

# 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.

### 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



The following ballasts are NEMA Premium®:

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

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.

# ELECTRONIC FLUORESCENT BALLASTS

## Ordering Information

### How to Order

Philips Lighting Electronics 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
CFL Mounting/Connector Options									
BL = Bottom leads									
BLS = Bottom leads with mounting studs									
BS = Bottom mounting studs with single entry color coded connectors									
EL = End leads									
ELS = End leads with mounting studs									
LD = Length mounting feet with SmartMate® dual entry color coded connectors									
LS = Length mounting feet with single entry color coded connectors									
QS = QuikStart									
Linear Fluorescent Mounting/Connector Options									
TP* = Thermal Protected									
2LS = 2 Level Switching									
CFL Can Description									
H1 = Hybrid metal / plastic case, size 1									
L2 = Linear									
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									
N = "N" can									
S1 = Square, style 1									
S2 = Square, style 2									
Linear Fluorescent Can Description									
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									
RH* = Reduced harmonics									
S = Slimline									
SC = Small can									
Lamp Watts (Primary lamp)									
Wiring Configuration									
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									
Maximum Number of Lamps									
Family Name									
CF = Compact Fluorescent					CN = Centium				
DA = ROVR					DL = ROVR				
EB = AmbiStar					ELB = AmbiStar				
EL = Standard					EZ = Mark 10® Powerline				
IC = Mark 5®					LV = Low Cost 0-10V				
MB = AmbiStar					OP = Optanium				
ZT = Mark 7® 0-10V									
Input Voltage									
G = 347V									
H = IntelliVolt 347V to 480V 50/60 Hz									
I = IntelliVolt 120V to 277V 50/60 Hz									
J = IntelliVolt 277V to 480V 50/60 Hz									
R = 120V									
V = 277V									

Corporate Offices  
(800) 322-2086

Customer Support/Technical Service  
(800) 372-3331  
(+) 1 847 390-5000 (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 9-5 to 9-14) will be useful in obtaining bids from electrical contractors.
- Contact your local Philips Lighting Electronics 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	
IOPA-1P32-HL-SC (c)	20'	Yes	Yes	20'	20'					1e
IOPA-1P32-LW-SC (c)	20'	Yes	Yes	20'	20'					1e
IOPA-1P32-SC (c)	20'	Yes	Yes	20'	20'					1e
IOPA-2P32-HL-SC (c)	20'	Yes	Yes	20'	20"					1e
IOPA-2P32-LW-SC (c)	20'	Yes	Yes	20'	20'					1e
IOPA-2P32-SC (c)	20"	Yes	Yes	20'	20"					1e
IOPA-3P32-HL-SC (c)	20"	Yes	Yes	20'	20"					1e
IOPA-3P32-LW-SC (c)	20'	Yes	Yes	20'	20'					1e
IOPA-3P32-SC (c)	20"	Yes	Yes	20'	20"					1e
IOPA-4P32-HL (c)	20"	Yes	Yes	20'	20'	8'				1e
IOPA-4P32-LW-SC (c)	20'	Yes	Yes	20'	20'	8'				1e
IOPA-4P32-SC (c)	20'	Yes	Yes	20'	20'	8'				1e
IZT-132-SC	6'	NA	NA							4
IZT-2S26-M5-BS IZT-2S26-M5-LD	No	No	No							5
IZT-2S32-SC	6'	Yes	Yes	6'	6'	6'				1
IZT-2T42-M3-BS IZT-2T42-M3-LD	No	No	No							5
IZT-2T42-M5-BS 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-8'	1'	1.25'	5.2'	1.25'	4.2'		3
JOP-2S84-G	20'	Yes	Yes	4'	20'	20'				2
RCF-2S13-H1-LD	1-Lamp	15'	No	No						4
RCF-2S13-M1-BS	2-Lamp	6'	Yes	Yes	2'	6'	6'			2
RCF-2S18-H1-LD	1-Lamp	15'	No	No						4
RCF-2S18-M1-BS	2-Lamp	6'	Yes	Yes	2'	6'	6'			2
RCF-2S26-H1-LD	1-Lamp	15'	No	No						4
RCF-2S26-M1-BS	2-Lamp	6'	Yes	Yes	2'	6'	6'			2
RCN-1S32-SC	20"	NA	NA							4
RCN-2S32-SC (d)	No	Yes	Yes	20'	4'	20'				3
RCN-3S32-SC (d)	No	Yes	Yes	4'	4'	20'	20'			6
RCN-4S32-SC (d)	No	Yes	Yes	4'	4'	20'	20'	20'		6
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-M1-LD-DIM	1-LAMP	20"	No	No						4
	2-LAMP	No	Yes	Yes	12'	2'	12'			3
REB-4P32-SC	20"	Yes	Yes	20'	20'	20'				1
REB-2S13-M6-EL	No	No	No							5
REB-2S13-M6-BL	No	No	No							5
REB-2S18-M6-EL	No	No	No							5
REB-2S18-M6-BL	No	No	No							5
REB-2S26-M6-EL	No	No	No							5
REB-2S26-M6-BL	No	No	No							5

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



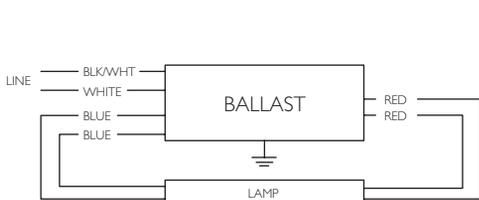
Electronic  
Fluorescent Ballasts

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
		PS	Centium	RCN-3S32-SC	91	0.88	10	0.78	32/0		30
	277	PS	Centium	VCN-3S32-SC	91	0.88	10	0.34	0/-18	B	65
				ICN-3P32-LW-SC	74-73	0.77	10	0.62-0.27			*66
	120-277	IS	Centium	ICN-3P32-SC	85	0.88	10	0.71-0.31	-20/-29	B	65
				ICN-4P32-LW-SC	80-79	0.82	10	0.67-0.29			
				ICN-4P32-SC	93	1.00	10	0.78-0.33			
				IOP-3P32-LW-SC	73-71	0.77	10	0.62-0.27			
				IOPA-3P32-LW-SC	82-80	0.87	10	0.70-0.30			
				IOP-3P32-SC	82-80	0.87	10	0.70-0.30			
			Optanium	IOP-3P32-HL-90C-SC	110-107	1.18	10	0.91-0.39	-20/-29	B	65
				IOPA-3P32-HL-SC	80-79	0.84	10	0.67-0.29			
				IOP-4P32-LW-SC	80-79	0.84	10	0.67-0.29			
				IOPA-4P32-LW-SC	90-88	0.97	10	0.75-0.32			
				IOP-4P32-SC	90-88	0.97	10	0.75-0.32			
				IOPA-4P32-SC	120-119	1.26	10	1.02-0.44			
			PS	IOP-4P32-HL-90C-G	120-119	1.26	10	1.02-0.44	0/-18	B	TBD
				IOPA-4P32-HL	120-119	1.26	10	1.02-0.44			
				IOP-3PSP32-LW-SC	TBD	0.71	10	TBD			
				IOP-3PSP32-SC	85	0.88	10	0.71-0.31			
				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	IS	Optanium	GOPA-3P32-LW-SC	74	0.77	10	-20/-29	B	65	
				GOPA-3P32-SC	84	0.88				*66	
GOPA-4P32-LW-SC				77	0.81	0.21					
GOPA-4P32-SC				89	0.96	0.24					
										0.23	
											0.26

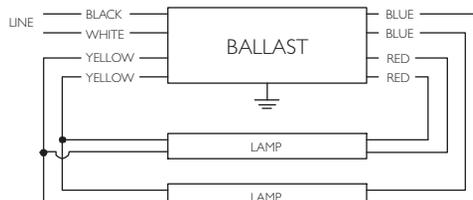
<sup>‡</sup> The above AmbiStar ballasts are normal power factor and labeled 'For Residential Use Only'



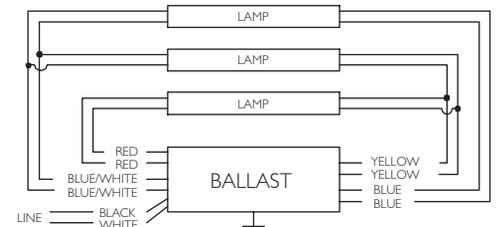
See pages 1-3 and 1-4 for specific SKU's that meet the NEMA Premium Standard



Diag. 20



Diag. 21



Diag. 30

Refer to page 1-41 for dimensions  
 Refer to page 1-60 for additional wiring diagrams  
 Refer to pages 9-24 to 9-28 for lead lengths and shipping data



# For 32W Lamps

HIGH POWER FACTOR SOUND RATED A



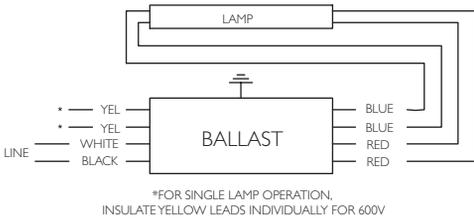
Electronic Fluorescent Ballasts

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>											
4	120	IS	AmbiStar <sup>‡</sup>	REB-4P32-SC	103	0.81	125	1.57	0/-18	B	66
			Standard	RCN-4S32-SC	121	0.88	10	1.03	32/0		138
	277	PS	Centium	VCN-4S32-SC	121	0.88	10	0.45		0/-18	B
			IS	Centium	ICN-4P32-LW-SC	97-95	0.77	10	0.81-0.34		
	ICN-4P32-SC	112			0.88	10	0.94-0.41				
	Optanium	IOP-4P32-LW-SC			96-94	0.77	10	0.81-0.35			
		IOPA-4P32-LW-SC									
		IOP-4P32-SC	109-106	0.87	10	0.92-0.39					
	Optanium	IOP-4P32-HL-90C-G	146-143	1.18	10	1.23-0.53					
		IOPA-4P32-HL									
		IOP-4PSP-LW-SC	TBD	0.71	10	TBD					
	PS	IS	Optanium	IOP-4S32-LW-SC	93-91	0.71	10	0.77-0.33	-20/-29	B	177
				IOP-4PSP32-SC	110	0.88	10	0.93-0.40			138
				IOP-4S32-SC	110	0.88	10	0.92-0.40			177
				IOP-4S32-SC	110	0.88	10	0.92-0.40			138
347	IS	Optanium	GOPA-4P32-LW-SC	92	0.78	10	0.27	-20/-29	B	66	
			GOPA-4P32-SC	107	0.88		0.31				

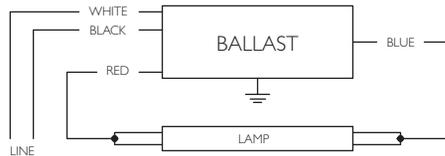
<sup>‡</sup> The above AmbiStar ballasts are normal power factor and labeled 'For Residential Use Only'



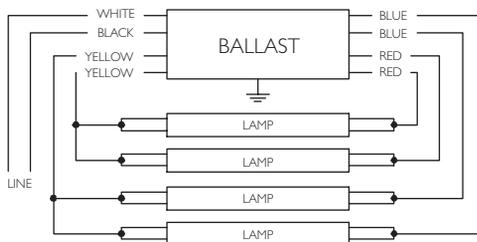
See pages I-3 and I-4 for specific SKU's that meet the NEMA Premium Standard



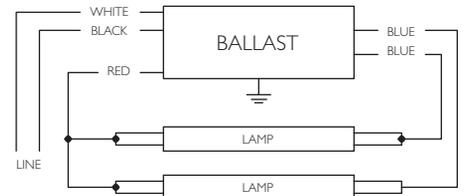
Diag. 39



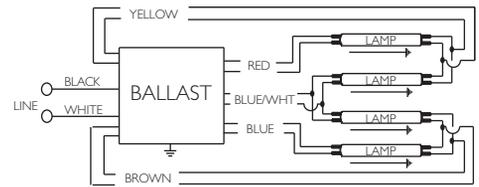
Diag. 65



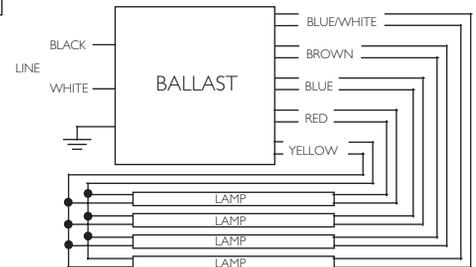
Diag. 66



Diag. 64



Diag. 138



Diag. 177

Refer to page I-62 for dimensions  
 Refer to page I-59 for additional wiring diagrams  
 Refer to pages 9-24 to 9-28 for lead lengths and shipping data