Are Off-the-Shelf Optics Always the Best Choice?

Mark Pontin, Managing Director of Resolve Optics Ltd., explained in this exclusive interview how optics have played a central role in the transformation of modern manufacturing processes. Despite it, companies tend to prefer off-the-shelf lenses over customized systems, even though this is not always the best choice. Let's find out why

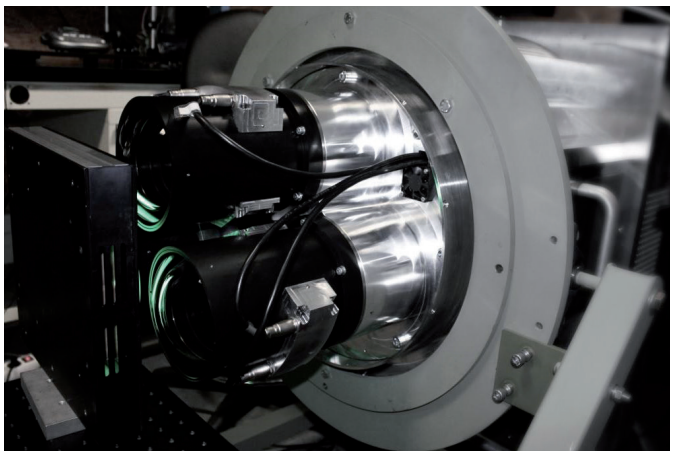
PCN Europe: The process industry is a large, diverse and growing marketplace. What function do optical instruments and sensors play in helping manufacturers and suppliers?

Mr. Pontin: Modern manufacturing processes have been transformed by the use of optics, which can both improve current manufacturing capabilities and enable new ones. Light directed by optical systems can be used to process or probe materials remotely, even through windows isolating harsh or vacuum environments. With no surface contact, there is no contamination of the process by the optical light beam. Optical techniques such as Near Infrared, Short Wavelength Infrared, Mid Infrared and Raman spectroscopy are being used to provide information about and help improve a manufacturing process or to perform manufacturing as in the case of photolithography or materials processing. Independent market research reports indicate that the global market for process spectroscopy equipment to already be worth over $1 billion annually.

PCN Europe: Resolve Optics is well known for its OEM lens design service. What are the benefits of opting for a custom lens rather than an off-the-shelf lens for your process instrument and sensor?

Mr. Pontin: Typically, off-the-shelf lenses are manufactured for the mass market where unit cost is the dominant driving force. However, when it comes to an application that optically requires something a little more demanding such as high performance, high-resolution, compactness or a large format image, using an off-the-shelf lens will force you to accept a compromise in one or more aspects of optical performance. The result of this compromise can be a reduction in optical performance (restricting process measurement advantages and possible applications), a bulkier less attractive product, shorter product life and loss of competitive advantage – all of which ultimately lead to lower profitability. As a result, demand for custom lens designs for process instruments and sensors that meet the exact needs of the customer application are rising dramatically.

Mark Pontin, Managing Director at Resolve Optics Ltd.



Ultra large format lenses mounted in B66 Aerial Surveillance camera

B66 Aerial Surveillance camera installed in an aircraft