Accepted Manuscript

Title: High focusing efficiency or high signal-to-noise ratio diffractive optical element for color separation and light focusing

Authors: Jia Li Wen-Qi Xu, Jia-Sheng Ye Peng Han Wen-Feng Sun Sheng-Fei Feng, Xin-Ke Wang Yan Zhang

PII: S0030-4026(17)30295-4

DOI: http://dx.doi.org/doi:10.1016/j.ijleo.2017.03.036

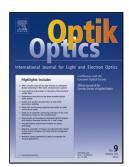
Reference: IJLEO 58959

To appear in:

Received date: 15-8-2016 Accepted date: 13-3-2017

Please cite this article as: Jia Li, Wen-Qi Xu,, Jia-Sheng Ye, Peng Han, Wen-Feng Sun, Sheng-Fei Feng,, Xin-Ke Wang, Yan Zhang, High focusing efficiency or high signal-to-noise ratio diffractive optical element for color separation and light focusing, <![CDATA[Optik - International Journal for Light and Electron Optics]]> (2017), http://dx.doi.org/10.1016/j.ijleo.2017.03.036

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High focusing efficiency or high signal-to-noise ratio diffractive optical element for color separation and light focusing

Jia Li, Wen-Qi Xu, Jia-Sheng Ye, ¹
Peng Han, Wen-Feng Sun, Sheng-Fei Feng,
Xin-Ke Wang, and Yan Zhang

Department of Physics, Capital Normal University, Beijing 100048, P. R. China
Beijing Key Lab of Metamaterials and Devices, Beijing 100048, P. R. China
Key Lab of THz Optoelectronics, Ministry of Education, Beijing 100048, P. R.
China

Abstract

Diffractive optical elements (DOEs) are designed by the simulated annealing method for simultaneously implementing color separation and light focusing (CSLF) functions. Through changing the maximum permitted phase, the quantization level number, the input pixel number or the target focusing region width, various CSLF DOEs are optimally designed. Optical performances of the designed DOEs are calculated by the Fresnel diffraction integral method. Simulation results reveal that the designed DOEs not only successfully realize the expected CSLF functions, but also exhibit an excellent performance of high focusing efficiency or high signal to noise

Email address: jsye@mail.cnu.edu.cn

¹ Corresponding author. Tel.: +86-10-68903467-3, Fax: +86-10-68903069.

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