

Telecentric Zoom Lens

Combining two Liquid Lenses for Adjustable Working Distance

Author: Francesco Mondadori, Product Manager, Opto Engineering | Images: Opto Engineering S.p.A.



Opto Engineering will release the new TCZEL telecentric lenses series that integrates two liquid lenses whose synergy allows to control both: magnification and working distance. inVISION spoke with Francesco Mondadori, product manager at Opto Engineering, about the new optics series.

Why does the TZCEL have two Liquid Lenses?

Francesco Mondadori: The integration of a liquid lens into the telecentric optics enables rapid focusing to adjust the working distance, as in Opto Engineering's TCEL series, for example. The magnification, on the other hand, remains almost the same (except for small variations that can be calibrated) and it is therefore possible to benefit from all the advantages of telecentric lenses while overcoming the limitations of a reduced depth of field.

The integration of two liquid lenses, on the other hand, makes it possible to combine the variations of optical powers in order to precisely adjust both the working distance and the magnification, creating a telecentric zoom lens capable of refocusing even on different planes. Thanks to this it is possible to avoid mechanical movements of the optics or of the object to be in-

spected, increasing the efficiency of the vision system.

For which applications is the lens particularly suitable?

TCZEL lenses are particularly suitable for applications such as FoV machines due to their extreme versatility. In addition, they are ideal for inspecting electronic components, where it is often necessary to refocus at different distances due to thick compo-

nents such as capacitors, and to zoom in for smaller features.

Will there be other variants of the TZCEL in the future?

A new model of TCZEL objectives with higher magnifications and a 6X range is currently under development and is expected to be launched next year. ■

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Francesco Mondadori, Opto Engineering