

ADVANCE

by ignify

Ballasts

Optanium

STEP-DIM



Advance Optanium high-efficiency ballasts with step-dim capability reduce input power by 50% to help meet energy code requirements

Advance Optanium ballasts with step-dim capability for T5, T5HO and T8 fluorescent lamps represent an affordable, energy-efficient, and versatile lighting solution designed to meet energy codes such as California's Title 24 and ASHRAE 90.1-2010 that require end users to reduce lighting power consumption by 50%.

These Ballasts offer optimal lighting solution for a wide variety of professional applications.

Features

- Reduces power by 50% to meet current energy codes
- Adjustable light levels — 100% power, 50% power, and off
- Operation from any line voltage switching device (such as standard toggle switches and occupancy sensors)

(¥, ‡ See page 4 for footnote)

Optanium STEP-DIM

Optanium Step-Dim Ballasts for 14-35W T5 Lamps

Programmed Start

No. of Lamps	Input Volts	Catalog Number	Max/Min		Full Light Output		Minimum Starting Temp (°F/°C)	Dim.	Wiring Diagram
			Input Power ANSI (Watts)	Ballast Factor	THD %	Line Current (Amps)			
F14T5 (14W)									
2	120-277	IOP-2S28-115-SC-SD	38/20	1.15/0.48	15	0.32-0.14	0/-18	B	173
F21T5 (21W)									
2	120-277	IOP-2S28-95-SC-SD	45/22	0.95/0.35	10	0.38-0.17	0/-18	B	173
2	120-277	IOP-2S28-115-SC-SD	55/27	1.15/0.48	10	0.46-0.20	0/-18	B	173
F28T5/ES (25W)									
1	120-277	IOP-2S28-115-SC-SD	34/18	1.15/0.48	15	0.31-0.13	32/0	B	170
2	120-277	IOP-2S28-95-SC-SD	57/27	0.95/0.35	10	0.47-0.20	32/0	B	173
2	120-277	IOP-2S28-115-SC-SD	67/33	1.15/0.48	10	0.55-0.23	32/0	B	173
F28T5 (28W)									
1	120-277	IOP-2S28-115-SC-SD	37/19	1.15/0.48	15	0.31-0.14	0/-18	B	170
2	120-277	IOP-2S28-95-SC-SD	60/28	0.95/0.35	10	0.50-0.22	0/-18	B	173
2	120-277	IOP-2S28-115-SC-SD	72/35	1.15/0.48	10	0.60-0.26	0/-18	B	173
F35T5 (35W)									
1	120-277	IOP-2S28-95-SC-SD	38/19	0.95/0.35	15	0.30-0.13	0/-18	B	170
1	120-277	IOP-2S28-115-SC-SD	45/23	1.15/0.48	15	0.30-0.13	0/-18	B	170

Optanium Step-Dim Ballasts for 44-54W T5HO Lamps

Programmed Start

No. of Lamps	Input Volts	Catalog Number	Max/Min		Full Light Output		Minimum Starting Temp (°F/°C)	Dim.	Wiring Diagram
			Input Power ANSI (Watts)	Ballast Factor	THD %	Line Current (Amps)			
F54T5/HO/ES (44W)									
1	120-277	IOP-2S54-L-SD	50/28	1.05/0.43	10	0.42-0.20	50/10	L	170A
2	120-277	IOP-2S54-L-SD	99/47	1.04/0.42	10	0.82-0.36	50/10	L	173A
F54T5/HO/ES (49W)									
1	120-277	IOP-2S54-L-SD	55/29	1.06/0.44	10	0.46-0.21	50/10	L	170A
2	120-277	IOP-2S54-L-SD	105/50	1.04/0.42	10	0.87-0.38	50/10	L	173A
F54T5/HO (54W)									
1	120-277	IOP-2S54-L-SD	60/30	1.05/0.43	10	0.50-0.23	32/0	L	170A
2	120-277	IOP-2S54-L-SD	116/53	1.00/0.40	10	0.98-0.42	32/0	L	173A

Optanium Step-Dim Ballasts for 17-32W T8 Lamps

Programmed Start

No. of Lamps	Input Volts	Catalog Number	Max/Min		Full Light Output		Minimum Starting Temp (°F/°C)	Dim.	Wiring Diagram
			Input Power ANSI (Watts)	Ballast Factor	THD %	Line Current (Amps)			
F17T8, FBO16T8 (17W)									
1	120-277	IOP-2S32-SC-SD	15/9	0.87/0.28	10	0.13-0.07	0/-18	B	170A
2	120-277	IOP-2S32-SC-SD	28/16	0.87/0.28	10	0.24-0.11	0/-18	B	173A
F25T8, FBO24T8 (25W)									
1	120-277	IOP-2S32-SC-SD	22/11	0.87/0.28	10	0.18-0.09	0/-18	B	170A
2	120-277	IOP-2S32-SC-SD	40/20	0.87/0.28	10	0.34-0.15	0/-18	B	173A
F32T8/ES (25W)									
2	120-277	IOP-2S32-SC-SD	45/22	0.87/0.28	10	0.38-0.17	60/16	B	173A
F32T8/ES (28W)									
2	120-277	IOP-2S32-SC-SD	48/23	0.87/0.28	10	0.40-0.18	60/16	B	173A
F32T8, FBO31T8, F32T8/U6 (32W)									
1	120-277	IOP-2S32-SC-SD	29/14	0.87/0.28	10	0.24-0.11	0/-18	B	170A
2	120-277	IOP-2S32-SC-SD	56/25	0.87/0.28	10	0.46-0.20	0/-18	B	173A

Optanium STEP-DIM

Dimensions

Figure	A	B	C	D
B	1.00"	1.30"	8.90"	9.50"
L	1.06"	1.18"	13.78"	14.17"

Figure B

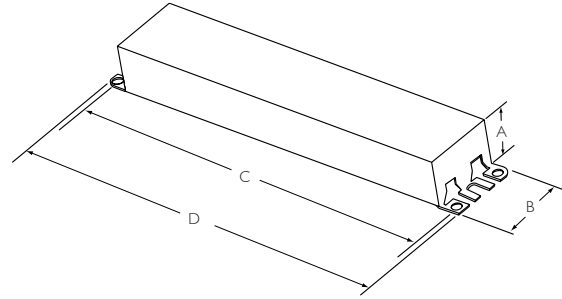
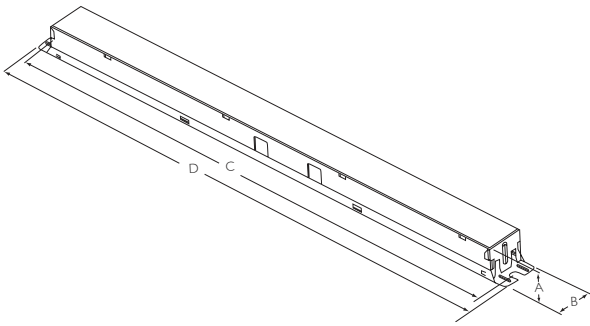


Figure L



Wiring Diagrams

Diagram 170

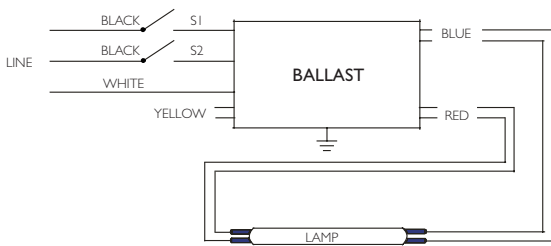


Diagram 170A

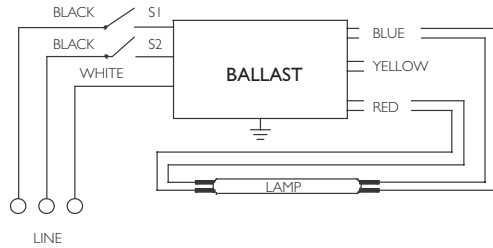


Diagram 173

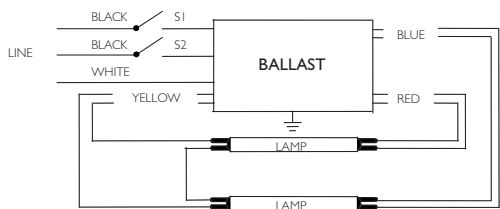
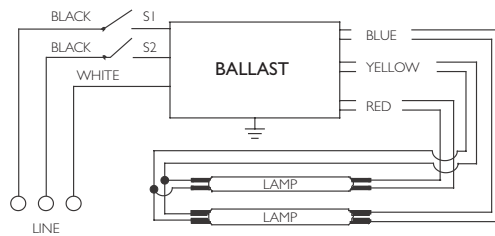


Diagram 173A



Ballast Specification

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 poke-in wire trap connectors or integral leads color coded per ANSI C82.11.

Section II - Performance Requirements

- 2.1 Ballast shall be Programmed Start.
- 2.2 The ballast shall contain auto restart circuitry in order to restart lamps without resetting power.
- 2.3 Ballast shall operate from 50/60 Hz input source of 120V through 277V with sustained variations of +/- 10% (voltage and frequency).
- 2.4 Ballast shall be high frequency electronic type and operate lamps at a frequency above 42 kHz to avoid interference with infrared devices and eliminate visible flicker.
- 2.5 Ballast shall have a Power Factor greater than 0.98 at 100% power and greater than 0.90 at 50% power for primary lamp.
- 2.6 Ballast shall have a ballast factor of 0.87 for primary T8 lamps or a ballast factor of 0.95 or 1.15 for primary T5HE lamps or a ballast factor of 1.0 for primary T5HO lamps at full light output.
- 2.7 Ballast shall provide for a Lamp Current Crest Factor of 1.7 or less.
- 2.8 Ballast input current shall have Total Harmonic Distortion (THD) of less than 10% when operated at nominal line and 100% power.
- 2.9 Ballast shall have a Class A sound rating.
- 2.10 Ballast shall have a minimum starting temperature of 0C (32F) for standard T5HE and T5HO lamps or -18C (0F) for standard T8 lamps or 16C (60F) for energy-saving T8 lamps or 10C (50F) for energy-saving T5HO lamps. Consult lamp manufacturer for temperature versus light output characteristics.
- 2.11 Ballast shall tolerate sustained open circuit and short circuit output conditions.
- 2.12 Ballast shall provide Lamp EOL Protection Circuit for T5 and T5HO lamps.
- 2.13 Ballast shall control light output in two steps: 100% power and 50% power. Control shall be any device that switches the line voltage input. Both line voltage inputs must be on the same phase.
- 2.14 Ballast shall ignite the lamps at any light output setting without first going to another output setting.

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 I 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 equipment.
- 3.6 Ballast shall comply with UL Type CC rating.
- 3.7 Ballast shall comply with NEMA 410 for in-rush current limits.

Section IV - Other

- 4.1 Ballast shall be manufactured in a factory certified to ISO 9001 Quality System Standards.
- 4.2 Ballast shall carry a _____ year limited 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.philips.com/advancewarranty).
- 4.3 Manufacturer shall have a twenty-year history of producing electronic ballasts for the North American market.
- 4.4 Ballast shall be Philips Advance part # _____ or approved equal.

Some lamp manufacturers recommend burning in new lamps 100 hours at full light output prior to dimming. Consult lamp manufacturer.

¥ As a licensee in the NEMA Premium Ballast Program, Philips Lighting Electronics N.A. has determined that the IOP-2532-SC-SD meets the NEMA Premium specification for premium energy efficiency.

‡ Restrictions on Hazardous Substances (RoHS) is a European directive (2002/95/EC) designed to limit the content of 6 substances [lead, mercury, cadmium, hexavalent chromium, polybrominated biphenyls (PBB), and polybrominated diphenyl ethers (PBDE)] in electrical and electronic products. For products used in North America compliance to RoHS is voluntary and self-certified.

The information presented in this document is not intended as any commercial offer and does not form part of any quotation or contract.

