CKD
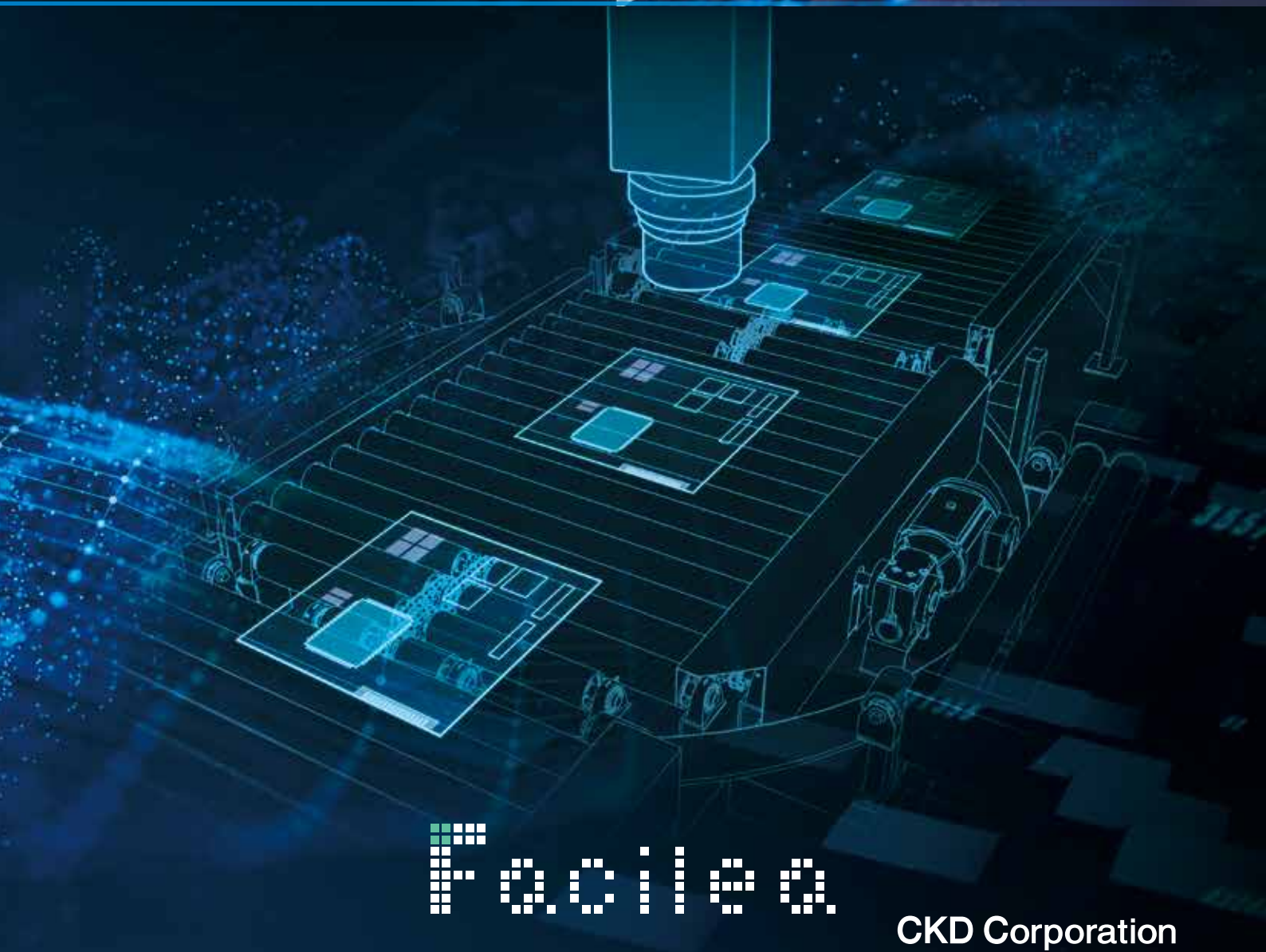
Facilea

Visual programming tool for image processing

Versatile Functions
Flexible Image Processing

Facilea

CKD Corporation

Proposing software solutions that can be done only by components and equipment manufacturers who are well versed in the field

CKD Softwares was developed from the standpoint of system users, making full use of know-how accumulated over many years as a manufacturer of equipment and devices. We propose optimal solutions for image processing, equipment control, and data collection that are tailored to the field.
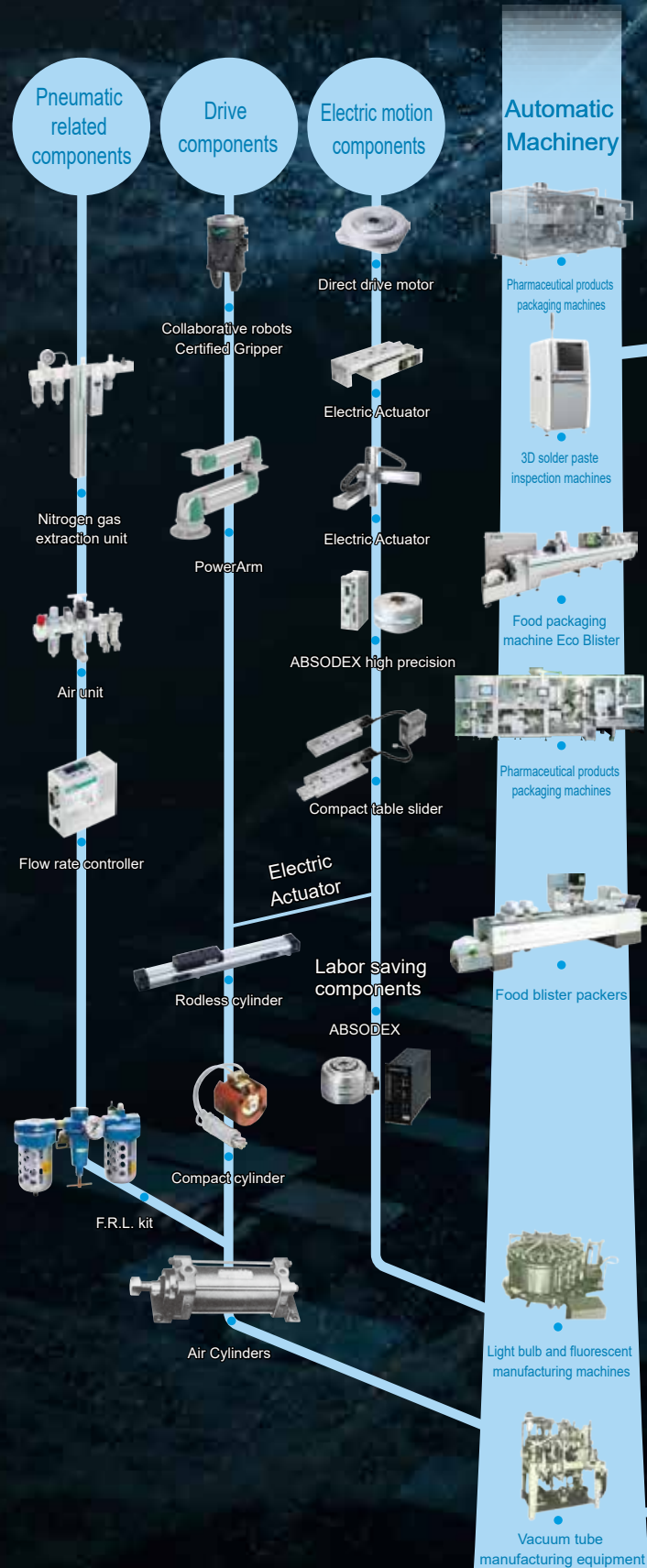
Pneumatic related components

- Nitrogen gas extraction unit
- Air unit
- Flow rate controller
- F.R.L. kit
- Air Cylinders

Drive components

- Collaborative robots Certified Gripper
- PowerArm
- Rodless cylinder
- Compact cylinder

Electric motion components

- Direct drive motor
- Electric Actuator
- Electric Actuator
- ABSODEX high precision
- Compact table slider
- Electric Actuator
- Labor saving components
- ABSODEX

Automatic Machinery

- Pharmaceutical products packaging machines
- 3D solder paste inspection machines
- Food packaging machine Eco Blister
- Pharmaceutical products packaging machines
- Food blister packers
- Light bulb and fluorescent manufacturing machines
- Vacuum tube manufacturing equipment

Software

Image processing Visual programming tool

Facilea

Image processing software that allows intuitive operation and programming

Image processing AI tools

Facilea AI

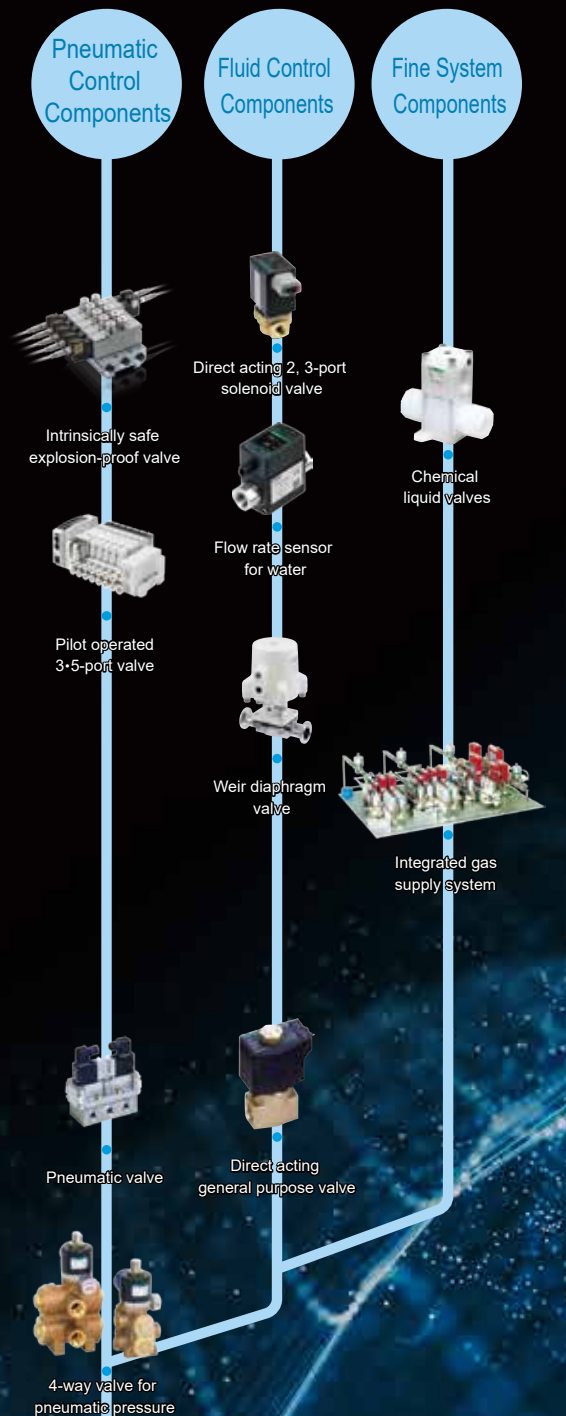Software that can learn and evaluate images and output model files that can be used with Facilea

Device Visual Programming Tool

ExiaStudio
ExiaStudio Pro

Easy-to-use software for programming beginners to collect information and build equipment control programs using only a PC.

Pneumatic Control Components

- Intrinsically safe explosion-proof valve
- Pilot operated 3·5-port valve
- Pneumatic valve
- 4-way valve for pneumatic pressure

Fluid Control Components

- Direct acting 2, 3-port solenoid valve
- Flow rate sensor for water
- Weir diaphragm valve
- Direct acting general purpose valve

Fine System Components

- Chemical liquid valves
- Integrated gas supply system

Facilea

Intuitive operation and easy programming

Visual programming adopted

Programs can be easily created by mouse operation, and adjustments can be made while confirming changes in image processing in real time due to changes in settings.
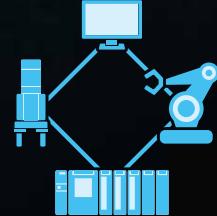
Anyone can start right away.

Flexible combinations

Multiple Camera Connection

Simple Automated Integration

Even if you are a first time user, it takes only 20 mins. to complete the creation!

Anyone can easily build an image processing system by dragging and dropping and entering simple settings.

STEP 1
Drag & Drop
Program Blocks

STEP 2
Input simple
parameter settings.

STEP 3
Start image processing!

Capture and leverage learning model files

Image processing AI tools

Facilea AI

No code from learning to assembly of inspection lines. In combination with rule-based processing, area measurement, number-of-samples measurement, and distance measurement are freely possible.

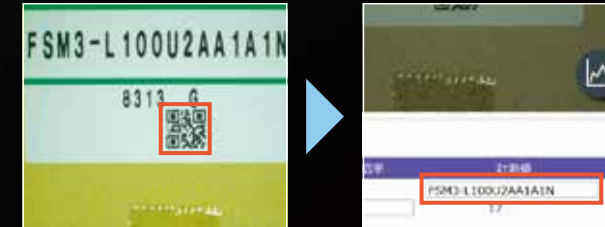Catalog No.CC-1623A Japan only release

Example of measurement and judgment process

✱When you hold your smartphone over the QR code, you can see a video of each process.
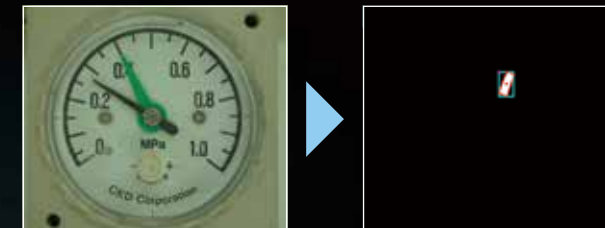
QR code reading inspection

Reads the QR code✱ to display the read string.

FSM3-L100U2AA1A1N
8313 G

FSM3-L100U2AA1A1N

✱QR code is a registered trademark of DENSO WAVE Co., Ltd.

7-segment numeric read

Reads the number on the 7-segment digital display.

Pressure gauge measurement judgment

OK/NG judgment is made after calculating the pressure value from the angle of the pressure gauge needle.

Position/angle correction of workpiece to be inspected

Inspects whether labels are attached to packing boxes placed within a certain area.

Inspecting the number of teeth on gears

The number of teeth on the gear is measured using the "Quantity" measurement.
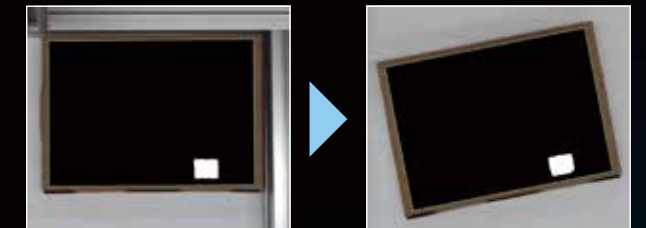
Inspecting the dimensions of gears

Use edge distance to measure gear dimensions.

Part mounting confirmation
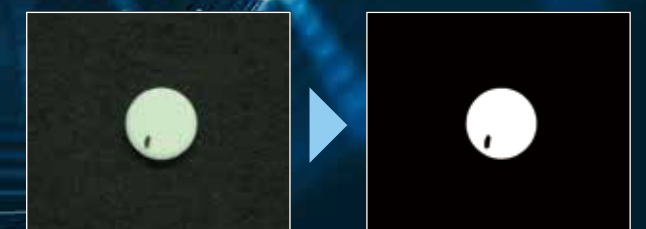
Detects screw installation errors by template matching.

Visual inspection of tablets

Inspects tablets for chipping and foreign matter adhesion by measuring the tablet area.

There's so much variety you can do

Image input block

▶ Import the image and output the imported image.

- **Industrial cameras**
  Basler / OMRON Sentech / Toshiba Teli / iRayple
- **Webcam**
  Compliant with UVC standards
- **Network cameras**
  Conforms to RTSP standards
- **Import image file**
  Supported image format: .png .jpeg .bmp
- **Screenshot image import**, etc.

Lighting block

▶ The light is turned ON immediately before the image is taken in by the image input block, and it is turned OFF when the flow execution ends.

- **I/O connectable lighting power supply**
  Connected with digital I/O unit
- **Lighting Power Supply with LAN Connectivity**
  Manufactured by Raymac / Optex FA / CCS
  (Connects via LAN cable)


Visual Programming Tool for Image Processing

Facilea

40 or more pre-processing types

0123456789ABCDEF

- Binarization
- Binarization in Otsu
- Adaptive binarization
- Binarization hole filling
- Gray image conversion
- Gamma correction
- Histogram planarization
- Histogram range correction
- RGB extraction
- HSV extraction
- RGB channel image
- Pixel value inversion
- Invert Vertically
- Invert Horizontally
- Resize

- Trimming
- Rotation
- Calibration
- Blur filter
- Gaussian filter
- Median filter
- Bilateral filter
- Sobel filter
- Laplacian filter
- Sharpening filter
- 3x3 filter
- 5x5 filter
- Canny Edge detection
- AI segmentation
- Morphological gradient

- Expansion / Condensation
- Opening/Closing
- Top hat
- Black hat
- Noise removal
- Circle mask
- Doughnut mask
- Square mask
- Image mask
- Image pasting
- Difference image
- Mosaic treatment
- Projective transform
- Polar transformation

20 or more measurement / judgment processing types
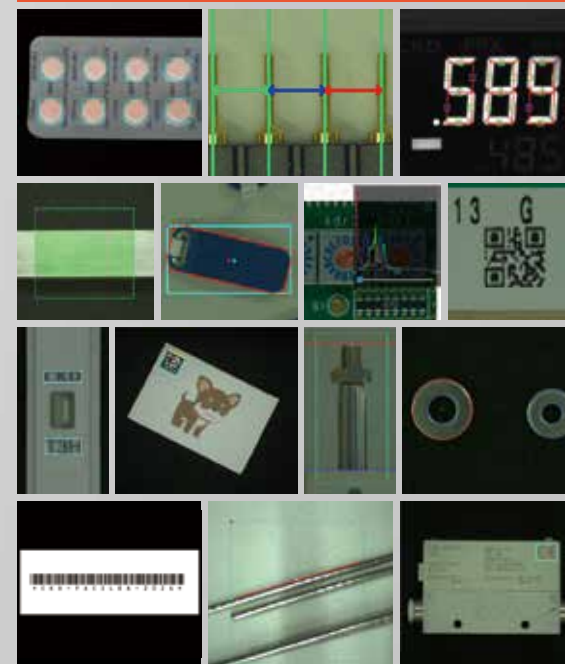
- Area measurement
- Quantity measurement
- Edge distance measurement
- Edge linear measurement
- Object measurement
- Pitch measurement
- Template matching
- Template matching individual measurement
- Template matching classification
- Character recognition
- 7-segment character recognition

- 1D/2D code reading
- Histogram analysis
- AR marker detection
- Circular measurement
- Character merge
- Character extraction
- Character replacement
- Measured value calculation
- Vector analysis
- AI classification

Output block

▶ Output the execution results.

- **Image storage**
  Input image storage, pre-processing image storage, main processing image storage
- **Saving the measurement value judgment result**
  CSV format, JSON format
- **Play Sound**
- **Drive recorder function**

●REC

Server block

▶ Linkage with external components is possible.

- **Digital input/output (I/O linkage)**
- **TCP communication coordination,** etc.

ExiaStudio

For the list of supported devices, please log in to "CKD plus" on the CKD website.
https://www.ckd.co.jp/kiki/en/member/login?ret=/product/detail/973/Facilea(AES)

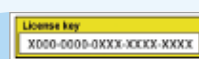# Directions after purchase

Shipping the product

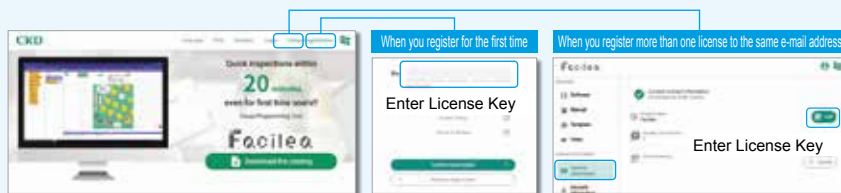CKD will send you the "User's Manual" and "USB Dongle".

USB dongle

Handling precautions

License key

License Registration

Please register from Facilea Homepage
https://www.ckd.co.jp/software/facilea/en/

When you register for the first time

Enter License Key

When you register more than one license to the same e-mail address

Enter License Key

Software Download and Installation

Start using

Specifications

Item		Description	
Part name		Facilea	
Model No.		AES-FACILEA-1	AES-FACILEA-2
Type		Facilea main unit	Renewal license
Operating Environment	OS	Windows11 / 10 64bit	
	CPU	Intel Celeron CPU N3050 1.60GHz or more	
	Required Memory	4 GB or more	
	Required Disk Space	10 GB or more free space	
	.NET Framework	4.6.1 or more	

Caution

● The accuracy of this product is not guaranteed, as the accuracy varies depending on the operating environment and equipment used.
● This product conforms to the general UVC and RTSP standards, but may not operate if camera-specific specifications are present.
● If multiple cameras are connected to the USB hub, the operation may become unstable.
● If the camera is plugged in or unplugged while the application is running, it may not operate properly.
● The number of flows can be up to two for simultaneous processing of multiple flows. Please check with your PC as more simultaneous processing will depend on the operating environment.
● The program will run only when the USB dongle is plugged in.
● The warranty period for this product is one (1) year from the initial delivery to the customer's designated site. For warranty information, please refer to our website.
● AES-FACILEA-1 is subject to the U.S. Export Admin Regulations (EAR99).

Remarks

● The latest version will be available for download for one year from the purchase of the device and one year from the purchase of the updated license.
● For the list of supported devices, please log in to "CKD plus" on the CKD website.
  URL: https://www.ckd.co.jp/kiki/en/member/login?ret=/product/detail/973/Facilea(AES)