VISIONERF

awareness is power

Industrial 3D vision

SOLUTIONS

FOR MORE THAN 30 YEARS, VISIONERF HAS BEEN DESIGNING AND DEVELOPING *VISION AND IMAGE PROCESSING SOLUTIONS* FOR THE AUTOMATION OF PRODUCTION PROCESSES.

With several thousand systems installed worldwide across all sectors of industry, Visionerf has built up unparalleled experience and is now regarded as a leading player in the field of industrial vision.

Thanks to innovative developments in the design of its sensors and software, Visionerf has become the “go-to” partner for customers with increasingly demanding requirements.

Strengthened by its experience, Visionerf can support you in the realization of your projects from start to finish, with an expert and available technical team.

Specific and precise solutions that will meet your needs and a know-how already recognized throughout the world.

RANGE OF 3D CAMERAS

P. 8-9 Cirrus3D LED SCAN
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OUR RANGE OF 3D CAMERAS

Cirrus3D LED SCAN
Cirrus3D LASER SCAN
Cirrus3D STATIC LASER

.01

Cirrus3D CAMERAS

The new Visionerf 3D sensor helps **simplify integration into your industrial process.** Cirrus3D is specially designed for integration at the heart of your installation – without any specific development requirements. Used as **a fixed or mobile component, with the eyesberg3D*** image processing software (patented technology) available as an option, Cirrus3D makes it possible to implement vision/robotic applications of unrivaled effectiveness and very high quality.

ULTRA-RAPID SCANNING
Minimum 0,2 seconds

AUTONOMOUS
“Plug & play” sensor

WATERPROOF INDUSTRIAL CONNECTORS
Power Supply and Ethernet RJ45

COOLING
to ensure a high protection rating

INTEGRATED HIGH-PERFORMANCE
processor for calculating 3D points

5MP CAMERA

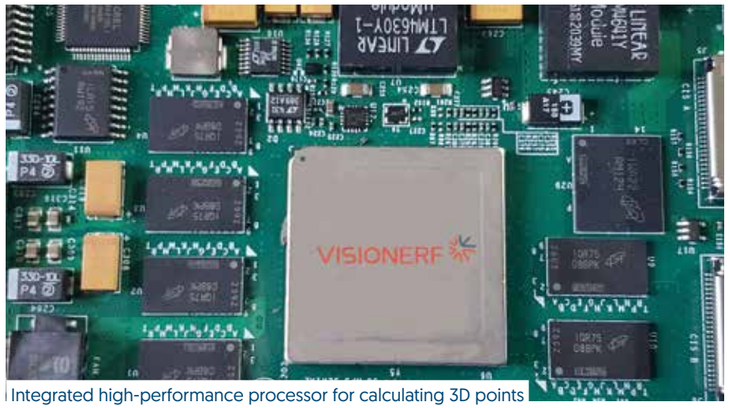
HIGH PROTECTION RATING (IP 65)

*eyesberg3D: smart localization thanks to CAD models

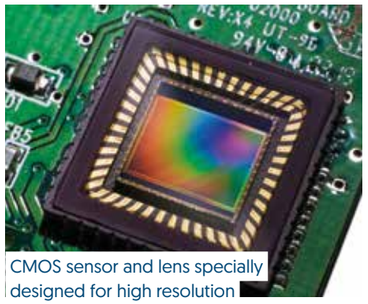
“MADE IN” VISIONERF

Waterproof industrial connectors

High-performance cooling



Integrated high-performance processor for calculating 3D points



CMOS sensor and lens specially designed for high resolution

ADVANTAGES Intended for use in industry, these scanners are **impervious to their environment, to dust, and to variations in light conditions,** ensuring your installations benefit from **peerless reliability and robustness** (IP 65). Assembly, inspection, identification, localization of single or bulk parts: these are just some of the industrial applications where **the Cirrus3D range can offer you a great return on your investment.**

Cirrus3D
LED SCAN

COMPACT, ROBUST AND LIGHT

HIGH DEFINITION PROCESSOR
for the calculation of 3D points

WATERPROOF INDUSTRIAL CONNECTORS
(power supply and Ethernet)

CMOS SENSOR
up to 0,04mm scan resolution within seconds

HIGH PROTECTION RATING
and cooling system

EASY TO EMBED
on a robot arm

IMPERVIOUS TO DUST AND DIRT
can adapt very easily to complex environments (IP65 standard)

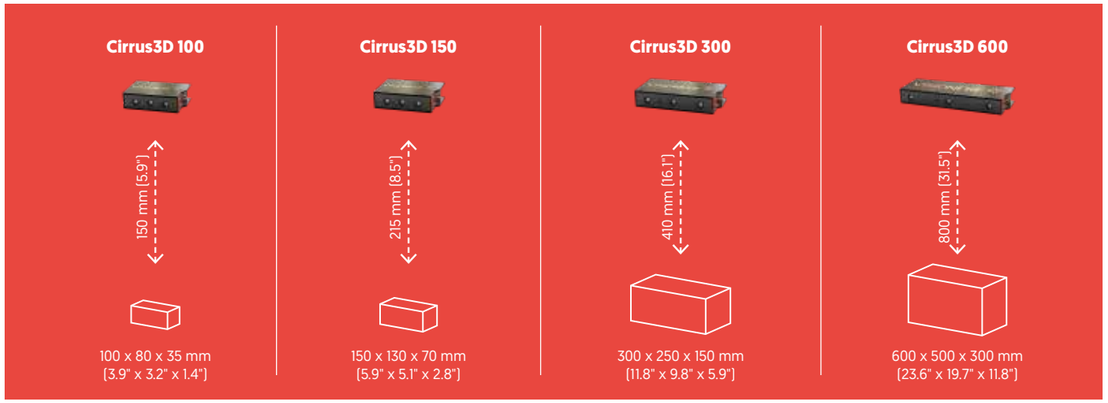
The range of 3D LED scan camera combine **both flexibility and reliability through its compact aspect, its lightness and its high resolution.**
Easy to integrate on a production line, it is available with or without its eyesberg3D software suite.

STANDARD FEATURES ON ALL MODELS	
Scanning time	From 0,2s
Number of 3D points per scan	Up to 5 million
Image processing sofware	Option
Calibration	In factory
Communication interface	Ethernet
Box material	Aluminium
Connectors	Power supply and inputs/ outputs, Ethernet M12
Power supply	24V CC 8 A max
Light source	Blue LED
Operating temperature	0 °C...50 °C / 32 °F...122 °F

THE WIDEST VOLUMES OF WORK ON THE MARKET

Cirrus3D MODELS	Cirrus3D 100	Cirrus3D 150	Cirrus3D 300	Cirrus3D 600	Cirrus3D 800	Cirrus3D 1200	Cirrus3D 1600
Vision volume in mm/inch (L x W x H)	100 x 80 x 35 (3.9" x 3.2" x 1.4")	150 x 130 x 70 (5.9" x 5.1" x 2.8")	300 x 250 x 150 (11.8" x 9.8" x 5.9")	600 x 500 x 300 (23.6" x 19.7" x 11.8")	800 x 650 x 500 (31.5" x 25.6" x 19.7")	1,200 x 1,000 x 1,050 (47.2" x 39.4" x 41.3")	1,600 x 1,300 x 1,200 (63" x 51.2" x 47.2")
Minimum working distance (mm/inch)	150 (5.9")	215 (8.5")	410 (16.1")	800 (31.5")	1,020 (40.2")	1,600 (63")	2,040 (80.3")
3D image resolution (mm/inch)	0,04 (0.002")	0,08 (0.003")	0,18 (0.007")	0,41 (0.02")	0,66 (0.03")	1,33 (0.05")	1,55 (0.06")
Sensor dimensions in mm/inch (L x W x H)	195 x 53 x 131 (7.7" x 2.1" x 5.2")	195 x 53 x 131 (7.7" x 2.1" x 5.2")	269 x 53 x 131 (10.6" x 2.1" x 5.2")	389 x 53 x 131 (15.3" x 2.1" x 5.2")	439 x 53 x 131 (17.3" x 2.1" x 5.2")	599 x 53 x 131 (23.6" x 2.1" x 5.2")	749 x 53 x 131 (29.5" x 2.1" x 5.2")
Weight (Kg/Lbs)	1,9 (4.2 lbs)	1,9 (4.2 lbs)	2,3 (5.1 lbs)	3,3 (7.3 lbs)	3,8 (8.4 lbs)	5 (11 lbs)	6,3 (13.9 lbs)

**For a single 3D point, furthest away from the sensor, without any averaging or interpolation. Part localization is 10 times better than the resolution, but depends on deviations between the CAD file and the actual part.*



Cirrus3D
LASER SCAN

COMPACT, ROBUST AND LIGHT

HIGH DEFINITION PROCESSOR
for the calculation of 3D points

WATERPROOF INDUSTRIAL CONNECTORS
(power supply and Ethernet)

CMOS SENSOR
up to 0,04mm scan resolution within seconds

HIGH PROTECTION RATING
and cooling system

IMPERVIOUS TO DUST AND DIRT
can adapt very easily to complex environments (IP65 standard)

EASY TO EMBED
on a robot arm

LASER LIGHT
for better precision on shiny parts

An innovation in the compact 3D camera range, the Cirrus3D's laser scanning allows it to **scan parts with excellent resolution, even on shiny or matte parts.**

STANDARD FEATURES ON ALL MODELS	
Scanning time	From 0,2s
Number of 3D points per scan	Up to 5 million
Image processing sofware	Option
Calibration	In factory
Communication interface	Ethernet
Box material	Aluminium
Connectors	Power supply and inputs/ outputs, Ethernet M12
Power supply	24V CC 8 A max
Light source	Blue laser
Operating temperature	0 °C...50 °C / 32 °F...122 °F

THE WIDEST VOLUMES OF WORK ON THE MARKET

Cirrus3D MODELS	Cirrus3D 100	Cirrus3D 150	Cirrus3D 300	Cirrus3D 600	Cirrus3D 800	Cirrus3D 1200	Cirrus3D 1600
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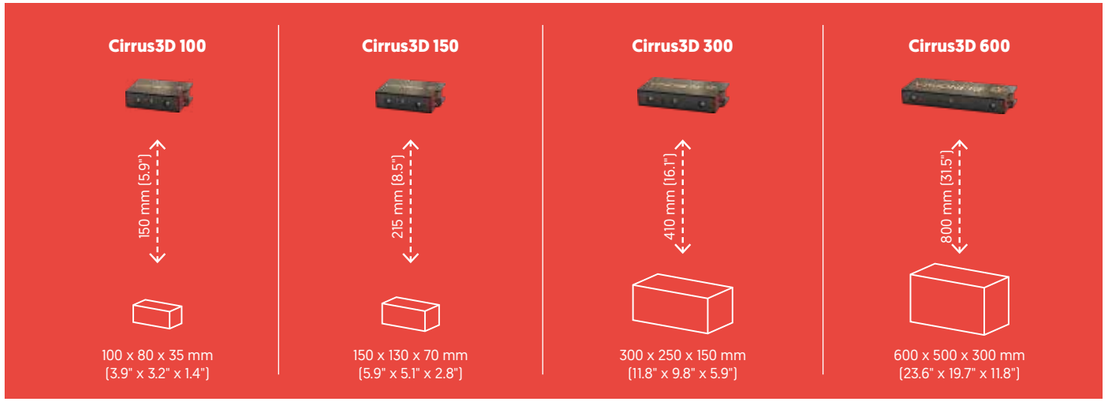
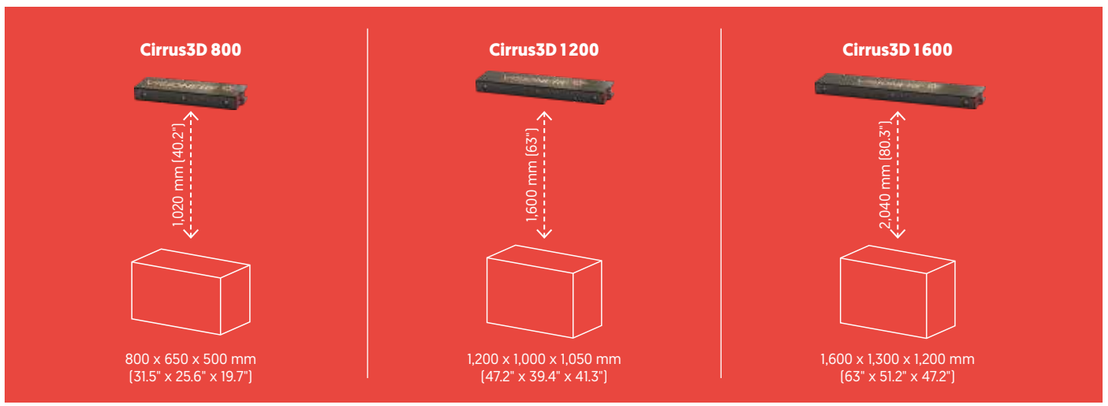
Minimum working distance (mm/inch)	150 (5.9")	215 (8.5")	410 (16.1")	800 (31.5")	1,020 (40.2")	1,600 (63")	2,040 (80.3")
3D image resolution (mm/inch)	0,04 (0.002")	0,08 (0.003")	0,18 (0.007")	0,41 (0.02")	0,66 (0.03")	1,33 (0.05")	1,55 (0.06")
Sensor dimensions in mm/inch (L x W x H)	195 x 53 x 131 (7.7" x 2.1" x 5.2")	195 x 53 x 131 (7.7" x 2.1" x 5.2")	269 x 53 x 131 (10.6" x 2.1" x 5.2")	389 x 53 x 131 (15.3" x 2.1" x 5.2")	439 x 53 x 131 (17.3" x 2.1" x 5.2")	599 x 53 x 131 (23.6" x 2.1" x 5.2")	749 x 53 x 131 (29.5" x 2.1" x 5.2")
Weight (Kg/Lbs)	1,9 (4.2 lbs)	1,9 (4.2 lbs)	2,3 (5.1 lbs)	3,3 (7.3 lbs)	3,8 (8.4 lbs)	5 (11 lbs)	6,3 (13.9 lbs)

**For a single 3D point, furthest away from the sensor, without any averaging or interpolation. Part localization is 10 times better than the resolution, but depends on deviations between the CAD file and the actual part.*





Cirrus3D
STATIC LASER

COMPACT, ROBUST AND LIGHT

HIGH DEFINITION PROCESSOR
for the calculation of 3D points

WATERPROOF INDUSTRIAL CONNECTORS
(power supply and Ethernet)

CMOS SENSOR
up to 0,04mm scan resolution within seconds

HIGH PROTECTION RATING
and cooling system

IMPERVIOUS TO DUST AND DIRT
can adapt very easily to complex environments (IP65 standard)

EASY TO EMBED
on a robot arm

LASER LIGHT
for better precision on shiny parts

The Cirrus3D is also available for scanning moving parts, such as on a conveyor (up to 250 mm/s) or on a rotating system. **Detect the defect of your parts in the blink of an eye!**

STANDARD FEATURES ON ALL MODELS	
Scanning speed	Up to 1,000 3D profiles/s
Number of 3D points per scan	Up to 5 million
Image processing sofware	Option
Calibration	In factory
Communication interface	Ethernet
Box material	Aluminium
Connectors	Power supply and inputs/ outputs, Ethernet M12
Power supply	24V CC 8 A max
Light source	Blue laser
Operating temperature	0 °C...50 °C / 32 °F...122 °F

THE WIDEST VOLUMES OF WORK ON THE MARKET

Cirrus3D MODELS	Cirrus3D C/R 100	Cirrus3D C/R 300	Cirrus3D C 500	Cirrus3D C 1000	Cirrus3D C 1500
Vision volume in mm/inch (L x W x H)	Conveyor width: 100 Max. part height: 35	Conveyor width: 300 Max. part height: 150	Conveyor width: 500 Max. part height: 300	Conveyor width: 1,000 Max. part height: 400	Conveyor width: 1,500 Max. part height: 500
Minimum working distance (mm/inch)	150 above the part 185 max. to the conveyor	410 above the part 560 max. to the conveyor	630 above the part 930 max. to the conveyor	1,280 above the part 1,680 max. to the conveyor	1,850 above the part 2,350 max. to the conveyor
3D image resolution (mm/inch)	0,04 (0.002")	0,17 (0.007")	0,3 (0.01")	0,57 (0.02")	0,85 (0.03")
Sensor dimensions in mm/inch (L x W x H)	195 x 53 x 131 (7.7" x 2.1" x 5.2")	269 x 53 x 131 (10.6" x 2.1" x 5.2")	389 x 53 x 131 (15.3" x 2.1" x 5.2")	599 x 53 x 131 (23.6" x 2.1" x 5.2")	749 x 53 x 131 (29.5" x 2.1" x 5.2")
Weight (Kg/Lbs)	1,9 (4.2 lbs)	2,3 (5.1 lbs)	3,3 (7.3 lbs)	5 (11 lbs)	6,3 (13.9 lbs)

**For a single 3D point, furthest away from the sensor, without any averaging or interpolation. Part localization is 10 times better than the resolution, but depends on deviations between the CAD file and the actual part.*

Cirrus3D C/R 100

35 x 100 mm (1,4" x 3,9")

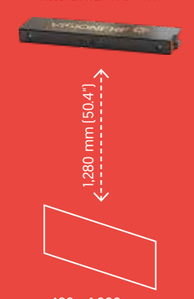
Cirrus3D C/R 300

150 x 300 mm (5,9" x 11,8")

Cirrus3D C 500

300 x 500 mm (11,8" x 19,7")

Cirrus3D C 1000



400 x 1,000 mm (15.7" x 39.4")

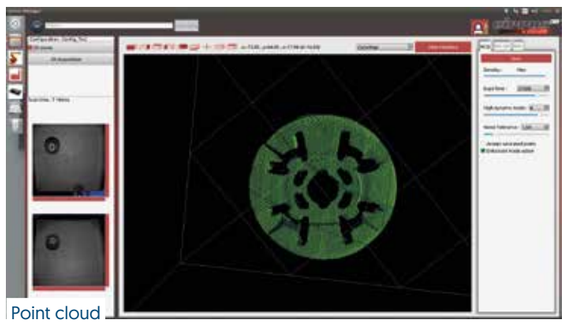
Cirrus3D C 1500

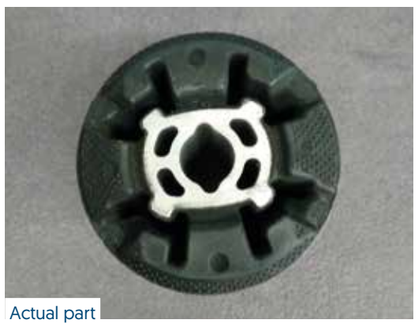
500 x 1,500 mm (19.7" x 59")

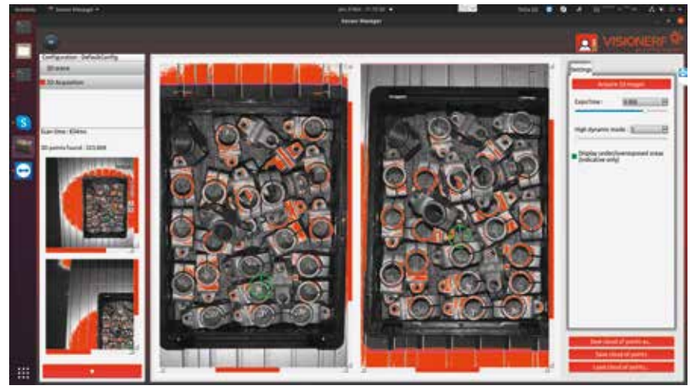
SENSOR MANAGER

A simple and intuitive configuration interface
in just a few steps!

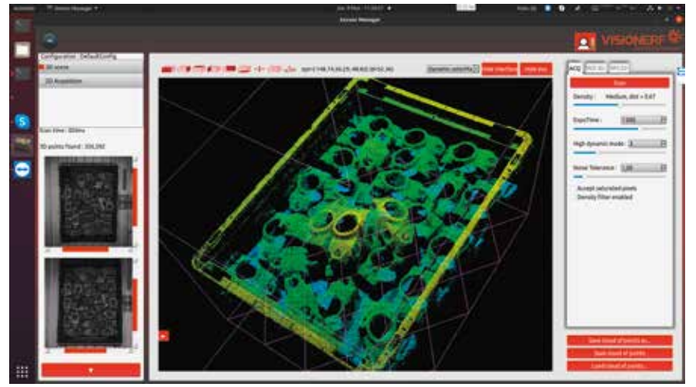
Highly dynamic sensor for digitalizing work scenes involving matte or shiny parts or those consisting of multiple materials.


Point cloud

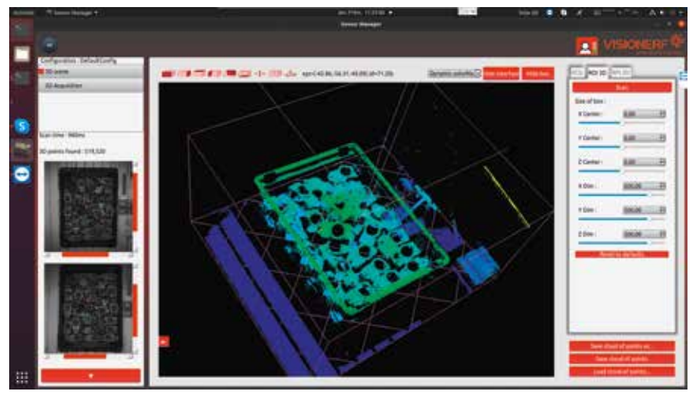

Actual part



1 **Take a scan of your parts to get a first impression.**



2 **Set the 3D point density, exposure time and imaging using sliders.**



3 **Save scanning time by setting up the work area.**

OUR APPLICATIONS

BIN-PICKING
ROBOT GUIDANCE
INSPECTION
IDENTIFICATION

.02

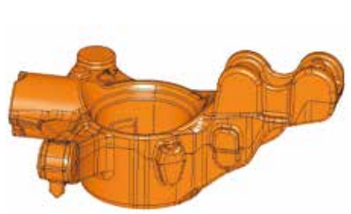
BIN-PICKING

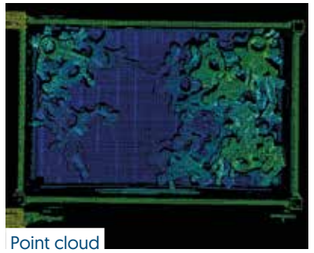
FOR COST-EFFECTIVE AUTOMATED LOADING OF BULK PARTS

FROM REAL TO VIRTUAL

The actual work scene is digitalized in the form of a 3D point cloud.


Actual scene


3D CAD Model


Point cloud

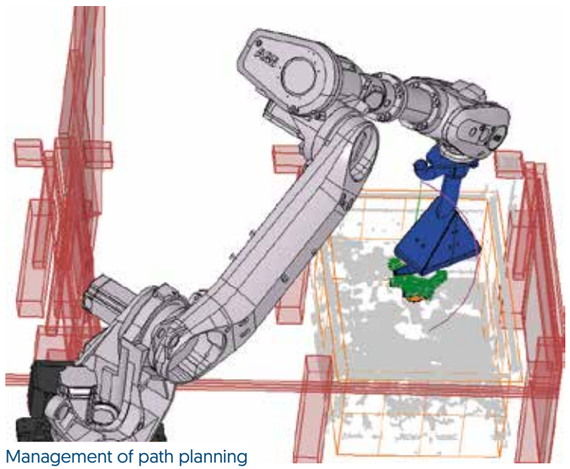
FROM VIRTUAL TO REAL

The comparison of the point cloud with the CAD model enables **localizing accurately the parts in the bin.**

The best part is selected by analyzing the virtual workspace and **checking for collisions.**

The robot is **guided to the ideal pick point** of the chosen part.

By repeating this process, the container can be completely emptied.


Management of path planning

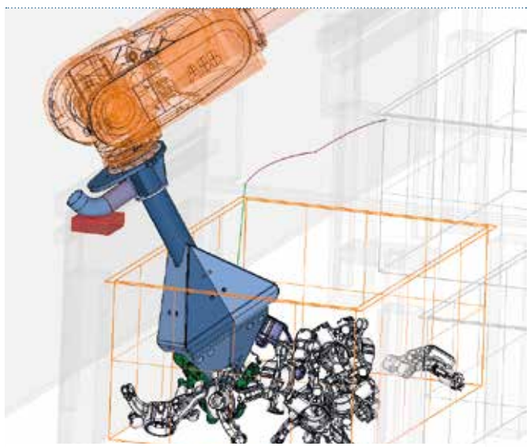
EXAMPLES OF APPLICATIONS

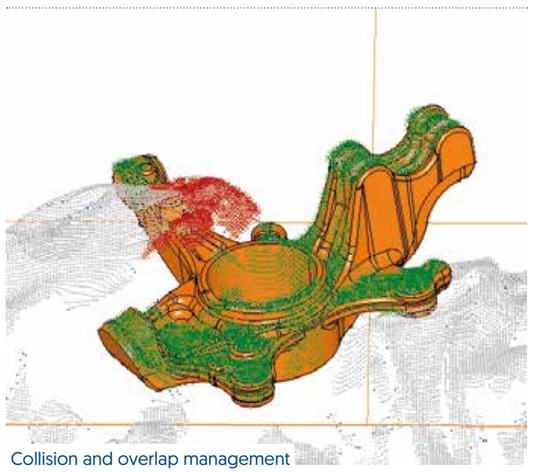

Forged parts


Mechanical parts


Safety parts


Electromechanical subassemblies


Possibility to simulate a bulk or semi-bulk in its environment


Collision and overlap management

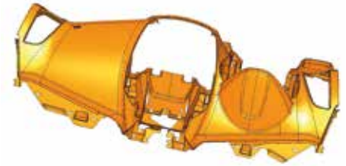
ROBOT GUIDANCE

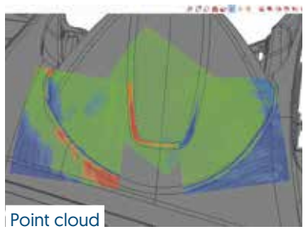
FOR COST-EFFECTIVE AUTOMATED FINISHING OR MACHINING OF MECHANICAL PARTS

FROM REAL TO VIRTUAL

The actual work scene is digitalized in the form of a 3D point cloud.


Actual scene


3D CAD Model


Point cloud

FROM VIRTUAL TO REAL

The comparison of the point cloud with the CAD model enables **localizing the part and adapt to its variations.**

The best trajectory is calculated by analyzing the virtual workspace.

The robot receives trajectory corrections to ensure **the tool tracks the outline of the part as closely as possible.**

EXAMPLES OF APPLICATIONS


Windshield installation


Wheel fitting


Gas leak detection at the back of a refrigerator


Interior vehicle parts


Household appliances


Body work parts


Structural vehicle parts


Vehicle wheels

INSPECTION

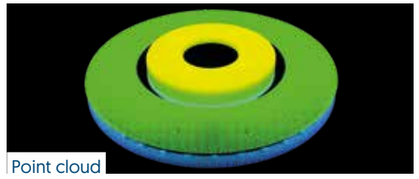
FOR COST-EFFECTIVE PARTS INSPECTION ON PRODUCTION LINES

FROM REAL TO VIRTUAL

The actual work scene is digitalized in the form of a 3D point cloud.

Actual scene

3D CAD Model



Point cloud

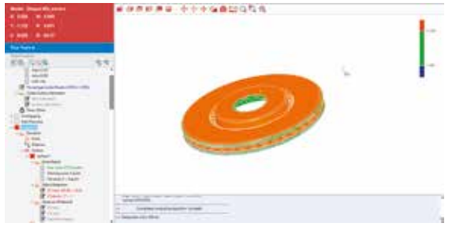
FROM VIRTUAL TO REAL

The analysis of the dimensions of the part ensures a **thorough inspection of the surface.**

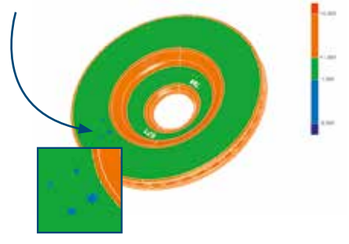
The comparison of the point cloud with the CAD model **checks conformity criteria:** lack of material, excess material, dimensions, evenness, etc.

The production line receives information in **real time regarding the conformity of the part** in order to ensure optimal quality.

ABILITY TO DEFINE TOLERANCES IN A FEW CLICKS



Detection of defects on the part

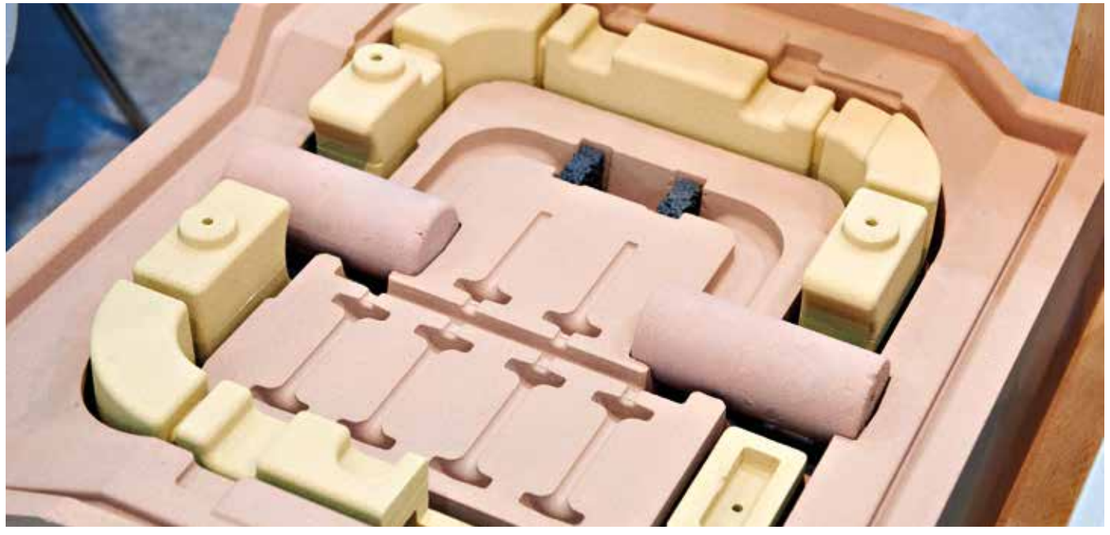


EXAMPLES OF APPLICATIONS

Motor parts

Crankshaft

Transmission parts



Sand core

Brake parts

IDENTIFICATION

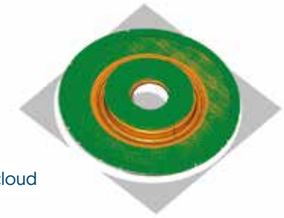
FOR COST-EFFECTIVE AUTOMATED PARTS RECOGNITION IN A MULTI-REFERENCE FLOW

FROM REAL TO VIRTUAL

The actual work scene is digitalized in the form of a 3D point cloud.

Actual scene

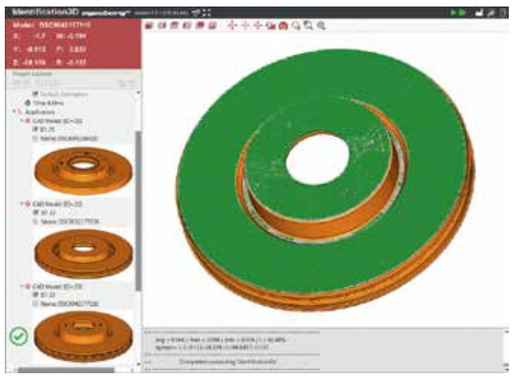
3D CAD Model



Point cloud

FROM VIRTUAL TO REAL

The comparison of the point cloud with CAD models from the eyesberg3D database enables **identifying and localizing the current part within the process flow.**



The automated element **receives information in real time,** which can be processed as required.

EXAMPLES OF APPLICATIONS

Body identification for paint application

Identification of automotive parts for sorting on conveyors

eyesberg3D CONTROLLER

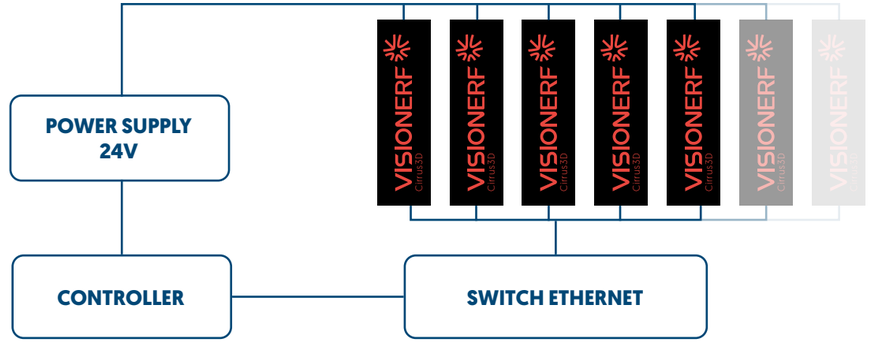
SPECIFIED CONTROLLER TO RUN THE EYESBERG3D VISION SOFTWARE

The eyesberg3D controller **can be supplied with the Cirrus3D** sensor in order to benefit from the various associated software modules.

TECHNICAL DATASHEET	
Dimensions	132 x 133 x 76 mm (5.2" x 5.24" x 3.0")
Processor	Intel® Core™ i7
Interfaces	4 x USB 3.1 Gen. 1, 2 x DisplayPort
Power supply	24V DC
Operating temperature	0 °C...55 °C / 32 °F...131 °F
Protection rating	IP 20
Device type	Ultra-compact PC
Housing	Aluminium zinc die-cast
Installation	Mounting sheet at the rear wall
Hard disks/flash	SSD

MULTI-SENSOR APPLICATION

It is possible to **connect several sensors to a single controller** in order to merge several point clouds.



OUR SYSTEMS ARE COMPATIBLE WITH:

ABB · COMAU · DENSO robotics · FANUC · Kawasaki Robotics · KUKA · MITSUBISHI ELECTRIC · STÄUBLI · UNIVERSAL ROBOTS · YASKAWA

VISIONERF,
YOUR WORLDWIDE SUPPLIER

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VISIONERF SA - FRANCE
ZI de la Caille - 49 340 Nuaillé
+33 (0) 2 41 30 00 10

VISIONERF NA
2791 Research Dr, Rochester Hills, MI 48 309
+1 248 878 6305

VISIONERF - GERMANY
Kruppstraße 44 - 42 489 Wülfrath
+49 (0) 170 7924 100

VISIONERF - CHINA
Room B310-1, No 1398 JiangChang Road,
Jing'An District - 200 072 SHANGHAI
+86 180 1928 1107

www.visionerf.com

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