

New laser triangulation sensors

Blue light for glowing materials

Amongst many other new sensors, Micro-Epsilon recently presented two new models in laser triangulation for the automation and premium measurement.

Innovation: Laser triangulation using a blue laser – this new technology was presented for the first time at the recent Hannover Messe. Standard commercially available triangulation sensors operate using red laser light at a wavelength of 670 nm. These sensors are for general use and are well established in the marketplace. However, in the case of red-glowing metals or organic matter, a red laser is only partially useful. Blue Laser sensors operate at a wavelength of 405 nm. In numerous applications, blue laser sensors are superior to standard sensors that use a red laser diode. Measurements carried out using red lasers do not offer reliable results, as red glowing metals emit a high level of infrared light. However, using the new blue laser technology enables the sensors to offer more reliable, precise measurement results on red-glowing metals (to 1,600 °C) and glowing silicon (to 1,250 °C). The blue laser offers significant benefits when measuring on organic materials such as wood, skin, foodstuffs and coatings etc. In contrast to the red laser, the blue laser light does not penetrate the target object due to its reduced wavelength. The blue laser generates a minimal laser point on the surface and so offers stable, precise measurement results on objects that are usually considered as critical. In order to ensure reliable, stable measuring results, the sensor has been completely re-designed. The sensors

are equipped with new high-end lenses, a new intelligent laser control system and evaluation algorithms. The new optoNCDT 1700BL technology is available with measuring ranges from 20 mm to 1,000 mm.

NEW HIGH-CLASS OF LASER TRIANGULATION. As well as the new colour of laser, a brand new model has also been developed, which offers a high-end solution in displacement measurement technology using lasers. The new optoNCDT 2300 offers an adjustable measuring rate up to 50 kHz. Five sensor models are available providing measurement ranges between 2 mm and 100 mm.

Product manager Mr. Erich Winkler commented: «It's not a high volume model but it's the choice for fast, demanding measuring tasks. In particular, a lot of new features have been integrated in the sensor, making it suitable for a wide range of measurement applications.»

The new A-RTSC (Advanced Real-Time-Surface-Compensation) feature is a further development of the proven RTSC. Therefore, due to an increased dynamic range, more precise real-time surface compensation is ensured during the measuring process. The automatic exposure control is adapted to measurement characteristics to an even greater extent than before. Data output is via Ethernet, RS422 or Ethercat – a further novelty, as data from these high speed sensors is normally only transmitted by analogue outputs. The sensor can be applied to thickness measurements of transparent objects, as well as for standard distance measurements.

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Left: The optoNCDT 1700 BL works with a blue laser which has great benefits on glowing metals as well as on organic targets. Right: Ultra precise measurements in high-speed are possible with the optoNCDT 2300, the new top class model in the triangulation.