





3D VISION SENSORS MOST ECONOMIC AND COMPACT 3D SENSOR IN IT'S CLASS FOR ACCURATE 3D VISION & METROLOGY APPLICATIONS



ABOUT THE COMPANY

SmartRay is a leading 3D Sensor company for Vision and Metrology applications; helping manufacturing companies to improve product quality, guide automation and reduce production costs. By focusing only on 3D, SmartRay has built a comprehensive portfolio of products that combine new technologies with German engineering to create a range of 3D sensors that can be fitted anywhere, are quick to set up and easy to deploy.

VISION. METROLOGY.



IMPROVE. PRODUCT QUALITY

WE LIVE 3D



HIGH PERFORMANCE SMALL SIZE LIGHTWEIGHT ROBUST HOUSING ECONOMIC PRICE

HEAD OFFICE. MUNICH



Headquartered in Munich, Germany, SmartRay also has operations in China and expanding global coverage through a network of distributors and system integrators. For more details, visit SmartRay at www.smartray.com



REDUCE. PRODUCTION COSTS

SmartRay 3D Sensors combine laser triangulation with innovative image formation technology to create detailed 3D images that can be processed by any 3rd party vision software. The latest ECCO[™] family brings a new design philosophy to the 3D sensor market that delivers high performance, small size, lightweight and robust housing at an economic price.



www.smartray.com

SmartRay **EC**onomic and **CO**mpact range of 3D Sensors, the ECCO™ family is revolutionising the 3D sensor market, combining high performance and great value in a family of economical, compact industrial products.

INTEGRATED

OPTICS



With optics and laser illumination included in every 3D Sensor, we have eliminated the need for lenses and lighting to be evaluated,

tested and purchased for each application.

At SmartRay we focus on a number of core proprietary technologies that when deployed together redefine the 3D Sensor market. Here are just a few of the SmartRay innovations incorporated into our products:

SmartRay

RESOLUTION

By incorporating the latest high resolution image sensors into our products, we can measure more accurately, detect smaller defects and control automation more precisely than other 3D Sensors.



SOFTWARE INTEGRATION

To ensure our 3D Sensors can be used with as wide a range of vision software as possible, we have created a set of communication and set up software tools that are quick and easy to use.



Our unique filtering technology helps our 3D Sensors create high quality, reliable images of products with reflective surfaces that would otherwise be impossible to inspect or measure.



All our sensors are pre-calibrated, so they deliver precise, repeatable measurements, right down to the micrometer range, as soon as they are installed.



By carefully miniaturising every component, we have created the smallest, lightest range of 3D Sensors available anywhere, so they are easier to fit on any production line.

...ABOUT ECCO **ABOUT OUR PRODUCTS**

ECCO 3D SENSORS TECHNOLOGY

SmartRay 3D Sensors work based on the principle of laser triangulation. A laser line is projected onto the object, which is reflected back onto an image sensor. Due to the angle between the laser line and the image sensor, the reflected laser line appears at different positions in the image depending on the height of the object at each point. The 3D Sensor measures the profile of the object. Relative movement between the object and the 3D Sensor creates a full 3D model of the object.



Do more with SmartRay 3D[™]

SmartRay's 3D Sensors capture the Intensity and Laser Line Thickness information from your part. By using our 3D Sensors, you will also have the 2D information available. 3D = 2D + more!



Intensity





To inspect and measure use the 3D PointCloud or the "Z-Maps". The height of the object is displayed in real mm.



Z-Map with 3D Visualization in mm



Laser Line Thickness

Based on laser triangulation, The ECCO™ Family of 3D





ECCO 35 WHEN SIZE & PRICE IS VITAL

Entry-level 3D sensor series for simple applications when compact size and low price is vital

ECCO 55 WHEN SIZE MATTERS IN HIGH SPEED

Mid-level 3D sensor series for standard applications demanding compact size and high speed

ECCO 75 FOR HIGH DEFINITION SCANNING

High-level 3D sensor series in HD (High Definition) for challenging applications deman-ding high resolution and repeatability

ECCO 95 FOR HIGH DEFINITION & HIGH SPEED

Premium 3D sensor series in HD and High Speed for challenging applications deman-ding ultra-high resolution, repeatability and high speed

ECCO 35 | ECCO 55 SPECIFICATIONS

MODEL

ECC0 35.050

ECC0 35.100



61 | **82** | 103 mm 100 mm 150 mm 11.5 – 32.5 µm 82 – 135 µm 0.01% (0.1µm/mm) 3.8 µm Approx. 180 g 3.002.010



MODEL

ECC0 55.020

ECC0 55.050 ECC0 55.100

ECC0 35.050 | ECC0 35.100 ECC0 55.020 | ECC0 55.050 | ECC0 55.100





ECCO 75 | ECCO 95 SPECIFICATIONS





111 mm

ECCO 95.010

Typical field of view ¹ near mid far	10.5 11 11.5 mm	34 36 38 mm	72 98 124 mm				
Measurement range ¹	4 mm	16 mm	100 mm				
Stand-off distance	23.5 mm	60 mm	150 mm				
Typical vertical resolution (Z) ¹	0.37 – 0.45 µm	1.4 – 1.8 µm	5 – 12 µm				
Typical lateral resolution (Y) ¹	5.8 – 6.8 µm	18 – 20 µm	42 – 70 µm				
Weight	Approx. 650 g	Approx. 490 g	Approx. 490 g	4			
Part number	3.002.152 (laser class 2M) 3.003.152 (laser class 3B)	3.002.153 (laser class 2M) 3.003.153 (laser class 3B)	3.002.150 (laser class 2M) 3.003.150 (laser class 3B)		0	2	







ECCO 75.030 | ECCO 75.100 | ECCO 75.200 ECCO 95.040 | ECCO 95.100

SMARTRAY DEVKIT (SDK) EASY TO GET STARTED



STANDARDIZED TERMINOLOGY

improved usability for programmers with clear and self explanatory function names & error codes **MULTI-SENSOR SUPPORT EXTENSION**

3D DATA FORMAT SELECTOR

choose preferred 3d data format (PIL, ZIL) and seamlessly receive data without additional computation SYNCHRONOUS FUNCTION CALLS

rely on function return calls instead of asynchronous callbacks for most commonly used functions (Ex: Connect Sensor)

QUICK START WITH NEW API SAMPLE

BACKWARD COMPATIBLE

no need to modify existing/old software application as backward compatibility is ensured down to API 4.2.1.32



- improvements in API to better support data acquisitioins & parameterization in a multi-sensor* 3D application *maximum number of sensors supported by API increased from 4 up to 64 sensors
- save integration time using new "API Sample" which demonstrates ease of usage (source code available)

SMARTRAY GMBH

Bürgermeister-Finsterwalder-Ring 12 82515 Wolfratshausen | Germany

> www.smartray.com support@smartray.com T +49 (0) 8171 9683 4199