INSPECTION, MEDICAL IMAGING, PRINT INSPECTION, SURFACE INSPECTION AND SIGNAL PROCESSING APPLICATIONS.

Anaconda™ /

Board Based Vision Processor

The Anaconda is at the vanguard of vision processing technology. A powerful PCI-X based board, the Anaconda combines a high speed image acquisition capability with a user programmable FPGA (Field Programmable Gate Array) and PowerPC™ CPU to deliver real time image processing on a single slot platform. The Anaconda series is ideally suited for embedded vision applications where large amounts of image processing is required in fields such as diagnostic X-Ray, fluoroscopy, flat-panel inspection, and semiconductor inspection. The Anaconda is available for both Camera Link® and LVDS/RS-422 formats.

Key Features:

- PCI-X vision processing board
- FPGA based for versatile and scalable application development
- Optimized memory architecture facilitates high speed real timing processing
- High speed RISC processor with SIMD architecture
- Image acquisition from area or linescan Camera Link cameras
- Trigger-to-Image Reliability ensures secure image capture

For detailed information on vision processors, visit our web site at www.imaging.com/anaconda

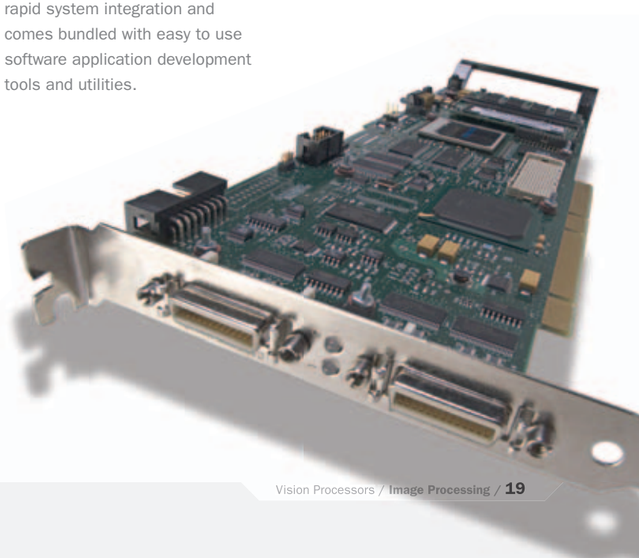
XRI-1200™ /

Processing for Enhanced X-Ray Imaging

X-ray imaging has proven itself an invaluable inspection and diagnostic tool for medical imaging as well as for a wide variety of applications such as food inspection, security, and more recently throughout the manufacturing process. The XRI-1200 is a PC based real time digital image processing board specifically engineered for demanding X-ray instrumentation and radioscopy applications. The XRI-1200 is capable of handling 10, 12 and 14-bit images and supports up to 50 frames per second. The XRI-1200 is designed for rapid system integration and comes bundled with easy to use software application development tools and utilities.

Key Features:

- **Adaptive Image Averaging /** Reduces noise in both still and dynamic images
- **Programmable Digital Filter /** Improves image quality and image contrast
- **Local Image Storage /** Increases reliability and processing time
- **Flexible Input Data Formats /** Supports higher resolution 1K x 1K - 10, 12 or 14-bit CCD, CMOS, flat-panel detectors and linear array scanners
- **Powerful Software Development Tools /** SDK is a Microsoft Windows compatible C++ library for image acquisition and digital image processor control - includes easy to use tools, utilities and installation scripts to allow rapid application development, diagnosis and deployment.



Anaconda
Powerful PCI-X vision processing technology platform

Vision Solutions

INNOVATIVE PREPACKAGED OR CUSTOM SOLUTIONS / DALSA CORECO ALSO SPECIALIZES IN PROVIDING BUNDLED MACHINE VISION SOLUTIONS THAT ARE QUICK TO IMPLEMENT AND DESIGNED TO SIMPLIFY YOUR MACHINE VISION TASKS. PLUG THEM IN, AND WITH OUR EASY TO USE WIZARDS, BE UP AND RUNNING WITHIN MINUTES. THESE COMPACT VISION SYSTEMS HAVE THE ABILITY TO INTERFACE WITH EITHER ANALOG OR CAMERA LINK CAMERAS AND ARE FIREWIRE AND ETHERNET READY - COMPLETELY INTEGRATED, STAND-ALONE PACKAGES READY TO TACKLE ANY INSPECTION TASK.

NetSight II™ /

Stand Alone Vision System

NetSight II is a compact, stand-alone vision processing solution designed for quick and easy implementation. Armed with a high performance processor, multiple camera inputs, and flexible I/Os the NetSight II is a completely integrated package equipped and set to tackle any inspection task. Depending on your application, we have developed NetSight II to fit your needs.

NetSight II MCA (Multi-Channel Analog) / A robust vision solution designed for high speed applications requiring analog cameras.

NetSight II DCL (Dual Channel Camera Link) / Supports image acquisition from standard Camera Link and area scan cameras

The "M" Series / Our latest series of products, the M series, are turbocharged versions of the MCA and DCL products that can deliver up to 3 times the overall performance of their predecessors.

NetSight II is available as a complete vision solution, together with cameras and peripherals or as a hardware platform for system integrators and machine builders.

Standard Features:

- Rugged system for online automated inspection
- Processes multiple image views simultaneously
- Powerful embedded processor ensures fast inspection times
- Easily integrates into factory environments, OPC compatible
- Fully configurable vision software, combines ease of use and flexibility with proven inspection tools
- Broad range of supported cameras
- Ideal solution for end-users, integrators and machine builders

For detailed information on the NetSight II, visit our web site at www.goipd.com

Customization /

DALSA Coreco is uniquely positioned to offer innovative custom solutions to exceed your next generation requirements. Drawing on the most sophisticated technology developed across the entire corporation, DALSA Coreco offers design and manufacturing expertise and engineering services in vision solutions for the most challenging applications, with designs including cameras, vision modules, data acquisition, and image processing.

NETSIGHT II

NetSight II™
Pre-packaged machine vision systems

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