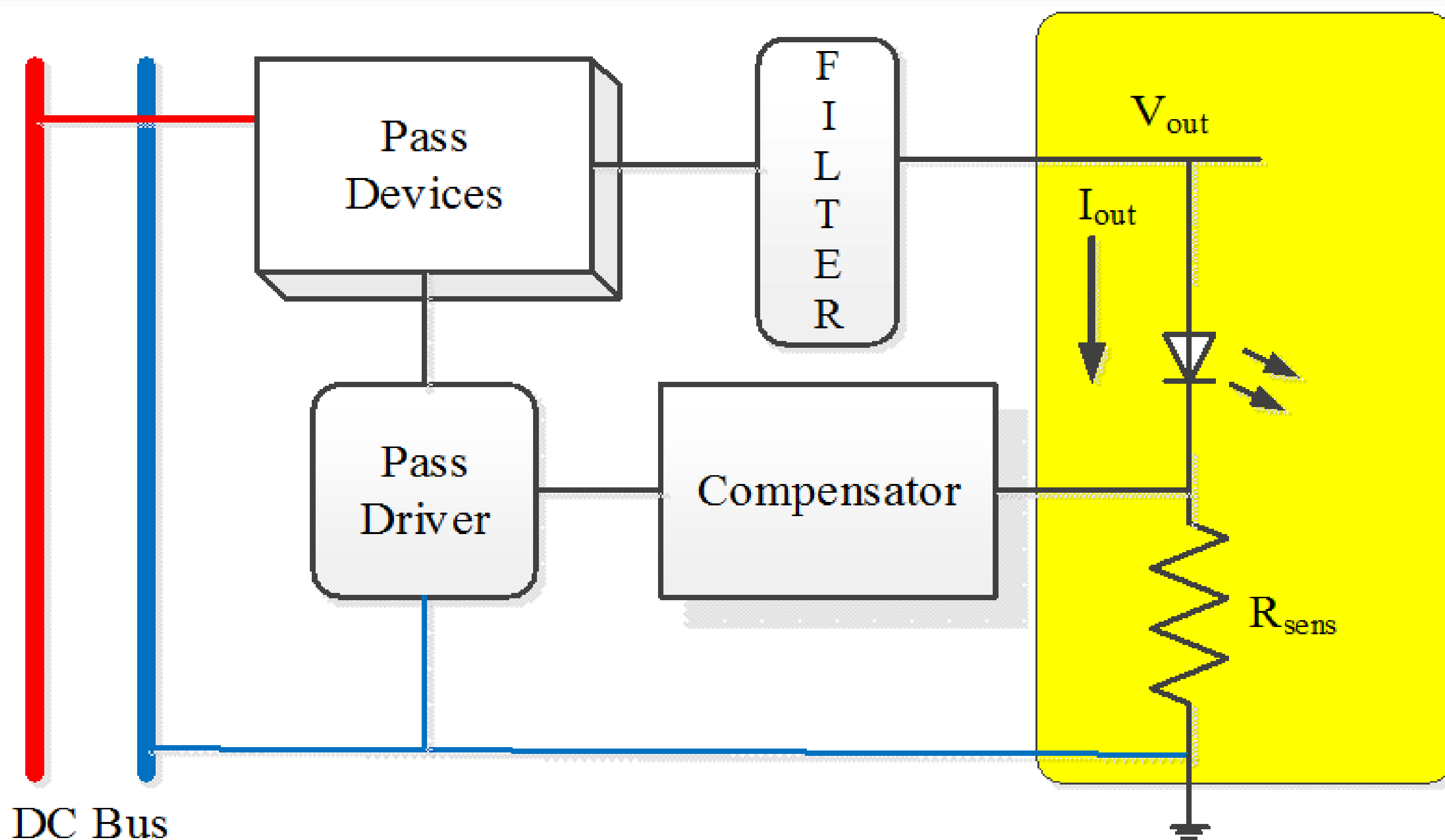


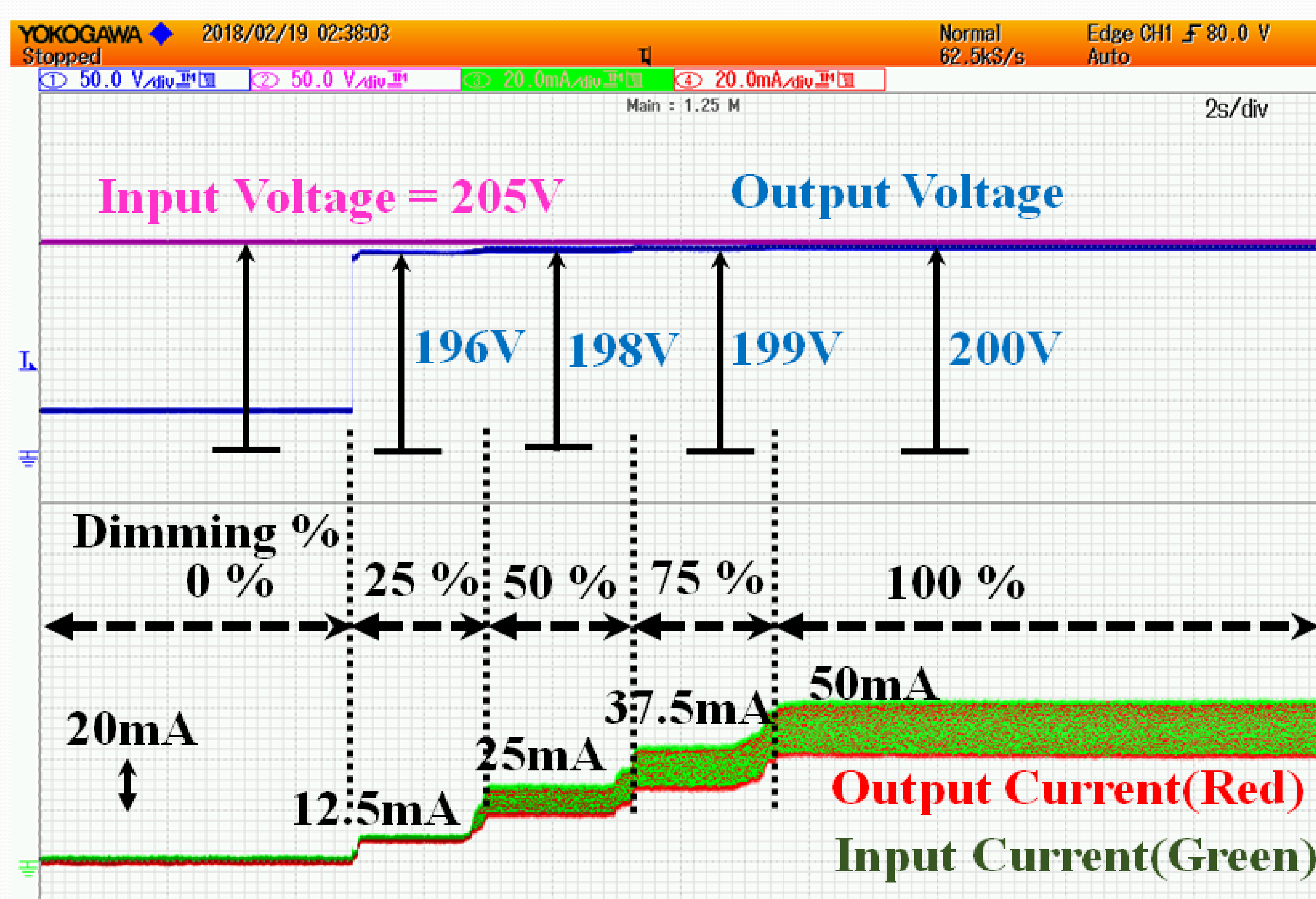
Abstract

This patent proposes a high brightness, high efficiency, dimmable LED driver based on linear current regulator technology for DC grid distribution systems. The proposed driver has excellent characteristics like highest lumen per watt, long lifetime, high reliability, compact, low cost, both environmental and user friendly which makes it suitable for lighting applications. Steady state and small signal model of the proposed driver are performed which helps in minimizing ground current and accurate compensator design, respectively. These two modelling approaches result in the optimization of both footprint and cost of the driver. The performance of the proposed Experimental prototype of 20W driver developed to validate the performance at different dimming levels and achieves a maximum efficiency of 97%.

Invention block diagram



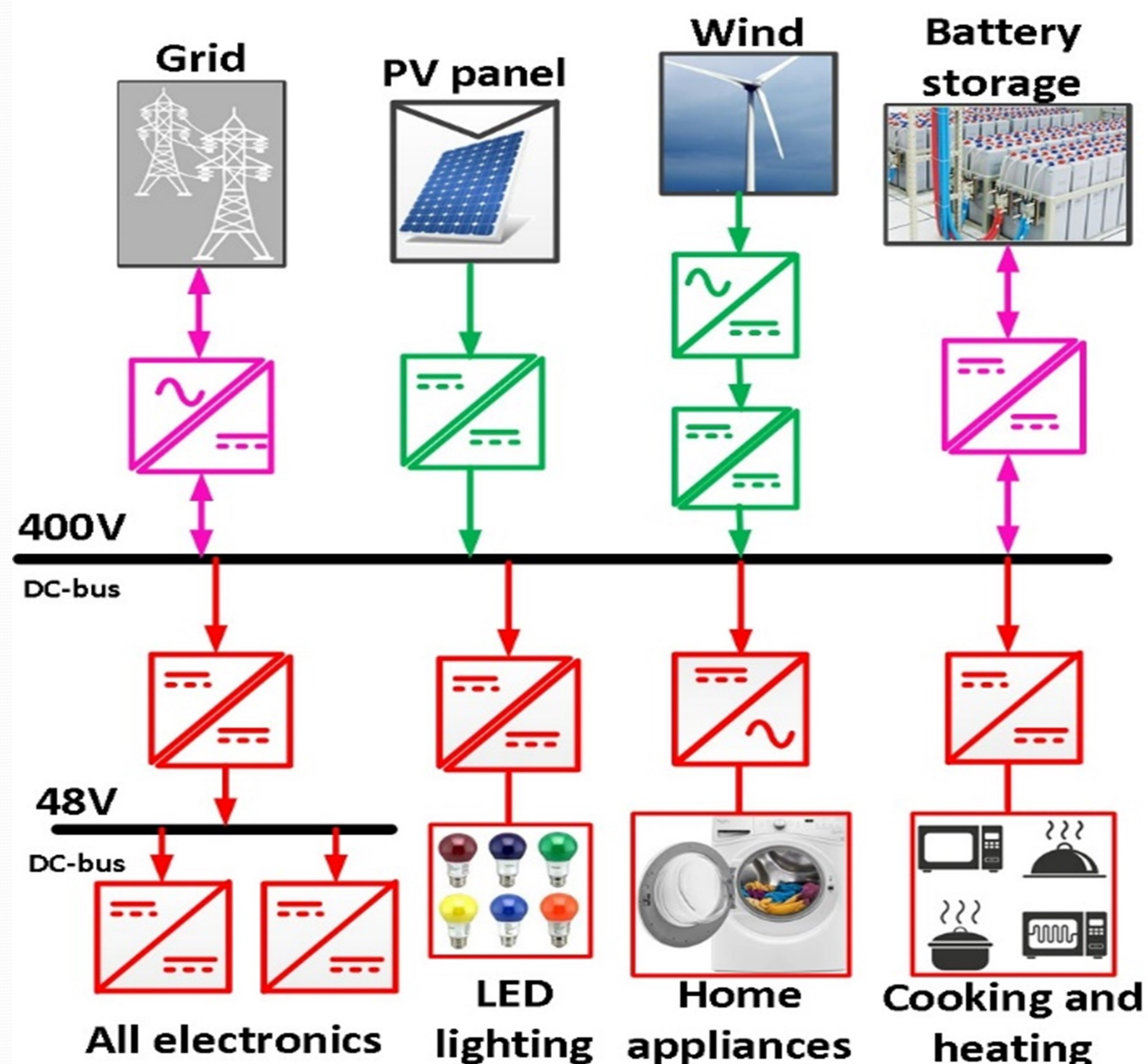
Testing and Verification



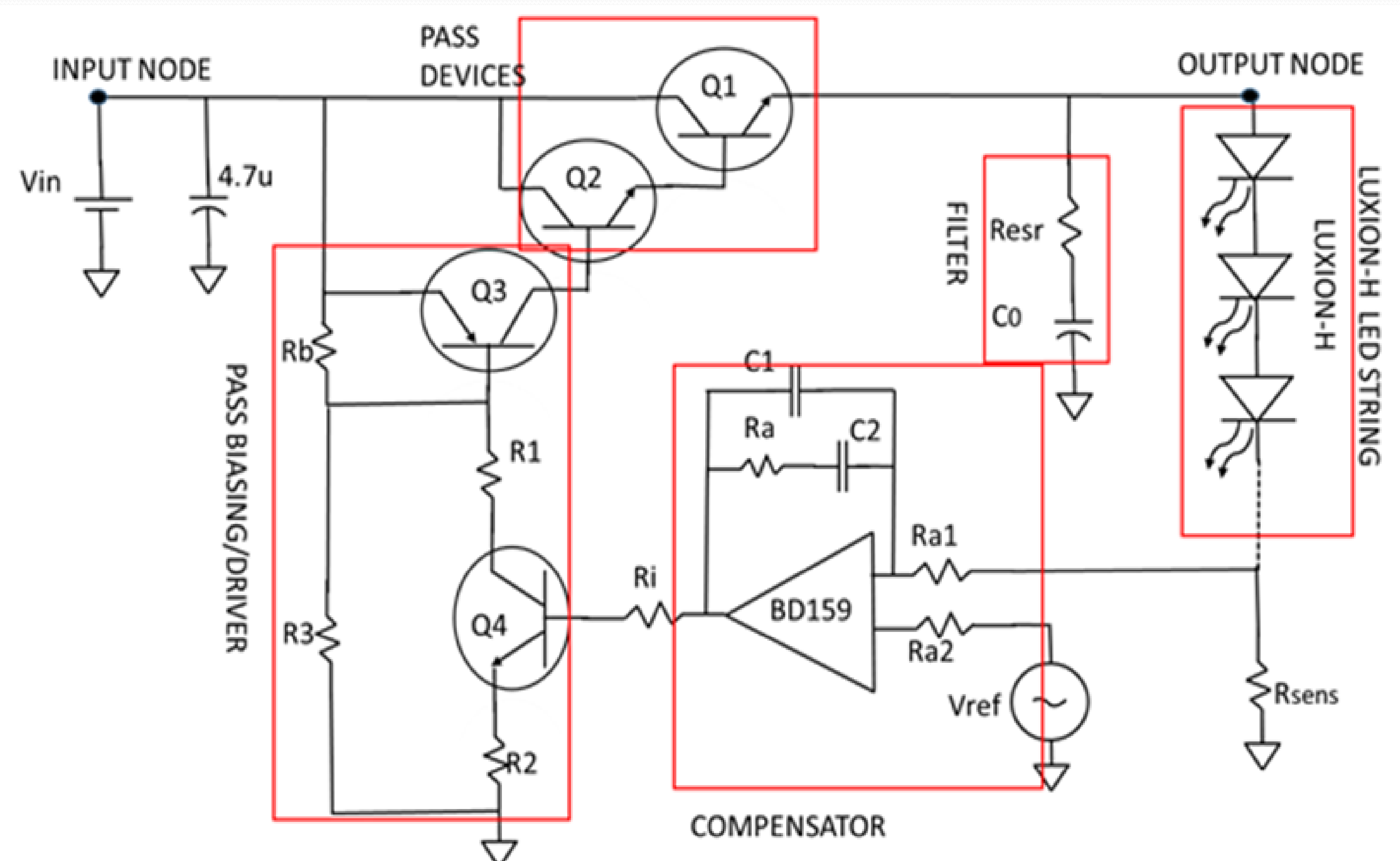
Acknowledgement

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Distributed Generation

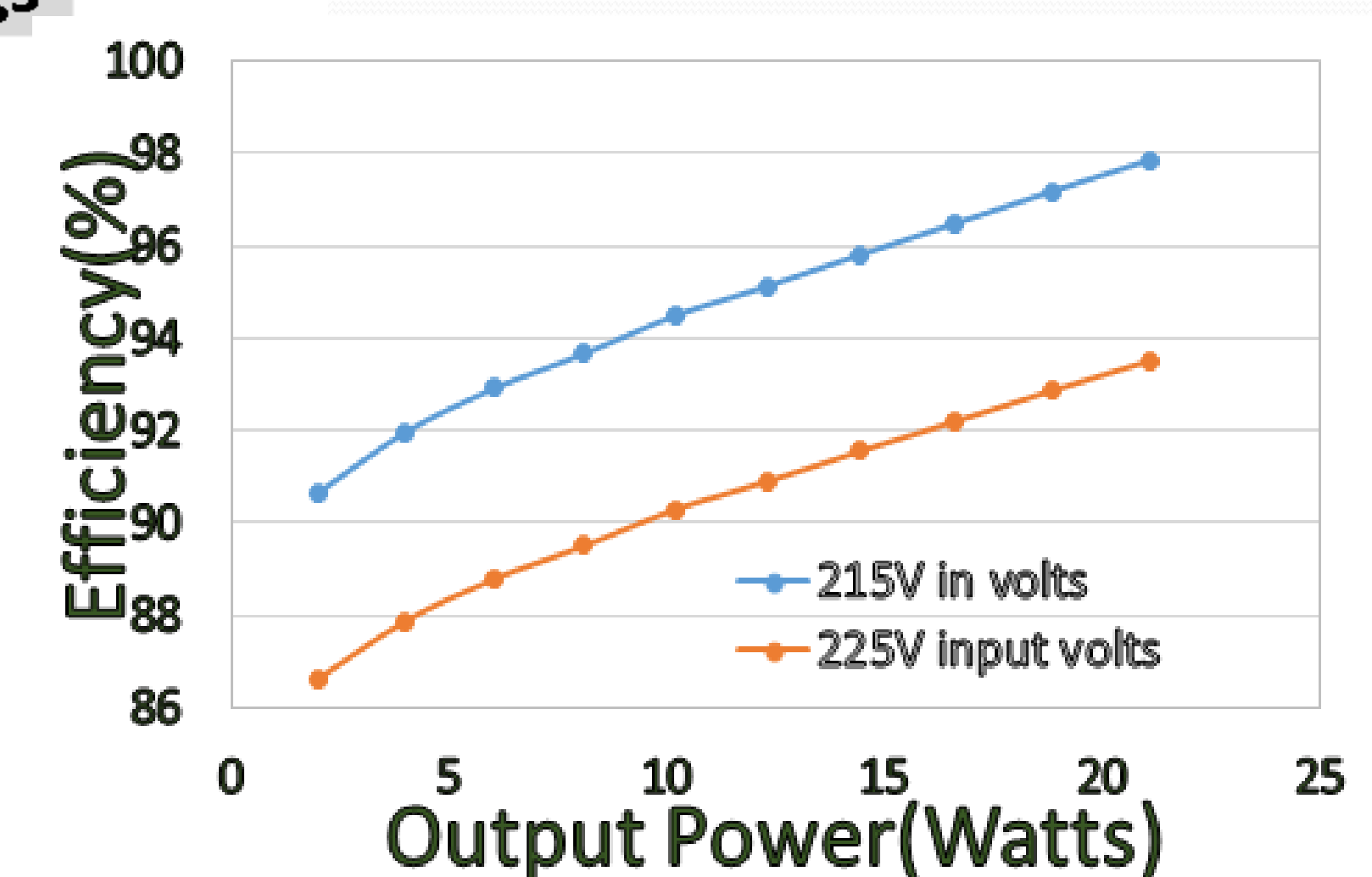


Invention Power Circuit



Applications of the Invention

- Avionics, Space, Ship and submarine lighting
- Advertisement boards and hoardings
- Dimmable Home lighting systems
- Controllable Industrial lighting
- Road Transport Indication lamps
- Outdoor Stadium Lighting
- Indoor Stadium lighting
- Automatic Street Lighting
- Decoration systems
- Health appliances
- Auditoriums



Publications

- Atif Iqbal, Mohammad Meraj, Syed Rahman, And Lazhar Ben Brahim, "Linear Regulated Dimmable LED Driver For DC Distributed Lighting System" docket no: 432743.10074, Tracking Code:2017-005.
- M. Meraj, S. Rahman, A. Iqbal and L. Ben-Brahim, "High Brightness and High Voltage Dimmable LED Driver for Advanced Lighting System," in IEEE Access, vol. 7, pp. 95643-95652, 2019. doi: 10.1109/ACCESS.2019.2928859