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(54) **COMPACT FOLDED LENSES WITH LARGE APERTURES**

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(57) **ABSTRACT**

Lens assemblies comprising, from an object side to an image side, a positive first lens element L_1 with a first optical axis and a first lens width W_1 , a light folding element, a negative second lens element L_2 and a plurality of additional lens elements L_3 - L_N with a common second optical axis, and an image sensor having a sensor diagonal length (SDL), wherein the light folding element is configured to fold light from the first optical axis to the second optical axis, wherein the folded lens has an optical height OH, wherein $SDL/OH > 0.7$ and wherein $OH/W_1 < 1.1$.

28 Claims, 11 Drawing Sheets

