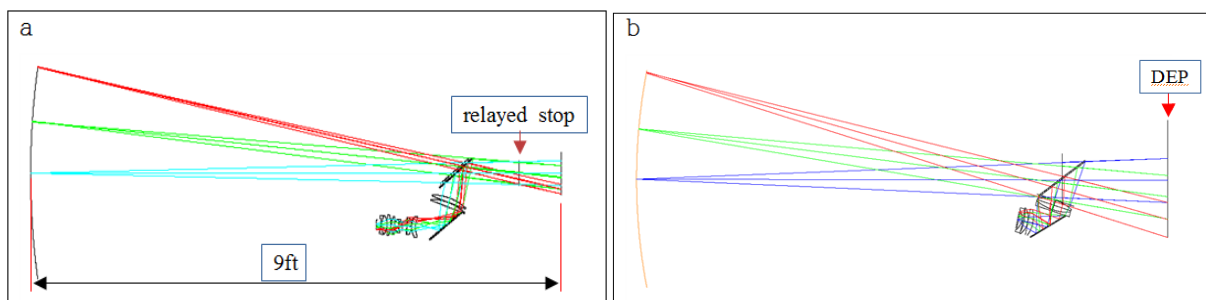


# Lens type comparison study for an aircraft Head Up Display

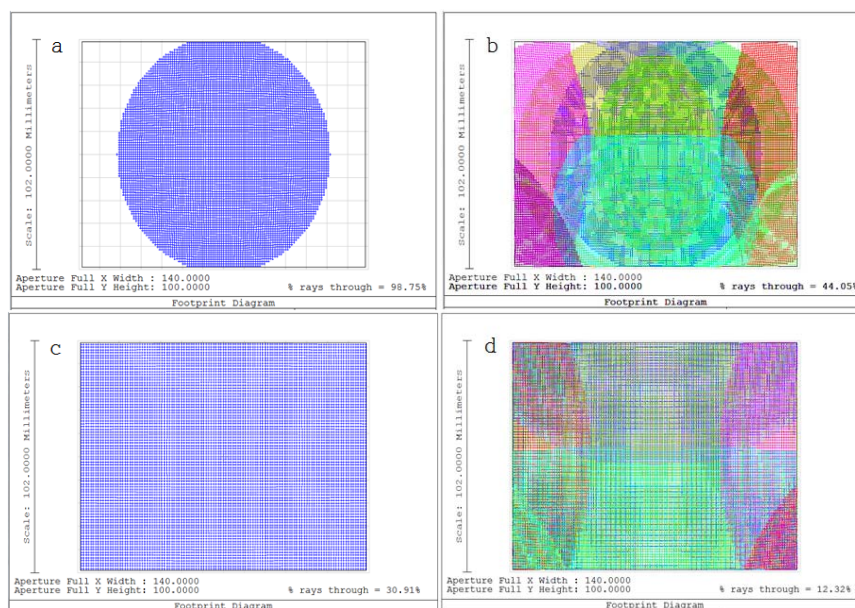
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An aircraft HUD displays the aircraft operational information to help identify the flight information [1]. We carried out design studies for HUD development for an aircraft simulator, of which the background screen is projected onto a 9ft dome. The HUD was designed to provide  $25^\circ$  TFOV,  $13.45^\circ$  VFOV &  $20^\circ$  HFOV, with the an eyebox of  $140 \times 100 \text{ mm}^2$ . Two optical design types were compared and optimized respectively for achieving the give requirement; a relay type, and a non-relay type. This paper presents those two design results concluding the non-relay type was better in our application.



**Fig. 1. System Layout**  
a) Relay lens system, b) Non-relay lens system



**Fig. 2. Foot-print diagram of DEP**  
a) Center beam of relay lens system, b) Full field of relay lens system,  
c) Center beam of non-relay lens system, d) Full field of non-relay lens system

## References

1. H. K. Jeon, K. H. Lee, and Y. B. Lim, 2014, "A study on the development of digital Head up display for aircraft," Journal of The Korean Society for Aeronautical & Space Sciences, Arp. 2014, pp.1082~1085.