



Ballast Quick Guide

Lighting Solutions Product Reference

PHILIPS
ADVANCE

Contents

- 3 Sustainable solutions
- 4 T8 ballasts
- 7 T5 ballasts
- 8 CFL ballasts
- 9 Magnetic T12 conversion to electronic
- 9 Circline and signage ballasts
- 10 T12 ballasts
- 11 Controllable ballasts
- 12 eHID ballasts
- 13 HID ballast kits



Lighting solutions for a sustainable future

As concerns about energy utilization and its effect on global climate change continue to make headlines, everyone is looking for ways to cost-effectively reduce their impact on the environment and comply with current energy efficiency regulations.

With the latest energy-efficient ballast technology and years of industry experience, we're helping our customers achieve their sustainability goals and boost their productivity and profitability through innovative products, tools, and resources we call Smart Solutions.

When you see the Smart Solutions indication ● in the following pages, you'll know that you're choosing an energy-efficient lighting solution.

And we're here to provide you with the support you need to reduce your energy consumption with sustainable lighting solutions. Whether it's on the phone or online, answers are always available.

Call 800-372-3331 or visit www.philips.com/advance for:

- Product information and support — features, specifications, wiring diagrams, and more
- Dynamic cross-reference tool — find equivalent Philips Advance products for 24 different manufacturers
- Warranty information — details on our industry-leading PLUS 90 Protection
- Sustainability information — get the latest information on energy regulations, rebate programs, and recycling options



T8

Offices

Classrooms

Hallways

Restrooms

Healthcare
Facilities



Optanium High-Efficiency Instant Start Electronic Fluorescent Ballasts for T8 Lamps

Engineered to optimize lighting performance and maximize energy savings, Optanium ballasts fully support the wide variety of T8 fluorescent lamps on the market. They are also one of the charter products of the NEMA Premium Ballast Program.

No. of Lamps	Input Volts	Philips Advance Model	Lamp Type	Input Power (Watts)	Ballast Factor	Line Current	T8 Lamps Operated					
							F17T8	F25T8	F32T8	F32T8/ES (25W)	F32T8/ES (28W)	F40T8
● 1	120-277	IOPA-1P32-LW-N	F32T8	25	0.77	0.22-0.10	1	1	1	1	1	1
			F32T8/ES (28W)	22	0.77	0.19-0.08						
			F32T8/ES (25W)	21	0.77	0.17-0.07						
● 1	120-277	IOPA-1P32-N	F32T8	28	0.87	0.25-0.11	1	1	1	1	1	1
			F32T8/ES (28W)	25	0.87	0.22-0.10						
			F32T8/ES (25W)	23	0.87	0.20-0.09						
● 1	120-277	IOPA-1P32-HL-N	F32T8	39-38	1.18	0.33-0.14	1	1	1	1	1	1
			F32T8/ES (28W)	33	1.21	0.28-0.12						
			F32T8/ES (25W)	32	1.21	0.26-0.12						
● 2	120-277	IOPA-2P32-LW-N	F32T8	48	0.77	0.41-0.17	1 or 2	1 or 2	1 or 2	1 or 2	1 or 2	1
			F32T8/ES (28W)	42	0.77	0.35-0.15						
			F32T8/ES (25W)	38	0.77	0.32-0.14						
● 2	120-277	IOPA-2P32-N	F32T8	55-54	0.87	0.47-0.20	1 or 2	1 or 2	1 or 2	1 or 2	1 or 2	1
			F32T8/ES (28W)	48-47	0.87	0.41-0.18						
			F32T8/ES (25W)	44-43	0.87	0.37-0.16						
● 2	120-277	IOPA-2P32-HL-N	F32T8	74-72	1.18	0.62-0.26	1 or 2	1 or 2	1 or 2	1 or 2	1 or 2	1
			F32T8/ES (28W)	65-64	1.19	0.55-0.24						
			F32T8/ES (25W)	60	1.19	0.50-0.22						
● 3	120-277	IOPA-3P32-LW-N	F32T8	73-71	0.77	0.62-0.37	2 or 3	2 or 3	2 or 3	2 or 3	2 or 3	2
			F32T8/ES (28W)	64-63	0.77	0.54-0.23						
			F32T8/ES (25W)	58-57	0.77	0.49-0.21						
● 3	120-277	IOPA-3P32-N	F32T8	82-80	0.87	0.70-0.30	2 or 3	2 or 3	2 or 3	2 or 3	2 or 3	2
			F32T8/ES (28W)	72-71	0.87	0.61-0.26						
			F32T8/ES (25W)	65-64	0.87	0.55-0.24						
● 3	120-277	IOPA-3P32-HL-N	F32T8	110-107	1.18	0.91-0.39	2 or 3	2 or 3	2 or 3	2 or 3	2 or 3	2
			F32T8/ES (28W)	99-97	1.20	0.83-0.36						
			F32T8/ES (25W)	95-93	1.20	0.79-0.35						
● 4	120-277	IOPA-4P32-LW-N	F32T8	96-94	0.77	0.81-0.35	3 or 4	3 or 4	3 or 4	3 or 4	3 or 4	3
			F32T8/ES (28W)	84-82	0.77	0.71-0.30						
			F32T8/ES (25W)	77-75	0.77	0.65-0.28						
● 4	120-277	IOPA-4P32-N	F32T8	109-106	0.87	0.92-0.39	3 or 4	3 or 4	3 or 4	3 or 4	3 or 4	3
			F32T8/ES (28W)	96-94	0.87	0.81-0.35						
			F32T8/ES (25W)	87-85	0.87	0.73-0.31						
● 4	120-277	IOPA-4P32-HL-SC	F32T8	150-146	1.18	1.26-0.54	3 or 4	3 or 4	3 or 4	3 or 4	3 or 4	3
			F32T8/ES (28W)	130-129	1.19	1.10-0.47						
			F32T8/ES (25W)	124-122	1.19	1.05-0.45						

● Smart Solution

Offices

Classrooms

Hallways

Restrooms

Healthcare
Facilities

T8

Optanium High-Efficiency Programmed Start Electronic Fluorescent Ballasts for T8 Lamps

Programmed start ignition provides extended lamp life in frequent switching applications, such as those where occupancy sensors or motion detectors are being used.

No. of Lamps	Input Volts	Philips Advance Model	Lamp Type	Input Power (Watts)	Ballast Factor	Line Current	T8 Lamps Operated					
							F17T8	F25T8	F32T8	F32T8/ES (25W)	F32T8/ES (28W)	F40T8
● 1	120-277	IOP-1PSP32-LW-N	F32T8	25	0.72	0.20-0.09	1	1	1	1	1	
			F32T8/ES (28W)	21	0.72	0.18-0.07						
			F32T8/ES (25W)	21	0.72	0.17-0.07						
● 1	120-277	IOP-1PSP32-N	F32T8	28	0.88	0.24-0.10	1	1	1	1	1	
			F32T8/ES (28W)	25	0.88	0.20-0.09						
			F32T8/ES (25W)	24	0.88	0.20-0.08						
● 2	120-277	IOP-2PSP32-LW-N	F32T8	46-45	0.71	0.40-0.17	1 or 2	1 or 2	1 or 2	1 or 2	1 or 2	
			F32T8/ES (28W)	39	0.71	0.33-0.14						
			F32T8/ES (25W)	37-36	0.71	0.31-0.13						
● 2	120-277	IOP-2PSP32-N	F32T8	58	0.85	0.48-0.21	1 or 2	1 or 2	1 or 2	1 or 2	1 or 2	
			F32T8/ES (28W)	51-49	0.88	0.42-0.18						
			F32T8/ES (25W)	46-45	0.88	0.39-0.17						
● 2	120-277	IOP-2PSP32-HL-N	F32T8	78-75	1.18	0.66-0.28	1 or 2	1 or 2	1 or 2	1 or 2	1 or 2	
			F32T8/ES (28W)	66-64	1.18	0.55-0.24						
			F32T8/ES (25W)	61-59	1.18	0.51-0.22						
● 3	120-277	IOP-3PSP32-LW-SC	F32T8	74	0.71	0.63-0.27	2 or 3	2 or 3	2 or 3	2 or 3	2 or 3	
			F32T8/ES (28W)	63	0.70	0.52-0.23						
			F32T8/ES (25W)	57	0.70	0.48-0.21						
● 3	120-277	IOP-3PSP32-SC	F32T8	85	0.88	0.71-0.37	2 or 3	2 or 3	2 or 3	2 or 3	2 or 3	
			F32T8/ES (28W)	75	0.88	0.62-0.27						
			F32T8/ES (25W)	70	0.88	0.58-0.26						
● 3	120-277	IOP-3PSP32-HL-SC	F32T8	113-110	1.18	0.94-0.40	2 or 3	2 or 3	2 or 3	2 or 3	2 or 3	
			F32T8/ES (28W)	99	1.18	0.83-0.36						
			F32T8/ES (25W)	92	1.18	0.76-0.33						
● 4	120-277	IOP-4PSP32-LW-SC	F32T8	94	0.71	0.78-0.33	3 or 4	3 or 4	3 or 4	3 or 4	3 or 4	
			F32T8/ES (28W)	83	0.71	0.69-0.30						
			F32T8/ES (25W)	75	0.71	0.63-0.28						
● 4	120-277	IOP-4PSP32-SC	F32T8	110	0.88	0.93-0.40	3 or 4	3 or 4	3 or 4	3 or 4	3 or 4	
			F32T8/ES (28W)	97	0.88	0.81-0.35						
			F32T8/ES (25W)	90	0.88	0.75-0.33						
● 4	120-277	IOP-4PSP32-HL-G	F32T8	153-149	1.18	1.28-0.55	3 or 4	3 or 4	3 or 4	3 or 4	3 or 4	
			F32T8/ES (28W)	132-130	1.20	1.11-0.48						
			F32T8/ES (25W)	121-120	1.21	1.07-0.44						

Optanium Instant Start Electronic Fluorescent Ballasts for T8 Slimline Lamps

These Philips Advance Optanium high-efficiency electronic ballasts are engineered to optimize lighting performance with Slimline lamps.

No. of Lamps	Input Volts	Philips Advance Model	Lamp Type	Input Power (Watts)	Ballast Factor	Line Current	T8 Slimline Lamps Operated					
							F72T8	F96T8/ES (51W)	F96T8/ES (57W)	F96T8		
● 2	120-277	IOP-2P59-SC	F96T8	108-106	0.87	0.91-0.39	1 or 2	1 or 2	1 or 2	1 or 2		

● Smart Solution

T8

Offices

Classrooms

Hallways

Restrooms

Healthcare
Facilities



Centium Instant Start Electronic Fluorescent Ballasts for T8 Lamps

Reliable and energy-efficient, Centium high-frequency electronic ballasts offer all the energy-saving properties of our standard electronic line, plus the added benefit of lamp striation reduction technology — making these ballasts compatible with all energy-saving T8 lamps.

No. of Lamps	Input Volts	Philips Advance Model	Lamp Type	Input Power (Watts)	Ballast Factor	Line Current	T8 Lamps Operated					
							F17T8	F25T8	F32T8	F32T8/ES (25W)	F32T8/ES (28W)	F40T8
1	120-277	ICN-1P32-N	F32T8	29	0.91	0.26-0.11	1	1	1	1	1	
			F32T8/ES (28W)	26	0.91	0.22-0.10						
			F32T8/ES (25W)	24	0.91	0.21-0.09						
2	120-277	ICN-2P32-N	F32T8	56	0.89	0.49-0.22	1 or 2	1 or 2	1 or 2	1 or 2	1 or 2	1
			F32T8/ES (28W)	49-48	0.89	0.41-0.17						
			F32T8/ES (25W)	46-45	0.89	0.38-0.16						
3	120-277	ICN-3P32-N	F32T8	85-84	0.88	0.71-0.31	2 or 3	2 or 3	2 or 3	2 or 3	2 or 3	2
			F32T8/ES (28W)	74-72	0.88	0.61-0.27						
			F32T8/ES (25W)	68-67	0.88	0.56-0.25						
4	120-277	ICN-4P32-N	F32T8	111	0.88	0.94-0.41	3 or 4	3 or 4	3 or 4	3 or 4	3 or 4	3
			F32T8/ES (28W)	99-97	0.88	0.82-0.36						
			F32T8/ES (25W)	92-91	0.88	0.77-0.33						

Centium Programmed Start Electronic Fluorescent Ballasts for T8/HO Lamps

Reliable and energy-efficient, this Centium ballast is optimized for use with high-output T8 lamps.


No. of Lamps	Input Volts	Philips Advance Model	Lamp Type	Input Power (Watts)	Ballast Factor	Line Current	T8/HO Lamps Operated					
							F48T8/HO	F60T8/HO		F72T8/HO	F96T8/HO	
2	120-277	ICN-2S86	F96T8/HO	185	0.95	1.57-0.68	1 or 2	1 or 2		1 or 2	1 or 2	

● Smart Solution

Centium and Optanium

Engineered to optimize lighting performance and maximize energy savings, these innovative ballasts bring sustainable performance to virtually any business application. Both ballast families feature IntelliVolt technology (120–277V operation), which simplifies ordering and reduces SKU requirements. In addition, Optanium and Centium ballasts for T8 fluorescent lamps are part of the NEMA Premium Ballast Program, which recognizes the market's highest-performing ballast products.



 Philips Advance Optanium electronic ballast

 Philips Advance Centium ballast



As a licensee in the NEMA Premium Ballast Program, Philips Lighting Electronics has determined that these products meet the NEMA Premium specification for premium energy efficiency.

Warehouses

Offices

Classrooms

Workshops

Low Bay Retail

Restaurants



T5

Programmed Start Fluorescent Ballasts for T5 and T5/HO Lamps

Offered in a broad range of fixed light output versions, these energy-efficient ballasts are ideal for applications such as hotels, offices, schools, restaurants, and specialty and department stores.

No. of Lamps	Lamp Type	Input Volts	Ballast Family	Philips Advance Model	Input Power (Watts)	Ballast Factor	Line Current	T5 & T5/HO Lamps Operated							
								F14T5	F21T5	F28T5	F28T5/ES (25W)	F24T5/HO	F39T5/HO	F54T5/HO	F54T5/HO/ES (49W)
2	F28T5	120-277	Centium	ICN-2S28-T	62-61	1.00	0.59-0.23	1 or 2	1 or 2	1 or 2	1 or 2				
2	F28T5	120-277	Optanium	IOP-2S28-95-SC	59-58	0.95	0.50-0.22	2	1 or 2	1 or 2	1 or 2				
2	F28T5	120-277	Optanium	IOP-2S28-115-SC	71-69	1.15	0.60-0.26	1 or 2	1 or 2	1 or 2	1 or 2				
2	F24T5/HO	120-277	Centium	ICN-2S24-T	52	1.00	0.49-0.19					1 or 2	1		
2	F39T5/HO	120-277	Centium	ICN-2S39-T	87-85	1.00	0.73-0.31					1 or 2	1 or 2		
2	F54T5/HO	120-277	Centium	ICN-2S54-T	120-117	1.00	1.00-0.43							1 or 2	1 or 2
2	F54T5/HO	120-277	Centium	ICN-2S54-90C-T	120-117	1.00	1.00-0.43							1 or 2	1 or 2
2	F54T5/HO	347-480	Centium	HCN-2S54-90C-WL	120-119	1.00	0.35-0.25							1 or 2	1 or 2
4	F54T5/HO	120-277	Centium	ICN-4S54-90C-2LS-G	240-234	1.00	2.00-0.86							3 or 4	3 or 4
4	F54T5/HO	347-480	Centium	HCN-4S54-90C-2LS-G	239-237	1.00	0.69-0.50							3 or 4	3 or 4
2	F54T5/HO	120-277	Optanium IBEAM	ICRP-2PSP54-90C	117-114	1.00	0.98-0.41							1 or 2	1 or 2
2	F54T5/HO	120-277	Optanium	IOP-2PSP54-SC	117-114	1.00	0.98-0.41							1 or 2	1 or 2
4	F54T5/HO	120-277	Optanium IBEAM	ICRP-4PSP54-90C	234-229	1.00	1.96-0.83							3 or 4	3 or 4
2	F54T5/HO	120-277	Optanium	IOP-4PSP54-2LS-G	235-229	1.00	1.96-0.83							3 or 4	3 or 4

Preheat Fluorescent Ballasts (separate starter required) for T5 Lamps

Standard electromagnetic core and coil construction continues to provide reliable 60Hz operation and economy over a wide variety of lighting system applications.

No. of Lamps	Lamp Type	Input Volts	Ballast Family	Philips Advance Model	Input Power (Watts)	Ballast Factor	Line Current	T5 Preheat Lamps Operated							
								F4T5	F6T5	F8T5					
1	F8T5	120	Magnetic	LC-4-9-C	11	1.08	0.17	1	1	1					
1	F8T5	120	Magnetic	LPL-5-9-TP	9	1.00	0.14	1	1	1					

Smart Solution



Philips Advance
Centium T5/HO ballast



CFL

Lobbies

Hallways

Conference Rooms

Accent/Track Lighting

Residential

Hospitality Guest Rooms



SmartMate Programmed Start Fluorescent Ballasts for 4-pin CFL Lamps

SmartMate electronic ballasts drive a broad range of quad and triple-tube lamps. The energy-efficient design and compact, lightweight housing make them an ideal replacement for incandescent downlighting systems in restaurants, reception areas, and conference and meeting rooms. The ballasts ending with a "K" are available in kits complete with wires, mounting plates, and hardware.

No. of Lamps	Lamp Type	Input Volts	Ballast Family	Philips Advance Model	Input Power (Watts)	Ballast Factor	Line Current	4-Pin CFL Lamps Operated							
								13W Quad/Triple	18W Quad/Triple	26W Quad/Triple	32W Triple	42W Triple	57W Triple	70W Triple	
2	13W 4-Pin	120-277	SmartMate	ICF-2S13-HI-LD-K	29	1.00	0.25-0.11	1 or 2							
2	18W 4-Pin	120-277	SmartMate	ICF-2S18-HI-LD-K	35	0.95	0.30-0.13		1 or 2						
2	26W 4-Pin	120-277	SmartMate	ICF-2S26-HI-LD-K	51	1.00	0.43-0.19			1 or 2	1	1			
2	42W 4-Pin	120-277	SmartMate	ICF-2S42-M2-LD-K	93	0.97	0.78-0.33			2	2	2	1	1	

Magnetic Preheat Fluorescent Ballasts for 2-Pin CFL Lamps

Standard electromagnetic core and coil construction continues to provide reliable 60Hz operation and economy over a wide variety of lighting system applications.

No. of Lamps	Lamp Type	Input Volts	Ballast Family	Philips Advance Model	Input Power (Watts)	Ballast Factor	Line Current	2-Pin CFL Lamps Operated						
								5W Twin	7W Twin	9W Twin	9W Quad	13W Twin	13W Quad	
1	9W 2-Pin	120	Magnetic	LPL-5-9-TP	10	0.89	0.14	1	1	1	1			
2	13W 2-Pin	120	Magnetic	LC-13-TP	16	0.93	0.27					1	1	
2	13W 2-Pin	120	Magnetic	LO-1322-TP	17	1.00	0.29					1	1	


Centium Instant Start Fluorescent Ballasts for 4-Pin Long Twin-Tube Lamps

Lightweight and compact, these ballasts are ideal for use in various types of office applications in the commercial, retail, hospitality, and healthcare markets. Independent lamp operation keeps the remaining lamps on, even when one lamp goes out.

No. of Lamps	Lamp Type	Input Volts	Ballast Family	Philips Advance Model	Input Power (Watts)	Ballast Factor	Line Current	4-Pin Long Twin-Tube Lamps Operated						
								40W Twin						
1	40W 4-Pin	120-277	Centium	ICN-1TTP40-SC	39	0.88	0.33-0.14	1						
2	40W 4-Pin	120-277	Centium	ICN-2TTP40-SC	67	0.88	0.57-0.25	1 or 2						
3	40W 4-Pin	120-277	Centium	ICN-3TTP40-SC	99	0.88	0.83-0.35	2 or 3						

● Smart Solution



 Philips Advance SmartMate
electronic ballast and kit components

Offices

Classrooms

Hallways



Magnetic T12 Conversion to Electronic

T12 Conversion for 4' and 8' Magnetic Ballasts

The Energy Policy Act of 2005 (EPA Act 2005) provides a tax deduction for commercial buildings for the certified use of qualifying energy-efficient technologies in both new construction and renovation applications. This act also closes the loop on existing Department of Energy regulations that prohibit the sale of T12 magnetic ballasts after July 2010.

Philips Lighting Electronics is leading the way with a complete line of proven T12 electronic ballasts that are excellent replacement options for our industry-leading magnetic fluorescent ballasts.

By converting to Philips Advance T12 electronic ballasts today, you can also enjoy the benefits of the same light output, quieter operation, improved efficiency (up to 30% more efficient than magnetic ballasts) and ENERGY STAR® compatibility (with selected products).

Lamp Information			Magnetic Ballast Cross Reference Chart					T12 Electronic Ballasts	
Lamp Type	# of Lamps	Lamp Wattage	Input Volts	ADVANCE	GE	ULT	OSRAM	Input Volts	Philips Advance Model
F34T12 F40T12	1	34W	120	R140-TP	GEM140RS120	723-L-SLH-TC-P	MB1X40/120RS	120	RELB-2S40-N*
			277	V140-TP	N/A	724-L-SLH-TC-P	MB1X40/120RS	120-277	ICN-2S40-N
	2	40W	120	R2S40-TP	GEM240RS120	446-L-SLH-TC-P	MB2X40/277RS	120	RELB-2S40-N*
			277	V2S40-TP	GEM240RS277	443-L-SLH-TC-P	MB2X40/277RS	120-277	ICN-2S40-N
F72T12 F96T12 F96T12/ES	2	55W 60W 75W	120	R-2E75-S-TP	GEN296IS120	806-SLH-TC-P	MB2X96/120IS	120-277	ICN-2P60-SC
				R-2E60-S-TP					
			277	V-2E75-S-TP	GEN296IS277	827-SLH-TC-P	MB2X96/277IS		
				V-2E60-S-TP					
F96T12/HO F96T12/HO/ES	2	95W 110W	120	R-2S110-TP	GEM296HORS120	480-SLH-TC-P	MB1X96/HO/120RS	120-277	ICN-2S110-SC
				V-2S110-TP					
	2	95W 110W	277	V-2S110-TP	GEM296HORS277	487-SLH-TC-P	MB1X96/HO/277RS		

* Can be used in ENERGY STAR rated fixtures

General Lighting

Outdoor Signage



Circline and Signage

Circline Fluorescent Ballasts

Standard electromagnetic core and coil construction continues to provide reliable 60Hz operation and economy over a wide variety of lighting system applications.

No. of Lamps	Lamp Type	Input Volts	Philips Advance Model	Input Power (Watts)	Ballast Factor	Line Current	Rapid Start Lamps Operated					
							FC6T9	FC8T9	FC12T9	FC16T9	FC8T9 & FC12T9	FC12T9 & FC16T9
1	FC8T9	120	RLQS-122-TP-W	25	0.75	0.53	I	I				
1	FC16T9	120	RLCS-140-TP-W	28	0.50	0.44			I	I		
2	FC8T9 & FC12T9	120	RS-2232-TP-W	46	0.70	0.40					I Each	
2	FC12T9 & FC16T9	120	RS-3240-TP-W	56	0.60	0.76						I Each

Sign Ballasts for T12/HO Fluorescent Lamps

Standard electromagnetic core and coil construction continues to provide reliable 60Hz operation and economy over a wide variety of lighting system applications.

No. of Lamps	Lamp Type	Input Volts	Type	Philips Advance Model	Input Power (Watts)	Ballast Factor	Line Current	Min. Start Temp. (F)	Total T12/HO Lamp Footage Operated	
									Min.	Max.
§ 1-2	T12/HO	120	Magnetic	ASB-0412-12-BL-TP	175	0.89	1.48	-20	4 feet	12 feet
§ 2-4	T12/HO	120	Magnetic	ASB-0620-24-BL-TP	304	0.90	2.56	-20	6 feet	20 feet
§ 2-4	T12/HO	120	Magnetic	ASB-1224-24-BL-TP	312	0.84	2.70	-20	12 feet	24 feet
§ 2-4	T12/HO	120	Magnetic	ASB-2040-24-BL-TP	472	0.80	4.00	-20	20 feet	40 feet
§ 4-6	T12/HO	120	Magnetic	ASB-1240-46-BL-TP	462	0.78	3.90	-20	12 feet	40 feet
§ 4-6	T12/HO	120	Magnetic	ASB-2448-46-BL-TP	604	0.86	5.19	-20	24 feet	48 feet

§ Ballasts can no longer be manufactured after Nov. 14, 2014, per DOE rule, but can still be used as replacements if manufactured prior to Nov. 14, 2014.

T12

Offices

Classrooms

Hallways

Restrooms



Our broad line of T12 ballasts includes our standard electromagnetic, standard electronic, Centium, and AmbiStar (residential) lines for all your retrofit applications that use either energy-saving or standard lamps.

Rapid Start Fluorescent Ballasts for T12 Lamps

No. of Lamps	Lamp Type	Input Volts	Ballast Family	Philips Advance Model	Input Power (Watts)	Ballast Factor	Line Current	Rapid Start Lamps Operated						
								F13T8	F15T8	F14/15T12	F20T12	F30T12	F34T12	F40T12
1	F20T12	120	Magnetic	RLQ-120-TP	28	0.83	0.55	1	1	1	1			
1	F20T12	120	Magnetic	HM-1P20-TP	29	0.83	0.24		1	1	1			
1	F34T12	120	AmbiStar	RELB-2S40-N	31	0.88	0.26					1	1	1
1	F34T12	120-277	Centium	ICN-2S40-N	31	0.88	0.26-0.12					1	1	1
2	F20T12	120	Magnetic	RL-2SP20-TP	36	0.61	0.49	2	2	2	2			
2	F20T12	120	Magnetic	HM-2SP20-TP	53	0.90	0.48		2	2	2			
2	F34T12	120	AmbiStar	RELB-2S40-N	62	0.85	0.53					2	2	2
2	F34T12	120-277	Centium	ICN-2S40-N	62	0.85	0.55-0.23					2	2	2
4	F34T12	120	Magnetic	R-4S40-ATPAC	144	0.88	1.26						4	4

Preheat Fluorescent Ballasts (separate starter required — except for LXI40FTP) for T12 Lamps

No. of Lamps	Lamp Type	Input Volts	Ballast Family	Philips Advance Model	Input Power (Watts)	Ballast Factor	Line Current	Preheat Lamps Operated						
								F14/15T8	F18/19T8	F14/15T12	F20T12	F30T8	F30T12	F40T12
1	F20T12	120	Magnetic	LC-14-20-C-TP	21	0.93	0.33	1	1	1	1			
1	F20T12	120	Magnetic	LO-13-22-TP	18	0.77	0.28	1	1	1	1			
1	F40T12	120	Magnetic	L-140F-TP	41	0.79	0.65					1	1	1

Instant Start Fluorescent Ballasts for T12 Slimline Lamps

No. of Lamps	Lamp Type	Input Volts	Ballast Family	Philips Advance Model	Input Power (Watts)	Ballast Factor	Line Current	Slimline Lamps Operated						
								F24/F36T12	F42/F48T12	F60/F64T12	F72T12	F96T12	F96T12/ES	
1	F48T12	120	Magnetic	SM-140S-TP	62	0.90	0.54	1	1					
1	F96T12	120	Magnetic	RSM-175S-TP	92	0.94	0.82			1	1	1		
1	F96T12	277	Magnetic	VSM-175S-TP	94	0.94	0.35			1	1	1		
2	F96T12	120-277	Centium	ICN-2P60-SC	137-135	0.90	1.17-0.50				1 or 2	1 or 2	1 or 2	
2	F48T12	120	Magnetic	SM-2E40S-TP	96	0.90	0.82	2	2					
2	F48T12	277	Magnetic	VSM-2E40S-TP	98	0.96	0.36		2					

Rapid Start Fluorescent Ballasts for T12/HO Lamps

No. of Lamps	Lamp Type	Input Volts	Ballast Family	Philips Advance Model	Input Power (Watts)	Ballast Factor	Line Current	HO Lamps Operated						
								F24/F36T12	F42/F48T12	F60/F64T12	F72T12	F96T12	F96T12/ES	
1	F96T12/HO	120	Magnetic	RS-110-TP	140	0.98	1.20	1	1	1	1	1		
1	F96T12/HO	277	Magnetic	VS-110-TP	145	1.00	0.54	1	1	1	1	1		
2	F72T12/HO	120	Magnetic	RC-2S85-TP	184	0.91	1.54	2	1 or 2	1 or 2	1 or 2	1		
2	F72T12/HO	277	Magnetic	VC-2S85-TP	180	0.90	0.67	2	1 or 2	1 or 2	1 or 2	1		
2	F96T12/HO	120-277	Centium	ICN-2S110-SC	194-190	0.89	1.60-0.69					1 or 2	1 or 2	
2	F96T12/HO	120	Magnetic	R-2S110-TP	237	0.95	2.00				2	2		
2	F96T12/HO	277	Magnetic	V-2S110-TP	245	0.98	0.90				2	2		
4	F48T12/HO	120	Magnetic	RC-4S60-TP	288	0.92	2.40	3 or 4	3 or 4					

Rapid Start Fluorescent Ballasts for T12/VHO Lamps

No. of Lamps	Lamp Type	Input Volts	Ballast Family	Philips Advance Model	Input Power (Watts)	Ballast Factor	Line Current	VHO Lamps Operated					
								F48T12	F60T12	F72T12	F96T12		
2	F48T12/VHO	120	Magnetic	RC-2S102-TP	230	0.89	2.20	1 or 2	1	1	1		
2	F48T12/VHO	277	Magnetic	VC-2S102-TP	241	0.87	0.94	1 or 2	1	1	1		
2	F96T12/VHO	120	Magnetic	RC-2S200-TP	320	0.80	2.72		2	2	2		
2	F96T12/VHO	120	Magnetic	RS-2S200-TP	358	0.85	3.31			2	2		
2	F96T12/VHO	277	Magnetic	VS-2S200-TP	442	0.90	1.65			2	2		

● Smart Solution

§ Ballasts can no longer be manufactured after Nov. 14, 2014, per DOE rule, but can still be used as replacements if manufactured prior to Nov. 14, 2014.

Offices

Classrooms

Conference
Rooms

Auditoriums



Controllable

Optanium Step-Dim Programmed Start Electronic Ballasts for F28T5 Lamps*

Optanium Step-Dim ballasts allow the end user to reduce power by 50%. Programmed start circuitry provides extended lamp life when used with occupancy sensors or motion detectors, making these ballasts the sustainable choice for many commercial applications.

No. of Lamps	Input Volts	Philips Advance Model	Input Power (Watts) (max/min)	Ballast Factor (max/min)	Line Current (full output)	THD (full output)	Lamps Operated					
							F14T5	F21T5	F28T5	F28T5/ES (25W)	F35T5	
2	120-277	IOP-2S28-95-SC-SD	58/28	0.95/0.35	0.50	<10		2	2	2	1	
2	120-277	IOP-2S28-115-SC-SD	71/35	1.15/0.48	0.60	<10	2	2	1 or 2	1 or 2	1	

Optanium Step-Dim Programmed Start Electronic Ballasts for F32T8 Lamps*

Optanium Step-Dim ballasts allow the end user to reduce power by 50%. Programmed start circuitry provides extended lamp life when used with occupancy sensors or motion detectors, making these ballasts the sustainable choice for many commercial applications.

No. of Lamps	Input Volts	Philips Advance Model	Input Power (Watts) (max/min)	Ballast Factor (max/min)	Line Current (full output)	THD (full output)	Lamps Operated					
							F17T8	F25T8	F32T8	F32T8/ES (25W)	F32T8/ES (28W)	F32T8/ES (30W)
2	120-277	IOP-2S32-SC-SD	56/25	0.87/0.28	0.46-0.20	<10	1 OR 2	1 OR 2	1 OR 2	2	2	2

Mark 10 Powerline Controllable Programmed Start Electronic Ballasts for 4-Pin CFL Lamps*

Mark 10 Powerline electronic controllable ballasts for CFL applications combine the long life and energy efficiency of fluorescent technology with the controllability and full-range dimming of incandescent systems. And they're easy to install because they require no additional wiring.

No. of Lamps	Input Volts	Philips Advance Model	Input Power (Watts) (max/min)	Ballast Factor	Line Current (full output)	THD (full output)	Lamps Operated				
							F26 CFL	F32 CFL	F42 CFL		
1	120	REZ-1T42-M2-LD-K	49/10	1.00	0.41	<10	1	1	1		
1	277	VEZ-1T42-M2-LD-K	49/10	1.00	0.18	<10	1	1	1		
2	120	REZ-2Q26-M2-LD-K	58/16	1.00	0.48	<10	2	-	-		
2	277	VEZ-2Q26-M2-LD-K	58/16	1.00	0.21	<10	2	-	-		

Mark 10 Powerline Controllable Programmed Start Electronic Ballasts for F32T8 Lamps*

Mark 10 Powerline electronic controllable ballasts for linear T8 lamps combine the long life and energy efficiency of fluorescent technology with the controllability and full-range dimming of incandescent systems. And they're easy to install because they require no additional wiring.

No. of Lamps	Input Volts	Philips Advance Model	Input Power (Watts) (max/min)	Ballast Factor	Line Current (full output)	THD (full output)	Lamps Operated				
							F17T8	F25T8	F32T8		
1	120	REZ-132-SC	35/9	1.00	0.29	<10	1	1	1		
1	277	VEZ-132-SC	35/9	1.00	0.13	<10	1	1	1		
2	120	REZ-2S32-SC	68/15	1.00	0.57	<10	2	2	2		
2	277	VEZ-2S32-SC	68/15	1.00	0.25	<10	2	2	2		
3	120	REZ-3S32-SC	96/20	1.00	0.80	<10	3	3	3		
3	277	VEZ-3S32-SC	96/20	1.00	0.35	<10	3	3	3		

Mark 7 0-10V Programmed Start Electronic Ballasts for F32T8 Lamps*

The Mark 7 0-10V series of controllable electronic ballasts are ideal for energy management systems in a broad range of commercial, institutional, and retail applications. They offer full-range continuous dimming and help support sustainable (green) design.

No. of Lamps	Input Volts	Philips Advance Model	Input Power (Watts) (max/min)	Ballast Factor	Line Current (full output)	THD (full output)	Lamps Operated				
							F17T8	F25T8	F32T8		
1	120-277	IZT-132-SC	35/8	1.00	0.30-0.13	<10	1	1	1		
2	120-277	IZT-2S32-SC	68/14	1.00	0.57-0.24	<10	2	2	2		
3	120-277	IZT-3S32-SC	100/20	1.00	0.86-0.37	<10	3	3	3		
4	120-277	IZT-4S32	116/25	0.88	0.98-0.42	<10	-	4	4		

Smart Solution

* Data listed is for the highlighted lamps above. Please consult our website www.philips.com/advance for data on other lamp types listed.



Philips Advance Mark 10 Powerline dimming ballast



MasterColor CDM Elite MW

Lamp Type	Lamp Watts	ANSI Code	Philips Advance Model	Input Volts	Input Power (Watts)	Line Current
MasterColor CDM Elite Medium Wattage Ceramic Metal Halide	210W	C183	IZTMH-210315-R-LF ³	200-277	229/227	1.2-0.82
	315W	C182		200-277	343/341	1.80/1.25



e-Vision Electronic HID

Lamp Type	Number of Lamps	Lamp Watts	ANSI Code	Philips Advance Model	Input Volts ¹	Input Power (Watts)	Line Current
Metal Halide	1	20W	C156	IMH-G20-K-LF IMH-G20-K-LFS IMH-G20-K-BLS	120-277	24	0.20/0.10
	1	20W	C156	IMH-G20-G-LF IMH-G20-G-BLS IMH-G20-E-LF	120-277	24	0.21-0.09
	1	22W	C175	RMH-20-K-BLS RMH-20-K-LF RMH-20-K-LFS	120	26	0.23
	1	39W	C179	RMH-39-K-LF RMH-39-K-LFS RMH-39-K-BLS	120	45	0.5
	1	39W	C179	IMH-P39-G-LF IMH-P39-G-BLS	120-277	46-45	0.39-0.17
	1	39W	C130	IMH-39-K-LF IMH-39-K-LFS IMH-39-K-BLS	120-277	45	0.39-0.18
	1	39W	C130	IMH-39-G-LF IMH-39-G-BLS IMH-39-E-LF	120-277	44-43	0.38-0.16
	1	39W	C130	IMH-39-A-BLS-ID ²	120-277	48-47	0.45-0.18
	2	39W	C130	IMH-239-A-LF IMH-239-A-BLS	120-277	89	0.74-0.31
	1	50W	M110/C193	IMH-50-G-LF IMH-50-G-BLS IMH-50-E-LF	120-277	57-56	0.48-0.22
	1	50W	M110/C193	IMH-50-K-LF IMH-50-K-LFS IMH-50-K-BLS	120-277	57	0.48-0.21
	1	70W	C98/M98/C139/M143	IMH-70-G-LF IMH-70-G-BLS IMH-70-E-LF	120-277	80-76	0.68-0.28
	1	70W	C98/M98/C139/M143	IMH-70-D-LF IMH-70-D-BLS	120-277	79-76	0.66-0.28
	1	70W	C98/M98/C139/M143	IMH-70-A-BLS-ID ²	120-277	86-84	0.72-0.31
	1	100W	C90/M90/M140/C191	IMH-100-B-LF	120-277	110-109	0.92-0.40
	1	100W	C90/M90/M140/C191	IMH-100-D-LF IMH-100-D-BLS	120-277	110-109	0.92-0.40
	1	100W	C90/M90/M140/C191	IMH-100-A-BLS-ID ²	120-277	115-113	0.96-0.40
	1	150W	C102/M102/C142	IMH-150-H-LF IMH-150-H-BLS	120-277	165-161	1.40-0.60



K can



E can



G can



A can

¹ Units designated as 120-277 are IntelliVolt: 120-277V ± 10%

² For use in recessed lighting applications that require a 4-wire self-heating thermal protector

³ Controllable ballast with 0-10V interface

Suffix information: LF includes ballast with side exit leads; LFS includes ballast with leads exiting on one side (only for certain models where LF – no "S" – includes leads exiting on both sides); BLS includes ballast with bottom exit leads and mounting studs

Letters A, B, D, E, G, H and K indicate can size. Consult the full Philips Lighting Electronics Atlas or go to www.philips.com/advance for complete dimensions

For additional lamp applications and a complete ballast listing, visit www.philips.com/advance

Smart Solution

High Bay
Retail



Manufacturing



Gymnasiums



Warehouses



Parking
Structures



Outdoor



HID

VAL-U-PAK Plus Magnetic HID Replacement Kits

Our VAL-U-PAK Plus magnetic HID replacement kits assemble the required components — including lamp, core and coil, the appropriate capacitor, ignitor (where required), mounting bracket and hardware, and instructions — in one convenient package. This saves valuable time for MRO and contractor applications.

Lamp Watts	ANSI Code	Input Volts	Philips Advance Model	Circuit Type	Watts Input	Max* Input Current	Nom Open Circuit Voltage	Fuse Rating (Amps)	Total Weight (lbs)
Metal Halide									
100 Pulse Start	M90 or M140	120/208/240/277	77L5390-001D	HX-HPF	129	2.3/1.4/1.2/1.0	265	6/4/3/3	5.5
150 Pulse Start	M102 or M142	120/208/240/277	77L5492-001D	HX-HPF	185	3.7/2.1/1.8/1.6	265	10/5/5/4	7
175/150	175: M57 150: M107	120/208/240/277	77L5570-001D	CWA	210	1.8/1.1/1.9/1.8	305	5/3/3/2	6.8
250	M58	120/208/240/277/480	77L5750-001D	CWA	290	2.6/1.5/1.4/1.1/1.7	315	8/5/5/3/2	10
400	M59	120/208/240/277/480	77L6051-001D	CWA	460	4.1/2.3/2.0/1.7/1.0	300	10/7/5/5/3	14
1000	M47	120/208/240/277/480	77L6552-001	CWA	1080	9.0/5.6/4.7/4.1/2.4	430	22/15/12/10/6	22
High Pressure Sodium									
150	S55	120/208/240/277	77L8172-001D-MOG	HX-HPF	188	2.8/1.6/1.4/1.3	120	10/5/5/5	9.5
250	S50	120/208/240/277/480	77L8251-001D	CWA	300	2.6/1.5/1.3/1.2/0.7	185	10/4/4/3/2	15
400	S51	120/208/240/277/480	77L8453-001D	CWA	465	3.9/2.2/1.9/1.7/1.0	195	10/6/5/5/3	16
1000	S52	120/208/240/277/480	77L8753-001	CWA	1100	9.3/5.3/4.7/4.1/2.3	437	25/15/12/10/6	29



Philips Advance VAL-U-PAK Plus replacement kit

VAL-U-PAK Plus magnetic HID replacement kits with lamp

These kits eliminate the need for stocking loose components or single-voltage ballasts for 120–480V applications — plus they include a premium-grade clear lamp.

HID

High Bay
Retail



Manufacturing



Gymnasiums



Warehouses



Parking
Structures



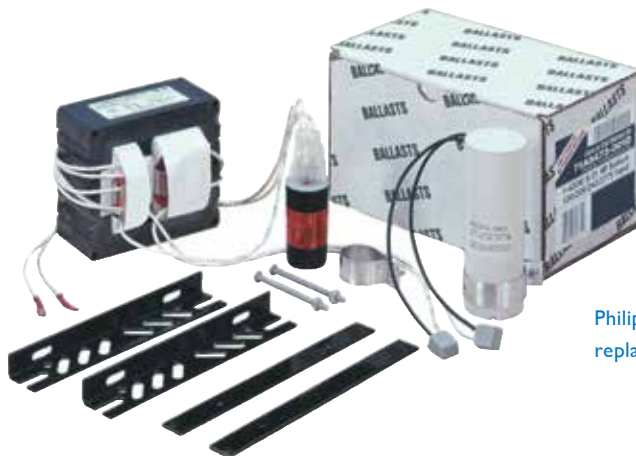
Outdoor



HID Core and Coil Ballast Kits

Unique to the industry, Philips Advance ballasts are manufactured using an exclusive vacuum impregnation process. This process provides quieter operation and lengthens life, protecting against premature ballast failure and voltage breakdown. Philips Advance ballast kits are compatible with most HID metal halide or high pressure sodium fixtures and come complete with capacitor, core and coil, ignitor (where applicable), mounting bracket and hardware.

Lamp Watts	ANSI Code	Input Volts	Philips Advance Model	Circuit Type	Watts Input	Max* Input Current	Nom Open Circuit Voltage	Fuse Rating (Amps)	Total Weight (lbs)
Metal Halide									
50 Pulse Start	M110 or M148	120/277	71A5181-00ID	HX-HPF	72	1.0/.5	260	3/2	4
		120/208/240/277	71A5191-00ID	HX-HPF	67	1.2/.68/.59/.51	254	3/3/2/2	4
70 Pulse Start	M98 (Med. Base or M143)	120/208/240/277	71A5292-00ID	HX-HPF	90	1.9/1.0/.9/.8	255	4/3/2/2	5
100 Pulse Start	M90 or M140	120/208/240/277	71A5390-00ID	HX-HPF	129	2.3/1.4/1.2/1.0	265	6/4/3/3	5.5
150 Pulse Start	M102 or M142	120/208/240/277	71A5492-00ID	HX-HPF	185	3.7/2.1/1.8/1.6	265	10/5/5/4	7
175/150	175: M57 150: M107	120/208/240/277	71A5570-00ID	CWA	210	1.8/1.1/.9/.8	305	5/3/3/2	6.8
		480	71A5540-00ID	CWA	210	0.5	305	2	8.5
175 Pulse Start	M137 or M152	120/208/240/277	71A5593-00ID	Super CWA	208	1.9/1.1/.9/.8	275	5/3/3/3	7
200 Pulse Start	M136	120/208/240/277	71A5692-00ID	Super CWA	232	2.0/1.2/1.0/.9	240	6/4/3/3	8
		120/208/240/277/480	71A5750-00ID	CWA	290	2.6/1.5/1.4/1.1/.7	315	8/5/5/3/2	10
250	M58	120/208/240/277	71A5771-00ID	CWA	294	2.6/1.5/1.3/1.1	300	8/5/5/3	9
		480/120T	71A5741-00ID	CWA	298	0.7	300	2	9
250 Pulse Start	M138 or M153	120/208/240/277	71A5792-00ID	Super CWA	291	2.5/1.4/1.3/1.1	275	8/5/5/3	9.5
320 Pulse Start	M132, M154 or M170	480/120T	71A5842-00IDT	Super CWA	368	0.8	270	5	11
		120/208/240/277	71A5892-00ID	Super CWA	368	3.3/1.9/1.7/1.4	270	8/6/5/3	11
350 Pulse Start	M131 or M171	120/208/240/277	71A5993-00ID	Super CWA	400	3.4/2.0/1.7/1.5	270	10/7/5/5	11
400	M59	120/208/240/277	71A6071-00ID	CWA	458	4.0/2.3/2.0/1.7	300	10/7/5/5	11.5
		120/208/240/277/480	71A6051-00ID	CWA	460	4.1/2.3/2.0/1.7/1.0	300	10/7/5/5/3	14
400 Pulse Start	M135 or M155 or M172	120/208/240/277	71A6092-00ID	Super CWA	452	3.8/2.2/1.9/1.7	265	10/7/5/5	11
		120/208/240/277/480	71A6052-00ID	Super CWA	454	3.8/2.3/1.9/1.7/0.95	275	10/7/5/5/3	11
750 Pulse Start	M149	480/120T	71A6042-00ID	Super CWA	452	1.0	270	3	14.5
		120/208/240/277/480	71A6452-00ID	Super CWA	818	7.0/4.0/3.5/3.0/2.0	355	20/10/10/8/5	18
1000	M47	277/347/480	71A64F2-00ID	Super CWA	818	3.0/2.5/1.7	355	8/7/2005	17
		120/208/240/277	71A6572-001	CWA	1080	9.0/5.2/4.5/3.9	430	20/15/10/10	21
1000 Pulse Start	M141	120/208/240/277/480	71A6552-001	CWA	1080	9.0/5.6/4.7/4.1/2.4	430	22/15/12/10/6	22
		120/208/240/277	71A6593-001	Super CWA	1080	9.0/5.2/4.5/3.9	430	20/15/10/10	21
1500	M48	480/120T	71A6542-001	CWA	1080	2.25	430	6	21
		120/208/240/277/480	71A6552-00ID	CWA	1090	9.2/5.8/4.8/4.1/2.4	430	25/15/12/10/6	22
1500	M48	120/208/240/277	71A6772-001	CWA	1605	13.5/7.8/6.8/5.9	450	30/25/20/15	30
		480	71A6742-001	CWA	1625	3.4	450	10	31



Philips Advance magnetic HID replacement kit

High Bay
Retail



Manufacturing



Gymnasiums



Warehouses



Parking
Structures



Outdoor



HID

HID Core and Coil Ballast Kits continued

Lamp Watts	ANSI Code	Input Volts	Philips Advance Model	Circuit Type	Watts Input	Max* Input Current	Nom Open Circuit Voltage	Fuse Rating (Amps)	Total Weight (lbs)
High Pressure Sodium									
35	S76	120	71A7707-001DB	R-HPF	46	0.8	120	2	1.5
50	S68	120	71A7807-001DB	R-HPF	62	1.0	120	3	2
		120/277	71A7801-001D	HX-HPF	66	1.0/.5	125	3/1	3.5
		120/208/240/277	71A7891-001D	HX-HPF	66	1.0/.5/1.5/.45	125	3/2/2/1	3.5
70	S62	120	71A7907-001DB	R-HPF	86	1.3	120	3	2
		120/208/240/277	71A7971-001D	HX-HPF	91	1.4/.9/.8/.7	120	5/3/2/2	5.5
100	S54	120	71A8007-001DB	R-HPF	115	1.8	120	5	2.8
		120/208/240/277	71A8071-001D	HX-HPF	130	2.2/1.3/1.1/0.9	120	7/5/3/3	7.2
		480	71A8041-001D	HX-HPF	130	0.6	120	3	7.5
150	S55	120	71A8107-001DB	R-HPF	170	2.4	120	8	4
		480	71A8142-001D	HX-HPF	188	0.7	120	2	9
		120/208/240/277	71A8172-001D	HX-HPF	188	2.8/1.6/1.4/1.3	120	10/5/5/5	7.5
	S56	480	71A8146-001D	CWA	188	0.5	180	2	8.5
		120/208/240/277	71A8176-001D	CWA	188	1.7/1.0/.9/.8	180	5/3/3/3	8.5
200	S66	480	71A8940-001D	CWA	240	0.6	185	2	8.5
		120/208/240/277	71A8970-001D	CWA	240	2.2/1.3/1.1/1.0	185	6/4/3/3	8.5
		480/120T	71A8241-001D	CWA	310	0.7	185	2	11
250	S50 or M168	120/208/240/277/480	71A8251-001D	CWA	300	2.6/1.5/1.3/1.2/0.7	185	10/4/4/3/2	12
		120/208/240/277	71A8271-001D	CWA	295	2.5/1.5/1.3/1.1	185	7/4/4/3	11
		480	71A8743-001	CWA	1100	2.3	435	6	28
310	S67	120/208/240/277	71A8371-001D	CWA	365	3.4/1.9/1.7/1.4	175	8/5/5/5	13.5
400	S51 or M169	480/120T	71A8443-001D	CWA	464	1.0	190	3	15
		120/208/240/277/480	71A8453-001D	CWA	465	3.9/2.2/1.9/1.7/1.0	195	10/6/5/5/3	16
		120/208/240/277	71A8473-001D	CWA	464	3.8/2.2/1.9/1.7	190	10/8/5/5	13.5
1000	S52	480	71A8743-001	CWA	1100	2.3	435	6	28
		120/208/240/277	71A8773-001	CWA	1100	9.5/5.5/4.8/4.2	435	25/15/10/10	28
		120/208/240/277/480	71A8753-001	CWA	1100	9.3/5.3/4.7/4.1/2.3	435	25/15/12/10/6	29



PROTECTION

You can feel confident in the fact that we stand behind our solutions with the industry's best warranty program — PLUS 90 Protection. PLUS 90 Protection matches the published "system" warranty of any major lamp manufacturer, fluorescent or HID, and extends it for an additional 90 days.

For more information, please visit www.philips.com/plus90



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