



# High performance for high ceilings

Philips Advance Optanium programmed start parallel ballasts for T5HO and T8 lamps offers improved efficiency-saving on both energy and maintenance costs.<sup>1</sup>

Our new addition to our high-performance, high-efficiency Optanium ballasts family, these new programmed start parallel ballasts for T5HO and T8 lamps are now available as parallel-wired which provides independent lamp operation within the fixture. When one lamp reaches its end-of-life (EOL) the remaining lamps stay illuminated, which means you change out only the lamps that need to be replaced. This also maintains light levels by minimizing dark lamps, which reduces the urgency of re-lamping.

These high-efficiency ballasts are engineered to optimize lighting performance and maximize energy savings by providing an exceptional package of features and benefits including all aluminum can construction with a high temperature 90°C case rating. Also, cold starting at -20°F/-29°C expands options into outdoor, cold storage, and other low temperature applications. Furthermore, these ballasts offer enhanced two-level switching to provide an additional 21W of energy savings when operated in low-power mode.<sup>2</sup>

#### For T5HO

Philips Advance Optanium ballasts for T5HO lamps are optimized for use with Philips Energy Advantage 49W T5HO lamps and may result in 38W of energy

savings in a six-lamp fixture.<sup>3</sup> These ballasts are designed to provide optimal lighting performance while maximizing potential energy savings and minimizing maintenance costs.

**T5HO version reduces input watts for additional energy savings over Centium T5HO Ballasts.<sup>4</sup>**

- Optanium High-Efficiency Design

**Helps reduce maintenance costs as more lamps remain on when lamps reach end-of-life minimizing wasteful re-lamping.**

- Independent Lamp Operation

**Lamps start in less than one second, improving lighting system response to occupancy sensors.**

- Fast Programmed Starters.

Footnotes are located on the bottom of page 3.

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No. of Lamps	Input Volts	Catalog Number	Input Power ANSI (Watts)	Ballast Factor	Max THD%	Line Current (Amps)	Minimum Starting Temp (°F/°C) *	Dim.	Wiring Diagram
<b>Philips F54T5/HO 44W Energy Advantage Lamps (at 100% output)</b>									
1	120-277	IOP-2PSP54-SC	46	1.00	15	0.39-0.18	5/-15	B	77
	347-480	HOP-2PSP54-L	53	1.00	10	0.15-0.11	5/-15	L	77
2	120-277	IOP-2PSP54-SC	91	1.00	10	0.77-0.34	5/-15	B	78
	347-480	HOP-2PSP54-L	98	1.00	10	0.28-0.21	5/-15	L	78
3	120-277	IOP-4PSP54-2LS-G	142-140	1.00	10	1.18-0.52	5/-15	G	80
	347-480	HOP-4PSP54-2LS-G	145	1.00	10	0.42-0.31	5/-15	G	80
4	120-277	IOP-4PSP54-2LS-G	185-182	1.00	10	1.55-0.67	5/-15	G	79
	347-480	HOP-4PSP54-2LS-G	192-191	1.00	10	0.56-0.41	5/-15	G	79
<b>Philips F54T5/HO 44W Energy Advantage Lamps (utilizing two level switching, 4 lamps → 2 lamps)</b>									
2	120-277	IOP-4PSP54-2LS-G	90	0.85	20	0.74-0.34	5/-15	G	79
	347-480	HOP-4PSP54-2LS-G	90-92	0.85	10	0.27-0.20	5/-15	G	79
<b>Philips F54T5/HO 49W Energy Advantage Lamps (at 100% output)</b>									
1	120-277	IOP-2PSP54-SC	57	1.00	10	0.47-0.21	-20/-29	B	78
	347-480	HOP-2PSP54-L	54-51	1.00	10	0.16-0.10	-20/-29	L	78
2	120-277	IOP-2PSP54-SC	109-105	1.00	10	0.91-0.38	-20/-29	B	78
	347-480	HOP-2PSP54-L	106-100	1.00	10	0.32-0.20	-20/-29	L	78
3	120-277	IOP-4PSP54-2LS-G	162-159	1.00	10	1.35-0.58	-20/-29	G	80
	347-480	HOP-4PSP54-2LS-G	160-154	1.00	10	0.47-0.32	-20/-29	G	80
4	120-277	IOP-4PSP54-2LS-G	214-208	1.00	10	1.79-0.76	-20/-29	G	79
	347-480	HOP-4PSP54-2LS-G	214-206	1.00	10	0.62-0.43	-20/-29	G	79
<b>Philips F54T5/HO 49W Energy Advantage Lamps (utilizing two level switching, 4 lamps → 2 lamps)</b>									
2	120-277	IOP-4PSP54-2LS-G	97-96	0.85	15	0.81-0.36	-20/-29	G	79
	347-480	HOP-4PSP54-2LS-G	100-96	0.85	10	0.30-0.20	-20/-29	G	79
<b>F54T5/HO 54W</b>									
1	120-277	IOP-2PSP54-SC	60	1.00	10	0.50-0.22	-20/-29	B	77
	347-480	HOP-2PSP54-L	51-57	1.00	10	0.18-0.12	-20/-29	L	77
2	120-277	IOP-2PSP54-SC	117-114	1.00	10	0.98-0.41	-20/-29	B	78
	347-480	HOP-2PSP54-L	116-113	1.00	10	0.35-0.23	-20/-29	L	78
3	120-277	IOP-4PSP54-2LS-G	176-174	1.00	10	1.47-0.83	-20/-29	G	80
	347-480	HOP-4PSP54-2LS-G	180-174	1.00	10	0.53-0.36	-20/-29	G	80
4	120-277	IOP-4PSP54-2LS-G	235-229	1.00	10	1.96-0.83	-20/-29	G	79
	347-480	HOP-4PSP54-2LS-G	240-234	1.00	10	0.70-0.48	-20/-29	G	79
<b>F54T5/HO 54W (utilizing two level switching, 4 lamps → 2 lamps)</b>									
2	120-277	IOP-4PSP54-2LS-G	105-104	0.85	15	0.88-0.39	-20/-29	G	79
	347-480	HOP-4PSP54-2LS-G	111-106	0.85	10	0.33-0.22	-20/-29	G	79

\*While the lamps are capable of starting at low temperatures, energy saving lamps, such as the 49W and 44W, can exhibit visible striations at temperatures of 20°C or below. At room temperature (25°C) striations disappear after few minutes.

No. of Lamps	Input Volts	Catalog Number	Input Power ANSI (Watts)	Ballast Factor	Max THD%	Line Current (Amps)	Minimum Starting Temp (°F/°C) *	Dim.	Wiring Diagram
<b>Philips F32T8 (32W) High Ballast Factor</b>									
2	347-480	HOP-2PSP32-HLL	79	1.20	10	0.23-0.17	0/-18	L	78
4	347-480	HOP-4PSP32-HLG	152-151	1.17	10	0.44-0.32	0/-18	G	81
<b>Philips F32T8/ES (25W) High Ballast Factor</b>									
2	347-480	HOP-2PSP32-HLL	61-62	1.17	10	0.18-0.14	60/16	L	78
4	347-480	HOP-4PSP32-HLG	121-122	1.16-1.17	10	0.36-0.26	60/16	G	81
<b>Philips F32T8/ES (28W) High Ballast Factor</b>									
2	347-480	HOP-2PSP32-HLL	68-69	1.16	10	0.20-0.15	60/16	L	78
4	347-480	HOP-4PSP32-HLG	133	1.16	10	0.36-0.28	60/16	G	81

Dimensions

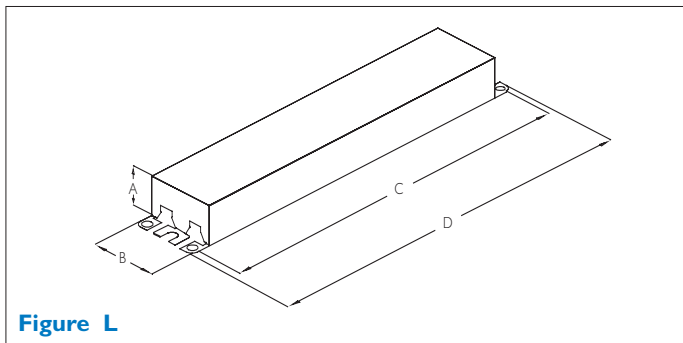
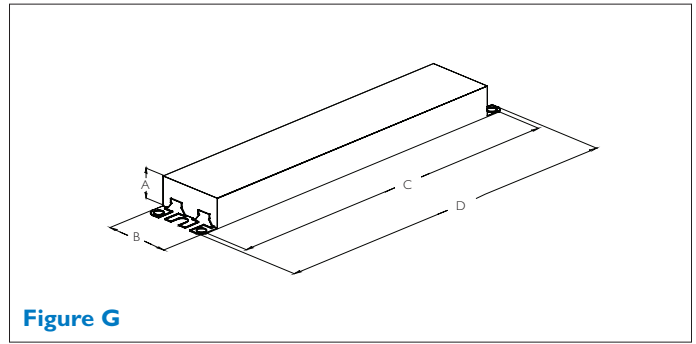
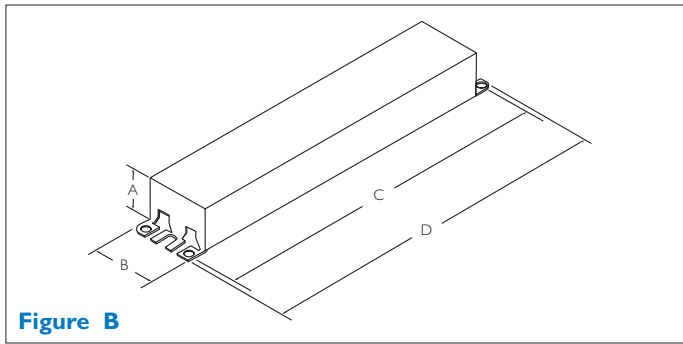
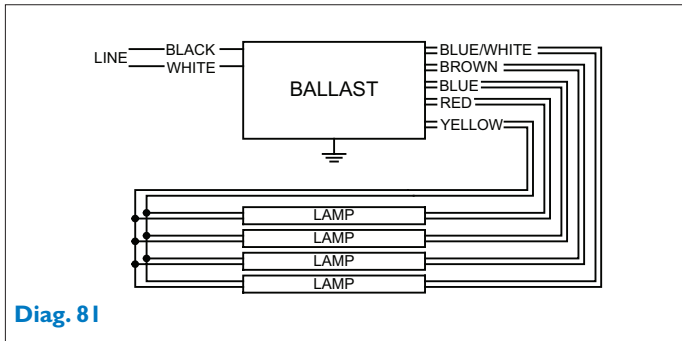
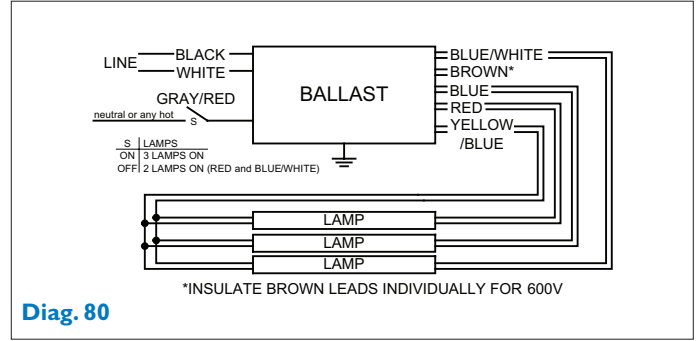
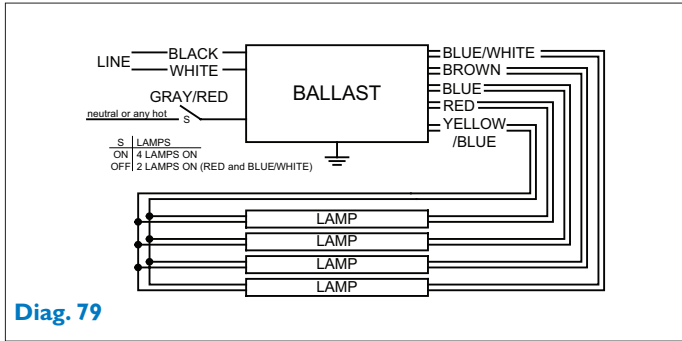
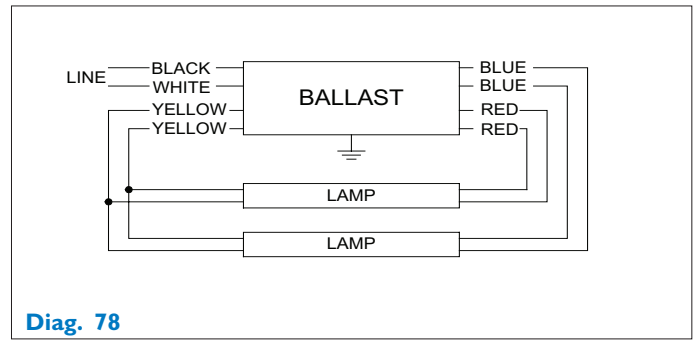
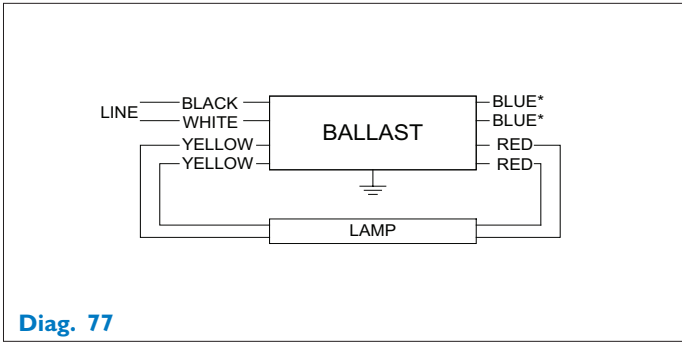


Figure	A	B	C	D
B	1.18"	1.70"	8.90"	9.50"
G	1.18"	1.70"	16.34"	16.70"
L	1.00"	1.18"	16.34"	16.70"

## Wiring Diagrams\*



\*For all HOP ballasts hot leads are black with orange stripes and black with white stripes.

## Ballast Specifications

### Section I - Physical Characteristics

- 1.1 Ballast shall be provided with integral leads color-coded per ANSI C82.11.

### Section II - Performance Requirements

- 2.1 Ballast shall be Programmed Start with lamp ignition in less than 1.0 second.
- 2.2 Ballast shall provide Independent Lamp Operation for Programmed Start ballasts allowing remaining lamp(s) to maintain full light output when one or more lamps reach end-of-lamp-life.
- 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 through 277V or 347V through 480V with sustained variations of +/- 10% (voltage and frequency).
- 2.5 Ballast shall be high frequency electronic type and operate lamps at a frequency between 42kHz and 52kHz to avoid interference with infrared devices, eliminate visible flicker and avoid Article Surveillance System, such as anti-theft devices.
- 2.6 Ballast shall have a Power Factor greater than 0.98 for primary lamp.
- 2.7 Ballast shall have a 1.0 ballast factor for primary lamp application.
- 2.8 Ballast shall provide for a Lamp Current Crest Factor of 1.7 or less, generally recommended by lamp manufacturers.
- 2.9 Ballast input current shall have Total Harmonic Distortion (THD) of less than 10% when operated at nominal line voltage with primary lamp at 100% output.
- 2.10 Ballast shall have a Class A sound rating for all 4-foot lamps and smaller.
- 2.11 Ballast shall have a minimum starting temperature of -20° F (-29° C) for 49W energy-saving T5HO lamps.
- 2.12 Ballast shall tolerate sustained open circuit and short circuit output conditions.

### 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 (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 \_\_\_ limited warranty from date of manufacture against defects in material or workmanship. This warranty is conditioned upon operation at a maximum case temperature of 90°C, among other items. (Go to our website for up-to-date warranty information, [www.philips.com/advancewarranty](http://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.

1. Energy savings is based on input watts of Centium T5HO ballasts and Input watts of a Optanium T5HO ballasts using standard 54W lamps. Based on the properties of independent lamp operation which allows you to replace only the failed lamps.

2. Based on input watts of Philips Advance IOP-4PSP54-2LS-G with Philips 49W T5HO Lamps (96W) subtracted from the input watts of Philips Advance ICN-4554-90C-2LS-G with Philips 54W T5HO Lamps (117W)= 21W energy saved.

3. Based on input watts of Philips Advance ICN-2554 (117W) and ICN-4554 (234W) with Philips 54W T5HO Lamps subtracting from the input watts of Philips Advance IOP-2PSP54 (105W) + IOP-4PSP54 (208W) with Philips 49W T5HO Lamps (117+234)-(105+208) = 38W.

4. Energy savings is based on input watts of a 2-lamp Centium T5HO ballasts (117W) and Input watts of a Optanium T5HO ballasts (114W) using 54W lamps.



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