Research and Development of High-Efficient Non-Strobe Flash Electronic Ballast for Fluorescent Light

Xu, Yanheng

The project is to develop electronic ballasts for T5-28W fluorescent lamps to lengthen the lifespan of fluorescent lamps by preventing the tube from going black and the luminosity from decreasing, reduce mercury pollution caused by wasted lamps and avoid stroboflash light-emitting. With the previous technical design and innovation, we apply integrated block to our design, and redesign circuit to make up for the disadvantage of the original manifold. Technical Innovation: 1. a scientific and rational design of preheating circuit of frequency conversion; 2. correction of PFC power factor circuit and a design of half-bridge inverter circuit; 3. with the design of the output of the resonant capacitor, we improve the working efficiency of a lamp with half-bridge inverter circuit. Practical effects: After we switch the lamp we design for 122,518 cycle times, the tube won't go black. 1.12% volatility of lighting depth is 4.5 times better than others. If we use a mobile phone camera to take a photo of such a lamp, stroboflash light-emitting still won't happen.

Awards Won: