



# The right fit for your high-output applications

Philips Advance programmed-start Centium<sup>®</sup> ballasts for T5HO lamps are available for a wide variety of applications

No matter what the conditions require, operating at a variety of line voltages between 120V to 480V, whether located in high ambient temperature environments (requiring a 90°C rating) or not, if you desire hi-low switching options for improved energy efficiency (4-lamp models only), our family of Philips Advance Centium ballasts for T5HO lamps are ideal for a wide variety of applications.

All of these ballasts utilize programmed-start circuitry which provides extended lamp life in frequent switching applications like those associated with the use of occupancy sensors or motion detectors. These ballasts additionally feature IntelliVolt<sup>®</sup> multiple voltage technology, auto-restrike capability, and lamp End-Of-Life (EOL) protection circuitry which safely removes power from the lamp upon failure.

Our ballasts for T5HO lamps are the optimal choice for a broad range of retail, commercial and institutional and industrial applications including; warehouses, manufacturing, schools, offices, and speciality and department stores. For additional energy saving opportunities Philips Advance T5HO ballasts are

compatible with energy saving lamps. For specific lead lengths visit our e-catalog at [www.philips.com/advance](http://www.philips.com/advance).

#### Programmed Start

- Potentially extends lamp life in frequent switching applications such as occupancy sensors or daylight harvesting.

#### -20°F Starting Capability (-29°C)

- Suitable for cold temperature applications (54W models only).

#### High-Low Switching on 4-Lamp Models

- Allows for easy switching from 4-lamps to 2-lamps with just one ballast.

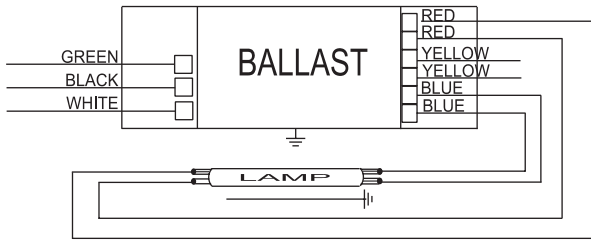
**PHILIPS**  
**ADVANCE**

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.
<b>F24T5/HO (24W)</b>											
1	120-277	PS	Centium	ICN-2S24+	27	1.02	10	0.23 - 0.10	0/-18	D	73
				ICN-2S39	29	1.12	15	0.25 - 0.12			
2	120-277	PS	Centium	ICN-2S24+	52	1.00	10	0.44 - 0.19	0/-18	D	74
				ICN-2S39	55	1.10	10	0.47 - 0.21			
<b>F39T5/HO (39W)</b>											
1	120-277	PS	Centium	ICN-2S24+	40	0.90	10	0.34 - 0.15	0/-18	D	73
				ICN-2S39	43	1.02	10	0.36 - 0.16			
2	120-277	PS	Centium	ICN-2S39	87-85	1.00	10	0.73 - 0.31	0/-18	D	74
<b>F54T5/HO (49W)</b>											
1	120-277	PS	Centium	ICN-2S54+	58	1.02	10	0.49-0.21	-20/-29	D	73
				ICN-2S54-90C+							
				ICN-2S54-90C-SC							
	347-480			HCN-2S54-90C-WL	58	1.02	10	0.18-0.13		L	73
2	120-277	PS	Centium	ICN-2S54+	112-109	1.00	10	0.93-0.40	-20/-29	D	74
				ICN-2S54-90C+							
				ICN-2S54-90C-SC							
	347-480			HCN-2S54-90C-WL	112-109	1.00	10	0.35-0.25		L	74
3	120-277	PS	Centium	ICN-4S54-90C-2LS	168-165	1.00	10	1.52-0.66	-20/-29	G	75
				ICN-4S54-90C-2LS-G							
				HCN-4S54-90C-2LS-G							
4	120-277	PS	Centium	ICN-4S54-90C-2LS	222-216	1.00	10	2.00-0.86	-20/-29	G	75A
				ICN-4S54-90C-2LS-G							
				HCN-4S54-90C-2LS-G							
	347-480										
<b>F54T5/HO (54W)</b>											
1	120-277	PS	Centium	ICN-2S54+	62	1.02	10	0.52-0.23	-20/-29	D	73
				ICN-2S54-90C+							
				ICN-2S54-90C-SC							
	347-480			HCN-2S54-90C-WL	62	1.02	10	0.18-0.13		L	
2	120-277	PS	Centium	ICN-2S54+	120-117	1.00	10	1.00-0.43	-20/-29	D	74
				ICN-2S54-90C+							
				ICN-2S54-90C-SC							
	347-480			HCN-2S54-90C-WL	120-119	1.00	10	0.35-0.25		L	74
3	120-277	PS	Centium	ICN-4S54-90C-2LS	182-179	1.00	10	1.52-0.66	-20/-29	G	75A
				ICN-4S54-90C-2LS-G							
				HCN-4S54-90C-2LS-G							
4	120-277	PS	Centium	ICN-4S54-90C-2LS	240-234	1.00	10	2.00-0.86	-20/-29	G	75
				ICN-4S54-90C-2LS-G							
				HCN-4S54-90C-2LS-G							
	347-480										
<b>F80T5/HO (80W)</b>											
1	120-277	PS	Centium	ICN-I S80	91-89	1.00	10	0.76-0.33	0/-18	D	73
<b>FT24W/2GII - 24/27W (PL-L24W, F27BX/RS, FT24DL)</b>											
1	120-277	PS	Centium	ICN-2S24+	27	1.02	10	0.23-0.10	0/-18	D	73
				ICN-2S39	29	1.12	15	0.24-0.12			
2	120-277	PS	Centium	ICN-2S24+	52	1.00	10	0.44-0.19	0/-18	D	74A
				ICN-2S39	54	1.10	10	0.46-0.20			

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.
<b>FT36W/2GII - 36/39W (PL-L36W, F39BX/RS, FT36DL)</b>											
1	120-277	PS	Centium	ICN-2S24+	34	0.90	10	0.29-0.13	0/-18	D	73
				ICN-2S39	36	0.96	15	0.30-0.13			
				ICN-2S54+	46	1.22	20	0.39-0.18	-20/-29		
				ICN-2S54-90C+							
	ICN-2S54-90C-SC										
347-480	HCN-2S54-90C-WL	46	1.22	15	0.13-0.10	L	73				
2	120-277	PS	Centium	ICN-2S39	69	0.94	10	0.59-0.25	0/-18	D	74A
				ICN-2S54+	89-86	1.20	10	0.75-0.32			
				ICN-2S54-90C+							
	347-480			ICN-2S54-90C-SC	89	1.20	10	0.26-0.19	L		
3	120-277	PS	Centium	ICN-4S54-90C-2LS	133-132	1.20	10	1.11-0.49	-20/-29	G	75A
	347-480			ICN-4S54-90C-2LS-G							
4	120-277	PS	Centium	ICN-4S54-90C-2LS	176-173	1.20	10	1.47-0.64	-20/-29	G	75
				347-480							
	347-480			HCN-4S54-90C-2LS-G	182-180	1.20	10	0.53-0.38			
<b>FT50W/2GII/RS - 50W (PL-L50W, F50BX/RS)</b>											
1	120-277	PS	Centium	ICN-2S54+	61	1.12	15	0.51-0.23	-20/-29	D	73
				ICN-2S54-90C+							
	347-480			ICN-2S54-90C-SC	61	1.12	10	0.18-0.13			
2	120-277	PS	Centium	ICN-2S54+	118-115	1.10	10	0.99-0.43	-20/-29	D	74A
				ICN-2S54-90C+							
	347-480			ICN-2S54-90C-SC	118	1.10	10	0.34-0.25			
3	120-277	PS	Centium	ICN-4S54-90C-2LS	178-175	1.10	10	1.49-0.65	-20/-29	E	75A
	347-480			ICN-4S54-90C-2LS-G							
4	120-277	PS	Centium	ICN-4S54-90C-2LS	235-230	1.10	10	1.96-0.84	-20/-29	E	75
				347-480							
	347-480			HCN-4S54-90C-2LS-G	236-234	1.10	10	0.68-0.49			
<b>FT55W/2GII - 55W (PL-L55W, F55BX, FT55DL)</b>											
1	120-277	PS	Centium	ICN-2S54+	58	0.92	15	0.49-0.22	-20/-29	D	73
				ICN-2S54-90C+							
	347-480			ICN-2S54-90C-SC	58	0.92	10	0.17-0.13			
2	120-277	PS	Centium	ICN-2S54+	112-109	0.90	10	0.94-0.41	-20/-29	D	74A
				ICN-2S54-90C+							
	347-480			ICN-2S54-90C-SC	112	0.90	10	0.33-0.24			
3	120-277	PS	Centium	ICN-4S54-90C-2LS-G	169-166	0.90	10	1.41-0.61	-20/-29	G	75A
	347-480			HCN-4S54-90C-2LS-G	178-176	0.90	10	0.52-0.37			
4	120-277	PS	Centium	ICN-4S54-90C-2LS-G	222-217	0.90	10	1.86-0.80	-20/-29	G	75
	347-480			HCN-4S54-90C-2LS-G	228-226	0.90	10	0.66-0.47			

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.		
<b>FT80W/2GII - 80W (PL-L80W, FT80DL)</b>													
1	120-277	PS	Centium	ICN-1S80	91-89	1.00	10	0.76-0.33	0/-18	D	73		
<b>FC9T5 (22W Circline)</b>													
1	120-277	PS	Centium	ICN-2S24+	27	1.02	10	0.23-0.10	0/-18	D	73		
				ICN-2S39	29	1.12	15	0.24-0.12					
2	120-277	PS	Centium	ICN-2S24+	52	1.00	10	0.44-0.19	0/-18	D	74		
				ICN-2S39	54	1.10	10	0.46-0.20					
<b>FC12T5 (40W Circline)</b>													
1	120-277	PS	Centium	ICN-2S24+	40	0.84	10	0.34-0.15	0/-18	D	73		
				ICN-2S39	42	0.92	10	0.35-0.16					
2	120-277	PS	Centium	ICN-2S39	80	0.90	10	0.68-0.29	0/-18	D	74		
<b>(1) FC9T5 &amp; (1) FC12T5 {(1) 22W &amp; (1) 40W Circline}</b>													
1&1	120-277	PS	Centium	ICN-2S39	68	1.00	10	0.58-0.25	0/-18	D	74		
<b>FC12T5/HO (55W Circline)</b>													
1	120-277	PS	Centium	ICN-2S54*+	55	0.87	15	0.46-0.21	0/-18	D	73		
				ICN-2S54-90C*+						B			
				ICN-2S54-90C-SC						L			
347-480				HCN-2S54-90C-WL	55	0.87	10	0.16-0.12					
				120-277	PS	Centium	ICN-2S54*+	106-103	0.85	10	0.89-0.38	D	74
							ICN-2S54-90C*+					B	
ICN-2S54-90C-SC	L												
347-480				HCN-2S54-90C-WL	106	0.85	10	0.31-0.22					

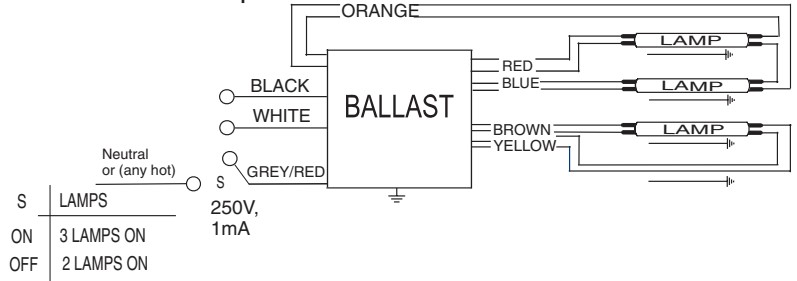
# Wiring Diagrams and Dimensions



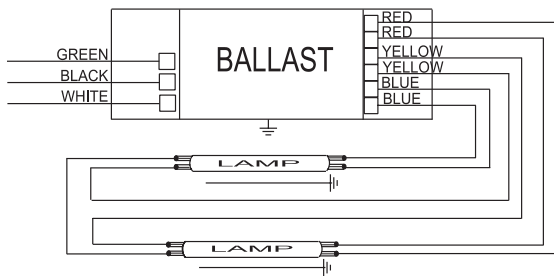
For one lamp operation, do not use yellow leads

Diag. 73\*

3-lamp

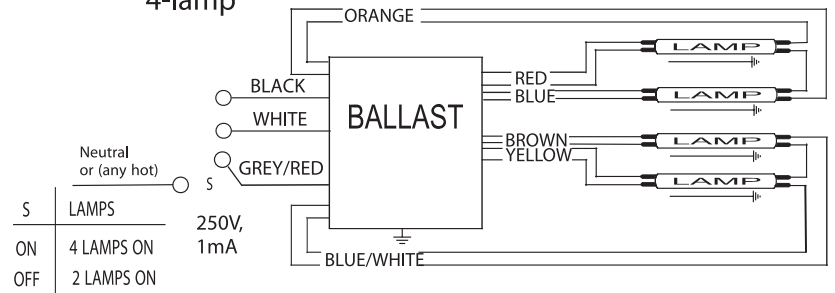


Diag. 75\*†



Diag. 74\*

4-lamp



Diag. 75A\*†

\* For all HCN ballasts hot leads are black with orange with black and white

† Grey/red wire must be connected to the neutrals or any hot

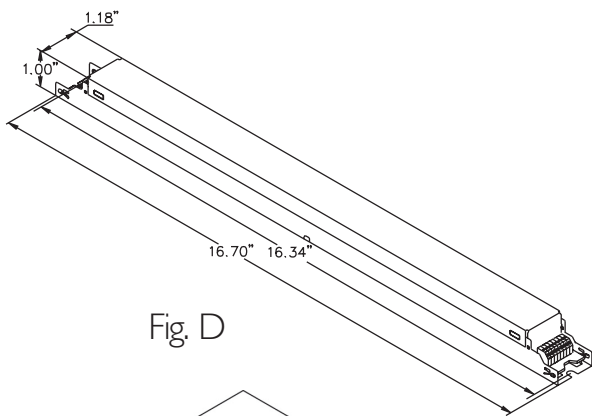


Fig. D

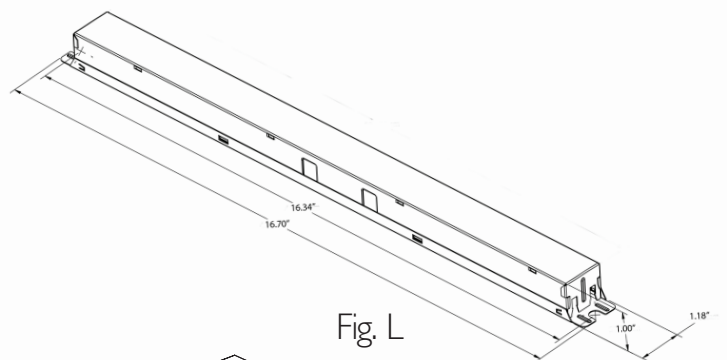


Fig. L

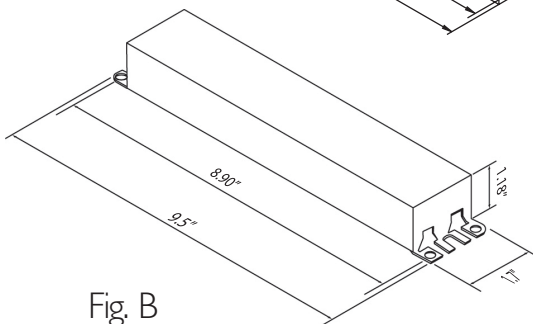


Fig. B

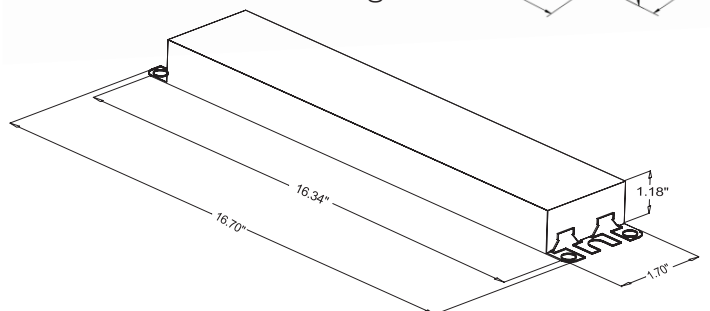


Fig. G

# 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 integral leads color-coded per ANSI C82.11.

## Section II - Performance Requirements

- 2.1 Ballast shall be Programmed Start.
- 2.2 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 or 347V through 480V with sustained variations of +/- 10% (voltage and frequency) with no damage to the ballast.
- 2.4 Ballast shall be high frequency electronic type and operate lamps at a frequency between 42 kHz and 52kHz to avoid interference with infrared devices, eliminate visible flicker and avoid Article Surveillance Systems, such as anti-theft devices.
- 2.5 Ballast shall have a Power Factor greater than 0.98 for primary lamp.
- 2.6 Ballast shall have a minimum ballast factor of 1.0 for primary lamps.
- 2.7 Ballast shall provide for a Lamp Current Crest Factor of 1.7 or less in accordance with lamp manufacturer recommendations.
- 2.8 Ballast input current shall have Total Harmonic Distortion (THD) of less than 10% when operated at normal line voltage with full load primary lamps.
- 2.9 Ballast shall have a Class A sound rating.
- 2.10 Ballast shall have a minimum starting temperature of -18°C (0°F) or -29°C (-20°F) for primary lamp.
- 2.11 Ballast shall provide Lamp EOL Protection.
- 2.12 Ballast shall tolerate sustained open circuit and short circuit output conditions without damage.

## 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).
- 3.6 Ballast shall comply with UL Type CC rating.

## 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. (Go to our web site 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.

