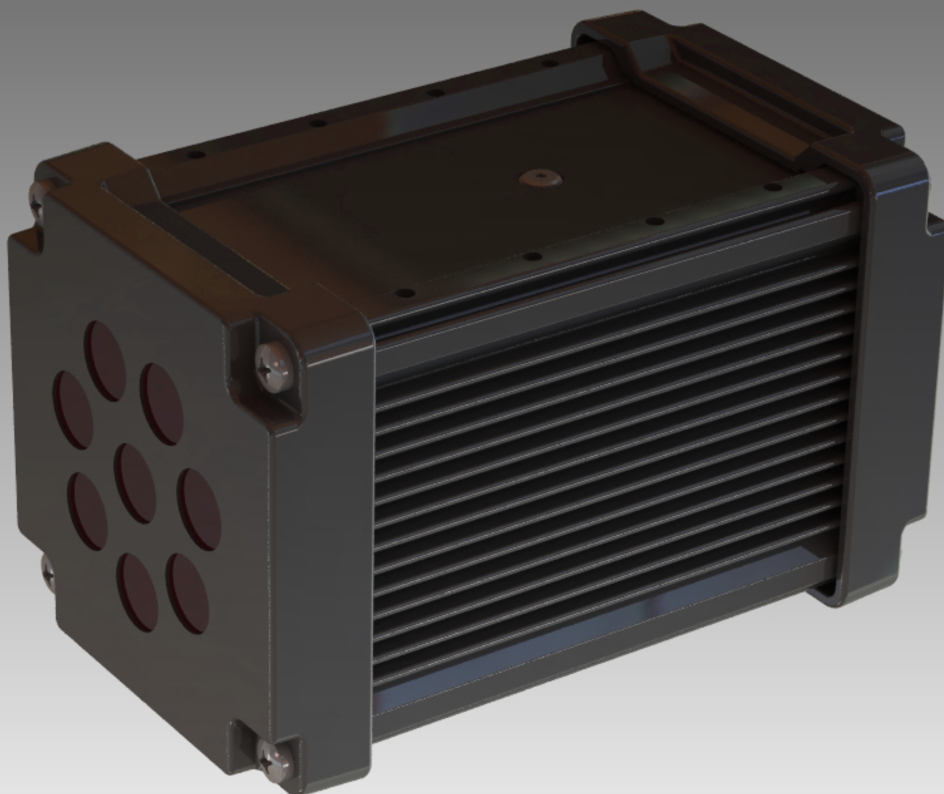


# 3D time-of-flight cameras

## Fast, simple 3D

Streaming point cloud output  
3D plus active IR image acquisition  
Integrated functionality  
Easy industrial deployment

 **StarForm**  
**SWIFT** 



# Advantages

## STREAMING POINT CLOUD OUTPUT

The StarForm Swift is factory configured to directly output a calibrated 3D point cloud, allowing the user to be working with metric 3D data in seconds. Fast frame rates can be used to track dynamic scenes in 3D, or accumulate static scenes to improve precision.

## 3D PLUS ACTIVE IR IMAGE ACQUISITION

Choose to output a 3D point cloud, raw range data, an active IR image, or any desired combination, giving the user freedom to work with the best data for any given application.

## INTEGRATED FUNCTIONALITY

Sensors, optics, illumination, processing and power are contained in a ruggedized industrial housing. Infrared filters prevent unwanted light from reaching the sensor whilst the GPIO interface enables synchronization of the camera.

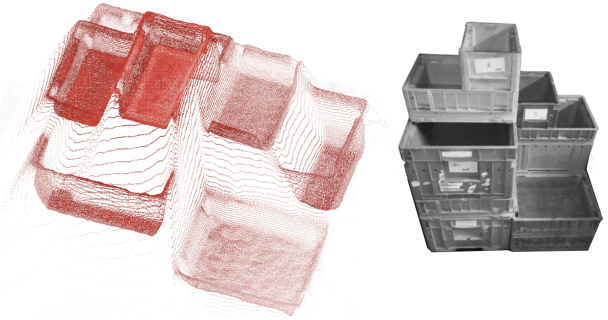
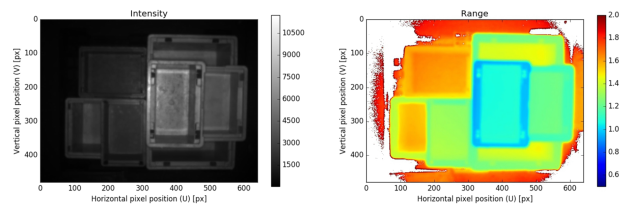
## EASY INDUSTRIAL DEPLOYMENT

Off-the-shelf integration software tools make interfacing to industry standard machine vision software packages quick and simple. The industry standard GenICam compatible interface and GigEVision connectivity makes hardware integration easy to achieve.

# Specifications

RESOLUTION	640 x 480 pixels
FRAME RATE	44 fps
RANGE	0.5 - 6.0 m
FIELD OF VIEW	43° x 33° (H x V)
ILLUMINATION	7 LEDs @ 850 nm
DEPTH PRECISION	1 cm (typical, varies with signal level)
SYNCHRONIZATION	external trigger, GPIO synchronization capability
OUTPUT DATA OPTIONS	xyz point cloud, range, active IR
INTERFACE	GigEVision and GenICam compatible
POWER	12 VDC / 24 W
SOFTWARE	C++ SDK (fully documented with examples)
HOST PC	Windows 7/8/10, Linux 32/64 bit

## ACTIVE IR - RANGE - POINT CLOUD - PALLET STACK DATA EXAMPLE



# Typical Applications

## LOGISTICS - PALLET MANAGEMENT



High resolution depth images ensure packages and pallets can be rapidly and accurately sorted and sized. An active IR image can be captured from the same sensor for tracking, manifest, and security purposes. Sensor systems mounted on a forklift can allow for weight and dimensions of target objects to be captured in real time, increasing the efficiency of the process flow.

## LOGISTICS - PALLETIZATION / DEPALLETIZATION



Increasing the flexibility and efficiency of robot palletizing with depth information is particularly suited to mixed load operation. Absolute dimensions and positions can be acquired and used for space optimization routines, improving the use of space in freight transport and efficient unpacking operations.

## CARTON/OBJECT - DIMENSIONING AND PROFILING



Multiple objects can be dimensioned or sized at the same time, allowing increased throughput and utilization. This approach provides detailed XYZ orientation and minimum bounding box information about each object. It is also possible to use the active IR image to check on the condition of the carton for tracking or manifest purposes.

## FACTORY AUTOMATION - COMPLETENESS CHECK



Combining 3D and active IR images can be used to create robust completeness checking systems. Check that each outbound packing container is fully loaded with the correct number of cartons or items before sealing and avoid costly customer returns.

## FLEXIBLE FACTORIES - AUTONOMOUS VEHICLES AND ASSET TRACKING



Flexible factories are defining the future of industrial automation, promising greater efficiency, higher throughput and single part customization. 3D data streams allow AGVs to identify position, paths, and unplanned hazards. Real time tracking of resources and assets on the factory floor can be achieved by combining 3D data with analytic processes.