

CKD

Facilea

Visual programming tool for image processing

Versatile Functions
Flexible Image Processing



Facilea

CKD Corporation

CC-1548AA5

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.

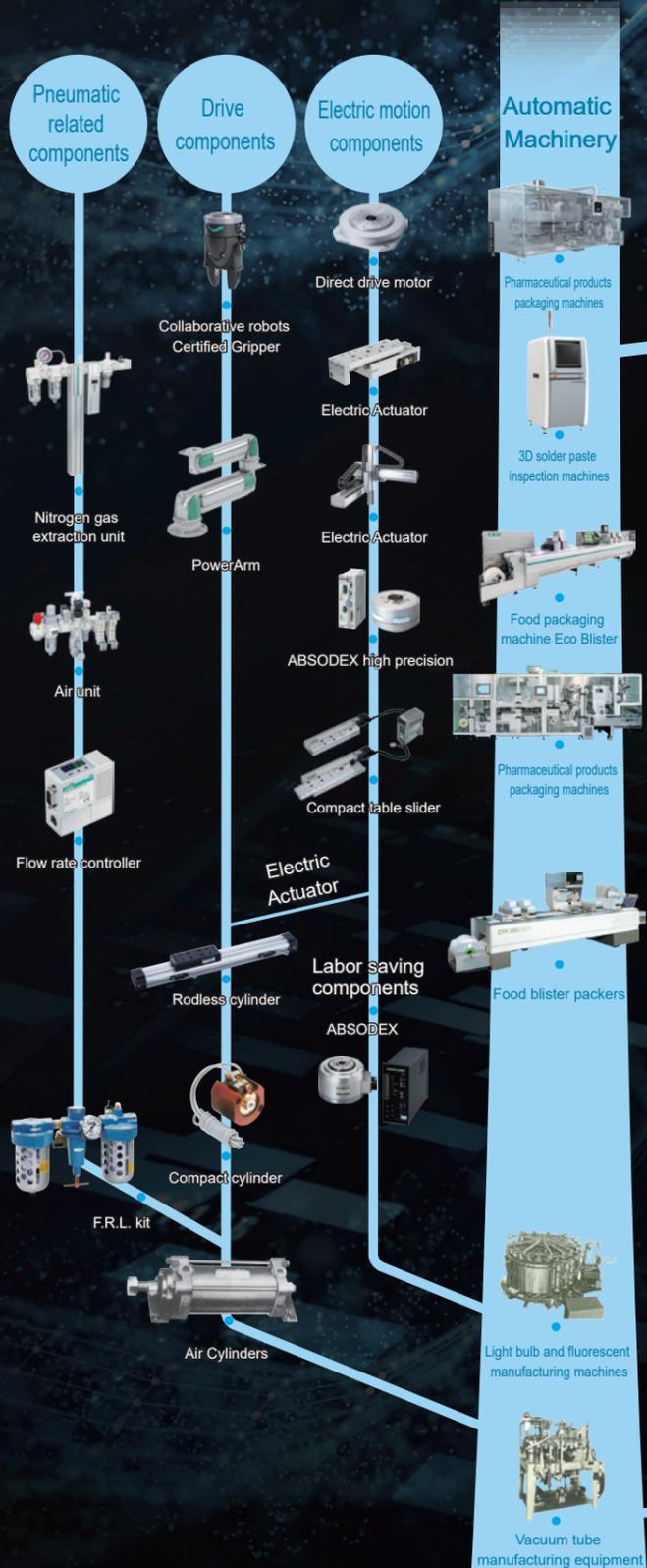


Image processing
Visual programming tool

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

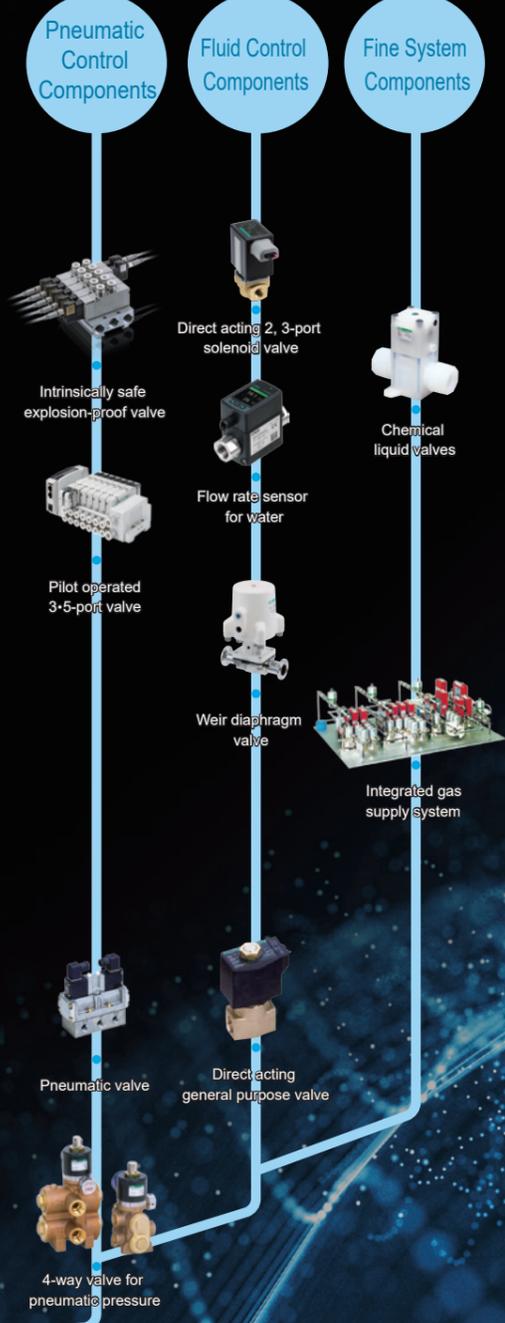


Software

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.



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.



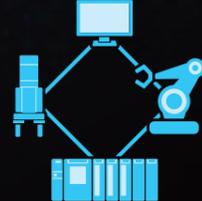
Anyone can start right away.



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-1623AA



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.



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

7-segment numeric read

Reads the number on the 7-segment digital display.



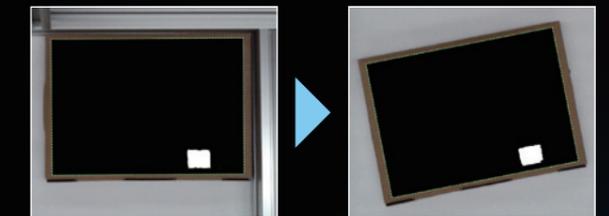
Pressure gauge measurement judgment

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



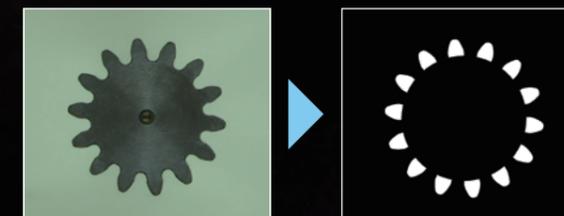
Position/angle correction of workpiece to be inspected

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.

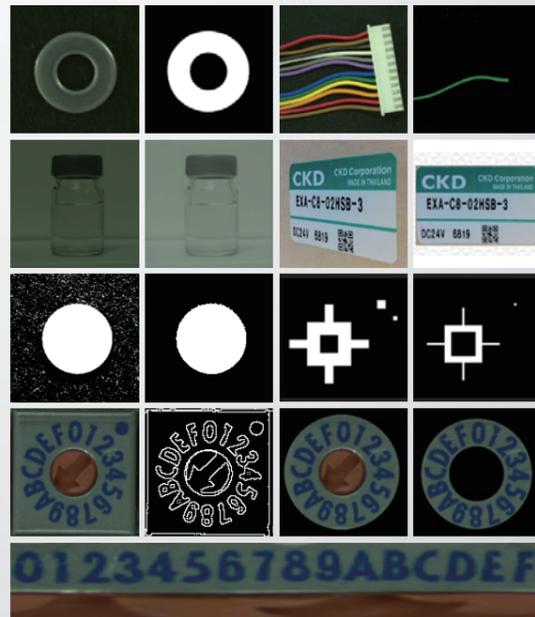
- **I/O connectable lighting power supply**
Connected with digital I/O unit
- **Lighting Power Supply with LAN Connectivity**
Manufactured by Raymac / Optex FA / CCS
(Connects via LAN cable)



Visual Programming Tool for Image Processing

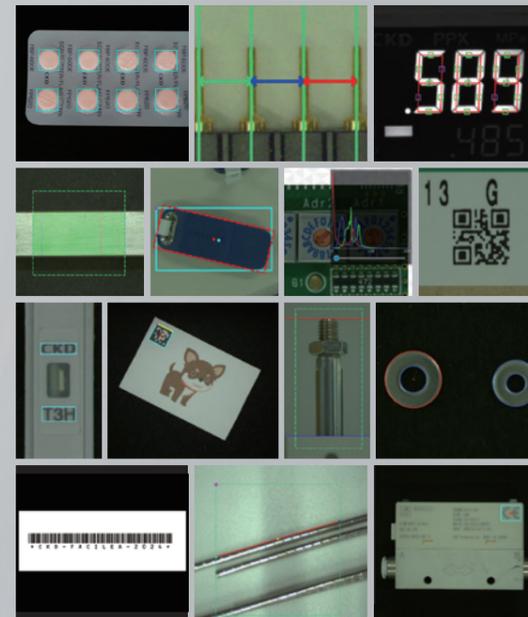
Facilea

40 or more pre-processing types



- | | | |
|------------------------------|--------------------------|----------------------------|
| • Binarization | • Trimming | • Expansion / Condensation |
| • Binarization in Otsu | • Rotation | • Opening/Closing |
| • Adaptive binarization | • Calibration | • Top hat |
| • Binarization hole filling | • Blur filter | • Black hat |
| • Gray image conversion | • Gaussian filter | • Noise removal |
| • Gamma correction | • Median filter | • Circle mask |
| • Histogram planarization | • Bilateral filter | • Doughnut mask |
| • Histogram range correction | • Sobel filter | • Square mask |
| • RGB extraction | • Laplacian filter | • Image mask |
| • HSV extraction | • Sharpening filter | • Image pasting |
| • RGB channel image | • 3x3 filter | • Difference image |
| • Pixel value inversion | • 5x5 filter | • Mosaic treatment |
| • Invert Vertically | • Canny Edge detection | • Projective transform |
| • Invert Horizontally | • AI segmentation | • Polar transformation |
| • Resize | • Morphological gradient | |

20 or more measurement / judgment processing types



- | | |
|--|------------------------------|
| • Area measurement | • 1D/2D code reading |
| • Quantity measurement | • Histogram analysis |
| • Edge distance measurement | • AR marker detection |
| • Edge linear measurement | • Circular measurement |
| • Object measurement | • Character merge |
| • Pitch measurement | • Character extraction |
| • Template matching | • Character replacement |
| • Template matching individual measurement | • Measured value calculation |
| • Template matching classification | • Vector analysis |
| • Character recognition | • AI classification |
| • 7-segment character recognition | |

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**



Server block

▶ Linkage with external components is possible.

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



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\(AES\)](https://www.ckd.co.jp/kiki/en/member/login?ret=/product/detail/973/Facilea(AES))



Directions after purchase

Shipping the product

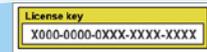
CKD will send you the "User's Manual" and "USB Dongle".



USB dongle



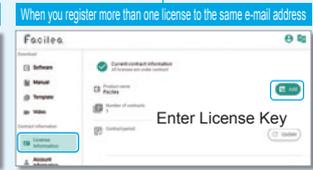
Handling precautions



License key

License Registration

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



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	Windows 11 / 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.
- Simultaneous processing of multiple flows is not possible under the following conditions.
 - ① When the same camera is used in multiple flows.
 - ② When the same AI training model is used in multiple flows.
- The program will run only when the USB dongle is plugged in.
- The warranty period for this product is one year after delivery to your designated location. Please check our website for details on the warranty coverage.
- 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\(AES\)](https://www.ckd.co.jp/kiki/en/member/login?ret=/product/detail/973/Facilea(AES))



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