

# ELECTRONIC FLUORESCENT BALLASTS

## Fluorescent Ballasts - Electronic - Optanium

High-efficiency electronic ballasts for a broad range of T5 and T8 lamps

Optanium ballasts for T5 and T8 lamps are part of our effort to promote environmental responsibility through Smart Solutions - energy efficient products, lighting systems, services and expertise through Philips Advance branded products. They are also one of the charter products of the NEMA Premium® Ballast Program. All of this makes these ballasts part of an overall high-efficiency lighting system that may help you achieve LEED certification, meet ASHRAE standards, become compliant with California Title 24 Energy Efficiency Standards, or any other local energy code you or your customers need to be in compliance.

Optanium ballasts will help you and your customers meet a variety of application challenges including luminaire design, installation, maintenance, and evolving lamp technology. Optanium ballasts are available in a standard light output, low-watt, and a high light output design. Also these ballasts come in options with cold-starting capability down to -20°F (with standard fluorescent lamps). These two features combined make it ideal for just about any T5 or T8 fixture design and application. These ballasts are available in either instant start or programmed start ignition for extended lamp life in frequent switching applications such as those where occupancy sensors or motion detectors are being used. Optanium ballasts are also available in program start with parallel wiring.

### Setting Industry Standards for Ballast Efficiency

As a charter product in the NEMA Premium® Ballast Program, Optanium ballasts are recognized as supporting energy-efficient lighting objectives. The National Electrical Manufacturers Association (NEMA) has created this program to help lighting professionals and end users recognize the market's highest-performing ballast products. For more information on the NEMA Premium Ballast Program, visit [www.philips.com/advance](http://www.philips.com/advance) and click on the "Sustainability" tab and then click on "NEMA Premium."

### Striation-reduction technology

Reduces the likelihood of striation often associated with energy-saving lamps, for consistent light output

### Cold temperature lamp ignition down to -20°F for instant or program start ballasts

Brings energy-efficient T5 and T8 performance to a variety of new applications such as parking garages, warehouses, and cold storage areas

### Arc-reduction technology — UL Type CC

UL Type CC\* (on certain ballasts)

### Program start parallel (PSP)

Program start ballasts with parallel wiring delivers independent lamp operation preventing premature lamp shut down ultimately reducing maintenance

### High efficiency design

Maximize energy savings with improved ballast efficiency

\* When operating standard non-energy saving lamps



The following ballasts are NEMA Premium®:

IOP-1P32-SC	IOP-3P32-HL-90C-SC	IOPA-2P32-HL-N
IOP-1P32-LW-SC	IOP-4P32-SC	IOPA-2P32-HL-SC
IOP-2P32-SC	IOP-4P32-LW-SC	IOPA-3P32-N
IOP-2P32-LW-SC	IOPA-4P32-HL-90C-G	IOPA-3P32-LW-N
IOP-2P32-HL-SC	IOPA-1P32-N	IOPA-3P32-HL-N
IOP-3P32-SC	IOPA-1P32-LW-N	IOPA-4P32-N
IOP-3P32-LW-SC	IOPA-2P32-N	IOPA-4P32-LW-N
		IOPA-4P32-HL-SC

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

# ELECTRONIC FLUORESCENT BALLASTS

## Ordering Information

### How to Order

Philips Lighting Systems and Controls has developed the industry's broadest distribution system for electronic ballasts. More than 3000 stocking distributors nationwide. For information on the distributor best able to serve your needs, please call 800-372-3331.

### Electronic Ballast Part Number Breakdown

I	CF	-	2	S	26	-	HI	-	LD														
<p><b>CFL Mounting/Connector Options</b></p> <p>BL = Bottom leads                      BLS = Bottom leads with mounting studs                      BS = Bottom mounting studs with single entry color coded connectors                      EL = End leads                      LD = Length mounting feet with SmartMate® dual entry color coded connectors                      QS = QuikStart</p> <p><b>Linear Fluorescent Mounting/Connector Options</b></p> <p>2LS = 2 Level Switching</p>																							
<p><b>CFL Can Description</b></p> <p>HI = Hybrid metal / plastic case, size 1                      M1 = Metal case, size 1                      M2 = Metal case, size 2                      M3 = Metal case, size 3                      M4 = Metal case, size 4                      M5 = Metal case, size 5                      M6 = Metal case, size 6</p> <p><b>Linear Fluorescent Can Description</b></p> <p>90C = 90°C maximum case temperature rating                      A = 'A' can                      D = 'D' can                      G = 'G' can                      HL = High light output                      L = 'L' can                      LW = Low watt                      MC = Micro can                      N = 'N' can                      SC = Small can</p>																							
<p><b>Lamp Watts (Primary lamp)</b></p>																							
<p><b>Wiring Configuration</b></p> <p>D = 2D, series                      M = Modified parallel**                      P = Parallel                      PSP = Programmed Start Parallel                      Q = Quad CFL, series                      S = Series                      T = Triple CFL, series                      TTS = Long twin tube, series                      TTP = Long twin tube, parallel</p>																							
<p><b>Maximum Number of Lamps</b></p>																							
<p><b>Family Name</b></p> <table border="0"> <tr> <td>CF = Compact Fluorescent</td> <td>CN = Centium</td> </tr> <tr> <td>DA = ROVR</td> <td>DL = ROVR</td> </tr> <tr> <td>EB = AmbiStar</td> <td>ELB = AmbiStar</td> </tr> <tr> <td>EZ = Mark 10® Powerline</td> <td>LV = EssentiaLine 0-10V</td> </tr> <tr> <td>MB = AmbiStar</td> <td>OP = Optanium</td> </tr> <tr> <td>TR = EssentiaLine Powerline</td> <td>UV = PureVolt</td> </tr> <tr> <td>ZT = Mark 7® 0-10V</td> <td></td> </tr> </table>										CF = Compact Fluorescent	CN = Centium	DA = ROVR	DL = ROVR	EB = AmbiStar	ELB = AmbiStar	EZ = Mark 10® Powerline	LV = EssentiaLine 0-10V	MB = AmbiStar	OP = Optanium	TR = EssentiaLine Powerline	UV = PureVolt	ZT = Mark 7® 0-10V	
CF = Compact Fluorescent	CN = Centium																						
DA = ROVR	DL = ROVR																						
EB = AmbiStar	ELB = AmbiStar																						
EZ = Mark 10® Powerline	LV = EssentiaLine 0-10V																						
MB = AmbiStar	OP = Optanium																						
TR = EssentiaLine Powerline	UV = PureVolt																						
ZT = Mark 7® 0-10V																							
<p><b>Input Voltage</b></p> <p>G = 347V                      H = IntelliVolt 347V to 480V 50/60 Hz                      I = IntelliVolt 120V to 277V 50/60 Hz                      R = 120V                      V = 277V</p>																							

### Corporate Offices

(800) 322-2086

### Customer Support/Technical Service

(800) 372-3331

(+) | 847 390-5000 (International)

### Visit our web site at

[www.philips.com/advance](http://www.philips.com/advance)

- Plan your lighting installation carefully; consider using the services of a qualified lighting designer
- Consult your local electric utility regarding demand side management rebate programs.
- Select the Philips Advance electronic ballast which best matches the requirements of your application. The technical specifications in this catalog (located on pages 9-6 to 9-13) will be useful in obtaining bids from electrical contractors.
- Contact your local Philips Lighting distributor. You will find them to be a helpful supplier of both products and information.

\* Many current and all future electronic ballast part numbers will not use the "RH-TP" suffixes even though these ballasts will be thermally protected.

\*\* Parallel Wiring Configuration. However, if one lamp fails, all other lamps in the circuit will extinguish.

# ELECTRONIC FLUORESCENT BALLASTS

	Allowed Wiring Configuration			Maximum Lead Length (Feet) for Tandem or Through Wiring (Total length of all wires between ballast and lamp sockets)						Application Note
	Remote (max length)	Tandem	Through	Blue	Red	Yellow	Blue/White	Brown	Orange	
IOP-3PSP32-SC	20'	Yes	Yes	20'	20'	18'	18'			1 (e)
IOP-3S32-LW-SC	10'	Yes	Yes	10'	4'	4'	10'			7 (d)
IOP-3S32-SC	10'	Yes	Yes	10'	4'	4'	10'			7 (d)
IOP-4P32-LW-SC	20'	Yes	Yes	20'	20'	8'				1 (e)
IOP-4P32-SC	20'	Yes	Yes	20'	20'	8'				1 (e)
IOP-4PSP32-LW-SC	20'	Yes	Yes	20'	20'	18'	18'	18'		1 (e)
IOP-4PSP32-SC	20'	Yes	Yes	20'	20'	18'	18'	18'		1 (e)
IOP-4PSP54-2LS-G	20'	Yes	Yes	20'	20'	15'	15'	15'		1 (e)
IOP-4S32-LW-SC	10'	Yes	Yes	10'	4'	4'	10'	10'		7 (d)
IOP-4S32-SC	10'	Yes	Yes	10'	4'	4'	10'	10'		7 (d)
IOPA-1P32-HL-N	20'	NA	NA	20'	20'					1 (e)
IOPA-1P32-LW-N	20'	NA	NA	20'	20'					1 (e)
IOPA-1P32-N	20'	NA	NA	20'	20'					1 (e)
IOPA-2P32-HL-N	20'	Yes	Yes	20'	20"					1 (e)
IOPA-2P32-LW-N	20'	Yes	Yes	20'	20'					1 (e)
IOPA-2P32-N	20'	Yes	Yes	20'	20"					1 (e)
IOPA-3P32-HL-N	20'	Yes	Yes	20'	20"					1 (e)
IOPA-3P32-LW-N	20'	Yes	Yes	20'	20'					1 (e)
IOPA-3P32-N	20'	Yes	Yes	20'	20"					1 (e)
IOPA-4P32-HL-90C-G	20'	Yes	Yes	20'	20'	8'				1 (e)
IOPA-4P32-HL-SC	20'	Yes	Yes	20'	20'	8'				1 (e)
IOPA-4P32-LW-N	20'	Yes	Yes	20'	20'	8'				1 (e)
IOPA-4P32-N	20'	Yes	Yes	20'	20'	8'				1 (e)
IZT-128-D	6'	NA	NA							4
IZT-132-SC	6'	NA	NA							4
IZT-180	No	NA	NA							5
IZT-2S26-M5-BS	No	No	No							5
IZT-2S26-M5-LD	No	No	No							5
IZT-2S28D	6'	Yes	Yes	6'	6'	6'				1
IZT-2S32-SC	6'	Yes	Yes	6'	6'	6'				1
IZT-2T42-M5-BS	No	No	No							5
IZT-2T42-M5-LD	No	No	No							5
IZT-2TTS40-SC	6'	No	No							4
IZT-3S32-SC	No	No	No							5
IZT-4S32	No	No	Yes	1'	1.25'	5.2'	1.25'	4.2'		3
RCF-2S13-MI-LD	1-Lamp 15'	No	No							4
RCF-2S13-MI-BS	2-Lamp 6'	Yes	Yes	2'	6'	6'				2
RCF-2S18-MI-BS	1-Lamp 15'	No	No							4
	2-Lamp 6'	Yes	Yes	2'	6'	6'				2
RCF-2S26-HI-LD	1-Lamp 15'	No	No							4
RCF-2S26-MI-BS	2-Lamp 6'	Yes	Yes	2'	6'	6'				2
REB-113-M6-BLS	No	No	No							5
REB-113-M6-EL	No	No	No							5
REB-118-M6-BLS	No	No	No							5
REB-118-M6-EL	No	No	No							5
REB-126-M6-BLS	No	No	No							5
REB-126-M6-EL	No	No	No							5
REB-2P32-SC	20"	Yes	Yes	20'	20'					1
REB-2S26-MI-LD-DIM	1-LAMP 20"	No	No							4
	2-LAMP No	Yes	Yes	12'	2'	12'				3

For nominal input voltage and 25°C ambient temperature. See all notes on page I-19.



# For 32W Lamps

HIGH POWER FACTOR SOUND RATED A



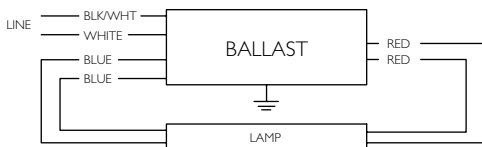
Electronic  
Fluorescent Ballasts

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 Dia.				
<b>F32T8, FBO3IT8, F32T8/U6 (32W)</b>															
3	120	IS	AmbiStar <sup>‡</sup>	REB-4P32-SC	80	0.84	125	1.36	0/-18	B	*66				
			Centium	ICN-3P32-N	85	0.88	10	0.71-0.31		N	65				
				ICN-4P32-N	93	1.00	10	0.78-0.33		N	*66				
		IS	Optanium	IOP-3P32-LW-SC	73-71	0.77	10	0.62-0.27	B	65					
				IOPA-3P32LW-N											
				IOP-3P32-SC	82-80	0.87	10	0.70-0.30	B						
				IOPA-3P32-N											
				IOP-3P32-HL-90C-SC	110-107	1.18	10	0.91-0.39	B						
				IOPA-3P32-HL-N											
			IOP-4P32-LW-SC	80-79	0.84	10	0.67-0.29	B							
			IOPA-4P32-LW-N												
			Optanium	IOP-4P32-SC	90-88	0.97	10	0.75-0.32	B						
				IOPA-4P32-N											
				IOPA-4P32-HL-90C-G	120-119	1.26	10	1.02-0.44	G						
			PS	Optanium	IOPA-4P32-HL-SC	122-120	1.29	10	1.02-0.44	B	71				
	IOP-3PSP32-LW-SC	74			0.71	10	0.63-0.27	0/-18	B	178					
	IOP-3PSP32-HL-SC	113-110			1.18	10	0.94-0.40								
	IOP-4PSP32-HL-G	TBD			TBD	10	TBD								
	IOP-3PSP32-SC	85			0.88	10	0.71-0.31			30					
	IOP-3S32-LW-SC	71-70			0.71	10	0.59-0.21								
	IOP-3S32-SC	83-81			0.88	10	0.70-0.30								
	347	PS			Optanium	GOP-4PSP32-SC	93			0.93	10	0.23	0/-18	B	178
						GOP-3PSP32-SC	TBD			0.88	10	TBD			
			GOP-3PSP32-LW-SC	TBD		0.71	10			TBD					
		IS	GOPA-3P32-LW-SC	74		0.77	10	0.21	-20/-29	65					
			GOPA-3P32-SC	84		0.88	10	0.24							
			GOPA-4P32-LW-SC	77		0.81	10	0.23							
	PS	Optanium	GOPA-4P32-SC	89	0.96	10	0.26	-20/-29	*66						
			HOP-3PSP32-HL-SC	TBD	1.18	10	TBD								
			HOP-4PSP32-HL-G	TBD	TBD	10	TBD								
347/480	PS	Optanium	HOP-4PSP32-HL-G	TBD	TBD	10	TBD	0/-18	G	178					

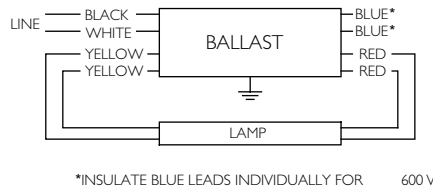
<sup>‡</sup> The above AmbiStar ballasts are normal power factor and labeled 'For Residential Use Only'



See pages 1-2 and 1-3 for specific SKU's that meet the NEMA Premium Standard

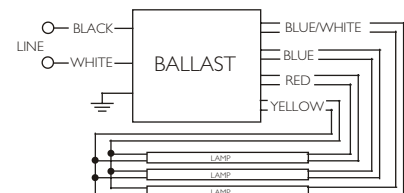


Diag. 20



\*INSULATE BLUE LEADS INDIVIDUALLY FOR 600 V

Diag. 77



Diag. 178

Refer to page 1-38 and 1-39 for dimensions  
 Refer to page 1-59 for additional wiring diagrams  
 Refer to pages 9-23 to 9-27 for lead lengths and shipping data



## For 32W Lamps

HIGH POWER FACTOR SOUND RATED A

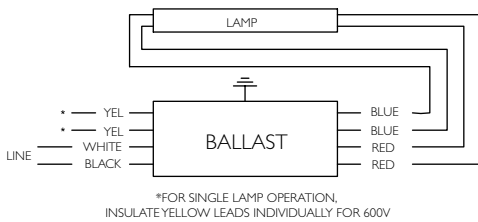


No. of Lamps	Input Volts	Lamp Starting Method	Ballast Family	Catalog Number	Input Power ANSI (Watts)	Ballast Factor	Max. THD %	Line Current (Amps)	Min. Starting Temp. (°F/°C)	Dim.	Wiring Dia.		
<b>F32T8, FBO3IT8, F32T8/U6 (32W)</b>													
4	120	IS	AmbiStar <sup>‡</sup>	REB-4P32-SC	103	0.81	125	1.57	0/-18	B	66		
			Centium	ICN-4P32-N	112	0.88	10	0.94-0.41		N			
	120-277	IS	Optanium	IOP-4P32-LW-SC	96-94	0.77	10	0.81-0.35	-20/-29	B	66		
				IOPA-4P32-LW-N									
				IOP-4P32-SC	109-106	0.87	10	0.92-0.39		B			
				IOPA-4P32-N									
				IOPA-4P32-HL-90C-G	146-143	1.18	10	1.23-0.53		G			
				IOPA-4P32-HL-SC	150-146	1.18	10	1.26-0.54		B			
				IOP-4PSP32-LW-SC	99	0.71	10	0.83-0.36		0/-18		B	178
				IOP-4PSP32-HL-G	TBD	1.18	10	TBD					177
	IOP-4PSP-LW-SC	99	0.71	10	0.83-0.36	138							
	IOP-4S32-LW-SC	93-91	0.71	10	0.77-0.33	177							
	IOP-4PSP32-SC	110	0.88	10	0.93-0.40	138							
	IOP-4S32-SC	110	0.88	10	0.92-0.40								
	347	PS	Optanium	GOP-4PSP32-SC	114	0.88	10	0.33	0/-18	B	178		
				GOP-4PSP32-LW-SC	TBD	0.71	10	TBD	-20/-29	B	66		
	347	IS	Optanium	GOPA-4P32-LW-SC	92	0.78	10	0.27	-20/-29	B	66		
				GOPA-4P32-SC	107	0.88	10	0.31					
347/480	PS		HOP-4PSP32-HL-G	TBD	0.88/1.18	10	TBD	0/-18	B	178			

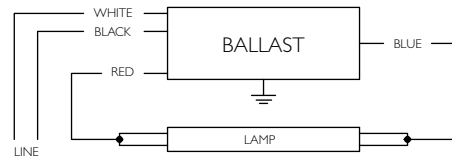
<sup>‡</sup> The above AmbiStar ballasts are normal power factor and labeled 'For Residential Use Only'



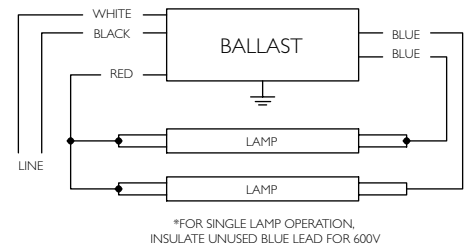
See pages 1-2 and 1-3 for specific SKU's that meet the NEMA Premium Standard



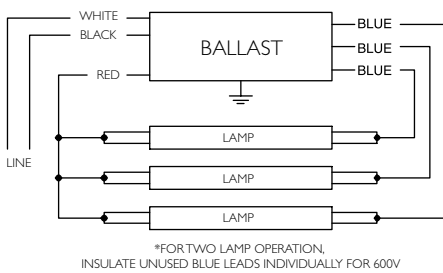
Diag. 39



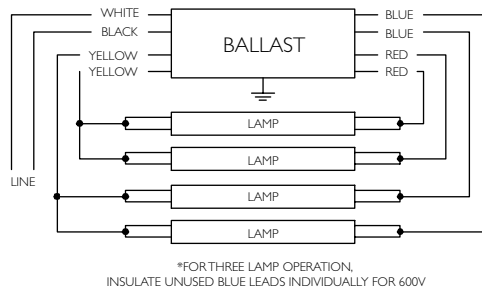
Diag. 63



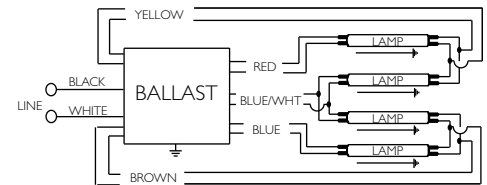
Diag. 64



Diag. 65



Diag. 66



Diag. 138

Refer to page 1-38 and 1-39 for dimensions  
 Refer to page 1-58 for additional wiring diagrams  
 Refer to pages 9-23 to 9-27 for lead lengths and shipping data