How to Triple Pocket Dermatoscopy Device Magnification and Avoid Digital Interpolation

Calogero PAGLIARELLO and Carlo Renè GIRARDELLI
UO Multizonale Dermatologia, Ospedale "Santa Chiara", Largo Medaglie d'oro 9, IT-38122 Trento, Italy. E-mail: calogero.pagliarello@libero.it
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Current hand-held dermoscopes provide 10× standard magnification. For greater magnification, dermatologists use adapters for smartphones and digital cameras, or, if portability is not essential, digital video dermoscopes. A smartphone or digital single-lens reflex camera coupled to a pocket dermoscope enlarges a specific portion of the image by cropping and resizing the image to fit the frame through interpolation. Image quality varies from manufacturer to manufacturer and, depends on the following: the sophistication of the algorithms; camera or smartphone sensor performance; and display quality, which in turn strongly influences clinical assessment (1).

Although a binocular stereoscopic contact dermoscope (Kocher Feinmechanik, Mössingen, Germany) and floor-stand stereomicroscopes provide binocular rather than monocular observation, different magnifications (× 6–80), and a remarkable optical performance, the former is bulky and no longer available, while the latter is expensive and requires a stable floor-stand.

To triple pocket dermatoscopy device magnification and avoid digital interpolation we use a Zeiss monocular 3×12T* fixed onto the Heine Delta-20 dermatoscope eyepiece by means of a custom adaptor ring (**Fig. 1**) provided by Costruzioni Ottiche Meccaniche Lolli Adriano, (https://www.adrianololli.com) (an adapter for DermLite devices, which have a threaded eyepiece is also available).

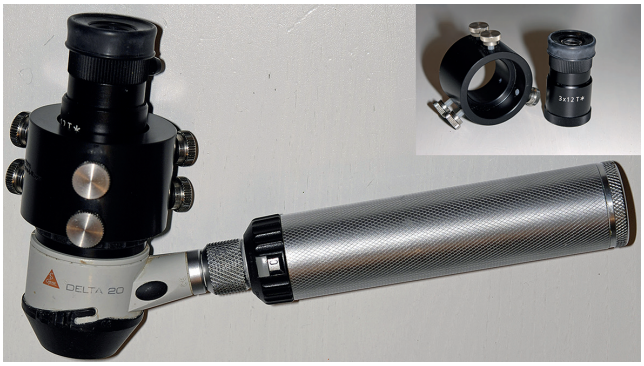

Fig. 1. Zeiss monocular used as a magnification tripler fitted through custom adaptor ring onto the Heine Delta-20; Inset: Zeiss monocular 3x12T* and custom adaptor ring.

The Zeiss monocular 3×12T* has an achromatic lens system, which gives sharp, colour-faithful images. Its shortcomings are the small 4-mm eye relief and a theoretical increased light loss and aberrations compared with a single instrument of equivalent power.

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REFERENCE

1. Pagliarello C, Stanganelli I, Fabrizi G, Feliciani C, Di Nuzzo S. Digital dermoscopy monitoring: is it time to define a quality standard? Acta Derm Venereol 2017; 97: 864–865.

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