

SECTION II – Controllable Light Output Electronic (Fluorescent)**Ballast Specification for Controllable Light Output Electronic Fluorescent****Bi-level****Section I - Physical Characteristics**

- 1.1 Ballast shall be physically interchangeable with standard electromagnetic or standard electronic ballasts, where applicable.
- 1.2 Ballast shall be provided with integral leads color coded per ANSI C82.11.

Section II - Performance Requirements

- 2.1 Ballast shall be Instant Start.
- 2.2 Ballast shall provide Independent Lamp Operation (ILO) allowing remaining lamp(s) to maintain full light output when one or more lamps fail.
- 2.3 Ballast shall contain auto restart circuitry in order to restart lamps without resetting power.
- 2.4 Ballast shall operate from 60 Hz input source of 120V, 277V or 347V as applicable with sustained variations of +/- 10% (voltage and frequency) with no damage to the ballast.
- 2.5 Ballast shall be high frequency electronic type and operate lamps at a frequency between 20 kHz and 30 kHz or above 42 kHz to avoid interference with infrared devices and eliminate visible flicker.
- 2.6 Ballast shall have a Power Factor greater than 0.98 for primary lamp.
- 2.7 Ballast shall have a minimum ballast factor for primary lamp application as follows: 0.75 for Low Watt, 0.85 for Normal Light Output, and 1.20 for High Light.
- 2.8 Ballast shall provide for a Lamp Current Crest Factor of 1.7 or less in accordance with lamp manufacturer recommendations.
- 2.9 Ballast input current shall have Total Harmonic Distortion (THD) of less than 20% for Standard models and THD of less than 10% for Centium models when operated at nominal line voltage with primary lamp.
- 2.10 Ballast shall have a Class A sound rating.
- 2.11 Ballast shall have a minimum starting temperature of 10C (50F) for primary lamp and 16C (60F) for energy-saving lamps.
- 2.12 Ballast shall tolerate sustained open circuit and short circuit output conditions without damage.
- 2.13 Ballast shall have a default setting of 4-lamp operation or 3-lamp operation. Ballast shall be wired and able to toggle between 2 and 4 lamp operation or 2 and 3 lamp operation.
- 2.14 Ballast shall reset back to default setting if power is in the 'off' position for a duration of longer than 3 seconds.

Section III - Regulatory Requirements

- 3.1 Ballast shall not contain any Polychlorinated Biphenyl (PCB).
- 3.2 Ballast shall be Underwriters Laboratories (UL) listed, Class P and Type 1 Outdoor; and Canadian Standards Association (CSA) certified where applicable.
- 3.3 Ballast shall comply with ANSI C62.41 Category A for Transient protection.
- 3.4 Ballast shall comply with ANSI C82.11 where applicable.
- 3.5 Ballast shall comply with the requirements of the Federal Communications Commission (FCC) rules and regulations, Title 47 CFR part 18, Non-Consumer (Class A) for EMI/RFI (conducted and radiated).

Section IV - Other

- 4.1 Ballast shall be manufactured in a factory certified to ISO 9002 Quality System Standards.
- 4.2 Ballast shall carry a five-year warranty from date of manufacture against defects in material or workmanship, including replacement, for operation at a maximum case temperature of 70C.
- 4.3 Manufacturer shall have a fifteen year history of producing electronic ballasts for the North American market.
- 4.4 Ballast shall be Advance Transformer part # _____ or approved equal.

