Telecentricity enhances camera performance

Telecentric lenses for machine vision applications

Telecentricity in the optical plane produces uniform camera illumination

The company offers an unparalleled portfolio of telecentric lenses. The photo shows 171 versions

Berndt Zingrebe

Sill Optics offers a broad range of telecentric lenses. The company has published a new 3-page fold-out entitled "Open for Solutions" which presents an overview of the telecentric lenses which are now available and which demonstrate the company's leadership position in this market. The company currently offers an unparalleled range of telecentric lenses which reflects the great flexibility which Sill possesses in its development, customer support, applications and in-house production activities.

The product summary lists 171 object-side or double sided telecentric lenses, and it is a useful reference for developers, consultants and users in the machine vision industry. Well-designed illustrations and detail views with color coding schemes, explanations and tips help users find the right telecentric lens for their application.

Berndt Zingrebe is Managing Partner at Sill Optics GmbH & Co.KG, Wendelstein
www.silloptics.de

New products: the secret revealed

The *Correctal TB* series of chip-side and double-sided telecentric lenses from Sill Optics is so new that it was not included in the fold-out. These lenses, which were developed in house and are produced on the company's own production line, ensure uniform illumination of the camera chip, because only light rays which are parallel to the axis reach the chip's microlenses. These microlens arrays are placed in front of the chip in CD and CMOS cameras. A microlens is positioned in front of every pixel. This improves quantum efficiency by about 20 percent, and it avoids shading caused by the incidence angle of the incoming light. Three lenses with magnification between 1x and 0.01x and with focal lengths of 22 mm (1/2" chip), 44 mm (2/3" chip) and 54 mm (1" chip) are available as standard products.

Adaptors which can be used to vary magnification extend the range of applications. A fine focus setting and variable aperture (f/5.0) offer great flexibility.

Summary

Telecentricity in the optical plane helps achieve uniform illumination in the camera. It is a good solution for cameras with microlenses, because it avoids shading.

This method is suitable for 3-chip color CCDs, 1x – 0.01x magnification and variable magnification using adapters. It offers fine focusing, variable f/5.0 aperture and focal lengths of 22 mm, 44 mm and 54 mm. The maximum chip sizes are 1/2" (F= 22 mm), 2/3" (F= 44 mm) and 1" (F = 54 mm).

About us

Sill Optics is one of the few medium-size companies in Germany that has specialized in the production of optical components. At the new site in Wendelstein, the company has made a significant investment in state of the art CNC machines which are used in the development and production of lenses. The product portfolio includes optics for leading-edge, high-tech applications ranging from medical products and opto-electronics to laser and measurement technology, machine vision and illumination. The number of employees has now exceeded the 100 mark. The company believes that in-house training is vital to ensure that qualified staff is available to face future challenges. 15 trainees are currently learning their trade at the company.