Easy to install step-dim capability

Philips Advance Optanium® high-efficiency ballasts with step-dim capability meets California's Title 24 requirement by reducing power to 50%

Philips Advance Optanium ballasts with step-dim capability for T5 fluorescent lamps represents an affordable, energy-efficient, and versatile lighting solution designed to meet California's Title 24 requirements by allowing the end-user to reduce power by 50%.

Operating from any line voltage switching device, the ballast's programmed-start circuitry provides extended lamp life in frequent switching applications like those associated with the use of occupancy sensors or motion detectors making this product the sustainable choice for many commercial applications.

The ballast additionally features IntelliVolt® multiple-voltage technology as well as safety features including auto restart, ballast shutdown mode, lamp End-Of-Life (EOL) protection circuitry which safely removes power from the lamp upon failure to minimize maintenance concerns.

Offering the flexibility of step-dimming* with the high-efficiency of Optanium electronic ballast technology, our ballast represents an optimal lighting solution for a wide variety of professional applications. This ballast is also available in a fixed output version for 28W, T5 lamps.

Title 24 Compliant

- Meets California's Title 24 by reducing power to 50%

Light levels are adjustable — 100% power, 50% power, and off

- Dims all the lamps together providing equal burn hours on all lamps reducing uneven lifetimes as experienced with on-off switching systems

Operation from any line voltage switching device (such as standard toggle switches and occupancy sensors)

- Ensures ease of use and system compatibility across a broad range of applications

* Also available in fixed light output version

PHILIPS
ADVANCE

No. of Lamps	Input Volts	Lamp Starting Method	Ballast Family	Catalog Number	Input Power ANSI (Watts)	Ballast Factor	Max. THD %	Line Current (Amps)	Min. Starting Temp. (°F /°C)	Dim.	Wiring Diag.
F28T5 (28W) Step-Dim at 100% Power											
2	120-277	PS	Optanium	IOP-2S28-95-SC-SD	60 - 58	0.95	10	0.50 - 0.22	32/0	A	173
	120-277			IOP-2S28-115-SC-SD	72 - 71	1.15	10	0.60 - 0.26			
F28T5 (28W) Step-Dim at 50% Power											
2	120-277	PS	Optanium	IOP-2S28-95-SC-SD	28	0.35	15	0.23 - 0.11	32/0	A	173
	120-277			IOP-2S28-115-SC-SD	35	0.48	15	0.29 - 0.13			
F28T5 (28W) Fixed Output NO Step-Dim											
2	120-277	PS	Optanium	IOP-2S28-95-SC	59 - 58	0.95	10	0.50 - 0.22	32/0	A	173A
	120-277			IOP-2S28-115-SC	71 - 69	1.15	10	0.60 - 0.26			

Wiring Diagrams and Dimensions

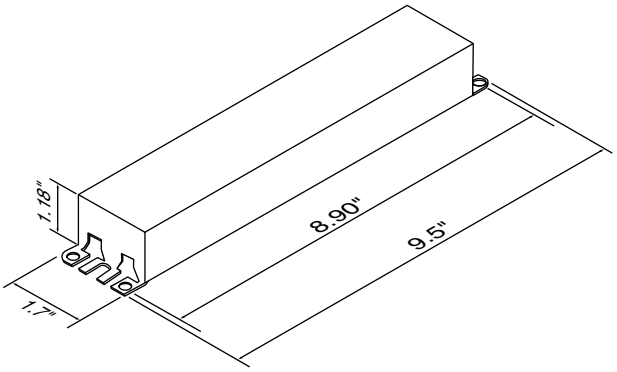

Fig. A

Power Output	Position	
	S1	S2
100%	On	On
50%	On	Off
50%	Off	On
0%	Off	Off

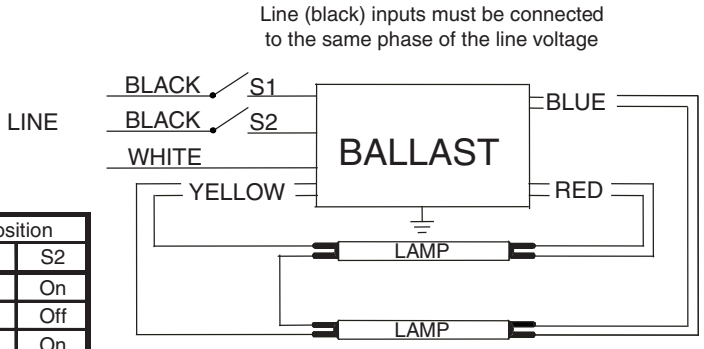

Diagram 173

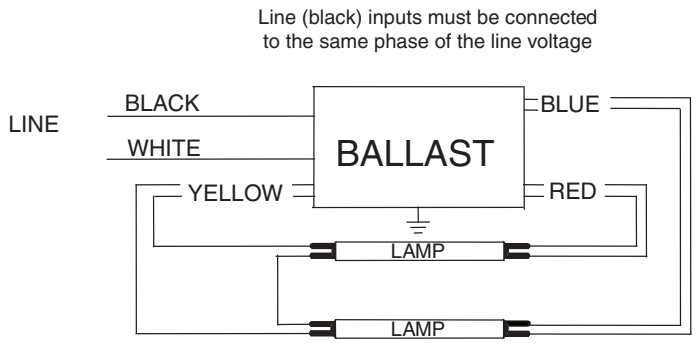

Diagram 173A

Ballast Specification

Section I - Physical Characteristics

1.1 The electronic ballast shall be physically interchangeable with standard electromagnetic or standard electronic ballasts, where applicable.

1.2 The electronic ballast shall be furnished with integral leads color coded to ANSI standard C82.11.

Section II - Performance Requirements

2.1 The ballast shall be Programmed Start.

2.2 The ballast shall contain auto restart circuitry in order to restart lamps without resetting power.

2.3 The ballast shall operate from a 50/60 Hz input source of 120V through 277V with sustained variations of +/- 10% (voltage and frequency) with no damage to the ballast.

2.4 The ballast shall be a high frequency electronic type and operate lamps at a frequency between 42 kHz and 54 kHz to avoid interference with infrared devices, elimiante visible flicker and avoid Article Surveillance Systems, such as anti-theft devices.

2.5 The ballast shall have a Power Factor greater than 0.98 for primary lamp.

2.6 The ballast shall have a ballast factor of 1.15 at 100% power, 0.48 at 50% power (IOP-2S28-115-SC-SD) or 0.95 at 100% power, 0.35 at 50% power (IOP-2S28-95-SC-SD).

2.7 The ballast shall provide a lamp current crest factor of 1.7 or less at 100% output and 50% power output in accordance with lamp manufacturer recommendation.

2.8 The ballast input current shall have Total Harmonic Distortion (THD) of less than 10% when operated "at 100% power" at normal line voltage with primary lamps.

2.9 The ballast shall have a minimum starting temperature of 32°F/0°C.

2.10 The ballast shall withstand a sustained open circuit and output conditions without damage.

2.11 The ballast shall provide lamp EOL protection circuitry.

2.12 The ballast shall control lamp output in two steps - 100% output and 50% power output. Control shall be from any device that switches the input mains.

2.13 Both input mains must be on the same phase for proper application of step functionality.

2.14 The ballast shall ignite lamps from either the 100% output level or the 50% power level without first going to a higher light level.

2.15 The ballast shall be connected to rapid-start sockets only. Shunted or jumpered sockets are not to be used.

Section III - Regulatory Requirements

3.1 The ballast shall not contain any Polycholorinated Biphenyl (PCB's).

3.2 The ballast shall be Underwriters Laboratories (UL) listed, Class P and Type 1 Outdoor; and Canadian Standards Association (CSA) certified, where applicable.

3.3 The ballast shall comply with ANSI C62.41 Category A for transient protection.

3.4 The ballast shall comply with ANSI C82.11, where applicable.

3.5 The ballast shall comply with the requirements of the Federal Communications Commission (FCC) rules and regulations, Title 47 CFR Part 18, for Non-Consumer equipment (Class A) for EMI/RFI (Conducted and Radiated).

3.6 The electronic ballast shall comply with California Energy Commission Title 24 requirements.

Section IV - Other

4.1 The ballast shall be produced in a factory certified to ISO 9002 Quality System Standards.

4.2 Ballast shall carry a _____warranty from date of manufacture against defects in material or workmanship for operation at a maximum case temperature of _____
(Go to our web site for up-to-date warranty information: www.advancetransformer.com/warranty).

4.3 The manufacturer shall have a fifteen-year history of producing electronic ballasts for the North American market.

Form No. EL-2420-R02 11/08

Philips Lighting Electronics N.A.
10275 W. Higgins Road
Rosemont IL 60018
Tel: 800-322-2086 Fax: 888-423-1882
Customer Support/Technical Service: 800-372-3331
OEM Support: 866-915-5886
www.philips.com/advance