Dear readers,

The ASTECH-team is very delighted to present you the latest edition of our *Sensitive*, with news about our tools for our speed- and length measuring devices VLM500 and our color sensors.

The focus of this edition is the new product portfolio of our distance sensors. Our LDM41 range will be replaced by the new LDM42-series with a wide performance spectrum. The modernized LDM42 impresses by improved signal stability and an updated measurement

algorithm. New OEM modules from other device series are available.

Our color sensor tool CROMLAVIEW® provides a new function for a more user-friendly application: pattern-teach. It offers the possibility to calculate color tolerances automatically.

We hope you enjoy reading our *Sensitive*
Your ASTECH Team

Fit for the future

ASTECH's product range of laser distance meters

*Background:
www.textures4.photoshop.com*

In this edition

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ASTECH revises its range of laser distance sensors

Although suffering from the effects caused by Covid19 quite a bit has happened in the field of laser distance meters at ASTECH. There were supply shortages, technological updates and intensive negotiations about supply conditions which led to an optimized product palette. Doing so ASTECH prepared to be ready for future challenges and sustainable success.

LDM4x series

The laser distance meters of the LDM4x series are on duty for more than 15 years now. Since then they proofed themselves in thousands of successful installations on the market. Not at least due to their robustness and durability together with still competitive detection capabilities there is still a quite big demand for new LDM4x devices. Together with our international distribution partners we serve this market while still new fields of applications and use-cases are developed for this class of laser distance meters.

The manufacturer took this as an opportunity to ensure the availability of the popular devices for the next few years through a technical revision of the LDM4 measuring module. The development work on the new centerpiece was finished in August. During this time ASTECH was continuously on side with the engineers. The result of this cooperation is a new updated generation of the LDM4x sensor series whose availability is ensured for the next couple of years.

The approved basic properties could be obtained as well as the form factor and the interface variations. Inside the sensor module now works an entirely new developed laser diode control circuit and an optimized detection algorithm. By means of a new modulation concept the average measuring time in continuous measurement mode could be reduced to 100 ms. In addition, the signal quality, repeatability and maximum range were generally improved.

With the technology update also the scope of the product palette was optimized. As result there remains only the basic module type LDM42. Customers who formerly used the LDM41 can be ensured that their applications can still be solved 100 % by the LDM42 with the same reliability.

LDM42A

OEM modules

Together with the revision of the LDM4 product palette a new OEM distance sensor module was introduced. The newly available RF4 is the basic distance sensor module of all LDM42 or RF42. It neither comes with an interface board nor with the usual frontend. It is meant for deep integration into customer specific systems. The RF4 requires a 5V DC power supply and provides 3.3 V low-voltage UART communication. With these features it will be easy to establish direct connection with microcontrollers and SoCs.

OEM distance sensor module RF4

With the RF4 ASTECH completes the choice of OEM distance sensor modules. Except for the LDM301 series there are integration-ready modules available in all product series. Target applications are mainly complex systems and devices which shall be featured with distance sensing capabilities. This means for example autonomously running machines and vehicles as well as many automotive applications. Also, the UAV market shall be penetrated by adding capabilities of altimeter measurement or anti-collision detection.

LDS70A

Following the market introduction of the LDS70A and its OEM module RF70A within the last couple of months

first customer applications could be solved with these new laser types. Several promising projects are currently being developed, where ASTECH is involved as consultant until serial production stage is reached.

LDS70A – ready for outdoor applications with distance measurement up to 70 m

Customers are mainly based in railroad, harbor and logistic branches, but there are also promising approaches in camera and surveillance applications.

In fact, with the newly optimized LDM product series and extended availability of OEM modules ASTECH maintains its flexibility and keeps the ability to react fast and competent to new application inquiries and measurement tasks. The experience from many thousands of successfully realized installations and the wide range of accessories will be of advantage for us furthermore.

We are looking forward to new customer inquiries and distance metering challenges. ◼

VLMTool – Users pocketknife

With the introduction of the velocity and length gauge VLM500 the software application VLMTool was also presented. The software has been recoded completely in a new programming environment. The focus of the development was a simple and handy user-interface utilizing input and selection boxes for the parametrization of the VLM500. This was achieved by grouping the several parameters according to functions and interfaces into individual tabs. For purists the so-called terminal

mode (known from the predecessor VLMTerm and the VLM320) is still available. The user there can enter directly the command to change a specific parameter.

Beside the different testing modes for VLM500 surveillance or maintenance (voltage monitoring, in- and outputs or interface boards), the VLMTool is equipped with the Length-Recorder and the Signal-Viewer. The two modules offer a convenient way to execute controlled single part length measurements on the one hand, and to record velocity-time-plots on the other hand.

There is also a function to store and share the measurement results as a picture or a CSV-file with the corresponding VLM parameter set.

All these capabilities of the VLMTool enable the ASTECH support team to assist the operator in the field efficiently. And even more in case of a remote support session.

The VLMTool supports the VLM500 series (incl. VLM502) as well as the VLM systems VLM500-DG and the VLM500-MID. The software is being developed continuously by ASTECH and runs under the Microsoft Windows platform. The application is free of charge and can be downloaded from *www.astech.de/download*.

Pattern Teach – parameterization for color sorting processes simplified

The CROMLAVIEW® color sensor family has been delivered with the free CR tool for years. This parameterization software enables the setting of parameters such as illumination intensity, amplification, scanning frequency, white balance, but also teaching of colors and the setting of the color tolerance. Special attention has now been paid to the parameterization of the color tolerance.

The measured colors per se are processed in the three-dimensional $L*a*b*$-color space (meaning of the axis: $L*$: brightness, $a*$: red- green, $b*$: yellow-blue). Color tolerances are given by the value ΔE – the distance between two color coordinates in space. A ΔE of 1 is generally considered as color resolution of the human eye.

Reference colors are saved in the sensor and stored with a tolerance value depending on the detection mode. The choice of this tolerance is not easy to make for some users, as there is often a lack of experience or an idea of this variable. For this reason, the CR tool has been expanded to include a new function: pattern teach. The use of this tool is based on the assumption that the user has good and bad samples.

The color values of these samples are shown in two separate tables. The good samples are shown in green and the bad samples in red. As soon as there is at least one good and one bad sample in the table, the color tolerance is calculated automatically. The color tolerance for the good
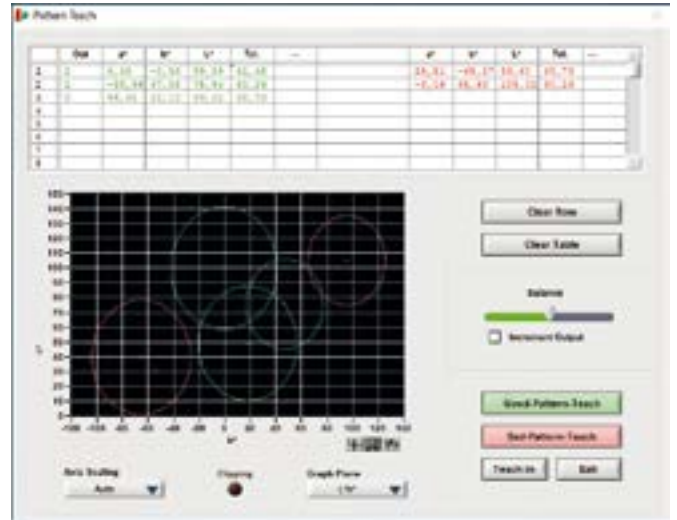
Pattern teach program window – automatic color tolerance calculation for good and bad samples

samples is initially set to half of the distance to the nearest bad sample. An adjustment in favor of the good or the bad samples can be done by means of a balance controller, depending on what is important during the parameterization. At the end of this process, the good samples are transferred to the sensor's color table.

Example of good and bad samples for granulates made of brass and copper to be sorted

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