Machine Vision & Auto ID

Track, Trace & Control Solutions

MICROSCAN®

Precision Data Acquisition and Control Solutions

Microscan is a global technology leader focused on precision data acquisition and control solutions serving a wide range of automation and OEM markets.

Data Acquisition and Control Solutions
We help manufacturers around the world drive down cost and waste, automate critical manufacturing processes, and increase yields through data acquisition and control solutions.

From personal electronics to clinical instruments and automotive components, Microscan solutions enable critical production-level applications such as quality control, work-in-process monitoring, guiding the movement of goods, component traceability, sortation, and lot tracking.

Precision
Microscan products are precision instruments. From tasks such as high speed barcode reading to high accuracy orientation, placement and coordinate checking through machine vision, Microscan products reliably perform complex data acquisition.

Technology Leader
Microscan has a strong history of technology innovation. We revolutionized the automatic identification (auto ID) industry in the early 1980s with the invention of the first laser diode barcode scanner, and with the invention of the 2D symbology, Data Matrix. We pioneered the machine vision industry with our advanced vision and lighting products.

Today, Microscan continues to be a recognized technology leader through continuous new product development in the areas of machine vision and auto ID.

Three Reasons Microscan is a Global Technology Leader

(1) Our company was founded on technology innovation

- Inventor of the laser diode barcode scanner
- Inventor of the 2D Data Matrix symbology
- Over 30 years of innovation in auto ID and machine vision

(2) We continue technology leadership

- Long list of "firsts" for auto ID and machine vision
- Others follow Microscan's new technology and product development

(3) We have unique patented technology solutions

- Hold over 100 technology patents in the U.S. with more patents pending
- Extensive library of powerful machine vision algorithms and tools

Quality Focus
An ISO 9001 certified company since 1996, with national recognition for Quality Leadership, Microscan is proud of our quality record.

"We guarantee quality by maintaining established standards, encouraging innovation, and inspiring our employees to excellence. We are committed to the continual improvement of processes, products and services, and to the delivery of solutions that exceed customer expectations."

—Microscan Quality Policy

MICROSCAN®

Global Strength

Microscan is a preferred supplier to companies around the world. With multi-language websites and worldwide office locations, we offer comprehensive service and support, including online and technical support, field services, and multilingual documentation.

Microscan products are represented and supported through a global network of partners and systems integration companies who specialize in automation solutions. The network includes more than 300 top automation integrators and value-added resellers in over 30 industrialized countries, with technology specialization in specific sub-channels and complementary product lines.

Worldwide Microscan office locations:

- U.S. (Corporate Headquarters, Technology Center & Regional)
- Europe (Netherlands, Germany, Belgium, Italy, Turkey)
- China (Shanghai, Guangzhou, Shenzen, Beijing)
- Singapore
- Latin America
- South Korea
- Japan
- India

Asia Pacific Headquarters

Contents Guide

Auto ID and Symbologies

Linear or 1D barcodes have been in commercial use since the 1970s and are the most common symbology type used for automatic identification part tracking. Today, increasing numbers of manufacturers are using two-dimensional (2D) symbols, such as Data Matrix, that offer greater placement flexibility and increased data capacity. Many industries specify the exact symbologies that must be used, and regulate their quality.

In addition, many manufacturers now practice "cradle-to-grave" traceability and permanently mark parts with a machine-readable symbol that is verified at each stage of the manufacturing process. Machine-readable symbols generally fall into the categories of linear barcodes, stacked symbols, 2D symbols, and Optical Character Recognition (OCR) fonts. A few examples of each are shown below.

Microscan provides fast, reliable reading solutions for all symbologies and OCR. Our products read any linear barcodes or 2D symbols printed or marked by any means.

1D and 2D Symbology Standards

- Automotive Industry Action Group: AIAG B-4
  Parts Identification and Tracking
- U.S. Department of Defense: IUID MIL STD 130
  Permanent & Unique Item Identification
- Electronics Industry Association: EIA 706
  Component Marking
- ISO/IEC 16022
  International Symbology Specification
- ISO/IEC 15418
  Symbol Data Format Semantics
- ISO/IEC 15434
  Symbol Data Format Syntax
- ISO/IEC 15415
  2D Print Quality Standard
- Society of Aerospace Engineers: AS9132
  Data Matrix Quality Requirements For Part Marking
- AIM DPM
  Direct Part Mark Quality Guideline

(See following page for details)

Linear Barcodes


Code 128


Code 39


Pharmacode


Code 93


I2 of 5


UPC

Stacked Symbologies


PDF417


GS1 Databar (Stacked)


Micro PDF


GS1 Databar (Composite)

OCR Fonts

OCR-A
1234ABCD
Alphanumeric
(+4 currency char.)

OCR-B
1234ABCD
Alphanumeric
(+4 currency char.)

MICR E-13B
1234
Numeric
(+4 special char.)

SEMI M12
1234ABCD
Alphanumeric
(+4 currency char.)

2D Symbologies


Data Matrix


QR


Aztec

Data Matrix Size/Data Comparison Chart

Symbol Size	Data Capacity		5 mil Examples	7.5 mil Examples	10 mil Examples	15 mil Examples
Row x Column	*Numeric*	*Alphanumeric*				
10 x 10	6	3	1.27 mm	1.90 mm	2.54 mm	3.81 mm
12 x 12	10	6	1.52 mm	2.29 mm	3.05 mm	4.57 mm

Direct Part Marking and Verification

Automated tracking of products down to the individual part and component level has proven to have great bottom-line impact. The most direct way to ensure complete quality control of the production process is to directly mark objects with permanent machine-readable symbols for tracking through their entire life cycle.

There are many methods to directly mark objects. Direct part marks (DPM) are typically 2D symbols permanently marked by methods such as dot peen or laser/chemical etch onto substrates including metal, plastic, rubber or glass. These marking methods often result in low contrast visibility of the symbol or inconsistent imprints that can be challenging to decode through traditional imaging technology. Many industries have strict symbol verification requirements and standards to ensure traceability of parts and components. Verification of symbol quality ensures that it can be decoded throughout a supply chain and throughout a marked product's life cycle.

Microscan offers a comprehensive family of readers and verifiers with illumination and decode algorithms specifically designed for challenging direct part marks.

AIM DPM: Direct Part Mark Quality Guideline

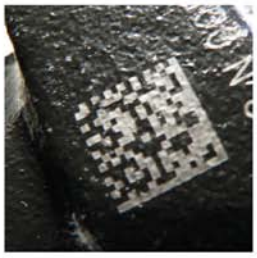
The AIM DPM Quality Guideline was developed to assess the symbol quality of direct part marks. It defines modifications to the measurement and grading of eight different symbol quality parameters, including:

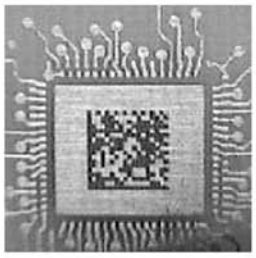
- AXIAL NON-UNIFORMITY
- GRID NON-UNIFORMITY
- CELL CONTRAST
- CELL MODULATION
- FIXED PATTERN DAMAGE
- PIXELS PER ELEMENT
- PRINT GROWTH
- UNUSED ERROR CORRECTION

Examples of Direct Part Marks

Laser etch on glass


Ink jet on plastic


Laser etch on metal


Laser etch on metal

Ink jet on ABS plastic


Thermal print on foil


Dot peen on machined metal


Dot peen on textured metal


Ink jet on glass

Chem etch on plastic

Data Acquisition Technology

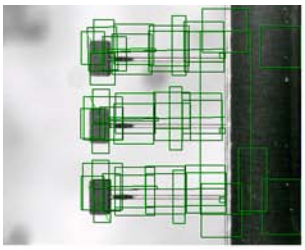
Machine Vision Image Capture and Analysis

100% quality control in manufacturing reduces costs and ensures a high level of customer satisfaction. With its enormous potential and capabilities, machine vision is becoming the standard discipline for automating inspection and other modern industrial problems, through complex image capture and analysis. While human inspectors working on assembly lines can visually inspect parts to judge the quality of workmanship, machine vision systems use a variety of advanced hardware and software components to perform similar tasks at high speeds with greater precision.

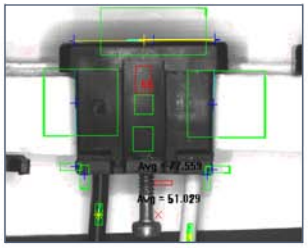
Microscan holds one of the world's most robust patent portfolios for machine vision technology, including hardware design, software algorithms and machine vision illumination. Our Visionscape® brand of machine vision software and hardware is an industry pioneer, improving automated technical identification, inspection, measurement, and guidance capability to the benefit of manufacturers worldwide.

Machine Vision Capabilities

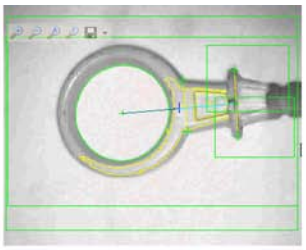
- **Identify**
  - Decode all standard 1D and 2D symbols
  - Optical Character Recognition (OCR) and Verification (OCV)
- **Inspect**
  - Color or flaw detection
  - Absence/presence of parts or components
  - Object location and orientation
- **Measure & Gauge**
  - Measure dimensions or fill levels
  - Preconfigured measurements such as line intersection or point-to-point distance
- **Robotic Guidance**
  - Output coordinates to guide machines or tools to precise locations



Complex, high speed inspection

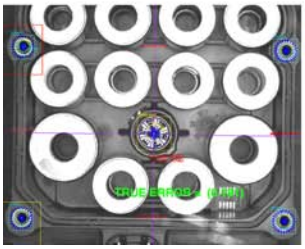


Check for completeness

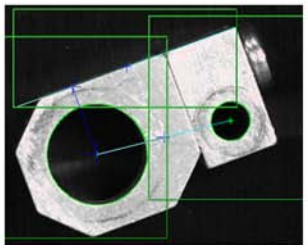


Shape inspection

Pattern comparison

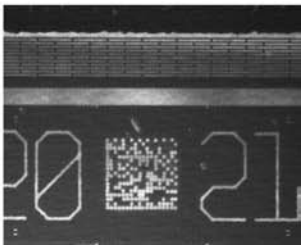


Measurement



Position/angle detection

OCR reading



1D/2D symbol reading

The Importance of Proper Lighting

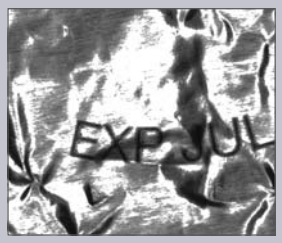
Proper lighting is critical to the success of a machine vision application, and should be the first consideration when setting up a system. A well planned lighting solution will result in better system performance and save time, effort, and money in the long run.

Machine vision lighting should maximize feature contrast while minimizing contrast of the rest, thereby allowing the camera to clearly "see" the part or mark. High contrast features simplify integration and improve reliability; images with poor contrast and uneven illumination require more effort from the system and increase processing time. The optimal lighting configuration is dependent on the size of the part to be inspected, its surface features and part geometry, and the system needs. With a broad range of wavelength (color), field of view (size), and geometry (shape) options available, machine vision lighting can be tailored to specific application requirements.

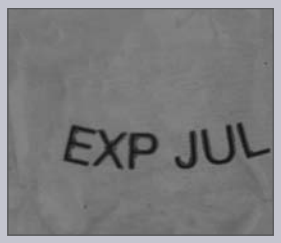
Microscan's innovative NERLITE® line of products is the longest-established brand of machine vision lighting, enabling machine vision and auto ID systems to perform reliably in thousands of applications worldwide.

Five Considerations When Choosing Lighting:

- **Is the surface flat, slightly bumpy or very bumpy?**
- **Is the surface matte or shiny?**
- **Is the object curved or flat?**
- **What is the color of the barcode or mark?**
- **Are you inspecting moving parts or stationary objects?**



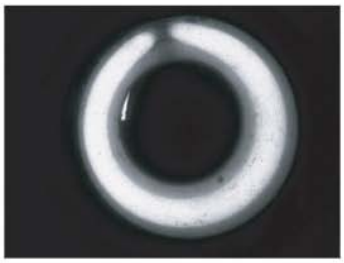
BEFORE
CORRECT LIGHTING

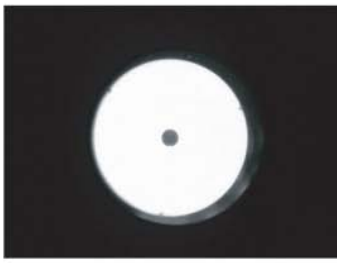


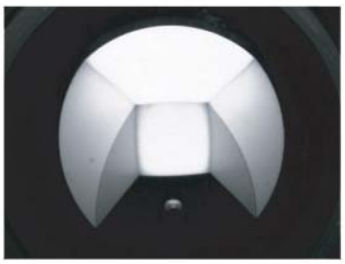
AFTER
CORRECT LIGHTING

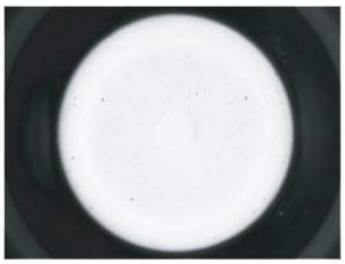

Ball bearing


Fiber optic ring light


Fluorescent ring light


Diffused dome light


NERLITE DOAL


NERLITE CDI

Track, Trace, & Control

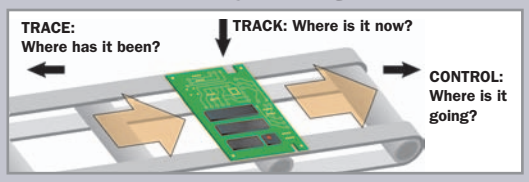
Many industries – from automotive and electronics assembly to drug discovery and pharmaceutical packaging – depend on reliable automatic identification and machine vision to manufacture products. Few products can be produced without some form of auto ID or machine vision. The increasing need for higher production output at a lower cost places more stringent demands on manufacturing systems.

At Microscan, we help thousands of manufacturers around the world to drive down cost and waste, automate critical manufacturing processes, and increase yields. Microscan's precision data acquisition products and solutions will enable you to meet your track, trace, and control objectives.

Industries Served:

- Pharmaceutical packaging
- Food and beverage packaging
- Electronics manufacturing
- Semiconductor manufacturing
- Medical device manufacturing
- Clinical diagnostics
- Contract manufacturing
- Dept. of Defense supply chain
- Automotive and aerospace manufacturing
- Document handling
- Drug discovery
- Kiosks
- And many more!

Enhanced Productivity Through Data



- **TRACK (Present)**
  Auto ID and machine vision are used to track parts that are work-in-process, or "WIP". Tracking specific parts and their locations provides critical data that plant floor managers use to maximize yield based on available capacity.

- **TRACE (Past)**
  Traceability is the ability to recreate or "trace" the manufacturing steps, processes, or location of a part during its assembly. Item level traceability is critical because it allows for quick containment of parts that may have undergone suspect or incorrect manufacturing processes.

- **CONTROL (Future)**
  Control is used to decide what step or future process a part must undergo. Machine vision inspection is a key element in many quality control processes and ensures that parts that do not meet exacting standards are rejected before moving further into the supply chain.

Industry solutions: Life Sciences

Focus on Life Sciences

Data accuracy and reliability are critical in the life sciences, where manufacturers are increasingly required to produce higher throughput in their instruments while meeting regulatory compliance.

Microscan helps manufacturers throughout the clinical diagnostics, drug discovery, laboratory, and medical device industries with diverse applications such as:

Auto ID Tracking & Traceability

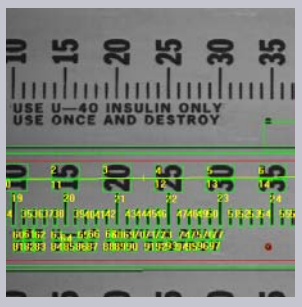
- Sample tracking
- Medical device tracking
- Test level traceability
- Vial reading and verification

Machine Vision

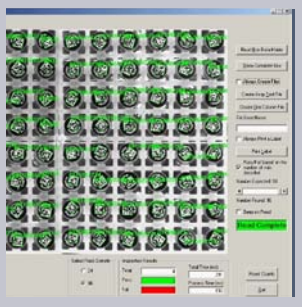
- Date and lot verification
- Color detection
- Robotic guidance
- Test tube cap and color inspection
- Package integrity inspection
- Dimensional gauging

Application Examples

- High speed reading of long linear barcodes



- Advanced OCR and OCV capabilities

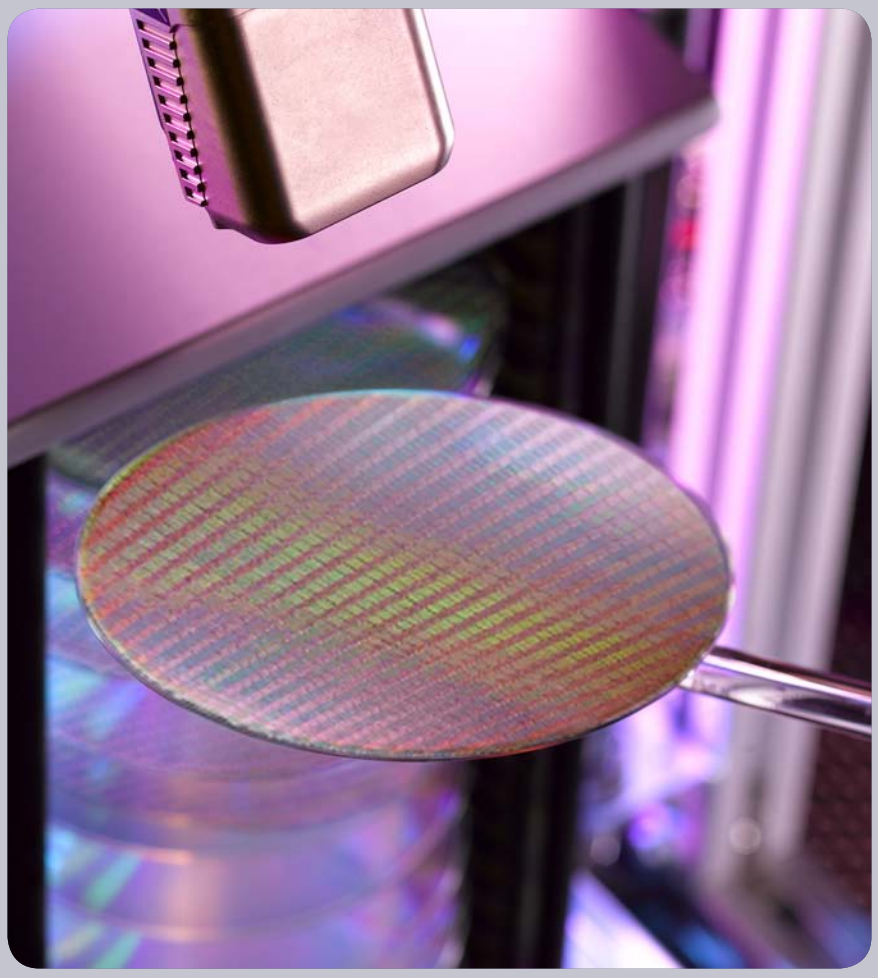


- Reading arrays of Data Matrix codes in a single capture

- Detailed inspection of small parts and components

Industry solutions: Electronics

Focus on Electronics



Industry leaders within electronics and semiconductor manufacturing implement lean manufacturing practices to optimize resources, increase yield and minimize scrap. Accuracy and traceability throughout the production process is essential.

Microscan products address the needs of these manufacturers in a broad range of applications, including:

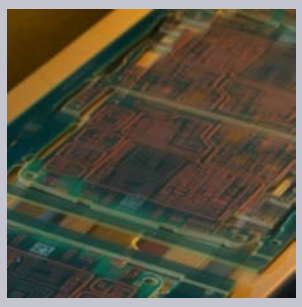
Auto ID Tracking & Traceability

- Component traceability
- Sub-assembly tracking
- Automated line changeover
- Quality assurance
- WIP tracking

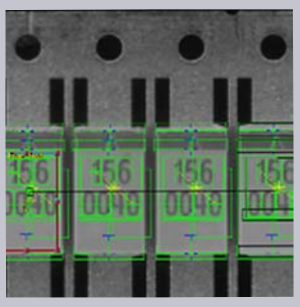
Machine Vision

- Solder paste inspection
- Location & alignment for pick and place
- Ball grid array inspection
- Die attach bond inspection
- Absence/presence of parts
- Color matching
- Robotic guidance

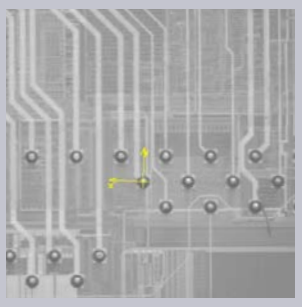
Application Examples



- Reading small, hard-to-read Data Matrix codes



- High speed, multi-camera inspection of defects



- High precision component placement

- Reading Data Matrix and Optical Character Recognition (OCR)

Industry solutions: Packaging

Focus on Packaging

Accurate labeling and traceability throughout the supply chain are essential in the packaging industry, where today's manufacturers need to optimize efficiency while ensuring compliance with government quality and safety regulations.

Manufacturers in food, pharmaceutical, consumer goods, and other industries use Microscan products to meet regulatory standards, increase productivity, and enhance brand perception in applications including:

Auto ID Tracking & Traceability

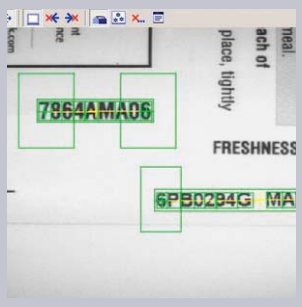
- Match inserts to packaging
- Item traceability
- Quality assurance
- Anti-counterfeiting measures

Machine Vision

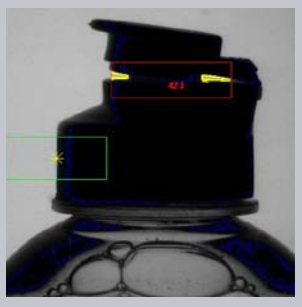
- Date and lot verification
- Measure fill levels
- Safety seal inspection
- Label presence/position
- Inspect package integrity
- Defect detection

Application Examples

- Reading codes produced by any printing method



- Advanced OCR and OCV for date/lot tracking



- Measuring and aligning caps, labels, and seals

- Matching label to contents

Industry solutions: Automotive

Focus on Automotive

Automotive suppliers and OEMs today rely on data tracking for quality assurance, spill prevention, error proofing, reduction of costly reworks, and increasing production yields.

Microscan helps these companies ensure quality and increase productivity through diverse applications such as:

Auto ID Tracking & Traceability

- Parts traceability
- WIP tracking
- Spill prevention and containment
- Build-sheet reading
- Mark verification

Machine Vision

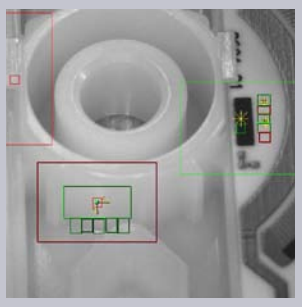
- Assembly verification
- Error proofing
- Sorting parts
- Dimensional gauging
- Quality assurance
- Robotic guidance

Application Examples

- Reading and verification of direct part marks

- WIP verification

- Dimensional check inspection



- Defect detection in parts and components

Product Portfolio

We help manufacturers around the world drive down cost and waste, automate critical manufacturing processes, and increase yields though data acquisition and control solutions. From tasks such as high speed barcode reading to high accuracy orientation, placement and coordinate checking through machine vision, Microscan products reliably perform complex data acquisition.

Our brands, such as Visionscape®, NERLITE®, AutoVISION™ and Hawk™ are globally recognized for quality and precision. Microscan's product families offer comprehensive solutions for any data acquisition need.

Machine Vision

Identify, Inspect, Measure, Guide

Machine Vision Lighting

Enabling Readability

Auto ID

Barcode Traceability & Verification

Solutions

Software, Engineered & Special Industry Focus

Machine Vision Software

Microscan holds one of the world's most robust patent portfolios for machine vision technology, with software solutions to accommodate all user levels and applications. AutoVISION™ features an intuitive interface for easy setup and deployment of vision applications, including scalability to Visionscape® for more complex configurations and advanced programming capabilities.

AutoVISION Software

AutoVISION Software: The easiest software available for basic to mid-range vision applications. Easy to install, set up, and use, AutoVISION enables even novice users to easily accomplish their goals. It features an intuitive interface that guides the user to connect to a device, configure the hardware, program the job, and monitor results.

- **Complete Tool Set**
  Includes Microscan's X-Mode 1D/2D decoding and fully teachable OCR. Locate, Measure, Count and Detect tools provide easy inspection, while Verification and OCV tools validate the quality of printed text such as date/lot codes.
- **Microscan Link**
  Connects parameters inside AutoVISION jobs to industrial control systems or to a PLC system with a simple click on the desired parameter.
- **Real Time Feedback**
  Provides real time feedback and results as a device is being configured or during programming.
- **Scalable with Visionscape**
  For applications demanding more flexibility or configuration options, AutoVISION jobs can be opened with Visionscape Frontrunner enabling scripting and other advanced programming capabilities.

Visionscape Software

Visionscape Software: Available on our complete line of vision hardware. Visionscape provides advanced vision users all the elements required to develop and deploy complex industrial vision applications, in a configuration environment that can be tailored to different users for maximum productivity. It can also open AutoVISION jobs to enable scripting and other advanced programming using an extensive collection of proven image processing tools and a powerful graphical user interface (GUI).

- **FrontRunner Interface**
  "Engineering" GUI provides application evaluation, development, training, parameter change, and monitoring.
- **AppRunner Interface**
  "Monitoring" GUI displays run time, application monitoring, and results.
- **Intellifind**
  Geometric pattern match tool for robust pattern location and pattern recognition in noisy images; includes scale measurement.
- **ActiveX Library**
  Complete set of ActiveX components allows the creation of custom user interfaces and vision applications on the fly.

Product Portfolio

Machine Vision Hardware

Our comprehensive line of machine vision hardware includes smart cameras and PC-based GigE solutions to provide maximum flexibility in a broad range of vision applications. Whether you require a compact form factor for tight spaces, high speed scanning for fast moving production lines, or high resolution for detailed inspection, Microscan has a machine vision solution to meet your needs.

Vision MINI Smart Camera

- Smallest fully integrated smart camera is ideal for implementing robust inspection in tight spaces.

  Features: Fully integrated with lens and lighting, autofocus, ultra compact size, color model option

Available Sensor Options:

- WVGA: High speed processing
- SXGA: Standard resolution (1.3MP)
- QXGA: High resolution (3.0MP), color

Vision HAWK Smart Camera

- Industrial smart camera features rugged plug-and-play design with liquid lens autofocus and embedded Ethernet.

  Features: Fully integrated with lens and lighting, autofocus, IP65/67, built-in I/O, Ethernet

- WVGA: High speed processing
- SXGA: Standard resolution (1.3MP)

Vision HAWK C-Mount Smart Camera

- Right angle C-Mount lens configuration allows maximum flexibility in any industrial automation environment.

  Features: Interchangeable lenses, IP65/67, built-in I/O, Ethernet

- WVGA: High speed processing
- SXGA: Standard resolution (1.3MP)
- WUXGA: High resolution (2.0MP)

Visionscape GigE Solution (PC-Based)

- Gigabit Ethernet software and compact cameras allow rapid deployment of any scale of machine vision solution.

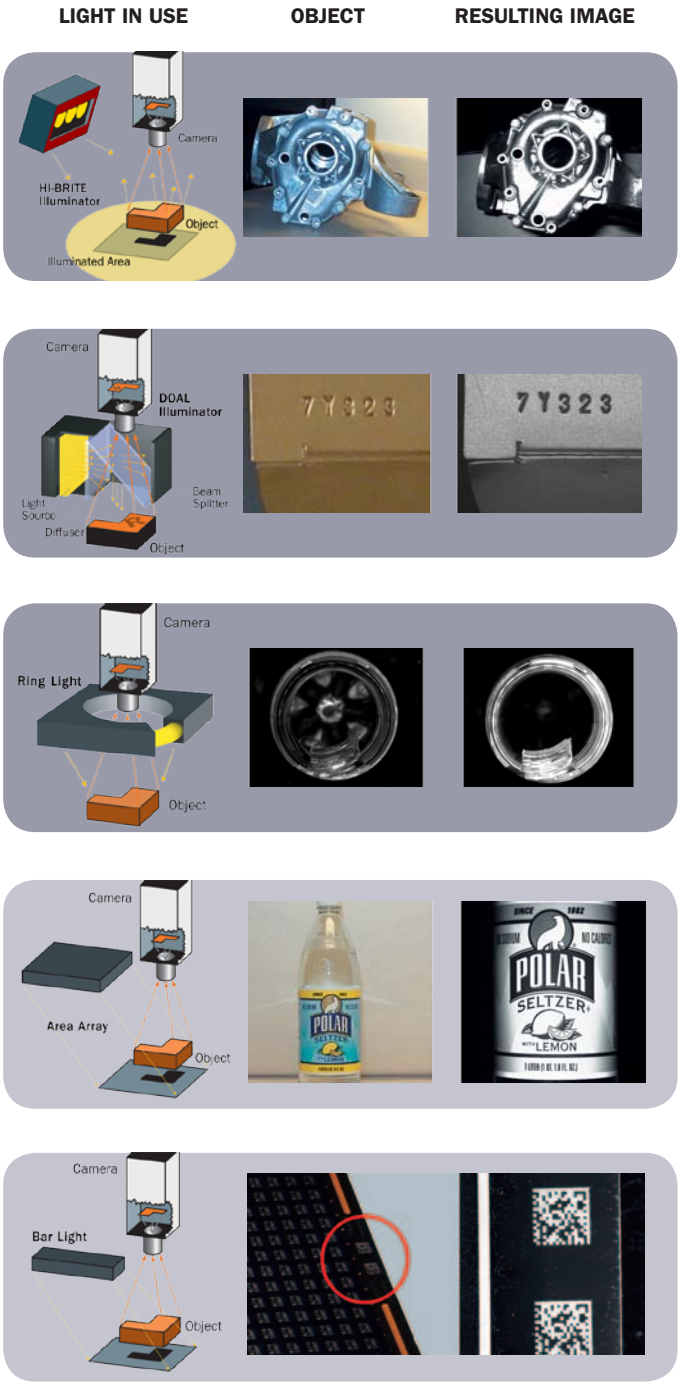
  Features: Longer cables, smaller footprint, Power over Ethernet, ideal for high speed applications

- VGA MONO CMOS (Color Optional)
- VGA MONO CCD (Color Optional)
- VGA MONO CCD POE (Power Over Ethernet)
- XGA MONO CCD
- SXGA MONO CCD (1.3 Megapixel)
- UXGA MONO CCD (2 Megapixel)
- QSXGA MONO CCD (5 Megapixel)

Product Portfolio

Machine Vision Lighting

Microscan's wide range of advanced NERLITE® lighting solutions features sophisticated optical technology and user-friendly designs. These precision illumination products allow machine vision and auto ID systems to perform reliably in any imaging application. In addition, Smart Series lighting includes a built-in controller with adjustable intensity continuous mode and high output strobe mode for a complete and easily integrated solution.



- **NERLITE Smart Series HI-BRITE**
  Illuminates small to very large areas, providing very high intensity when required. Suitable for indoor or outdoor use.

- **NERLITE Smart Series DOAL®**
  Provides high intensity, diffuse illumination with superior uniformity for flat, specular surfaces.

- **NERLITE Smart Series Ring Light**
  Covers a broad range of applications, providing high intensity illumination and a variety of optical accessories.

- **NERLITE Area Array Light**
  General purpose design for diffused surface lighting in applications that demand economical solutions.

- **NERLITE Bar Light**
  Provides uniform light in a compact, linear shape for general purpose illumination in a variety of applications.

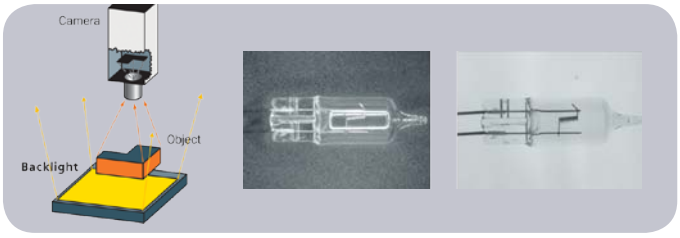
Product Portfolio

Machine Vision Lighting

Depending on the product, wavelengths available include red, blue, ultraviolet, and infrared, as well as full spectrum white.

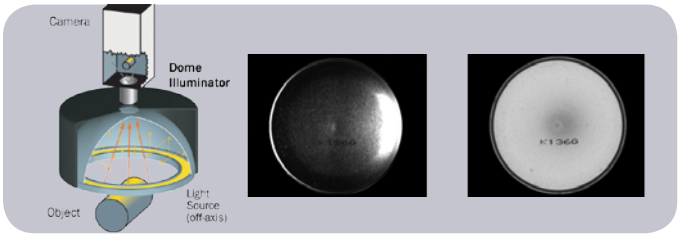
LIGHT IN USE **OBJECT** **RESULTING IMAGE**

■ **NERLITE Backlight**
Provides sharp contrast to outline a part's shape, hide clear housings, and view openings such as drilled holes.

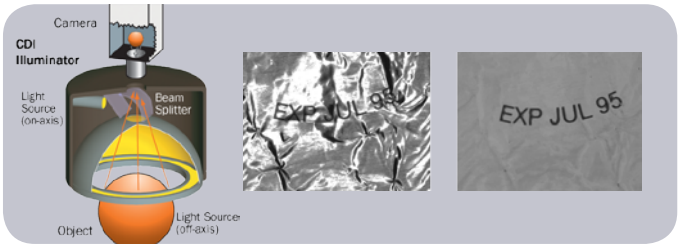


■ **NERLITE Dark Field Illuminator**
Provides low-angle illumination to enhance the contrast of surface features such as laser embossed or engraved marks and surface defects.

■ **NERLITE Dome Light**
Provides practical and cost effective solutions to illuminate curved, shiny, or bumpy surfaces.



■ **NERLITE CDI®**
Self-contained continuous diffuse illumination unrivaled in this industry, perfect for highly faceted and undulating reflective surfaces. Allows products to be inspected in clear packages.



Product Portfolio

Auto ID Barcode Readers

From small products for embedded OEM applications to rugged readers for industrial manufacturing environments, Microscan offers a wide range of quality products to read linear barcodes and stacked symbols, with features such as high speed reading, wide field of view, symbol reconstruction, and aggressive decoding technology.

Embedded Reader Series

- **MS-1**
  Smallest fully decoded scan engine in its class.

- **MS-2**
  Compact CCD reader is available in several configurations to solve a variety of applications.

- **MS-3**
  Compact laser scanner offers high performance decoding and wide scan angle.

- **MS-9**
  Laser scanner offers ultra-fast decode performance.

Industrial Scanner Series

- **QX-830**
  Compact laser scanner features QX Platform, symbol reconstruction, and optional embedded Ethernet protocols.

- **QX-870**
  Sweeping raster laser scanner with QX Platform, symbol reconstruction, and optional embedded Ethernet protocols.

- **MS-890**
  Heavy duty laser scanner with extended read range, auto focus, and sweeping raster.

QX Platform provides high performance connectivity, networking, and decoding in any automated industrial environment.

Quick Connect: Includes M12 Ultra-Lock™ connectors and cordsets for plug and play setup of single or multi-reader solutions.

X-Mode: Provides superior ease of use and our most advanced symbol decoding technology, including symbol reconstruction or reading direct part marks.

Product Portfolio

Auto ID 2D Fixed-Mount Readers

Our 2D fixed-mount readers feature the latest technology for decoding both 2D symbols and linear barcodes. Specialty readers are available for high speed reading, ESD-sensitive applications, and decoding the most challenging direct part marks (DPM).

High Performance Imager Series

- **MS-2D Engine**
  Miniature fully decoded scan engine for decoding both 1D and 2D symbols.

- **MS-4**
  Ideal imager for OEM design engineers who need to read 1D and 2D symbols in tight spaces.

- **MS-4X**
  Compact imager with X-Mode featuring easy plug and play setup and reliable decoding of challenging direct part marks.

- **NEW! MS-4Xi**
  Compact imager with X-Mode includes industrial connectivity and integrated Ethernet for high speed communication.

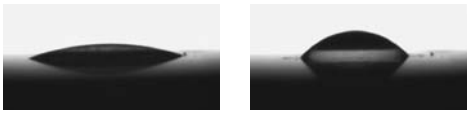
- **MINI HAWK**
  Versatile compact X-Mode imager available in high speed, high resolution, three megapixel, and ESD-safe configurations.

- **NEW! MINI HAWK Xi**
  Compact imager with X-Mode includes industrial connectivity and integrated Ethernet for high speed communication.

- **QX Hawk**
  Fully integrated liquid lens imager provides infinite focus capabilities. Exceptionally easy to use, with embedded Ethernet, IP65/67 rating, and new optional C-mount lens.

Integrated Liquid Lens System

World's first fully integrated liquid lens imaging system is deeply embedded within the QX Hawk to optimize the entire imaging system and provide a 1" to infinity working range.



Electrostatic pressure creates currents that react quickly with the two liquids to produce the appropriate lens curvature.

Product Portfolio

Auto ID 2D Handhelds and Verifiers

Our auto ID products include verifiers and handheld 2D readers featuring the latest technology for decoding symbols and verifying their quality. Handheld readers are ideal for any track, trace, or control application. Symbol verification ensures only high quality marks enter the supply chain, to help guarantee successful traceability implementation.

Handheld Reader Series

- **HS-1**
  Economical linear barcode reader.

- **NEW! HS-21**
  Economical imager for reading both 1D and 2D high contrast symbols.

- **NEW! HS-41X**
  Decoding capabilities include high density linear and 2D symbols, as well as simple direct part marks.

- **Mobile Hawk**
  Robust imager provides industry-leading direct part mark reading with a simple trigger pull.

Verifier Series

- **DPM Verifier**
  UID Compliance Verifier designed for verifying direct part marks.

- **LDP Verifier**
  UID Compliance Verifier designed specifically for labels and data plates.

Product Portfolio

Communication and Connectivity for Machine Vision and Auto ID

Microscan's wide range of communication and connectivity products feature high quality components and user-friendly designs to supplement our auto ID, lighting, and machine vision systems, and enable quick and easy installation and networking.

Machine Vision

- **Cameras**
  GigE VGA and SXGA cameras are available and support C-mount lenses.

- **Lenses**
  Standard C-mount lenses, filters, and spacers are available for use with either an external camera or with Microscan C-mount compatible products.

- **I/O Modules**
  Enable the use of discrete inputs and/or outputs with a PC that has Visionscape installed.

- **Cables and Mounting**
  Complete selection of cables, mounting hardware, power supplies, calibration targets, and other accessories are available for vision applications.

Machine Vision Lighting

- **Power Supplies**
  DIN rail mount power supplies are compatible with the complete NERLITE product family.

- **Lighting Controllers**
  Include the power regulation, intensity control, and timing and triggering functions required in machine vision applications.

Auto ID

- **QX-1**
  Complements and streamlines installation of QX Platform products. Features Quick Connect system with M12 Ultra-Lock connectors and IP65 sealing.

- **Connectivity**
  Efficient connectivity and communication tools are available for use within any auto ID application.

- **Interface Devices**
  Interface devices simplify connection to readers by providing separate ports for the host, power supply, trigger, and network.

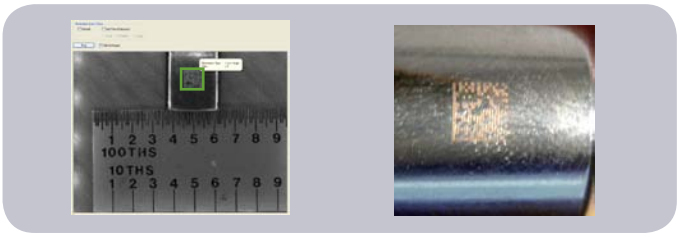
- **Cables and Mounting**
  Variety of cables, mounting hardware, power supplies, and other accessories are available.

Product Portfolio

Industry Focused Solutions

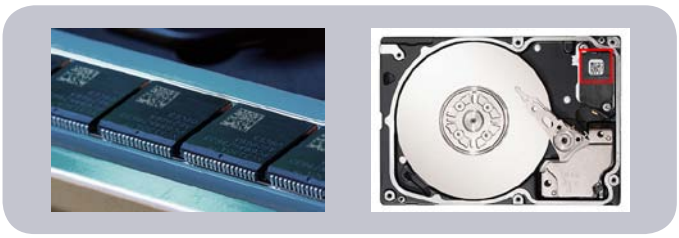
Many industries face unique track, trace, and control challenges, or have specific application parameters that must be met. Microscan has expertly designed and engineered auto ID and machine vision solutions for a variety of industry needs. Some examples are listed below.

- **Direct Part Mark Reading Solutions**
  Hawk imagers are optimized to read challenging directly marked Data Matrix symbols on metal, glass, rubber, plastic, and other materials.

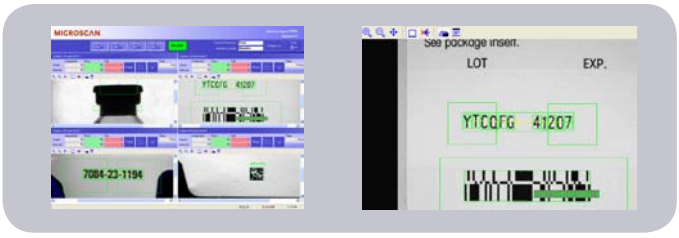


- **DoD IUID Solutions**
  Allow compliance with the U.S. Dept. of Defense (DoD) mandated Item Unique Identification (IUID) policy in accordance with MIL-STD-130 and DFAR 252.211-7003.

- **MINI HAWK ESD Safe**
  ESD-safe miniature imager designed for use in the assembly and manufacture of sensitive electronic components.



- **Visionscape® I-PAK®**
  Proven solution for packaging applications requiring inspection, date and lot tracking, symbol verification, and more. 21 CFR Part 11 compliant.



- **NERLITE® Pharmalite**
  Smart Series light with integrated camera bracket is ideal for lighting pharmaceutical labels and packages without glare or hot spots.

Product Portfolio

Software and Engineered Solutions

Our software products combine user-friendly interfaces with advanced tools to address a range of modern identification and inspection challenges. For specific data acquisition needs that our general product line does not address, contact us about custom-engineered solution development.

Software

- **AutoVISION™ Machine Vision Software**
  AutoVISION software features a complete vision tool set designed specifically for novice users solving basic to mid-range vision applications. Easily exports to Visionscape to enable scripting and other advanced programming.

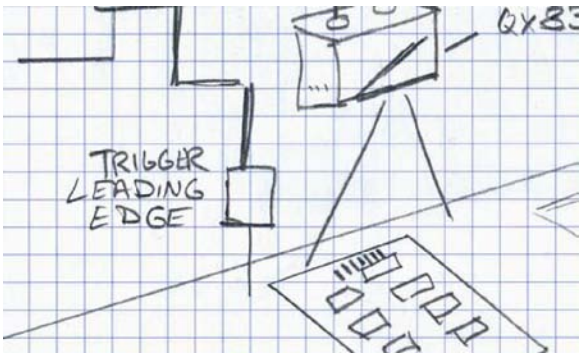
- **Visionscape® Machine Vision Software**
  Visionscape software provides advanced vision users a common environment for complex application development and deployment using Microscan machine vision products, such as GigE cameras and smart cameras.

- **ESP® Auto ID Software**
  Easy Setup Program (ESP) is a powerful software application that provides quick and easy setup of our complete line of auto ID scanners and imagers. Offers basic and advanced features with a variety of options for different applications.

Engineered Solutions

Microscan designs and develops high quality specialized engineered solutions to meet specific customer needs. Our machine vision and auto ID experts can pair our products with customized firmware, electronics, optics, or mechanics to create an optimized system to meet the most complex applications and critical customer needs.

Do you have unique track, trace, and control requirements?
Contact us about a custom engineered solution.



Microscan is a global technology leader focused on precision data acquisition and control solutions serving a wide range of automation and OEM markets. Visit **www.microscan.com** for complete information on Microscan products, technology, specifications, case studies, and more.

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