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(54) **FOLDED CAMERA LENS DESIGNS**

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See application file for complete search history.

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(57) **ABSTRACT**

Digital cameras, optical lens modules for such digital cameras and methods for assembling lens elements in such lens modules. In various embodiments, the digital cameras comprise an optical lens module including $N \geq 3$ lens elements L_i , each lens element comprising a respective front surface S_{2i-1} and a respective rear surface S_{2i} . In various embodiments the first lens element toward the object side, L_1 and its respective front surfaces S_1 have optical and/or mechanical properties, such as a clear aperture, a clear height and a mechanical height that are larger than respective properties of following lens elements and surfaces. This is done to achieve a camera with large aperture stop, given a lens and/or camera height.

33 Claims, 28 Drawing Sheets

