

Your trusted partner
for fully integrated automation solutions

OMRON



Machine vision solutions

Omron Vision Family

INTEGRATED | INTELLIGENT | INTERACTIVE

- Smart cameras & vision sensors
- Vision systems
- PC-based vision
- Industrial cameras
- Software

For more than 80 years, we've been enriching the lives of people around the world by bringing state-of-the-art automation solutions to the manufacturing and infrastructure industries. We began developing machine vision solutions 40 years ago, and our track record in innovation continues to this very day.

As the only total solution provider in the market that can offer a complete package for your application that includes input, logic, output, robots and safety, we guarantee seamless integration and effortless programming in a real integrated development environment.

From traceability to robot guidance, we seek to make our solutions as intuitive and accessible as possible. Sharpen your competitive advantage and move into the future with your next vision solution from Omron.

OMRON

When you work with Omron,
you get a **fully integrated
solution** to meet the needs of
your automated production.

Your trusted partner in vision and traceability





29,000+

employees worldwide

Top 5

global machine
vision supplier¹

7%

annual R&D investment

40+

years of machine
vision solutions



Innovation is in our DNA.

We build the technologies that create the future

Introduced to the Americas at the CES show, the FORPHEUS robot showcases our advanced Sensing & Control + THINK technologies and has been receiving awards at every single exhibit. A solid step towards Omron's vision of the future, FORPHEUS improves the relationship between machines and humans.

Sensing

Cameras and sensors allow FORPHEUS to simultaneously detect movements of the ball, player, and racket with high accuracy and impressive speed through synchronized sensing.

Control

A six-axis robotic arm plus high-speed control with a cycle time of less than 1/1000th of a second, expanding the range of possible movements in the way that a human player does.

Think

Sensor-collected data leads to accurate trajectory prediction and improved coaching skills.

Over 200,000 products delivering input, logic and output

We have everything you need for complete machine automation: sensing, control systems, visualization, drives, robotics, safety, quality inspection, control and switching components.

No other company can match our wide-ranging technology portfolio or deliver connectivity that's as reliable, fast or accessible. Our machines promise exceptional performance, effortless integration, absolute safety and the fastest time from concept to market.

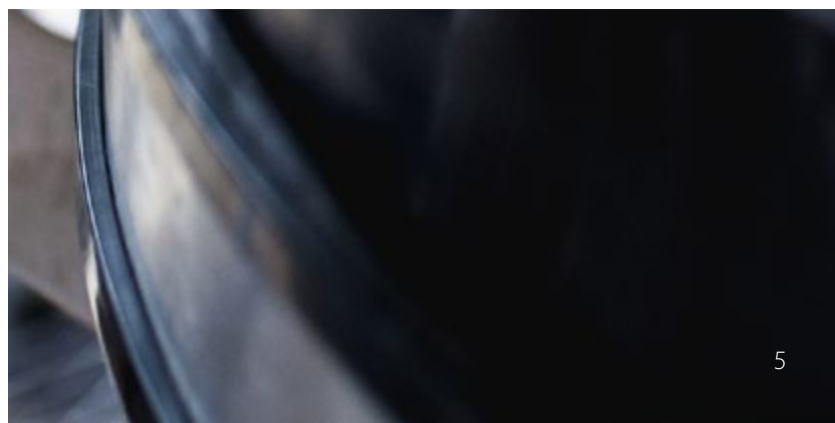
Enabling flexible on the flexible factory floor

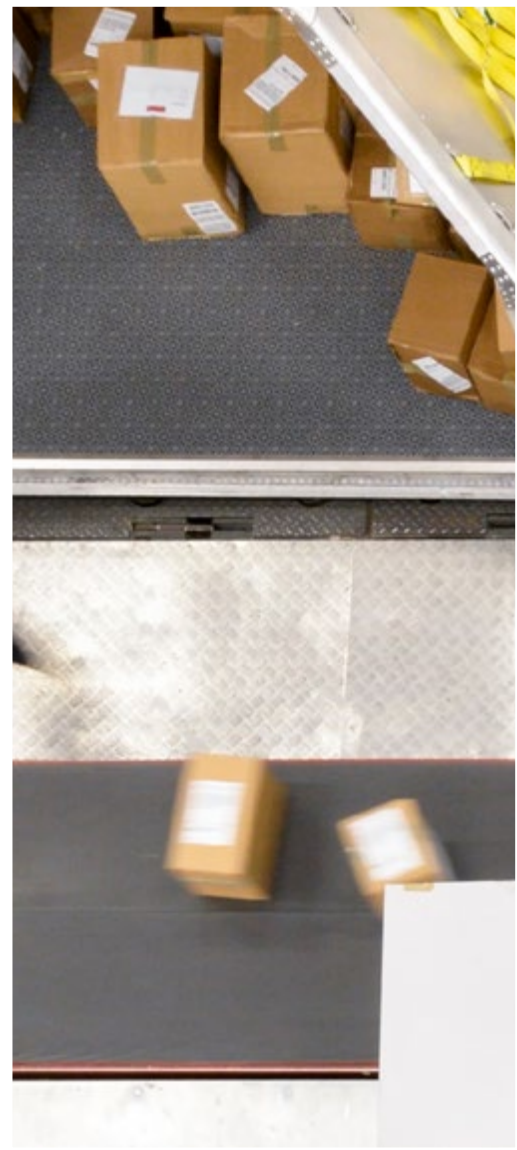
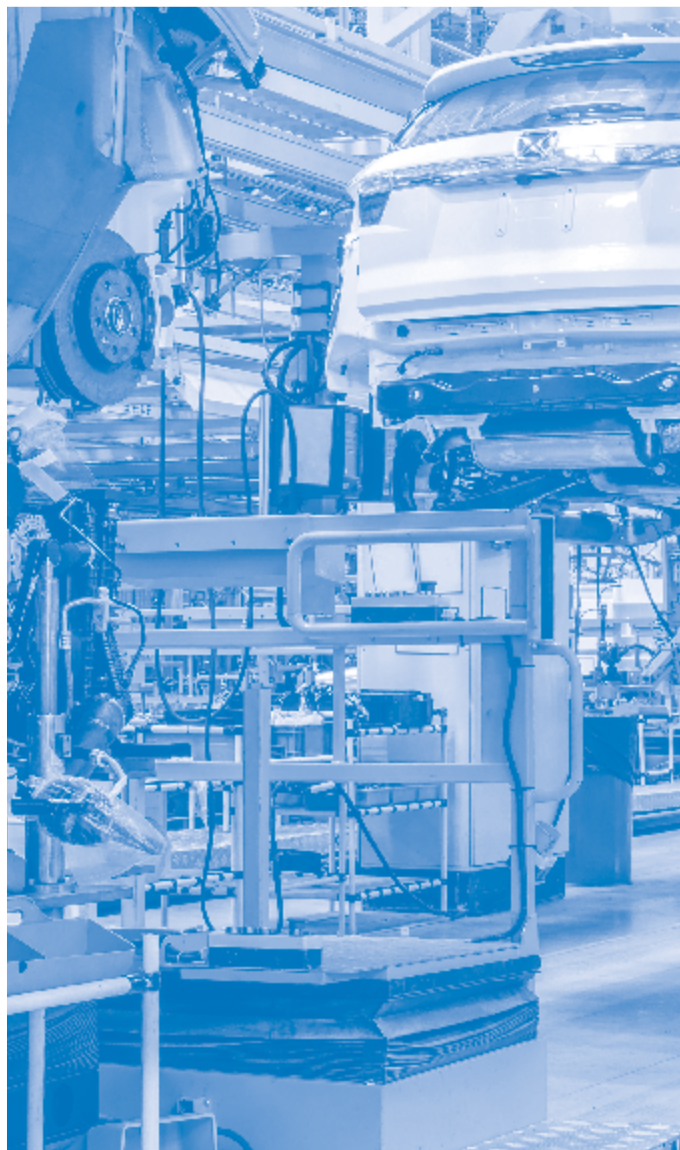
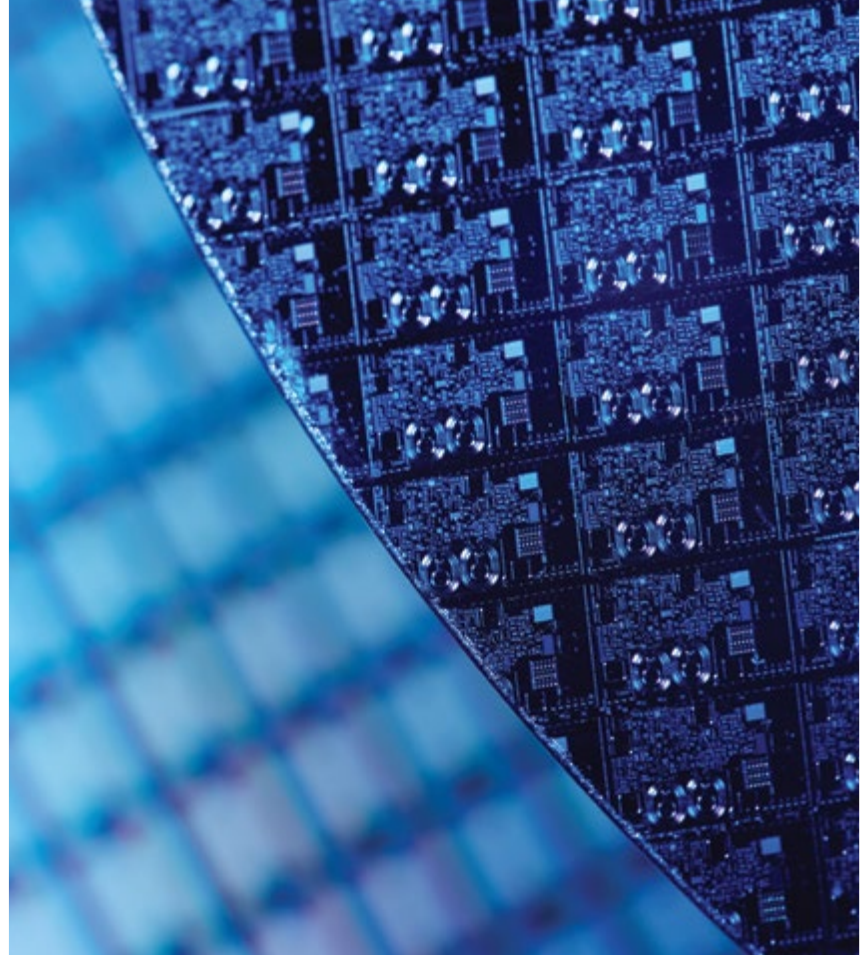
Minimize costs while maximizing performance



Flexible manufacturing demands mobile intelligence, and developments in autonomous intelligence will dramatically change the manufacturing floor. While logic controls manufacturing processes, it is motion and robotics that bring manufacturing processes to life.

Omron's portfolio includes affordable solutions that increase uptime and throughput while using less space and energy. Whether a collaborative robotic application, an autonomous intelligence vehicle (AIV), or precision motion advanced manufacturing application, our solutions synchronize movement, facilitate part movement, and enable assembly of very intricate designs with speed and precision.





Built for industry

We offer machine vision solutions for multiple application needs:

Inspection and measurement

Inspect, measure and judge the quality and/or presence/absence of objects

Identification, recognition and validation

Recognize and judge characters and codes, including quality verification

Guidance and positioning

Locate and output parts coordinates to guide machines (including robots) or tools to precise locations for seamless robot integration.

Our solutions are highly versatile and can be implemented in a variety of industries, including the following:



Life Sciences

- CFR 21 Part 11 solutions
- OEM Cameras for complete inspection and traceability
- Full OCR and OCV options for label inspection
- Serialization



Electronics/Semiconductor

- Flat panel display alignment
- PCB & components inspection
- Wafer inspection



Food and Beverage

- High speed cameras and inspection algorithms
- Multi-color, multi-directional lights and auto-focus cameras for flexible manufacturing
- Backward and forward traceability solutions
- Label compliance



Automotive

- Value added inspection for body, power-train, paint and final assembly
- Classification tools
- Full traceability tools for reading, verification, saving and tracking
- Battery and electric motor components inspection



Logistics & Warehouse Automation

- Warehouse AGVs
- Automated Storage and Retrieval Systems
- Bin picking systems
- Label inspection via Code Reading, OCR and OCV
- Barcode grading



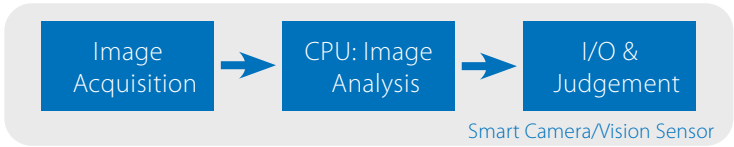
Packaging

- 360° code reading
- Label verification against industry standards
- Traceability on all packaging stages
- Palletizing solutions with our cameras, robots and motion systems

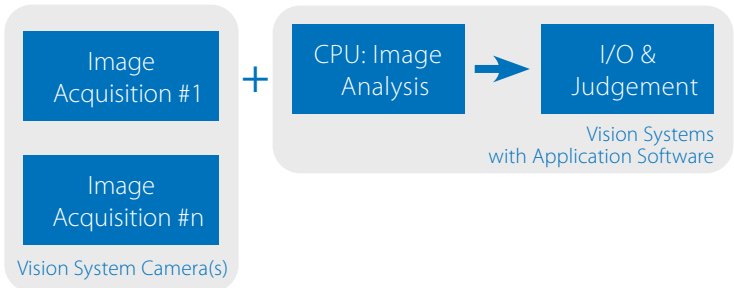
Machine Vision categories

Four options to suit any manufacturing environment

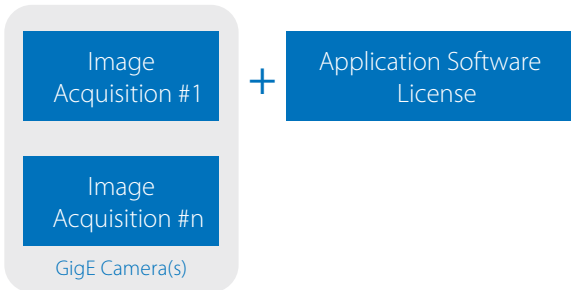
Smart Cameras



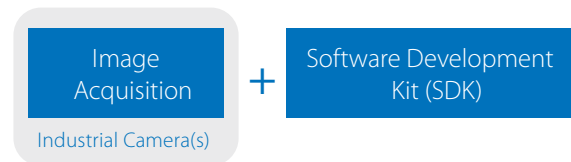
Vision Systems



PC Based Vision



Industrial Cameras



Finding the right solution

Making machine vision as simple and intuitive as possible

Most common reasons to select each category

Smart Camera

- Cost effective and ready to deploy solution.
- Options for built-in light and lens (including auto-focus)
- No need to build additional panel at the machine
- Can be installed on existing machines without many modifications
- Single camera application or independent multi-point inspections
- Scalable to Vision Systems
- Single and Dual core processors
- Camera resolutions from 0.3MP to 12MP
- Integrated I/O

Vision System

- Mid to high speed options
- Robust, flexible and dedicated processing hardware for Machine Vision to address the majority of applications
- Single or multi camera options, including synchronous or asynchronous processing
- Real Color Sensing Technology
- Camera Link cameras for high speed transmission, lighting power and control via single camera cable
- Advanced optics and lighting options
- Dual and Quad core multi-thread processors
- Video output
- Custom & Advanced Programming options
- Integrated I/O
- Camera resolutions from 0.3MP to 20MP

PC Based Vision

- Flexibility to choose your own processing hardware. Install Omron programming software on your PC or IPC
- GigE cameras
- Limited I/O and interfaces
- Speed dependent on hosting hardware. Normally combining Vision and other tasks in the same hardware, where one can impact the other

Industrial Cameras

- Flexibility to choose camera interface (GigE Vision, Camera Link, USB3 Vision, Coax, etc.) and a multitude of sensors from Sony, CMOSIS, e2v, OnSemi, etc.
- Ability to create proprietary application software, or using third party software
- Flexible processing hardware. Capable of being run on high powered PC Systems, Single Board Computers, Linux OS, etc.
- Lower hardware cost, but increased engineering hours to develop (or integrate) software/ application solution

	Smart Camera	Vision System	PC Based Vision	Industrial Cameras
MicroHAWK F and MV Series	•			
FQ Series	•			
FHV Series	•			
FH Series		•		
FZ Series		•		
FJ Series			•	
AutoVISION/Visionscape GigE			•	
Omron Sentech Series				•

The Omron vision portfolio

Smart cameras and vision sensors



Click on the product photos to view more information on our website.

FQ2



Now on its second generation, our robust smart camera provides key differentiators at its price point. Real Color Sensing technology similar to what can be found in advanced vision systems. Built-in light and lens, or a C-mount option for flexibility on FOV (field of view). Dedicated industrial touch-finder display. Sensor options from 0.3MP to 1.3MP.

MicroHAWK



Compact, intelligent, powerful and agile smart cameras. Same platform can be used for code reader (Vxxx series) or as a smart camera (Fxxx series). Cameras available in multiple interfaces and enclosures (IP40, IP54, IP65/67), including active PoE options. Autofocus liquid lens and camera resolutions varying from 0.3MP to 5MP.

HAWK MV4000



Scalable and faster smart camera solution for users who are already working with MicroHAWK platform. Dual core processor and video output directly from camera. Global shutter sensors from 0.3MP to 5MP (mono and color), with a C-mount lens connection.

FHV7



It brings the power of our FH Vision Systems in a smart camera concept that is ready to deploy on machine vision applications. It uses the same software interface from the FH systems, with a substantial sub-set of the inspection tools. Global and rolling shutter sensor resolutions varying from 0.4MP to 12MP. Unique built-in accessories, including a multi-color light and auto-focus lenses. Real Color Sensing technology.

F440 Smart Camera



Combining Omron's top-of-the-line mechanical design with the power and ease of use of the AutoVISION software platform, the F440 features a Sony Pregius 5MP global shutter sensor with 35FPS. A small form factor makes it ideal for applications that involve embedding a smart camera inside of a machine without sacrificing power or quality.

Performance, investment and key applications

We have the right camera for you budget and application needs



Applications and Technology Benefits

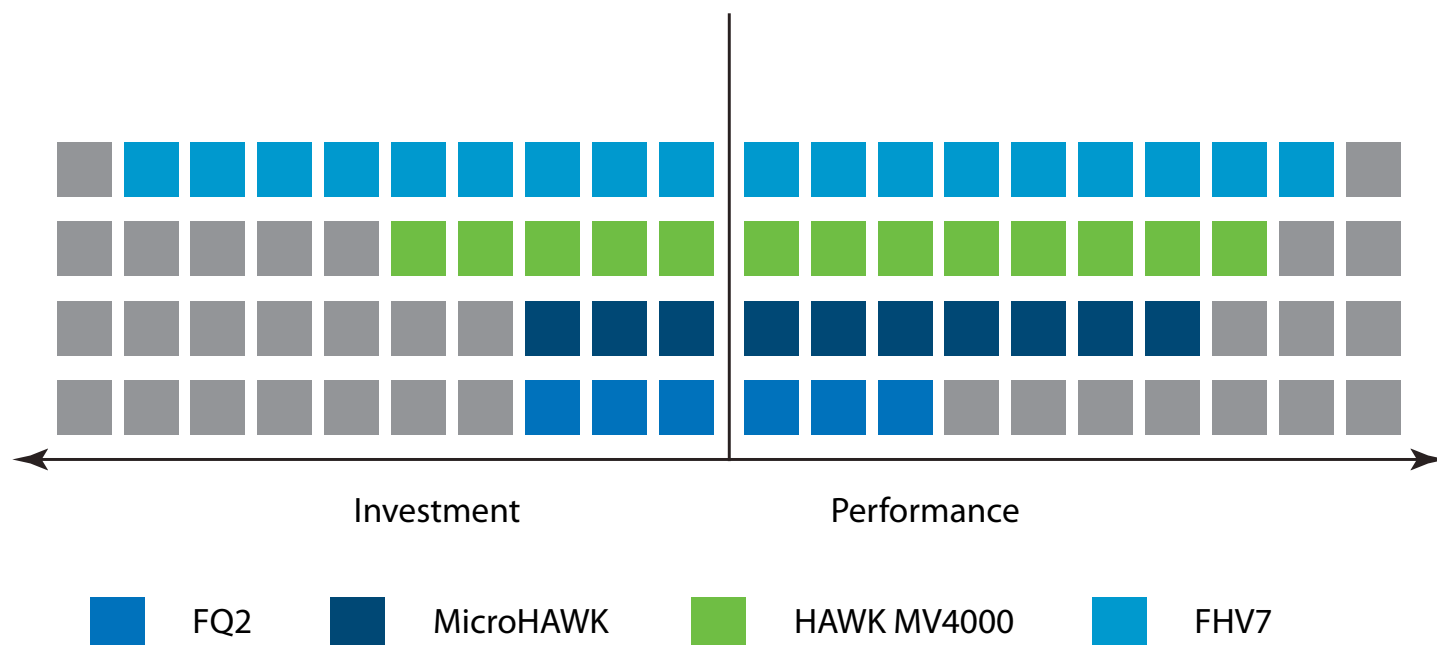
Smart cameras are single programmable devices that to acquire images, process them internally and provide an output/judgement to the user. Most have built-in accessories for image acquisition (lens, lighting, filters) and I/O modules. Some users also refer them as vision sensors when offered with limited capabilities. The machine vision software application already comes installed with the product.

Omron has made significant vision investments in the last few years, including the acquisition of Microscan. Our smart camera portfolio continues to expand, and we can now offer multiple scalable solutions to allow you to choose a platform and grow with your original investment.



Performance and Investment

The two most popular smart cameras are the MicroHAWK and the FHV7 series, which cover the majority of applications. Below you can find a comparison in terms of investment versus performance for these four product families.



Smart cameras and vision sensors

MicroHAWK V/F Series features overview



Overview

As the inventor of the first laser diode barcode scanner and the DataMatrix barcode symbology, Microscan Systems became part of Omron Automation in 2017. With this acquisition, Omron now holds one of the world's most extensive patent portfolios for barcode reading and machine vision technology.

The MicroHAWK line was launched in 2016 to cover a variety of barcode reading and machine vision needs with an extremely small footprint. Now updated with new features and additional models that further address pressing traceability and vision requirements, the latest generation of MicroHAWK continues to provide incredible value and performance in all industrial applications.

Inspection, code reading and character reading all in one

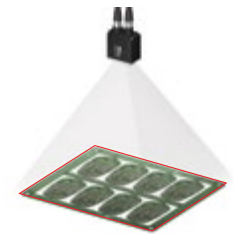
The F430/F420 Series successfully performs both functions, simplifying inspection tasks overall.



A single camera can now perform both code reading and inspection

High-resolution 5-megapixel color camera

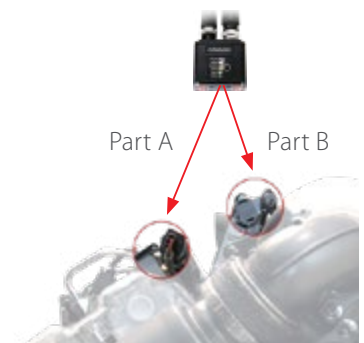
The 5-megapixel color camera of the F430/F420 Series delivers high-resolution imaging of multiple points with a single device.



With the F430/F420 Series 5MP high-resolution color camera, a single device covers all inspection needs

Long life liquid autofocus lens

To inspect multiple parts that vary in size, an autofocus lens does not require multiple cameras or a mechanical structure to change camera position. Its longevity is much greater than that of mechanical autofocus lenses.



A single F430-F/F420-F Series camera

MicroHAWK V/F Series

Product Lineup



Feature	V320, F320	V330, F330	V420, F420	V430, F430	V440, F440
Barcode Symbol Types	1D, 2D, Direct Part Marks	1D, 2D, Direct Part Marks	1D, 2D, Direct Part Marks	1D, 2D, Direct Part Marks	1D, 2D, Direct Part Marks
Sensor Resolutions Available	752 (H) x 480 (0.3MP) (V) Mono 1280 (H) x 960 (1.2MP) (V) Mono 2592 (H) x 1944 (V) (5.0MP) Color	752 (H) x 480 (0.3MP) (V) Mono 1280 (H) x 960 (1.2MP) (V) Mono 2592 (H) x 1944 (V) (5.0MP) Color	752 (H) x 480 (0.3MP) (V) Mono 1280 (H) x 960 (1.2MP) (V) Mono 2592 (H) x 1944 (V) (5.0MP) Color	752 (H) x 480 (0.3MP) (V) Mono 1280 (H) x 960 (1.2MP) (V) Mono 2592 (H) x 1944 (V) (5.0MP) Color	2464 (H) x 2056 (V) – 3.45 µm Pixel Size
Illumination Standard	8 LED White/Red	8 LED White/Red	8 LED White/Red	8 LED White/Red	External Only
Illumination Optional	N/A	N/A	8 LED, White, Red, Blue, IR	8 LED or 24 LED (Ring Light), White, Red, Blue, IR	External Only
Lens Focal Length Available	Wide, Medium, Narrow	Wide, Medium, Narrow	Wide, Medium, Narrow, Long Range	Wide, Medium, Narrow, Long Range	External Only
Lens Focal Length Available	Fixed Focus; 50, 64, 102, 190, 300 mm	Fixed Focus; 50, 64, 102, 190, 300 mm	50-300mm Autofocus, 75-1200mm Autofocus, Fixed Focus	50-300mm Autofocus, 75-1200mm Autofocus, Fixed Focus	External Only
Processor Speed	500 MHz	500 MHz	800 MHz	800 MHz	866 MHz
Maximum Shutter Speed	Up to 52 frames per second	Up to 60 frames per second	Up to 60 frames per second	Up to 60 frames per second	35 FPS for 5 MP
I/O	N/A	1 input/1 output	3 inputs/3 outputs	3 inputs/3 outputs	3 inputs/3 outputs
Communication	RS-232, USB 2.0 Full-Speed (Ethernet over USB and HID)	Ethernet TCP/IP, EtherNet/IP, PROFINET	RS-232C, USB 2.0 High Speed, Ethernet over USB/HID	RS-232C, Ethernet TCP/IP, EtherNet/IP, PROFINET	RS-232C, Ethernet TCP/IP, EtherNet/IP™, PROFINET
Power Input Required	5VDC	44-57 VDC IEEE802.3af POE	5VDC	5 to 30 VDC	PoE (44-57 VDC): 0.10 A or 24 VDC: 0.15 A
Environmental Degree of Protection	IP40	IP40	IP54	IP65/67	IP40
Housing Dimensions	24.1mm H x 51.5mm W x 38.8mm D	24.1mm H x 40.0mm W x 63.0mm D	25.4mm H x 44.5mm W x 38.1mm D	25.4mm H x 44.5mm W x 44.5 mm D	30 mm H x 40 mm W x 61 mm D
Read Range	see product datasheet				
Optional Vision Software	AutoVISION, Visionscape (F320)	AutoVISION, Visionscape (F330)	AutoVISION, Visionscape (F420)	AutoVISION, Visionscape (F430)	AutoVISION, Visionscape (F440)

Datasheet

Brochure



Additional Resources

Smart cameras and vision sensors

FHV7



Overview

Omron's new FH-Series Vision System is a compact yet powerful solution for advanced defect detection. With top-of-the-line sensing and processing capabilities, the vision system is designed to maximize production line performance and flexibility by matching and exceeding the sensitivity of human vision.

The FHV7 Smart Camera provides several options for components, allowing you to freely combine the lens and light with the camera and easily adjust the optical conditions to specific products. The footprint of the camera is not affected by module replacement. Even if a sudden change occurs in the product specification, the system can be ready after minimal configuration changes.

Robust structure

IP67 waterproof housing and connectors

IP67 rating allows for use in harsh conditions, such as regular wash-downs of the area where the cameras are installed.



Captive screws

Serviceable components use captive screws, preventing problems caused by the screws falling into the production line and not properly re-sealing the camera housing.



High scalability

External lights supported

The Omron FLV and FL Lighting Series consist of a wide offering of more than 150 models, and can easily be attached as external lights to FHV7 Smart Cameras.

By connecting the lighting controller, you can, via the FHV7 configuration setting menu, easily adjust the lighting intensity and set strobing to synchronize with the activation of the camera shutter.



FHV7

System Components



Configurations or Models	C-mount lens	C-mount lens + cover	Auto-focus Lens	Auto-focus lens + cover	Auto-focus lens + Internal lighting/IP67
Sensor resolutions	0.4MP Global S. Mono/Color - 720 (H) x 540 (V)		0.4MP Global S. Mono/Color - 720 (H) x 540 (V)		
	1.6MP Global S. Mono/Color – 1440 (H) x 1080 (V)		1.6MP Global S. Mono/Color – 1440 (H) x 1080 (V)		
	3.2MP Global S. Mono/Color – 2048 (H) x 1536 (V)		3.2MP Global S. Mono/Color – 2048 (H) x 1536 (V)		
	5MP Global S. Mono/Color – 2448 (H) x 2048 (V)		6.3MP Rolling S. Mono/Color – 3072 (H) x 2018 (V)		
	6.3MP Rolling S. Mono/Color – 3072 (H) x 2018 (V)				
	12MP Rolling S. Mono/Color – 4000 (H) x 3000 (V)				
Optional Illumination	Connector for external light with internal SW control (FL/FLV light series)				Internal Modules: R, W, IR or Multi-color
Lens Focal Length	Broad variety of C-Mount Standard, Tele-centric, and Vibration/Shock resistant lens		Autofocus liquid lens; 6mm, 9mm, 12mm, 16mm, 25mm		
Processor Speed	Dual Core CPU (with core management capability)				
Frame rate (image acquisition time)	0.4MP: 430fps (2.3ms); 1.6MP: 224fps (4.5ms); 3.2MP: 55fps (18ms); 5MP: 35fps (28ms); 6.3MP: 59fps (16.7ms); 12MP: 19fps(25ms)		0.4MP: 430fps (2.3ms); 1.6MP: 224fps (4.5ms); 3.2MP: 55fps (18ms); 6.3MP: 59fps (16.7ms);		
I/O Options	Built-in I/O connector + optional I/O data expansion unit				
Communication	Built-in RS-232, Ethernet (EtherNet/IP, PROFINET, others), Parallel I/O; Optional EtherCAT data unit				
Power Input	24 VDC				
Degree of Protection	IP40	IP67	IP40	IP67	
Dimensions	see product datasheet				
Available Software Platforms	FZ-PanDA (FHV/FH/FJ Software), Sysmac Studio				
Additional Info	Ambient operating temperature; 0 - 40C				



Additional Resources

Datasheet



Brochure



Omron vision family of products

Compact vision systems - controllers



Click on the product photos to view more information on our website.

FH-L550



FH Lite is our entry-level vision system that accommodates medium-speed applications

- Runs the same software as the faster FH systems
- Dual-core mid speed processor
- 2 and 4 camera models in single line processing mode
- Camera resolutions from 0.3MP to 12MP (Global and Rolling Shutter sensors)
- Mono-chrome and color cameras, including Real Color Sensing technology
- EtherNet/IP plus additional communication interfaces

FH2050



FH2050 provides a faster processor and expanded memory

- Additional capabilities beyond FH-L550
- Dual-core high-speed processor
- 2-, 4- and 8-camera models
- Multi-line processing capability: each camera can independently be triggered and can operate synchronized in a single line or completely independent on separate lines
- EtherNet/IP, EtherCAT, plus additional communication interfaces
- Camera resolutions from 0.3MP to 20MP (Global and Rolling Shutter sensors)
- Support for AI Fine Matching

FH5050/FH5550



FH5050 provides a quad core processor and expanded memory

- Additional capabilities beyond FH2050
- Quad core high speed processors
- FH5050 is the fastest vision system in the market and can support up to 20MP cameras, where 4 can be combined to obtain up 80MP for wide field of view
- FH5550 adds 24GB of RAM vs. FH5055
- Support for AI Fine Matching, AI Scratch Detection, and Omron 3D Cameras

Vision System Controllers

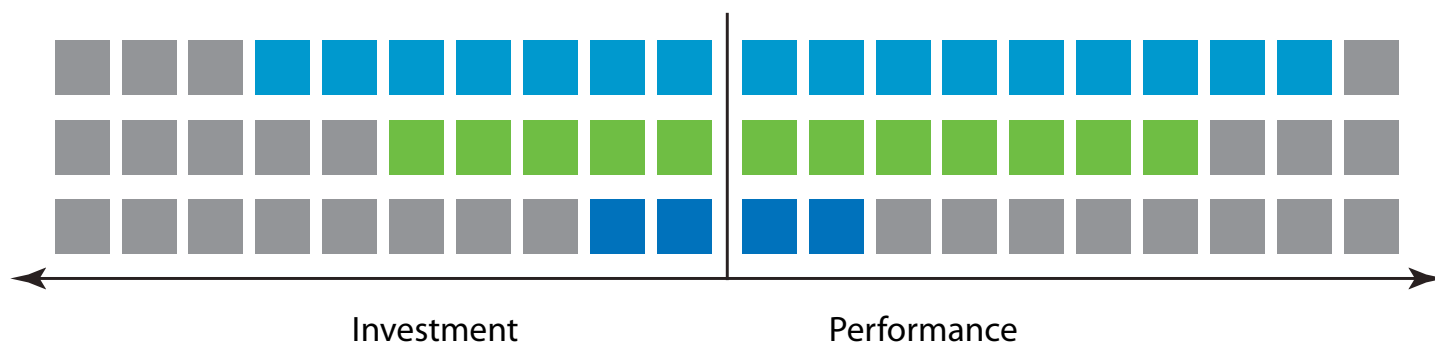
Features and Comparison



Model	FH-L550	FH2050	FH5050/ FH5550
Features	FH Software	FH Software plus AI Fine Matching	Same features as FH2050 plus supports FH-UMAI Scratch Detection Filter
	Supports 0.3-12 MP cameras	Highest resolution (0.3MP-20.4 MP)	
	2 core Intel CPU, single line inspection only	2 core Intel CPUs	4 core Intel CPUs 8GB/32GB RAM
	Global and Rolling Shutter options	Global and Rolling Shutter options	Global and Rolling Shutter options
	2 and 4 camera models	2,4, and 8 camera models	Supports up to 4x 20.4MP in same controller
	Real color sensing	Real color sensing	Same features as FH2050 plus supports FH-SMD 3D camera series
	EIP/PROFINET	EIP/PROFINET/ECAT	



Performance and Investment



FHL550/L550-10



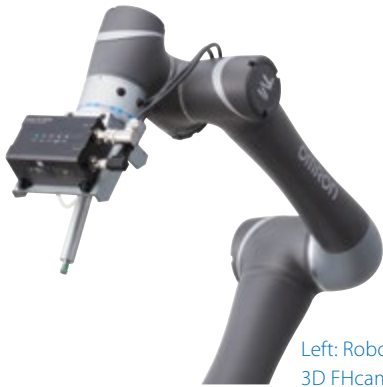
FH2050



Super FH5050/5550

Smart cameras and vision sensors

FH Series



Left: Robot-mounted
3D FHcamera



AI

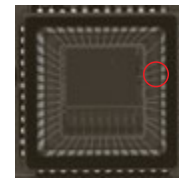
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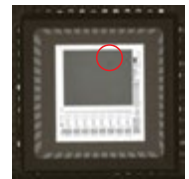
- High-speed, high-resolution (20.4 Mpix) compact cameras with a wide field of view
- Innovative MDMC Light technology that spots subtle defects
- Unique and powerful image processing algorithms
- High-capacity storage with industry's fastest controller technology
- AI scratch detection and fine filter
- 3D camera for robotic bin picking applications

Automation of external inspection via AI

New lights and new filtering technologies make difficult-to-see defects visible



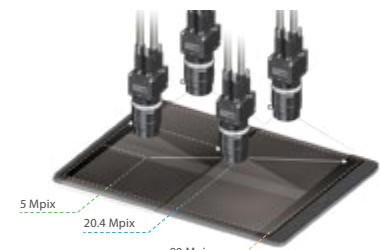
Broken wires



Scratches and dirt on surface

Wide field of view

High resolution images can be combined to obtain up to 80 Mpix to providing a very wide field of view



20.4 Mpix camera
Inspect images from 4 cameras to capture objects with varying sizes or complex shapes.

High-capacity storage

Large-volume image data for complex applications and quality control can be processed at extremely high speeds



Intel® Core™ i7
processor

High-speed,
Large-capacity Controller
FH-5050 Series

FH Series

System Components

Select the best combination for your application

Cameras

No. of pixels	High-speed camera	Standard camera	3D Camera	Rolling shutter camera	Camera with built-in light
20.4 Mpix*	—	—	—	FH-S□21R	—
12 Mpix	FH-S□X12	—	—	—	—
5 Mpix	FH-S□X05	FZ-S□5M3	—	FH-S□05R	—
2 Mpix	FH-S□02	FZ-S□2M	—	—	—
1.3 Mpix	—	—	FH-SMDA-GS050B	—	—
0.4 Mpix/ 0.3 Mpix	FH-S□X	FZ-S□	—	—	FZ-SQ□□□□

Controllers

	Series	CPU	Performance	Memory	No. of connect- able cameras	Fieldbus
High-speed, Large-capacity Controller	FH-5550 Series	Intel® Core™ i7 pro- cessor 4 cores	★★★★★	RAM 32 GB, ROM 64 GB	8 max.	PROFINET, EtherNet/IP™, EtherCAT
High-speed Controller	FH-5050 Series	Intel® Core™ i7 pro- cessor 4 cores	★★★★★	RAM 8 GB, ROM 32 GB	8 max.	PROFINET, EtherNet/IP™, EtherCAT
Standard Controller	FH-2050 Series	Intel® Celeron® pro- cessor 2 cores	★★★	RAM 8 GB, ROM 32 GB	8 max.	PROFINET, EtherNet/IP™, EtherCAT
Lite Controller	FH-L550 Series	Intel® Atom® processor 2 cores	★	RAM 3 GB, ROM 4 GB	4 max.	PROFINET, EtherNet/IP™

Optional product (sold separately)	Model
Scratch Detect AI Software Installer ¹	FH-UMAI1

1. This product can be installed on the FH-5□50-series Controller (version 6.4 or later)

Camera Lights

External Lighting controller		
Description	LED	High-brightness LED
Camera-mount Lighting Controller	FLV-TCC	FL-TCC
Bar Light	FLV-BR	FL-BR
Direct Ring Light	FLV-DR	FL-DR
Low Angle Ring Light	FLV-DL	—
Coaxial Light	FLV-CL	—
Shadowless Light	FLV-FR/FP/FS/ FQ	—
Spot Light	FLV-EP	—
Direct Back/Edge Type Light	FLV-DB/FB	—
Dome Light	FLV-DD	—
Photometric Stereo Light*	—	FL-PS
Built-in lighting controller		
Description	Model	
MDMC Light	FLD-MD	

Touch panel monitor

Description	Model
Touch Panel Monitor 12.1 inches	FH-MT12
DVI-Analog Conversion Cable for Touch Panel Monitor	FH-VMDA □□
USB Cable for Touch Panel Monitor	FH-VUAB □□



Additional Resources

Datasheet

Brochure

Brochure



Omron vision family of products



Click on the product photos to view more information on our website.

PC-based vision

AutoVISION or Visionscape plus Omron Sentech STC-M Series GigE Vision Cameras and USB3 Vision



Omron offers the new Sentech STC-M Series GigE series with CMOS sensors. Resolutions from that camera family vary from 0.4MP all the way to 20MP.

Users need to purchase the AutoVISION/Visionscape software license (part # GMV-VGL0-1DD1) and the necessary STC-M Series GigE Vision and USB3 Vision cameras.

FJ2 Cameras



The FJ2 series is the next evolution of the former FJ series. It is coming with the same resolution options (from 0.4MP all the way to 5MP). These cameras will only work with the FH/FJ programming software.

Users have the option to acquire just the camera (s), just the software or the camera+software as single part number

IPCs



Omron also offers an extensive line of Industrial PCs that can be used to install the Camera Programming software to connect with these cameras via Ethernet port. They are part to the NY series and more information can be found in our website.

Some of these IPCs have the option to run in parallel a Machine Automation Controller and an Industrial PC, which would give you total machine control in a single device (Logic+Vision in a single device).

Vision System Controllers

Features and Comparison

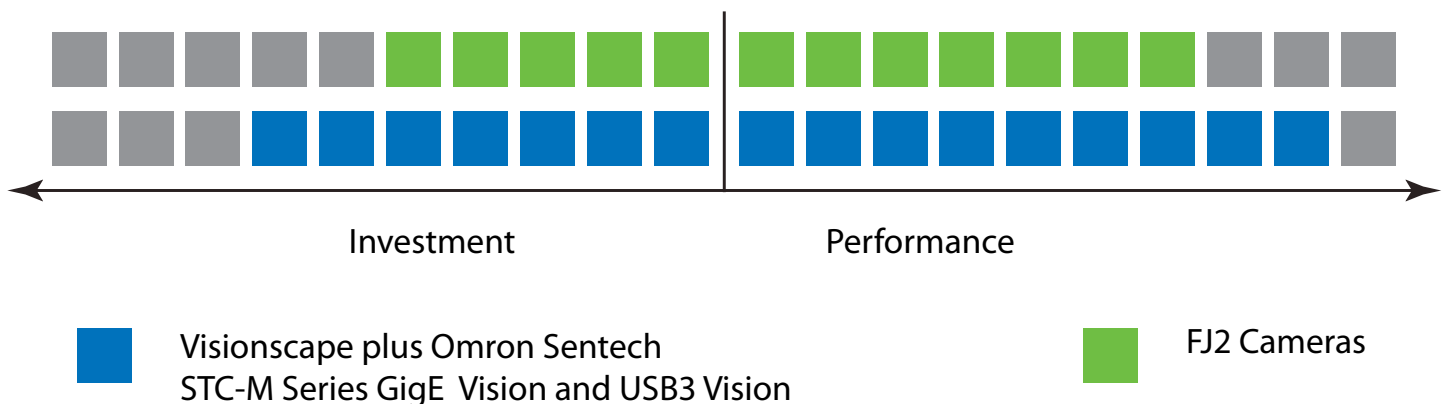


Model	AutoVISION or Visionscape plus Omron Sentech STC-M Series GigE Vision Cameras and USB3 Vision	FJ2 Cameras
Features	0.4, 1.6, 2, 3.2, 5, 12 and 20 MP cameras	Fj2 GigE Camera (POE)
	Visionscape license needed, but a single camera can be programmed via AutoVISION	0.4, 2 and 5MP cameras
		Runs with FJ/FH Software



Performance and Investment

With the acquisition of Omron Microscan and Omron Sentech, Omron offers PC-based cameras using either the Visionscape FrontRunner interface or via the FH/FJ Programming Software.



Additional Resources

Brochure



Machine Vision Software

Three powerful platforms to address all your machine vision needs

1. AutoVISION and Visionscape FrontRunner

Applicable cameras: MicroHAWK Fxxx and MVxx series; HAWK MV4000 and STC-M Series and USB3 Vision cameras

AutoVISION: this should cover the majority of vision applications. It is a simple yet power software interface where programmers can self-learn the tool and have a machine vision application running in less then 10 minutes, especially if paired with the new MicroHAWK smart cameras.

Visionscape FrontRunner: if the user requires more advanced capabilities within the same camera family, this interface allows users to have access to more than 100 machine vision tools.

Web Monitor: formerly called as CloudLink, this is web based interface dedicated for monitoring your cameras. If can be fully customizable and even edit some of the jobs already pre-loaded to the camera.

2. FHV/FH/FJ/FZ Programming interface

Applicable cameras: FHV7, FH, FJ and FZ systems

Software: The same programming interface is shared within smart cameras like FHV7 all the way to powerful vision systems like FH, so scalability is key when considering this family. If using it with the FHV7 smart camera, the software will allow to chose from more than 75 inspection tools, and when using with a FH vision system for example it will expand for more than 100 tools. It is a single piece of software that can be used for Programming, Simulation and Monitoring purpose.

3. Sysmac Studio

Applicable cameras: FHV7 and FH systems

Software: Sysmac Studio is a true IDE (Integrated Development Environment) where via a single software interface you will be able to program your machine controller, industrial network, safety controls, motion, robots and vision.

If you are already a Sysmac controller user with a full standard license, you already have access to the Vision Sensor category. You have the option to program the vision sensor via Sysmac Studio, but a lot of users prefer to program the vision portion of the machine using the dedicated vision software (FZ-PanDA for example) and then switch to Sysmac Studio when it is ready to integrate vision with the rest of the machine.

Machine Vision Software

AutoVISION Programming Software



Overview

Easiest software available for beginners to machine vision

Simplifies common machine vision applications

Intuitive navigation with instant automated feedback

Scalable to more complex applications

Comprehensive tool set separated in 3 licenses selected with the camera purchase



AUTOVISION provides the most commonly used machine vision inspection tools in an intuitive interface

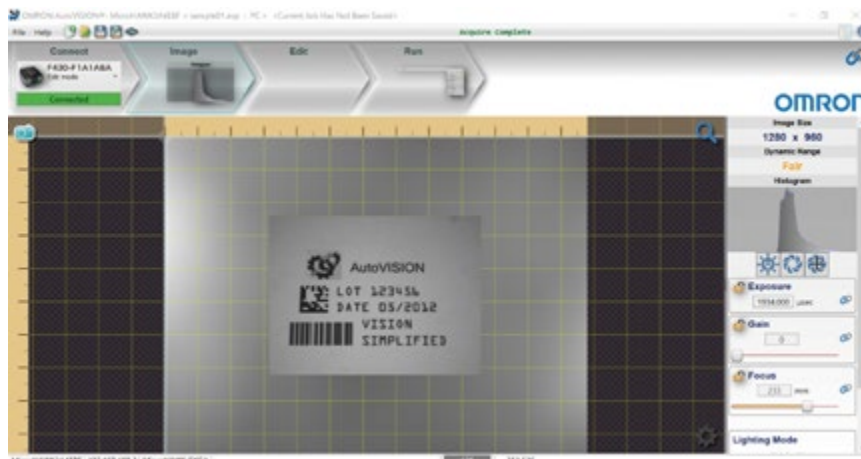
Main New Features

Non-Linear Calibration and Calibration Utility

New improved decode algorithm
Same as in WebLink 2.0

Latest ISO verification standards
(ISO 15416:2016)

Support for Omron Sentech STC-M Series GigE and USB3 Vision cameras for use with a PC



Enables both product and label inspection

Machine Vision Software

FH/FHV/FHJ Programming Software



- Scalable for smart cameras, vision systems and pc based cameras
- User can choose to program via traditional measurement flow where they can drag and drop inspection tools, or they can choose to build the programs using a more customizable interface called TDM (Total Design Management) Editor, which allows you to design complex measurement processes while managing variables and data sharing within the system.

Overview

Full traceability capabilities (locate, read, measure, inspect, save and share measurement data)

Robust, accurate and extremely fast object detection tools including Shape Search 3

State of art patented Real Color Sensing technology for true color analysis

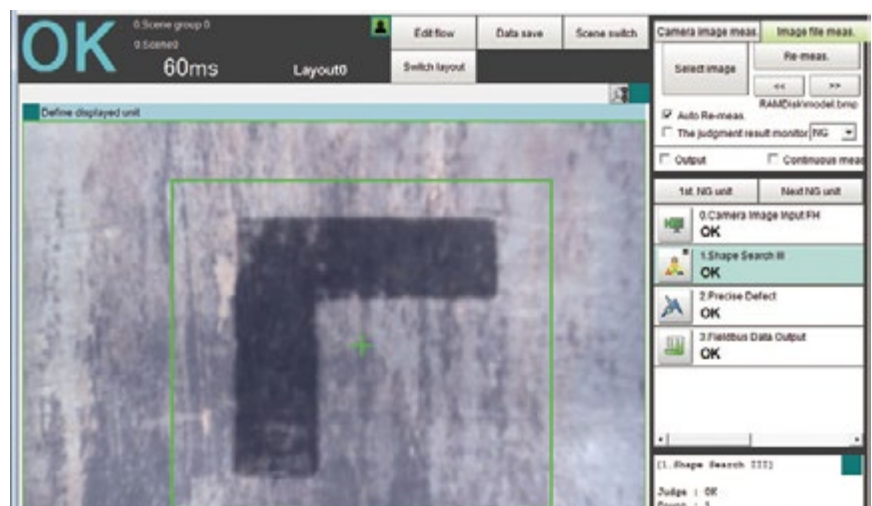
Simplicity on setting OCR capable of reading touching characters and curved strings with built-in dictionary

Auto core management or manual core allocation for parallel processing and logging data without slowing down the process

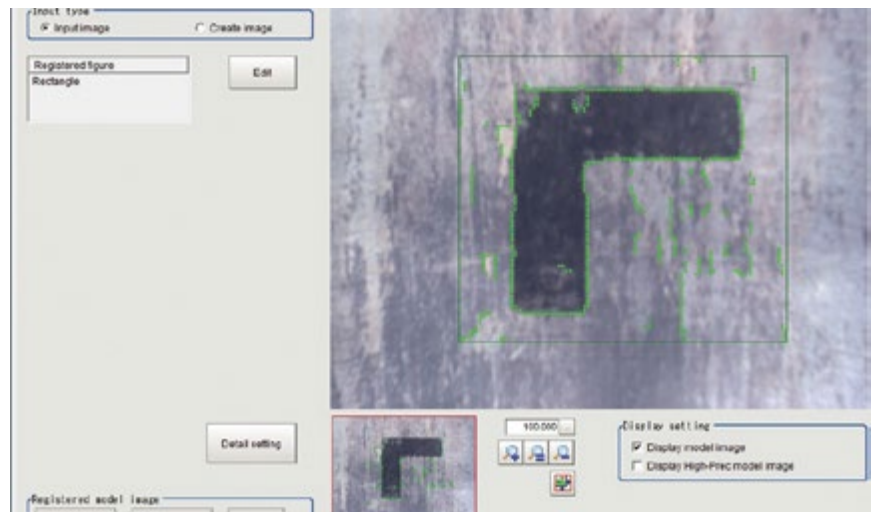
Powerful Operator layout customization and user password control

Multiple image acquisition modes, including HDR and advanced filtering options

AI Fine Matching and Scratch Detection Filter



Shape Search 3 quickly locates object of interest in the field of view



Even minor defects are consistently and reliably detected

Machine Vision Software

Sysmac Studio



Sysmac
always in control

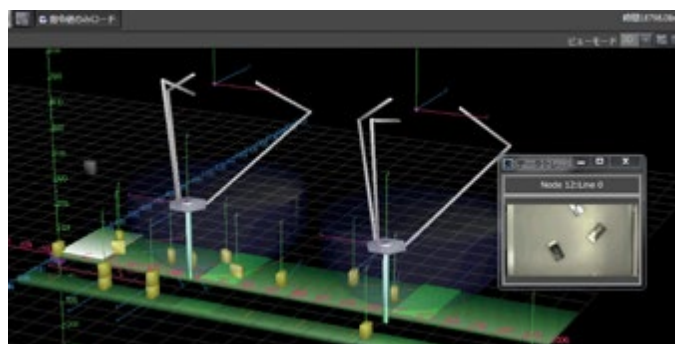
Overview

Sysmac Studio is a true integrated development environment (IDE) for programming your machine controller, industrial network, safety, motion, robots and vision via a single software interface. If you are already using a Sysmac controller with a full standard license, you have access to the Vision Sensor category. Program the vision sensor via Sysmac Studio or use the dedicated FZ-PanDA vision software and switch to Sysmac Studio later.

Powerful machine simulation and troubleshooting tools within a single software interface dramatically simplify integration when using EtherCAT. Take advantage of this robust, real-time industrial protocol to speed up data sharing between the vision system and the PLC. Any user can implement the industrial network in less than two minutes and start sharing numeric and string data directly to a database for traceability.



The Sysmac technology platform ensures a flexible and integrated production business model



3D Simulation tool enables seeing changes that result from code edits

Machine Vision Accessories

Lights and lenses for any industrial application



Overview

Besides providing full machine vision solutions in terms of cameras and full vision systems, Omron provide multiple accessories that could be associated with a particular product category and family, or general ones like lights, lenses and industrial monitors

Omron Lights

- Complete lineup of lights that can be powered up directly by the camera (single cable), which can also provide light intensity control with the same camera software. Programs can store light intensity parameters and switch them as necessary

Omron Lenses

- Multiple connection types, formats and technologies to match our camera lineup. Please refer to our Vision Accessory Catalog for all details and selection guides.

Lighting Options

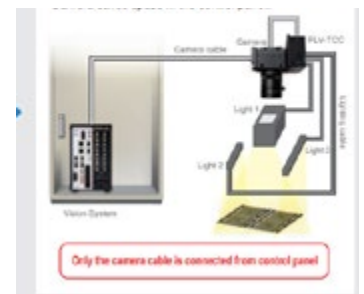
Standard Lighting System

Complicated wiring from the control panel to the lights and camera is required
Space to install the Power Supply for lights in the control panel is required



FLV-TCC Series

Power supplied from the camera eliminated the need for complicated wiring
The compact design enables mounting onto the camera saves space in the control panel..



Lenses

Photometric Stereo Light

The new FH Photometric Stereo Light can be used with standard or high-resolution cameras up to 20.4 Mpix. To detect dents and surface damages with high accuracy. A 5, 12 or 20.4 Mpix high-speed camera can be selected.



Machine Vision Accessories

Lights and lenses for any industrial application



Additional Resources

Brochure



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