

CHAPTER 2 - CONSERVATION AND EFFICIENCY: BUILDING SYSTEMS

500

502.07 ELECTRONIC BALLASTS



INTENT

To improve the life span of light sources and to increase energy savings.

REQUIREMENT

For all new buildings, high frequency electronic ballasts must be used with fluorescent lights and metal halide lights, of 150 W and less.

High frequency electronic ballasts must be labelled and must be compliant with international standards as approved by the DEWA and Dubai Municipality.

SIGNIFICANCE

Ballasts consume a significant portion of power in a lighting system. Improvements in ballasts can reduce the overall energy consumption.

Electronic ballasts are considerably more efficient than magnetic ballasts and produce much less heat. Energy losses from the ballast are reduced as the solid-state circuit contains no copper windings.

The high frequency electronic ballasts eliminate flickering and humming. They provide instant start with higher light output. The lamp is increased due to lower operating current.

APPLICABILITY

This regulation is applicable to all building types. Refer to Table 101.07(1) in Section One - Administration for detailed applicability levels.

IMPLEMENTATION

This regulation requires high frequency electronic ballasts to be used with fluorescent lights. Electronic ballast is a device that controls the starting voltage and the operating currents of lighting devices. A typical electronic ballast consists of low-pass filter, rectifier, buffer capacitor and a high frequency (HF) oscillator. In fluorescent lamp, greater efficacy is obtained at high operating frequency. Electronic ballast by working under higher frequency operation increases the efficacy of lamps, thereby enabling the lamp to be operated at a lower input power. Performance characteristics for an electronic ballast considers ballast factor (BF), ballast efficacy factor (BEF) and system efficacy. These characteristics provides information on the various aspect of lamp-ballast system.