



Laser marking in the optical industry

Marking of ophthalmic prescription lenses



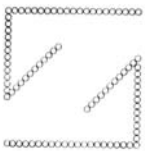
■ Carl Zeiss Vision GmbH

www.zeiss.de

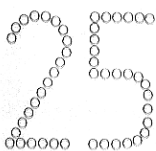
Carl Zeiss Vision GmbH, headquartered in Aalen, Germany, is a leading manufacturer of ophthalmic lenses. The company processes orders from within Germany and throughout Europe. An order usually comprises two lenses characterized by the prescription data (spherical and astigmatic, lens type, type of coating, etc.). As it is impossible to hold millions of different lens types in stock, many of these orders have to be manufactured on demand.

■ The application

Carl Zeiss Vision GmbH marks all high-value glass and plastic progressive and individual progressive lenses with the trademark "Z" logo.



Furthermore, to meet ISO standards, all progressive lenses are permanently labelled with a unique alphanumeric string to identify the manufacturer, the lens type and its focal properties.



Trotec Case Studies

■ The challenge

The surface markings have to be clearly visible to the trained optician but relatively unobtrusive to the eyeglass wearer. The mark must have enough depth so that it does not become invisible by the coating processes. Also, marks are required to be highly precise with very clean edges that are free from micro-cracking. As markings vary from lens to lens, it is important that the laser system is highly flexible and easy to operate.



■ The Trotec solution

The excimer laser produces marks that are demonstrably superior to other laser types. Thanks to short pulse length, low optical penetration depth and homogenous energy density the Excimer laser creates marks free of peripheral thermal damage and microcracking, unlike longer wavelength lasers that rely on thermal processes. The high reliability of the laser, the ease of operation and the high operation speed ensure the reduction of the operating costs for lens production at Carl Zeiss Vision GmbH.