

**A CENTURY OF FOLDABLE MICRO MONOCULARS**  
**A short historical impression**  
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**July 2023**



**Introduction.**

In 1921 the Zeiss company introduced the 8x21 Turmon monocular: 100g, FOV 110m/1000m. The monocular was, with improvements, produced for about a century after 1921. After WW-2 Zeiss Jena was situated in East Germany and the inscript on the monocular was changed in Aus Jena due to the conflict about the use of the name Zeiss. Zeiss Jena was later bought and continued by Docter Optik and that company also continued the production of this 8x21 monocular.

Since there were no patent rights other companies also started production of similar foldable monoculars among others the British Wray and Russian companies.

This paper is not a specific test of different foldable monoculars but I will try to give an impression of the progress in optical performance in the course of about a century after 1921 by measuring their transmission spectra. In this way one gets an impression of the quality of the optical components and the applied coatings.

As yet I was unable to find more information about the Nikula 10x21 monocular, so the reader can add that information if it is known to him/her. The only information I found was that the name Nikula is connected to a Chinese company. Looking at the measured transmission spectrum of the Nikula sample we have investigated we conclude that the company still has to do quite a bit of homework.



Fig. 1 From left to right: Zeiss Turmon 8x21 (Jena 1921), Aus Jena Turmon 8x21 (Jena 1950) Docter Optik, Jena (1990) 8x21, Nikula 10x21, Russian 5x25 and Russian 7x25

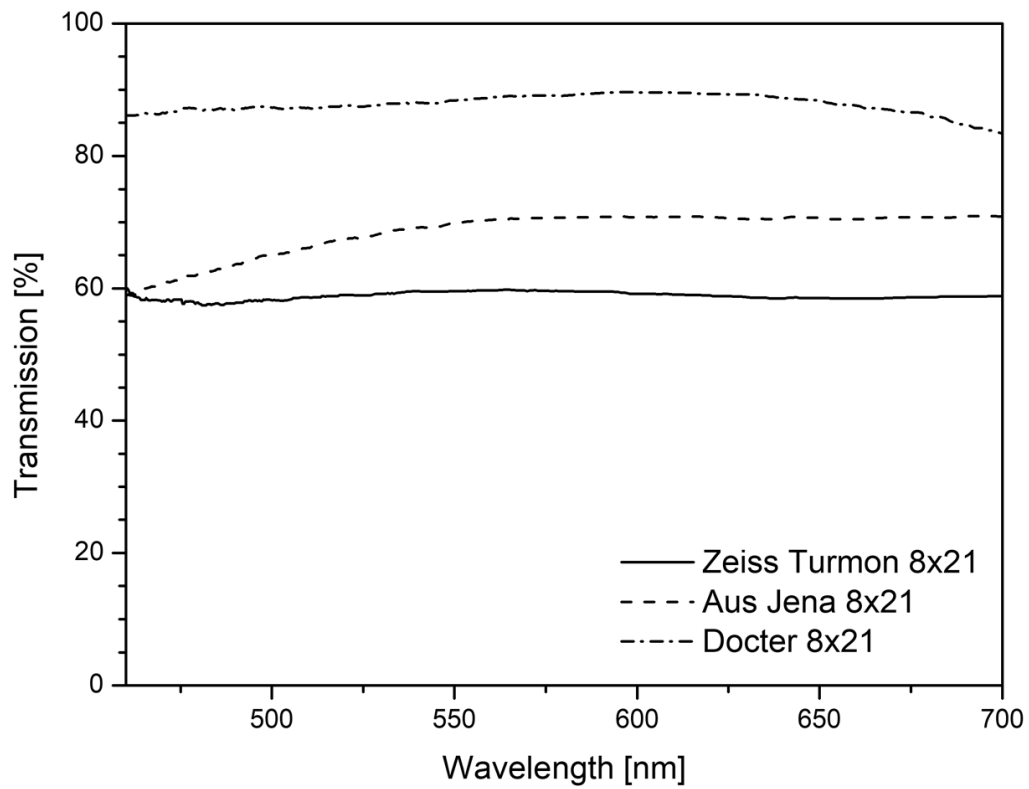


Figure 1. Transmission spectra of Zeiss Turmon 8x21 monocular (1921) and its successors made by the same company but carrying different names: Aus Jena 8x21 (1955?), Docter Optik (1990?)

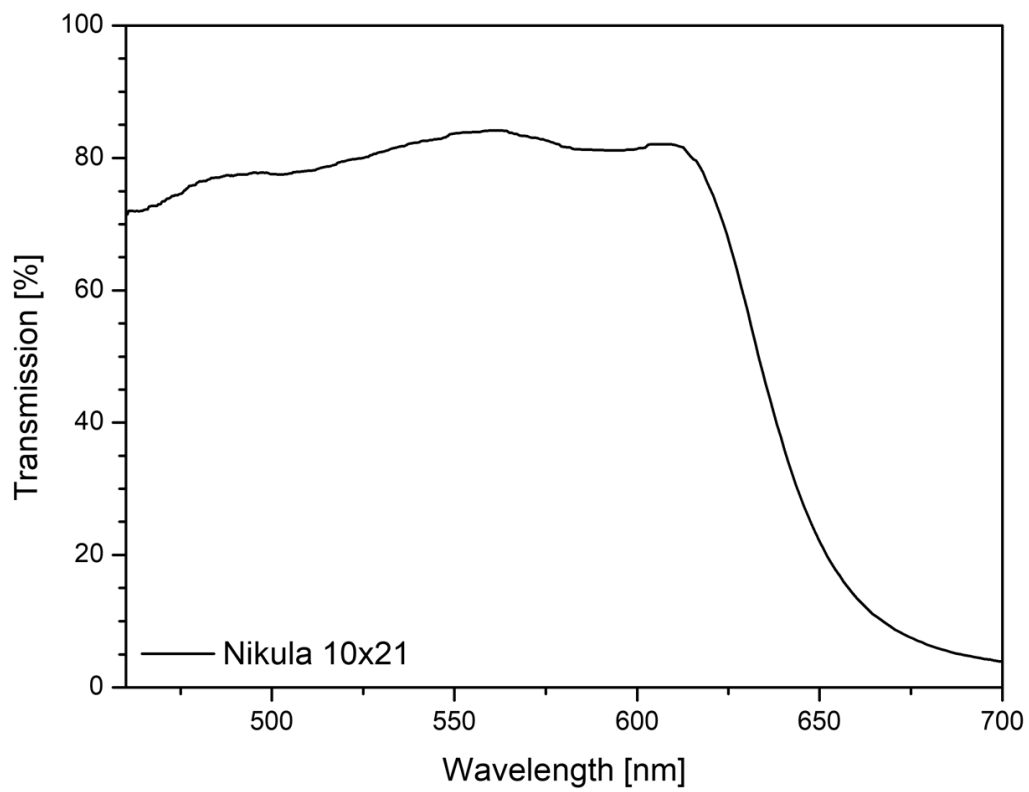


Figure 2. Transmission spectrum of the Nikula 10x21 foldable monocular

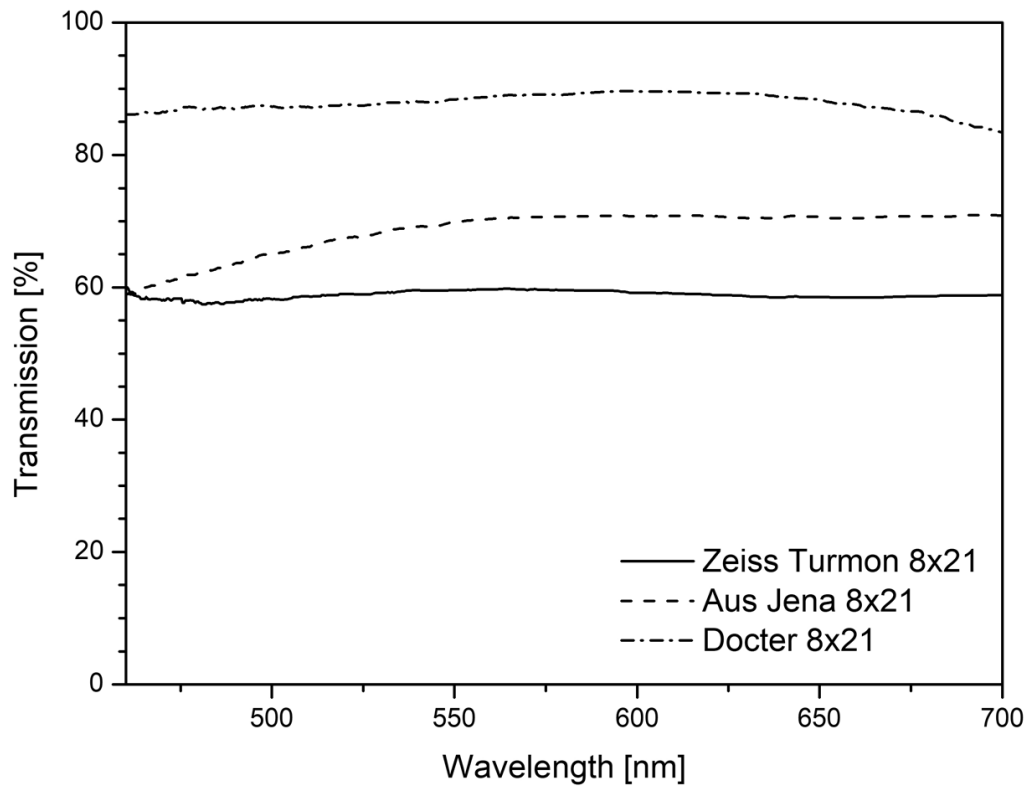


Fig. 3 Transmission spectra of the well-made Russian foldable micromonoculars