

Locator Studio

Product Guide

About the Locator Studio

Locator Studio is a set of **Photoneo 3D Sensor(s)** and **Vision Controller** with pre-installed software for:

- Easy configuration of the solution via web-based interface
- Robot-Camera Calibration
- CAD-based object localization: finding object position and orientation (6-DOF pose) in the scene
- TCP/IP interface for communication with an arbitrary robotic controller, PC, or PLC

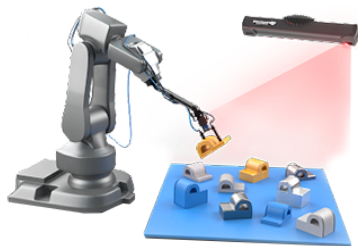
Sample robotic programs are provided to download.

Product is shipped with complete accessories and calibration objects.

Target audience: System integrators with solid knowledge of robot programming.

Use Cases

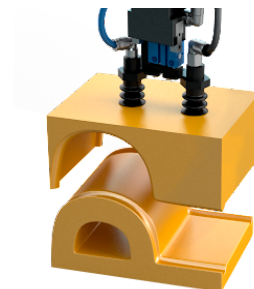
Locator Studio is ideal for robot-guided applications based on referenced position: picking objects from trays, conveyor belts, racks, or to locate components, fixtures for precise placing, screwing, and assembly.



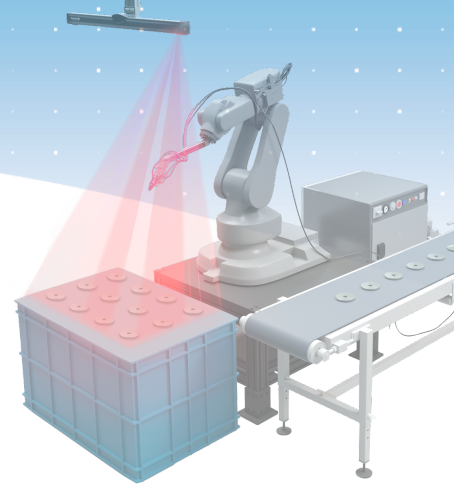
Localization of multiple objects at the time of robotic picking



Trajectory correction based on object position



Assembly of objects based on object position

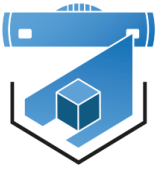


Photoneo 3D Sensor



Vision Controller

Key benefits



Superior 3D scan quality and speed thanks to compatibility with PhoXi 3D Scanner and MotionCam-3D. Scanning ranges from 161 to 3780 mm.



Easy calibration of the vision system with the robot. Support for multiple vision systems. Fixed or on-arm mounting.



Powerful CAD-based pose estimation of multiple objects in a single scan. Support for switching between solutions to search for different parts.



Fast integration with arbitrary robot systems thanks to TCP/IP interface and provided robot examples.

Robot compatibility

Locator Studio provides TCP/IP interface for binary encoded exchange of 6-DOF pose data into a robotic controller, PC, or PLC. This universal interface allows the connection of practically any robot manipulator.

Sample robot programs that implement the interface can be found on Photoneo website. (See [Resources](#).)

Selected robotic examples are provided for ABB, Fanuc, Kawasaki, and Universal Robots (Locator Studio v1.0.0). Examples for additional brands are added per request.



6-axis robot arm



Delta robots



Palletizing robots



Scara robots

Configuration and run-time

Configuration

Vision controller - web-based interface

- Setting up scanning parameters
- Uploading CAD model + localization parameters
- Robot-camera calibration

Run-time

- Robot program triggers 3D scanning and localization sequence
- Robot program asks for found poses of objects

Creation of robot program

- Based on the provided example or implemented by the user based on interface specification

Advanced bin picking applications

Locator Studio is a great tool for vision-guided robotics applications where the objects can be approached by the robot directly, without the need for advanced path planning with collision avoidance.

The most common scenarios are objects lying on a flat surface, ground, conveyors, or stacked in racks.

A typical scenario, where advanced path planning with collision avoidance is required is a bin picking application. It is necessary to account for many possible collisions between the robot and the bin, robot and the part, robot and the camera system, including accounting for gripper design and its different states (empty gripper or gripper holding the part). When parts are overlapping, multiple gripping points are usually considered and the most suitable path to the non-colliding object has to be found. All this functionality is provided by Photoneo's leading solution for advanced applications - **Bin Picking Studio**.

See the comparison below to decide what solution is right for your application. We recommend to think twice about all possible collisions that might happen in your application. If you intend to pick objects from the bin, then we strongly recommend using **Bin Picking Studio**.

High level solution overview	Locator Studio	Bin Picking Studio
Vision system: where are the parts?	✓	✓
Decision logic: which part to pick?	✓ Basic	✓ Full
Communication: how to tell the robot?	✓ Basic	✓ Full
Path planning: how to get there and back?	✗	✓
Avoiding collisions: how to navigate the robot safely?	✗	✓
Robot kinematics compatibility	✓ All	6-axis robots
Robot brands compatibility	✓ All	Selected brands *
Deployment support & training	On demand	✓ 16 hours

* ABB, Denso, Doosan, Fanuc, Kawasaki, Kuka, Mitsubishi, Nachi, Staubli, Universal Robots, Yaskawa

Resources

- Product website: <https://www.photoneo.com/locator-studio>
- Example robot programs: <https://www.photoneo.com/downloads/robot-modules/>
- Quick Start Guide: <https://www.photoneo.com/kb/locator>

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www.photoneo.com