Optimized Singlet Lens Design

The initial merit function value before optimization is 0.703158763 (Fig. 1), the worst RMS before optimization is 154.8 um^2. After optimization, the merit function value drop to 0.056509814 (Fig. 2), the worst RMS after optimization become 109.0 um^2. The final design parameters are listed as the below (Fig. 3 – Fig. 5):

Final EFL	30 cm	35 cm	40 cm
Final Throw	26.2171 cm	27.3875 cm	29.0369 cm

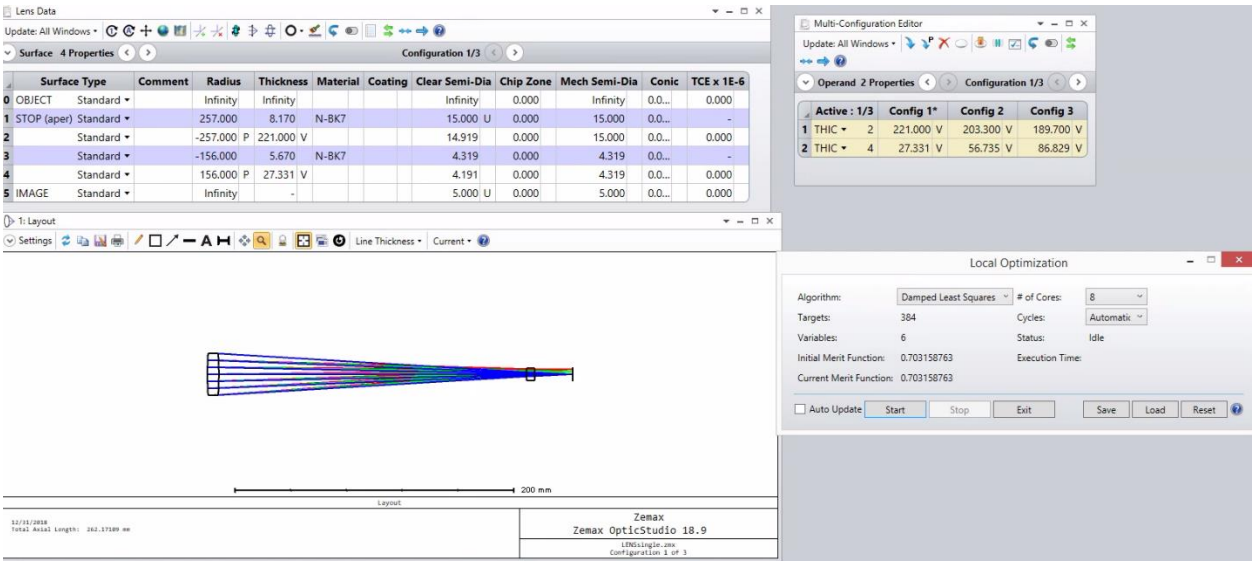

Fig. 1 Lens Data, Multi-Configuration and Merit Function of initial singlet design

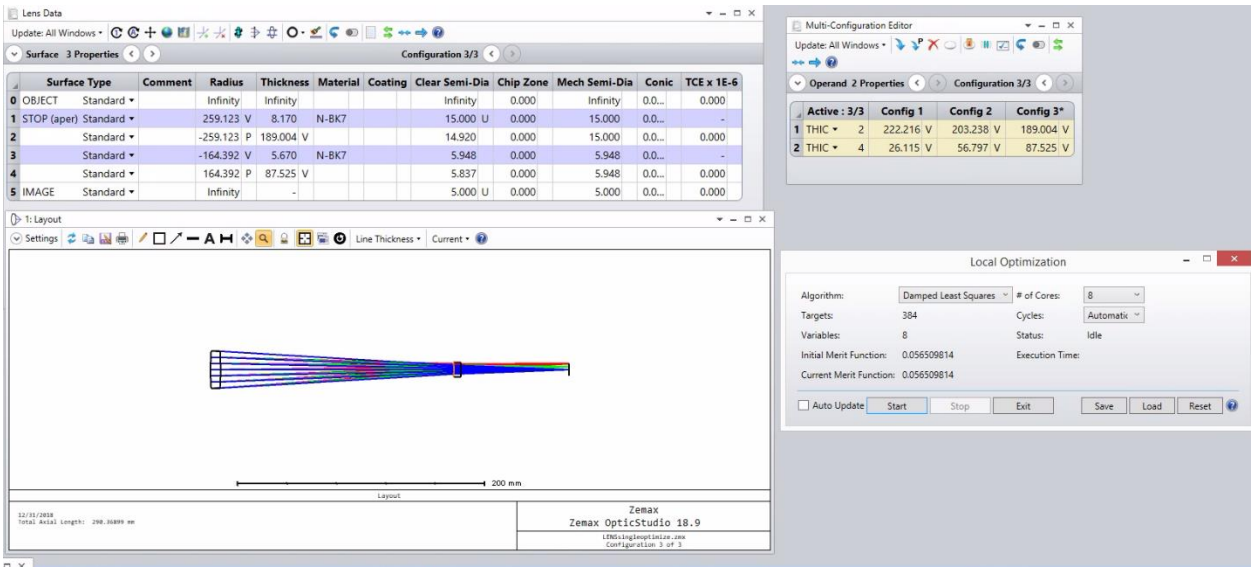

Fig. 2 Lens Data, Multi-Configuration and Merit Function of final singlet design

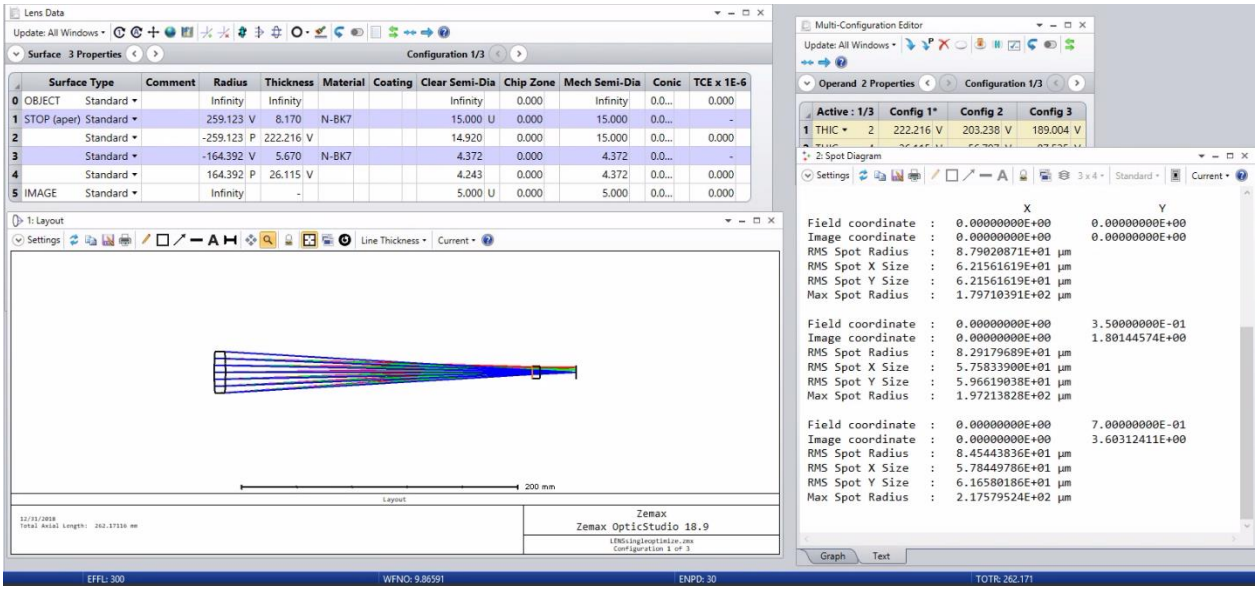

Fig. 3 Final OpticStudio lens data, layout and spot radius of planed EFL = 30 cm.

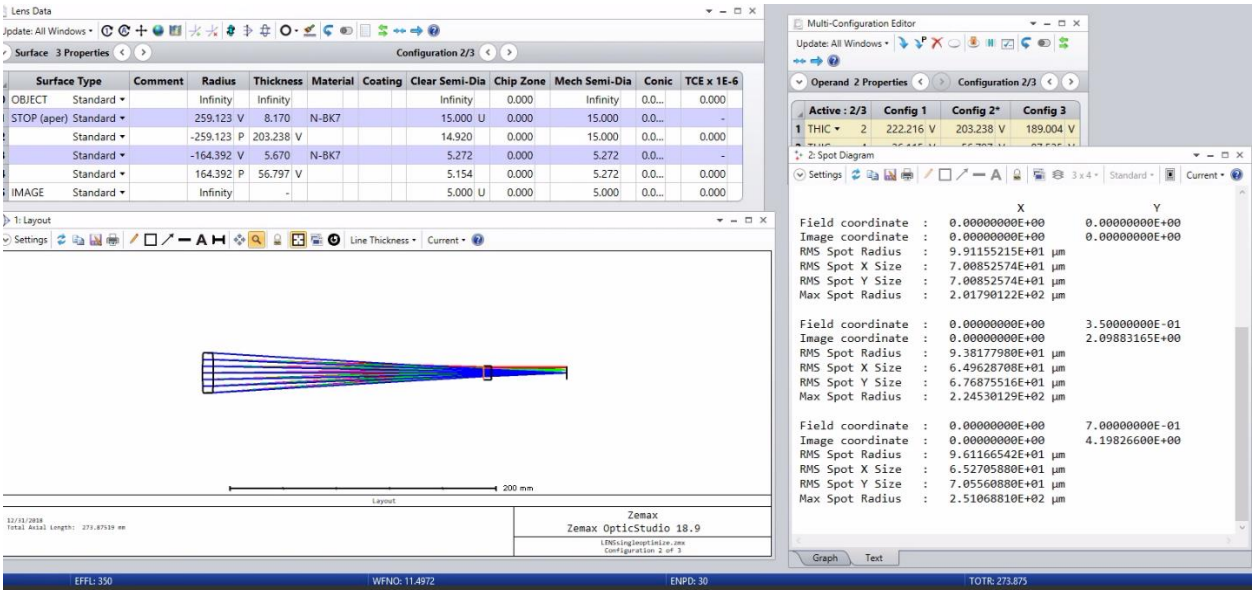

Fig. 4 Final OpticStudio lens data, layout and spot radius of planed EFL = 35 cm.

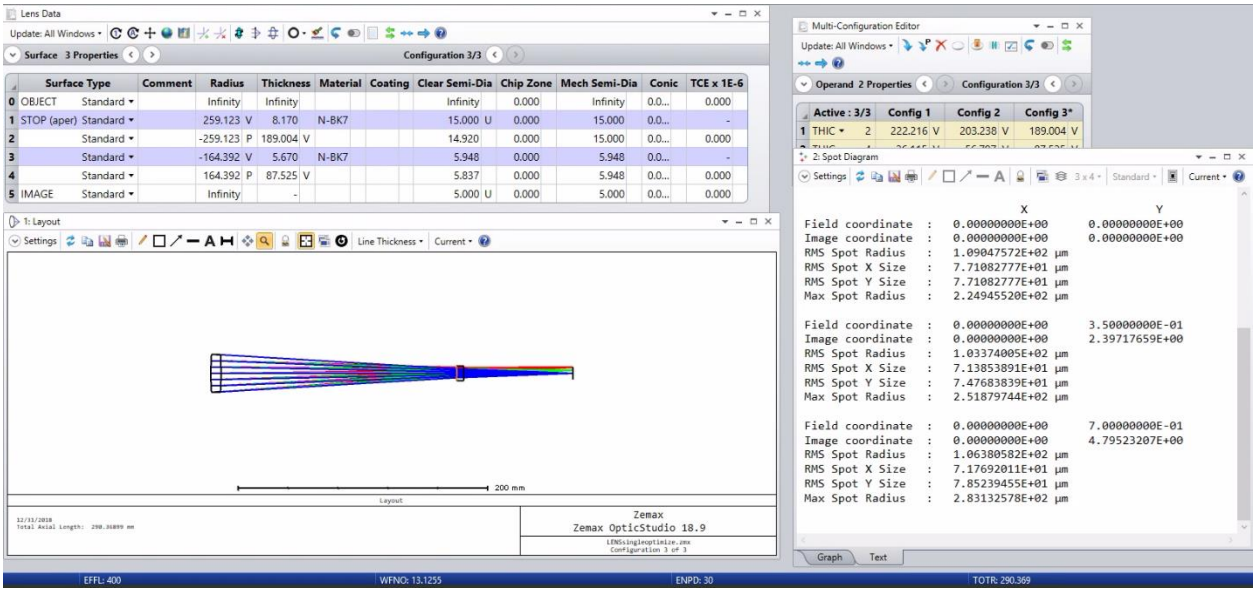

Fig. 5 Final OpticStudio lens data, layout and spot radius of planed EFL = 40 cm.