OMRON

MICROSCAN

Precision traceability and inspection solutions for automation and OEM applications

Your trusted partner for traceability

Founded in 1982, Omron Microscan has a strong history of technology innovation. We have sold over a million products worldwide, and hold more than 100 technology patents. We leverage our expert position to help manufacturers and labs create error-free operations using innovative, analytics-driven track, trace and control solutions.

Data acquisition and control solutions
Our barcode, machine vision and verification products boost manufacturing efficiency and quality control to a whole new level. We help our customers cut costs, monitor quality and increase production flow with easy-to-implement solutions.

Used in personal electronics, clinical instruments and product packaging, our solutions facilitate critical production-level applications such as quality control, work-in-process monitoring, component traceability, sortation and lot tracking.

Technology leadership
We revolutionized the automatic identification (auto ID) industry in the early 1980s with the invention of the first laser diode barcode scanner, and again in 1994 with the invention of the 2D symbology, Data Matrix. We pioneered the machine vision industry with our advanced vision and lighting products.

Today, Omron Microscan continues to be a recognized technology leader through our continuous development of new products in machine vision, auto ID and verification.

Quality focus
We are proud of our unfaltering commitment to quality and our strong record. We have been an ISO 9001 certified company since 1996 and have received national recognition for Quality Leadership.

Global Strength
As part of Omron's extensive distribution network, Omron Microscan has a global reach that includes expert customer service, engineering support and a proven reputation. This builds upon 35 years of experience implementing projects of varying scales around the world.

Certified GS1 solution partner
As a member of the U.S. GS1 Solutions Partner Program, Omron Microscan has the experience and knowledge to provide manufacturers with solutions and guidance to address barcode verification applications and compliance with GS1 standards.

GS1 US Solution Partner

OMRON

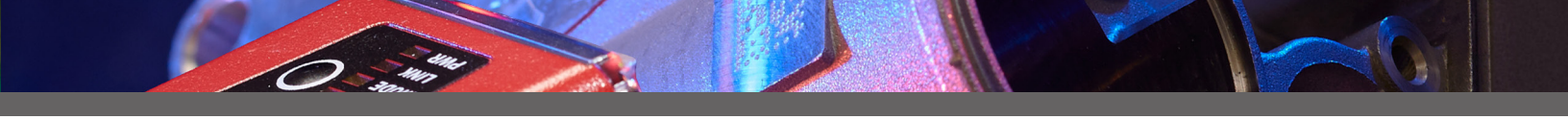
Established in 1933, Omron is a global leader in automation technology with solutions ranging from industrial automation and electronic components to social infrastructure systems and healthcare. Omron has over 36,000 employees in 117 countries – an extensive network of engineering expertise and customer support.

Omron acquired Microscan in late 2017 to upgrade its solutions portfolio with cutting-edge machine vision, barcode reading and barcode verification technologies.

These are key additions to the sensing and automation solutions that Omron has always been known for. With the acquisition of Microscan, Omron is now a full machine vision and code reading supplier with expert solutions in traceability, flexible manufacturing and the factory of the future.

At Omron, our mission is to improve lives and contribute to a better society. We value innovation driven by social needs, and we are pioneers in creating inspired solutions for the future. Challenging ourselves to pursue new challenges with passion and courage is at the cornerstone of what we do. Most importantly, we believe in respect for all - this means we act with integrity and strive to encourage everyone's potential.

Omron Founder Kazuma Tateishi



1D/2D symbols and direct part marks

Linear (1D) barcodes have been in commercial use since the 1970s and are the most common symbologies used for automatic identification. Increasing numbers of manufacturers are using two-dimensional (2D) symbols, such as Data Matrix, that offer greater placement flexibility and increased data capacity.

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 (symbologies are not to scale).

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

LINEAR BARCODES


CODE 128


CODE 39


PHARMACODE


CODE 93


INTERLEAVED 2 OF 5

UPC

STACKED SYMBOLOGIES


PDF417


GS1 DATABAR (STACKED)


GS1 DATABAR (COMPOSITE)


MICRO PDF417

2D SYMBOLOGIES


DATA MATRIX


QR CODE


AZTEC CODE


DOTCODE

1D and 2D symbology standards

- ISO/IEC 15416
  1D Print Quality Standard
- ISO/IEC 15415
  2D Print Quality Standard
- Automotive Industry Action Group: AIAG B-4
  Parts Identification and Tracking
- U.S. Department of Defense: IUID MIL-STD-130
  Permanent and Unique Item Identification
- Electronics Industry Association: EIA 706
  Component Marking
- Clinical/Laboratory Standards Institute: AUTO2-A2
  Bar Codes for Specimen Container Identification
- ISO/IEC 16022
  International Symbology Specification
- ISO/IEC 15434
  Symbol Data Format Syntax
- Society of Aerospace Engineers: AS9132
  Data Matrix Quality Requirements For Part Marking
- AIM DPM / ISO 29158
  Direct Part Mark Quality Guideline

Note: Symbologies on this page are not shown to scale and are not intended for testing purposes.

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.)

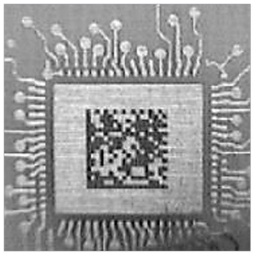
DIRECT PART MARKS

Direct part marks (DPM) are typically 2D Data Matrix symbols permanently marked by such methods as dot peen or laser/chemical etch onto substrates including metal, plastic, rubber or glass. Omron Microscan offers a comprehensive family of readers and verifiers with illumination and decode algorithms specifically designed for difficult direct part marks.


Thermal print on foil


Inkjet on plastic


Dot peen on metal


Laser etch on metal

Inkjet on plastic

Barcode verification and label inspection

Legible, accurate barcodes and text have never been more important than they are today. Inconsistencies in quality can lead to process inefficiencies and downtime. Unreadable barcodes may cause a need for constant rescanning, relabeling of products or even manual entry of critical information by a human operator. Inconsistent quality may also result in expensive vendor non-compliance fines and other penalties and cause reputation damage.

Readability of barcodes is determined by how well a barcode reader can decode the data stored in a symbol. Operators can save valuable time and effort when decoding reading issues if they understand the primary reasons for decoding failures. Once the cause of barcode unreadability is defined, it can be addressed with simple preventive measures.

Omron Micrsocan's barcode verifiers are embedded off-line or in-line solutions that include camera, software and precision illumination specifically designed for the verification of 1D/2D codes and direct part marks to ISO/IEC standards. In-line inspection systems feature OCR, OCV and blemish detection that together provide 100% label inspection against a label reference image and expected label content.

Benefits of barcode verification systems

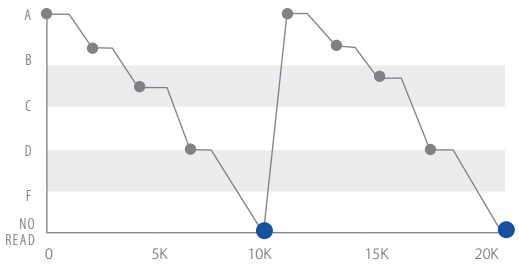
- Comply with symbol quality industry standards and directives
- Maximize efficiency of your manufacturing process
- Control quality in real time as you verify the output from your printer or code marking equipment
- Minimize returned goods due to bad labels
- Increase customer satisfaction
- Produce informative verification reports

THE IMPORTANCE OF VERIFICATION

Automated data capture is critical to a company's success, and the results of scanning failure can have a serious impact. Without verification, bad barcodes are not identified until they are unreadable. By the time a bad barcode is identified, thousands of poor-quality barcodes may have already escaped down the line. With verification, bad barcodes are prevented from being applied to the product, eliminating the chance for future failures.

WITHOUT VERIFICATION

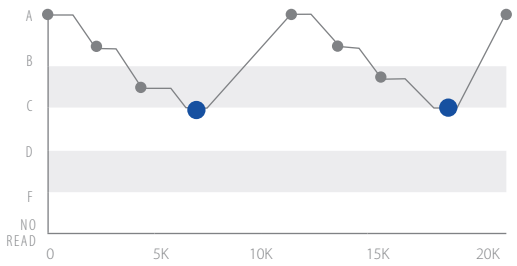
Barcode Quality Over Time:
Using a Reader to Check Quality



Number of Parts Marked/Labeled

WITH VERIFICATION

Barcode Quality Over Time:
Using a Verification Solution to Check Quality



Number of Parts Marked/Labeled

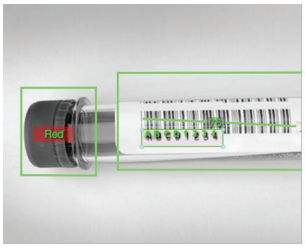
Machine vision inspection and guidance

100% quality control in manufacturing reduces costs and ensures a high level of customer satisfaction. With its wide range of capabilities and applications, machine vision is becoming the standard discipline for automating inspection and other modern industrial processes, 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.

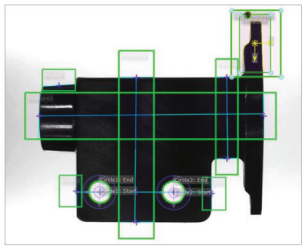
Omron Microscan holds one of the world's most extensive patent portfolios for machine vision technology, including hardware design, software algorithms and machine vision illumination. Our Visionscape® brand of machine vision software and hardware is an industry pioneer, and works in concert with AutoVISION® software to improve automated technical identification, inspection, measurement, and guidance capabilities to the benefit of manufacturers worldwide.

Machine vision capabilities

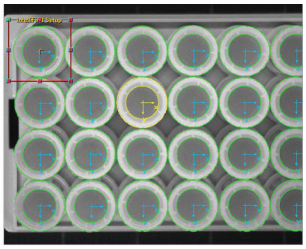
- **Identify**
  - Decode all standard 1D and 2D symbols
  - Optical Character Recognition (OCR) and Verification (OCV)
- **Inspect**
  - Color or flaw detection
  - Absence/presence of parts or components
  - Object location and orientation
- **Measure and Gauge**
  - Measure dimensions or fill levels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



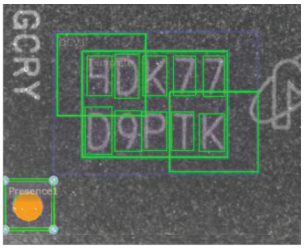
Color detection and OCR reading



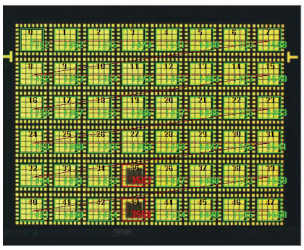
Part location and measurement



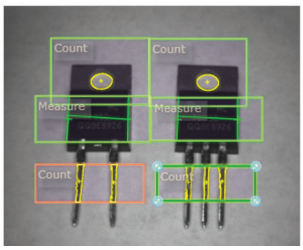
Intellifind®-based shape counting



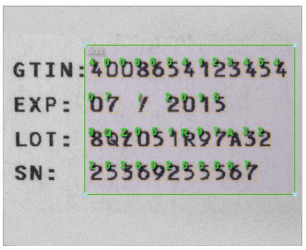
Optical Character Verification (OCV)



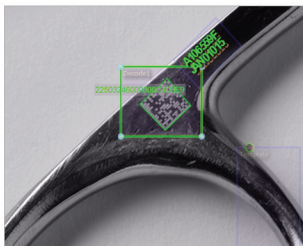
Grid-based inspection and reject mark detection



Shape inspection



OCR reading



1D/2D and DPM symbol decoding

Optimal lighting for any application

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

Machine vision lighting should maximize feature contrast while minimizing contrast of everything else, thereby allowing the camera to clearly "see" the part or mark. High-contrast features simplify integration and improv reliability, while images with poor contrast and uneven illumination increase processing time by requiring more effort from the system.

The optimal lighting configuration depends on the size of the part to be inspected, its surface features and geometry, and the system needs. With a broad range of wavelength (color), field of view (size) and geometry (shape) options available, Omron Microscan's machine vision lighting solutions can be tailored to virtually any requirement.

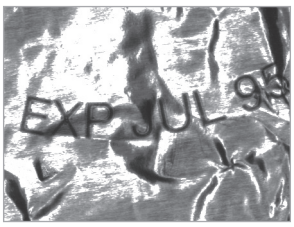
Omron Microscan's innovative NERLITE® line of products is the longest-established brand of machine vision lighting. It enables machine vision and auto ID systems to perform reliably in thousands of applications worldwide.

Five Considerations When Choosing Lighting

- Is the surface flat, slightly bumpy, or 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?

EXAMPLES OF PROPER LIGHTING

Printed text on foil pouch



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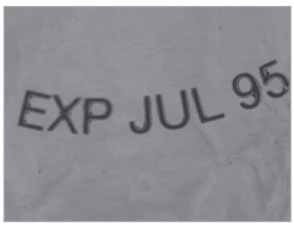
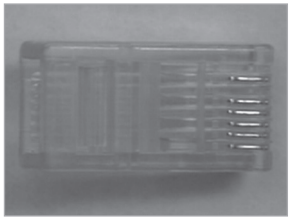


AFTER

Parts and components inspection



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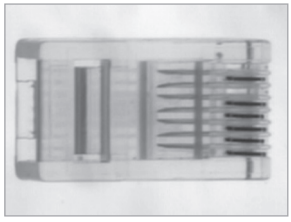
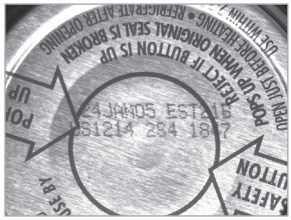


AFTER

Printed text on bottle cap



BEFORE

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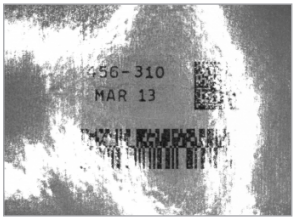
Text and symbols on glossy label



BEFORE

AFTER

Solutions for packaging and labeling

Packaging systems are under constant pressure to ensure the quality of primary, secondary and final packaging while maximizing production flow. Omron Microscan's barcode and machine vision products are commonly used throughout automated packaging applications to monitor, track and trace critical data that helps maximize both quality and productivity.

Machine Vision
Inspect Packaging Integrity and Label Quality

- Cap Presence and Fill Level
- Blemish and Color Check
- Text (OCR and OCV)
- Defect Detection
- Label Presence and Position

Barcode Verification
Verify Barcode Quality and Compliance

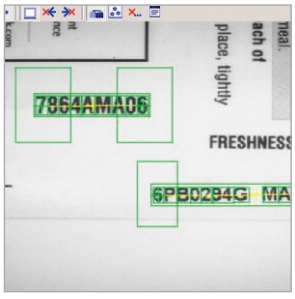
- ISO/IEC Print Quality
- GS1, HIBCC Compliance
- Data Accuracy

Barcode Reading
Read Any Linear Code or 2D Symbol

- Product Identification
- WIP Tracking
- Item Traceability
- Product Serialization
- Date/Lot Tracking

INDUSTRIES SERVED

Food and Beverage



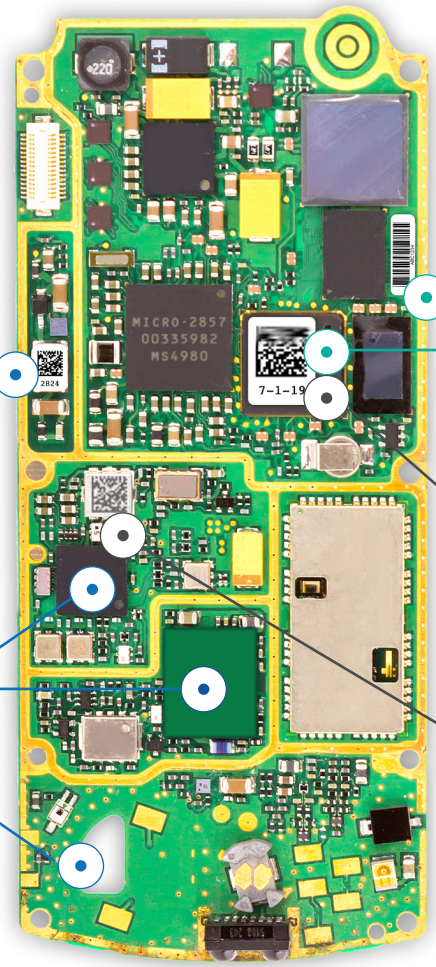
Pharmaceutical Manufacturing

Medical Devices

Fast-Moving Consumer Goods (FMCG)

Solutions for electronics manufacturing

Industry leaders within electronics depend on lean manufacturing and efficient use of resources to produce the highest quality products. Effective shop floor data collection is a competitive advantage. Omron Microscan's barcode and machine vision solutions provide reliable product inspection and traceability to support electronics manufacturing throughout the entire production process.



Barcode Reading
Read Any 1D/2D Symbol or DPM

- Component Traceability
- WIP Tracking
- Recall Management
- Time/Date Stamping

Machine Vision
Inspect Parts and Assembly

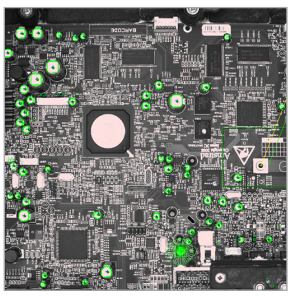
- Label Presence and Position
- Text (OCR and OCV)
- Reject Identification
- Absence/Presence of Components
- Dimensional Testing

Barcode Verification
Verify Barcode Quality and Compliance

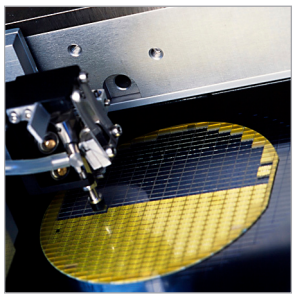
- ISO/IEC Print Quality
- DPM Mark Quality
- Data Accuracy
- Data Sequence

INDUSTRIES SERVED

Consumer Electronics



Automotive Electronics



Semiconductor

Machine Builders

Solutions for life sciences and medical

Manufacturers within the life sciences and medical industries require 100% data integrity and extremely reliable components that are small enough to fit into their instruments. From reading labels on specimen tubes or directly marked surgical instruments, to automated presence/absence detection of microtiter plates, manufacturers depend on the highest levels of performance and flexibility with minimal integration effort.

Machine Vision
Inspect and Enable Guidance

- Cap Color and Presence
- Text (OCR and OCV)
- Sample Location
- Fill Level
- Label Quality
- Measurement for Guidance

Barcode Reading
Read Any Linear Code or 2D Symbol

- Sample or Tube Carrier ID
- Reagent ID
- Match Test to Sample
- Sample Routing
- Sample Tracking

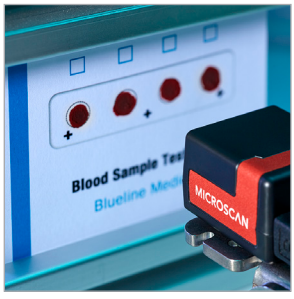
Barcode Verification
Verify Barcode Quality and Compliance

- Symbol Quality and Legibility
- GS1, HIBCC Compliance
- Data Content and Format
- Compare Data to Match String

INDUSTRIES SERVED

Lab Automation

Clinical Chemistry

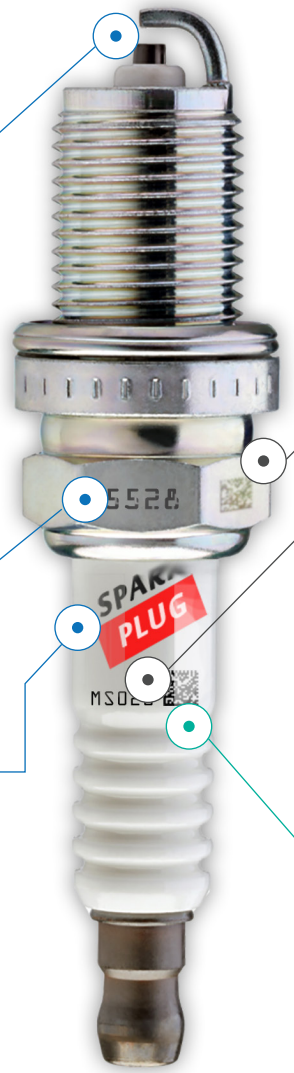


Reagent and Kit Tracking

Medical Devices

Solutions for factory automation

Production automation, lot tracking and component traceability are all common requirements for today's busy factories and assembly plants. Many suppliers choose Omron Microscan for reliable product inspection and data capture, enabling plant floor data tracking, outbound product traceability and part quality requirements from manufacturers.



Machine Vision
Inspect Parts and Assembly

- Dimensional Inspection
- Text (OCR and OCV)
- Part Presence and Position
- Label Presence and Position
- Defect Detection

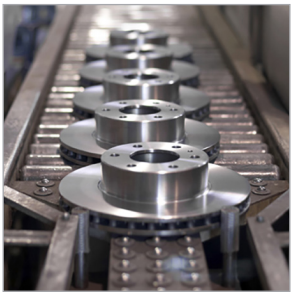
Barcode Verification
Verify Barcode Quality and Compliance

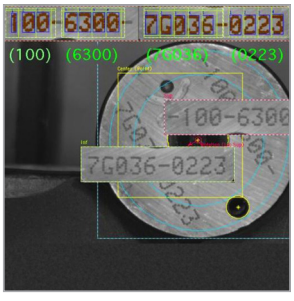
- Symbol Quality and Legibility
- Direct Part Mark Quality
- Data Sequence
- Data Accuracy

Barcode Reading
Read Any 1D/2D Symbol or DPM

- Part Traceability
- WIP Tracking
- Recall Management
- Bill-Sheet Reading

INDUSTRIES SERVED


Automotive Assembly



Powertrain Manufacturing


Aerospace and Defense


White Goods

Laser barcode scanners

From small devices for embedded OEM applications to rugged readers for industrial manufacturing environments, Omron Microscan offers a wide range of quality products to read linear barcodes and stacked symbols. Features include high-speed decoding, wide field of view, symbol reconstruction and aggressive decode algorithms.

MS-3
Compact raster laser scanner offers high-performance decoding and wide scan angle at close range.

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

QX-870
Programmable sweeping raster laser scanner with QX platform, symbol reconstruction and optional embedded Ethernet protocols.

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

	Read Range	Scans/Second	Power	Sensor	IP Rating	Connectivity
MS-3	2–10 in 51–254 mm	Up to 1000	5 V	CCD, 32bit	IP54	RS-232, RS-422/485 (up to 115.2k), Keyboard Wedge, USB
QX-830	1–30 in 25–762 mm	300–1400	10–28 V	Embedded Laser Diode	IP64	RS-232, RS-422/485, Optional Embedded Ethernet TCP/IP or EtherNet/IP™
QX-870	1–30 in 25–762 mm	300–1400	10–28 V	Embedded Laser Diode	IP65	RS-232, RS-422/485, Optional Embedded Ethernet TCP/IP or EtherNet/IP
MS-890	10–120 in 254–3048 mm	400–1000	10–28 V	Semicon- ductor Visible Laser Diode	IP65	RS-232, RS-422/485, Optional Ethernet (via IB-890 Wiring Box)

OTHER FEATURES

- QX platform offers the best connectivity, networking and decode power
- Powerful X-Mode decoding includes symbol reconstruction and DPM reading
- ESP software provides a single program to setup any Omron Microscan barcode scanner

2D Barcode readers

Our 2D barcode readers feature industry-leading technology for decoding both 2D symbols and linear barcodes based on Omron Microscan's legacy of image processing and decode algorithm development. Engineered with modular hardware features in space-saving designs, our MicroHAWK® readers offer unrivaled performance for reliably decoding challenging codes and direct part marks (DPM).

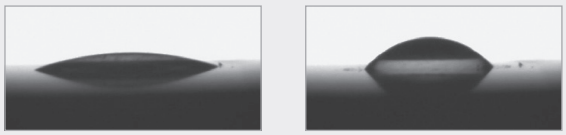
	Read Range	Focus	Sensor	Color	Power	IP Rating	Connectivity
 **MS-2D Engine** Miniature fully-decoded scan engine for decoding both 1D and 2D symbols.	1.5–15.5 in 38–394 mm	Fixed	CMOS DVGA		5 V	N/A	RS-232, USB 2.0
 **MicroHAWK Engine** Adaptable engine with ultra-fast processor, aggressive optics and algorithms, and unlimited configurability.	2–12 in 50–300 mm	Fixed	Global WVGA or SXGA, Rolling QSXGA	✔	5 V	N/A	USB 2.0 High Speed, Ethernet over USB/HID
 **MicroHAWK ID-20** Software, optics, sensor and lighting in a fully-enclosed USB device measuring less than 2 in. (51 mm) on each side.	2–12 in 50–300 mm	Fixed	Global WVGA or SXGA, Rolling QSXGA	✔	5 V	IP40	USB 2.0 High Speed, Ethernet over USB/HID
 **MicroHAWK ID-30** Miniature IP54-rated imager with corner-exit RS-232 serial cable and liquid lens autofocus.	2–12 in 50–300 mm	Fixed, Autofocus	Global WVGA or SXGA, Rolling QSXGA	✔	5 V	IP54	RS-232, USB 2.0 High Speed, Ethernet over USB/HID
 **MicroHAWK ID-40** Rugged industrial imager in resilient IP65-rated enclosure featuring Ethernet, PROFINET and liquid lens autofocus.	2–12 in 50–300 mm	Fixed, Autofocus	Global WVGA or SXGA, Rolling QSXGA	✔	5–30 V	IP65/67	RS-232, Ethernet TCP/IP, EtherNet/IP, PROFINET I/O®, Power over Ethernet (PoE)
 **MicroHAWK ID-45** Miniscule industrial reader with embedded Ethernet, liquid lens autofocus and 24-high-intensity LEDs including white, red, blue and optional IR.	2-12 50-300 mm	Autofocus	Global WVGA or SXGA	✔	5–30 V	IP65/67	RS-232, Ethernet TCP/IP, EtherNet/IP PROFINET I/O®, Power over Ethernet (PoE)

OTHER FEATURES

- Includes X-Mode technology for aggressive decoding right out of the box
- WebLink interface provides simple, intutive configuration of MicroHAWK readers with no software needed
- Thousands of customized hardware configurations are available

INTEGRATED LIQUID LENS TECHNOLOGY

Embedded in ID-30, ID-40 and ID-45, this system uses electrostatic pressure to create liquid lens curvature, optimizing the imaging system and providing a near-infinite working range in autofocus applications.



Handheld barcode readers

Omron Microscan's handheld barcode readers feature the latest technology for decoding 1D and 2D symbols. From simple data tracking for inventory control to aggressive reading of the toughest direct part marks, we have a handheld solution for any track, trace, and control application. These compact designs feature durable, shock-resistant enclosures that are disinfectant-ready.

	1D/2D	DPM	Wireless	Enclosure	Focal Point	Field of View
 **HS-360X DPM Handheld Reader CORDED** Ultra-rugged handheld with industry-leading DPM decoding performance and intuitive WebLinkPC interface	✔	✔		IP 65	6 in (150 mm)	31° Horizontal by 23° Vertical
 **HS-360X DPM Handheld Reader CORDLESS** Easy-to-use wireless option for the high-performing DPM handheld with Bluetooth support and Wi-Fi friendly mode.	✔	✔	✔	IP 67 Cradle: IP65	6 in (150 mm)	31° Horizontal by 23° Vertical

UNSTOPPABLE POWER AND PRODUCTIVITY

wrapped into an ultra-rugged IP67 casing

Nothing matches the HS-360X when it comes to surviving toughest environments. This high-performing handheld reader has a skin that's thick enough to withstand harsh industrial fluids as well as multiple tumbles to a concrete floor.
With a 3100 mAH lithium ion battery and powerful X-Mode algorithms for DPM decoding, the HS-360X has what it takes to supercharge your productivity.

INDUSTRIAL CODE READING POWER AT A GLANCE

- Industry-leading DPM decoding with X-Mode
- IP67 waterproofing and IP65 sealed cradle
- Operating temperature of -30° C
- 8-food (2.45m) drop spec and 5,000 3.3 ft./1m tumble rating
- Up to 50,000 scans per charge with 3100 mAH Li-ion battery

Omron Microscan's engineers carefully considered every design detail to ensure that the HS-360X will set the standard for the next generation of code readers. It uses the world's first browser-based barcode reader interface – WebLinkPC – and makes management simple with cordless technology, Bluetooth support and a Wi-Fi friendly mode.

OTHER FEATURES

- Superior DPM reading
- Ease of Use "WebLinkPC"
- Ultra-Rugged design ase of Use "WebLinkPC"
- Industry's only IP65 cradle uperior DPM reading
- 50,000+ Scans /Charge
- Industry's only On Board Battery Guage

BARCODE SOFTWARE AND CONNECTIVITY

WebLink Interface
Browser-based interface to set up, test, control and monitor any MicroHAWK barcode reader. No software installation required.

Barcode verification

Omron Microscan's LVS® Barcode Verifiers are fully-integrated off-line solutions designed for the verification of 1D and 2D symbols and direct part marks to application standards such as GS1, HIBC, USPS and ISO/IEC 15415/15416. Barcode Verification Kits offer flexible integration options for off-line or in-line grading to symbology standards or user-defined parameters.

LVS-9510
All-in-one desktop verifier for off-line ISO/IEC barcode verification.

LVS-9585
High-performance handheld verifier for 1D/2D and direct part mark (DPM) verification to ISO/IEC and GS1 standards. Includes red dome, 30 degree and white dome lighting. Ultra-HD model for 2 mil codes.

LVS-9580
All-in-one handheld verifier for flexible verification of multiple printed 1D/2D symbols and direct part marks (DPM). Can be used with a tablet for portability.

LVS-9570
All-in-one portable verifier featuring omni-directional line scan camera for 2D symbols and 1D barcodes up to 8 inches (203.2 mm) in length.

Barcode Verification Kits
Modular solutions for off-line or in-line barcode grading to ISO/IEC standards or user-defined parameters. Includes MV-4000 smart camera and lens paired with NERLITE Smart Series light, mounting bracket, and AutoVISION software.

	1D/2D	DPM	GS1 Data	GS1 Certified	Manage Permissions	Field of View
LVS-9510	✔		✔	✔	✔	Varies By Model
LVS-9585	✔	✔	✔	✔	✔	3 in (76 mm) horizontal, 2.25 in (57 mm) vertical for non-DPM; 1.75 in (44 mm) horizontal, 1.75 in (44 mm) verticl for DPM
LVS-9580	✔	✔	✔	✔	✔	3 in (76 mm) horizontal, 2.25 in (57 mm) vertical for non-DPM; 1.75 in (44 mm) horizontal, 1.75 in (44 mm) vertical for DPM
LVS-9570	✔		✔	✔	✔	5.4 in (137 mm) in Picket Fence Format
Barcode Verification Kits	✔	✔				Varies By Model

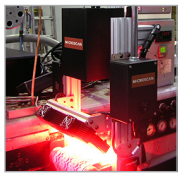
OTHER FEATURES

- GS1 US® and 21 CFR Part 11 compliant-ready
- Verifies to over 20 global application standards and over 30 symbology types
- Enables U.S. FDA UDI (Unique Device Identification) compliance for Medical Device Manufacturers and Labelers
- Provides comprehensive and user-friendly barcode defect analysis to help guide corrections
- Includes a local report archive, as well as an external database interface to provide flexible quality reporting

GS1 US Solution Partner

Print quality inspection systems

Ensure 100% label quality in real time with Omron Microscan's LVS® Print Quality Inspection Systems. Our in-line ISO verification solutions help manufacturers catch defective labels immediately and maintain print quality standards throughout the printing process. Systems range from add-on hardware to custom-integrated solutions. These systems are designed to be installed directly at the point of printing, whether mounted on a printing press or integrated into a thermal printer.

	1D/2D Read & Verify	OCR/OCV	Blemish Detection	Delta E Color Control	Field of View	Equipment Mounting & Integration
 **LVS-7000** Modular print and barcode quality inspection system custom-integrated into web presses, slitter rewinders, and other equipment.	✔	✔	✔	✔	Varies By Model	Printing Press, Slitter Rewinder, Folder Gluer, Conveyer
 **LVS-7500** Turnkey print and barcode quality inspection system that easily mounts onto thermal printers and rewinders.	✔	✔	✔		8.5 in (216 mm) Maximum Label Width, 8.66 in (220 mm) Maximum Web Width	Thermal Printers and Rewinders: Printronix®, Zebra®, cab®, SATO®, Honeywell®, Others Upon Request
 **LVS-7510** Modular print and barcode quality inspection system integrated directly into thermal printers.	✔	✔	✔		8.5 in (216 mm) Maximum Label Width, 8.66 in (220 mm) Maximum Web Width	Thermal Printers: Printronix, Zebra

OTHER FEATURES

- Automatically inspects both barcode quality and label content including OCR and OCV
- Compares every label to a master image to detect variances, including color parameters
- Integrates directly with the most popular thermal transfer label printers including Zebra and Printronix
- Intuitive defect analysis that quickly, accurately and reliably pinpoints label print quality problems
- Multiple security levels for managing user permissions
- Data integration with Label Management Software

GS1 US Solution Partner

Machine vision cameras

Our comprehensive line of machine vision hardware includes smart cameras and PC-based GigE solutions that are scalable across software platforms for basic to advanced toolsets. Whether you require a compact form factor for tight spaces, high-speed imaging for fast-moving production lines, or high resolution for detailed inspection, Omron Microscan has a machine vision solution to meet your needs.

	Focus	Sensor	IP Rating	Power	Connectivity	Connectors	Software
 **MicroHAWK Engine** Smallest imaging engine for basic to advanced vision.	Fixed, Autofocus	WVGA, SXGA, 5 MP Color	N/A	5 V	USB 2.0 High Speed	Micro-B USB, Second USB Port on ZIF Connector	AutoVISION, Visionscape
 **MicroHAWK MV-20** Software, optics, sensor and lighting in a fully-enclosed, IP40-rated USB smart camera measuring less than 2 in. (51 mm) on each side.	Fixed, Autofocus	WVGA, SXGA, 5 MP Color	IP40	5 V	USB 2.0 High Speed, Ethernet over USB	Micro-B USB	AutoVISION, Visionscape
 **MicroHAWK MV-30** Miniature IP54-rated smart camera with corner-exit RS-232 serial cable and liquid lens autofocus.	Fixed, Autofocus	WVGA, SXGA, 5 MP Color	IP54	5 V	RS-232, USB 2.0 High Speed, Ethernet over USB	High Density 15-Pin D-Sub	AutoVISION, Visionscape
 **MicroHAWK MV-40** Rugged industrial smart camera in resilient IP65-rated enclosure featuring Ethernet, PROFINET and liquid lens autofocus.	Fixed, Autofocus	WVGA, SXGA, 5 MP Color	IP65/67	4.75–30 V	RS-232, Ethernet TCP/IP, EtherNet/IP, PROFINET I/O	M12-12, M12-8 socket	AutoVISION, Visionscape
 **HAWK MV-4000** High-performance smart camera reaching near-PC processing speeds with complete vision, code reading and code verification toolset.	C-mount	VGA, SXGA, WUXGA, 5MP (Mono and Color)	IP67 with lens cap	24V	Gigabit Ethernet	M12-8, M12-12 socket, Digital I/O, M12-12 plug for VGA, USB	AutoVISION, Visionscape
 **Visionscape GigE Solution** Gigabit Ethernet software and compact cameras allow rapid deployment of any scale machine vision solution. Illumination not included.	C-Mount	Options from VGA to 8 MP (Mono and Color)	IP54	8–30 V	Gigabit Ethernet	RJ45 socket, M8-3, M8-4	Visionscape

OTHER FEATURES

- Fully-integrated smart cameras with lighting, lens, I/O, easy connectivity and advanced software tools
- Complete range of hardware components from OEM imaging engines to complex multi-camera PC/GigE vision systems
- Machine vision jobs are fully scalable across cameras, software, industrial systems, and PCs or mobile devices

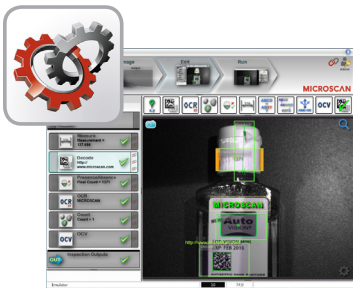
Software solutions

Omron Microscan offers intuitive software solutions for each of its product lines that accommodate all user levels and applications. MicroHAWK barcode readers work right out of the box thanks to Omron Microscan's easy-to-use WebLink software. On the machine vision side, 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.

WebLink

WebLink Software: As the world's first browser-based barcode reader configuration interface, WebLink provides real-time remote access to the settings on any MicroHAWK reader. Users can employ the web browser of their choice to set up, test, control and monitor any MicroHAWK device without needing to install any software. Its best-in-class usability makes it easy to read challenging codes and even train the interface to adjust settings according to varying conditions.

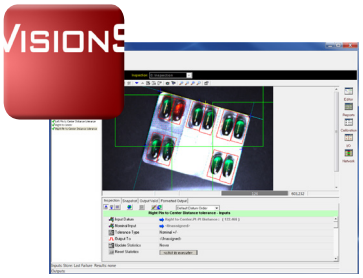
AutoVISION Software



AutoVISION is the easiest software available for basic to mid-range vision applications. Its intuitive interface guides the user to connect to a device, configure the hardware, program the job and monitor results. Jobs are fully scalable across cameras, software, industrial systems, PCs and mobile devices.

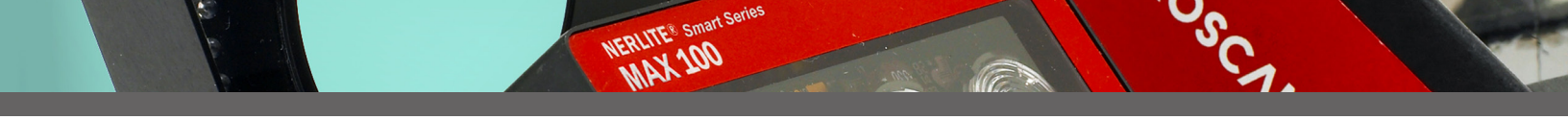
- Complete Tool Set includes X-Mode decoding technology and fully-teachable OCR. Locate, Measure, Count, Color ID or Matching, and Presence/Absence tools make inspection easy while Verification and OCV tools monitor barcode and text quality.
- Omron Microscan Link connects parameters within AutoVISION jobs to industrial control or PLC system with a simple click on the desired parameter.
- CloudLink provides feedback and real-time visualization of runtime data with a customizable, web-based HMI display that works on nearly any browser.
- Visionscape is available for applications demanding more flexibility. Jobs can be opened with Visionscape FrontRunner to enable scripting and other advanced programming.

Visionscape Software



Visionscape gives advanced users all the elements required to develop and deploy complex industrial vision applications with a customizable configuration environment. It can open AutoVISION jobs for scripting and other advanced programming using numerous proven image processing tools and a powerful graphical user interface.

- FrontRunner Interface serves as an "Engineering" GUI for application evaluation, development, training, parameter change, and monitoring.
- VsKit.NET provides modules to make vision inspection an integral part of a machine setup interface by incorporating machine vision capabilities into any .NET program.
- Omron Microscan Link connects parameters inside jobs to industrial control systems or PLCs with a simple click on the desired parameter.
- CloudLink provides feedback and real-time visualization of runtime data with a customizable, web-based HMI display that works on nearly any browser.



Machine Vision Lighting

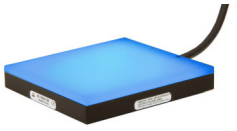
Omron Microscan's advanced NERLITE® lighting solutions feature sophisticated optical technology and user-friendly designs. These precision illumination products allow machine vision and auto ID systems to perform reliably in any imaging application. In addition, Smart Series lighting includes a built-in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

NERLITE Smart Series MAX Light
Illuminates small to very large areas, providing very high intensity when required. Suitable for indoor or outdoor use.

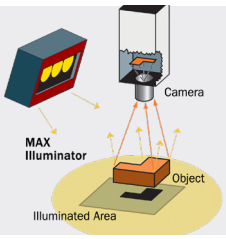
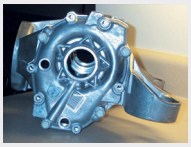
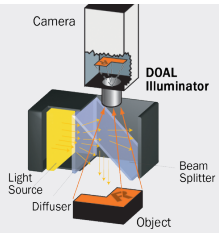
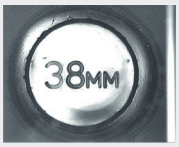
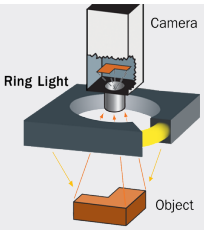
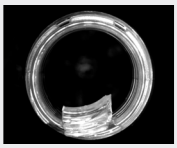
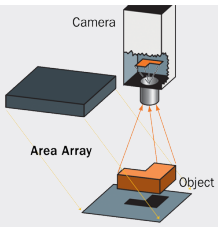
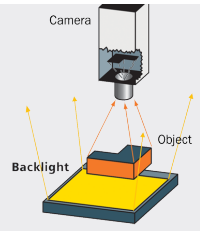
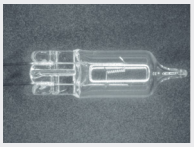
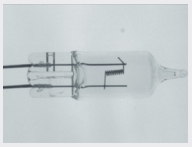
NERLITE Smart Series DOAL® Light
Provides high-intensity, diffuse illumination with superior uniformity for flat, specular surfaces.

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

LIGHT IN USE	OBJECT	RESULTING IMAGE
		
		
		
		
		

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

How Much Space Does Your Symbol Need?

Data Matrix symbols set the standard for reliable, accurate and space-efficient identification. Because information is encoded in two dimensions, Data Matrix has much more data capacity than common linear symbologies such as UPC or Code 39. For example, 50 characters can be encoded in a Data Matrix symbol measuring just 6mm by 6mm. See the chart below for more information on Data Matrix sizes and capacities.

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
14 x 14	16	10	1.78 mm	2.67 mm	3.56 mm	5.33 mm
16 x 16	24	16	2.03 mm	3.05 mm	4.06 mm	6.10 mm
18 x 18	36	25	2.29 mm	3.43 mm	4.57 mm	6.87 mm
20 x 20	44	31	2.54 mm	3.81 mm	5.08 mm	7.62 mm
22 x 22	60	43	2.79 mm	4.19 mm	5.59 mm	8.38 mm
24 x 24	72	52	3.05 mm	4.57 mm	6.10 mm	9.14 mm
26 x 26	88	64	3.30 mm	4.95 mm	6.60 mm	9.91 mm
32 x 32	124	91	4.06 mm	6.10 mm	8.13 mm	12.19 mm
36 x 36	172	127	4.57 mm	6.86 mm	9.14 mm	13.72 mm
40 x 40	228	169	5.08 mm	7.62 mm	10.16 mm	15.24 mm
44 x 44	288	214	5.59 mm	8.38 mm	11.18 mm	16.76 mm

NOTE: Each Data Matrix symbol shown is a square matrix. Symbols are for size reference only, and may not be accurately reproduced on-screen or by some print methods. Scale is 1:1.

2.5 mil Data Matrix

These extremely small Data Matrix symbols are nearly invisible to the naked eye. They must be printed or marked with a high level of accuracy to ensure readability. Omron Microscan readers can decode Data Matrix symbols as small as 2.5 mil.

Symbol Size: 10 X 10
Data Capacity: Numeric: 6 / Alphanumeric: 3