ELECTRONIC FLUORESCENT BALLASTS

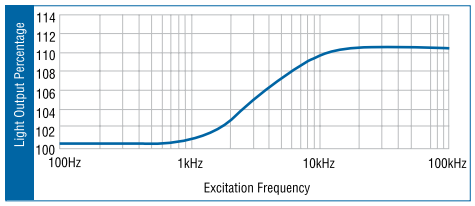
Ballast Life

Philips Advance fluorescent electronic and magnetic ballasts are designed and manufactured to engineering standards correlating to an average life expectancy of 50,000 hours of operation at maximum rated case temperature. Since Philips Advance ballasts operate below their maximum case temperature in the majority of applications, increased ballast life can be expected. As a rule of thumb, ballast life may be doubled for every 10°C reduction in ballast case operating temperature. However, there are many variables, such as input voltage, ambient temperature, etc. which affect ballast operating temperatures, and therefore ballast life.

Lamp Operating Frequency

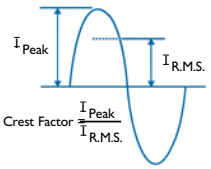
Electromagnetic ballasts and the lamps connected to them operate at an input voltage frequency of 60 Hertz (Hz), 60 cycles per second — which is the standard alternating voltage/current frequency provided in North America. Electronic ballasts, on the other hand, convert this 60 Hz input to operate lamps at much higher frequencies above 20 Kilohertz (kHz), 20,000 cycles per second. Philips Advance ballasts operate above 20 kHz, but avoid certain ranges such as 30-40 kHz (infrared) and 54-62 kHz (theft deterrent systems) due to interference issues.

Because electronic ballasts function at high frequency, the fluorescent lighting systems that they operate can convert power to light more efficiently than systems operated by electromagnetic ballasts (See chart below). For example, lamps operated on electronic ballasts can produce over 10 percent more light then if operated on electromagnetic ballasts at the same power levels. In effect, today's electronic ballasts provide additional energy savings by matching the light output from electromagnetic ballasts while operating the lamps at lower power. This is the main reason why electronic ballast systems are more efficient than magnetic ballast system.



Crest Factor

Lamp manufacturers use crest factor to determine ballast performance as it relates to lamp life. Lamp Current Crest Factor is a measurement of current supplied by a ballast to start and operate the lamp. It is basically the ratio of peak current to RMS (average) current. High crest factor currents may cause the lamp electrodes to wear out faster, reducing lamp life. Crest factor requirements are regulated by ANSI (American National Standards Institute) standards and specified by lamp manufacturers. For rapid start and instant start T8 lamps the ratio is 1.7 maximum, and for instant start slimline lamps, it is 1 .85 maximum.



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Controllability

The ability of a building's occupants to control how they light their space is becoming an increasingly important factor for organizations in determining what real estate they will lease, buy or invest in. The ability to dim the lights or easily shut them off completely is a trend fueled not just by a desire to help the environment, but also by significant economic benefits. These benefits include greater energy efficiency — in terms of reduced HVAC costs as well as energy savings for lighting — more comfortable and productive working environments, and compliance with ever tighter energy efficiency regulations. Philips Advance offers five families of electronic controllable ballasts — ROVR, Mark 7 *0-10V*, Mark 10 *Powerline,* PowerSpec HDF, EssentiaLine *0-10V* and EssentiaLine *Powerline*.

Compatibility With Powerline Carrier Systems

A powerline carrier system (PLC) uses electronic wiring devices to send information via a high frequency signal over the 120V or 277V electrical power distribution system of a building. For example, PLC systems are used in automatic clock systems (master time systems) to synchronize all of the clocks in a building or reset the time after a power outage. They eliminate the need for maintenance personnel to reset hundreds of clocks throughout a facility.

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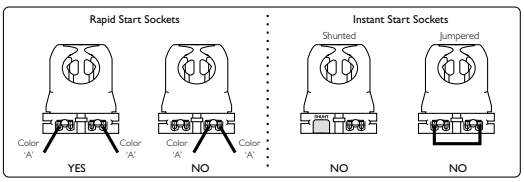
When using dimming ballasts in fixtures, sockets must be of the Rapid Start type. Many fixtures with T-8 Instant Start electronic ballasts use jumpered or "shunted" Instant Start sockets. Controllable ballasts require two distinctly separate wires for each lamp socket. If you encounter shunted or jumpered sockets in a retrofit application, they must be removed and replaced with Rapid Start sockets.

Improper socket application will damage the ballast and void the ballast warranty.
Refer to ballast wiring diagram for proper installation.



Fluorescent Lamp Burn-In

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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
LD = Length mounting feet with SmartMate® dual entry color coded connectors
QS = QuikStart

Linear Fluorescent Mounting/Connector Options

2LS = 2 Level Switching

CFL Can Desription
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

Linear Fluorescent Can Desription
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

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
DA = ROVR
EB = AmbiStar
EZ = Mark 10® *Powerline*
MB = AmbiStar
TR = EssentiaLine *Powerline*
ZT = Mark 7® *0-10V*
CN = Centium
DL = ROVR
ELB = AmbiStar
LV = EssentiaLine *0-10V*
OP = Optanium
UV = PureVolt

Input Voltage

G = 347V
H = IntelliVolt 347V to 480V 50/60 Hz
I = IntelliVolt 120V to 277V 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

- 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	
ICN-2S40-N	20'	Yes	Yes	4'	10'	10'				2
ICN-2S54	20'	Yes	Yes	20'	4'	20'				3
ICN-2S54-N	20'	Yes	Yes	20'	4'	20'				3
ICN-2S54-90C-SC	20'	Yes	Yes	20'	4'	20'				3
ICN-2S86	12'	Yes	Yes	12'	4'	12'				3 (b)
ICN-2S110-SC	20'	Yes	Yes	4'	20'	20'				2
ICN-2TTP40-SC	20'	Yes	Yes	20'	20'					1
ICN-3P32-N	20'	Yes	Yes	20'	20'					1 (e)
ICN-3S14-D	No	No	No							5
ICN-3TTP40-SC	20'	Yes	Yes	20'	20'					1
ICN-4P32-N	20'	Yes	Yes	20'	20'	20'				1 (e)
ICN-4S54-90C-2LS-G	20'	Yes	Yes	20'	4'	4'	20'	20'	20'	7
IDA-128-D	6'	NA	NA							4
IDA-132-SC	No	NA	NA							5
IDA-154	No	NA	NA							5
IDA-2S28-D	6'	Yes	Yes	6'	6'	6'				1
IDA-2S32-SC	No	No	Yes	5'	4'	4'				3
IDA-2S54	No	No	Yes	5'	4'	4'				3
IDA-3S32-G	No	No	No							5
IDA-4S32	No	No	Yes-8'	1'	1.25'	5.2'	1.25'	4.2'		3
IDL-2S26-M5-BS IDL-2S26-M5-LD	No	No	No							5
IDL-2T42-M5-BS IDL-2T42-M5-LD	No	No	No							5
IEZ-2S24-D	No	No	Yes	3'	2'	2'				3
ILV-2S32-SC	6'	Yes	Yes	6'	6'	6'				1
ILV-4S32-G	No	No	Yes-8'	1'	1.25'	5.2'	1.25'	4.2'		3
IOP-1P32-HL-SC	20'	NA	NA							1 (e)
IOP-1P32-LW-SC	20'	NA	NA							1 (e)
IOP-1P32-SC	20'	NA	NA							1 (e)
IOP-1S32-LW-SC	10'	NA	NA							4
IOP-1S32-SC	10'	NA	NA							4
IOP-2P32HL-SC	20'	Yes	Yes	20'	20'					1 (e)
IOP-2P32-LW-SC	20'	Yes	Yes	20'	20'					1 (e)
IOP-2P32-SC	20'	Yes	Yes	20'	20'					1 (e)
IOP-2P59-SC	20'	Yes	Yes	20'	20'					1 (e)
IOP-2PSP32-LW-SC	20'	Yes	Yes	20'	20'	18'				1 (e)
IOP-2PSP32-SC	20'	Yes	Yes	20'	20'	18'				1 (e)
IOP-2PSP54-SC	20'	Yes	Yes	20'	20'	15'				1
IOP-2S28-95-SC-SD	7'	Yes	Yes	7'	7'	7'				1
IOP-2S28-115-SC-SD	7'	Yes	Yes	7'	7'	7'				1
IOP-2S28-95-SC	20'	Yes	Yes	20'	20'	20'				1
IOP-2S28-115-SC	20'	Yes	Yes	20'	20'	20'				1
IOP-2S32-LW-SC	10'	Yes	Yes	4'	10'	10'				2 (d)
IOP-2S32-SC	10'	Yes	Yes	4'	10'	10'				2 (d)
IOP-3P32-HL-90C-SC	20'	Yes	Yes	20'	20'					1 (e)
IOP-3P32-LW-SC	20'	Yes	Yes	20'	20'					1 (e)
IOP-3P32-SC	20'	Yes	Yes	20'	20'					1 (e)
IOP-3PSP32-LW-SC	20'	Yes	Yes	20'	20'	18'	18'			1 (e)

For nominal input voltage and 25°C ambient temperature. See all notes on page 1-19..

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.
F32T8, FBO31T8, F32T8/U6 (32W)											
1	120	IS	AmbiStar‡	REB-2P32-SC	33	1.00	140	0.48	0/-18	B	*64
	120-277	IS	Centium	ICN-132-MC	30	0.88	10	0.25-0.11	0/-18	A2	63
				ICN-1P32-N	31	0.90	10	0.26-0.12		N	
				ICN-2P32-N	36	1.03	15	0.30-0.14			*64
			Optanium	IOP-1P32-LW-SC	25	0.77	10	0.22-0.10	-20/-29	B	63
				IOPA-1P32-LW-N						N	
				IOP-1P32-SC	28	0.87	10	0.25-0.11		B	
				IOPA-1P32-N						N	
				IOP-1P32-HL-SC	39-38	1.18	10	0.33-0.14		B	
				IOPA-1P32-HL-N						N	
				IOP-2P32-LW-SC	31	0.90	10	0.26-0.11		B	*64
				IOPA-2P32-LW-N						N	
				IOP-2P32-SC	35	1.05	10	0.30-0.13		B	
				IOPA-2P32-N						N	
				IOP-2P32-HL-SC	45	1.37	10	0.37-0.17		B	
				IOPA-2P32HL-N						N	
		PS		IOP-2PSP32-LW-SC	26	0.73	10	0.22-0.10	0/-18	B	77
				IOP-2PSP32-SC	32	0.94	10	0.27-0.12			
				IOP-2PSP32-HL-SC	44	1.33	10	0.38-0.17			
				IOP-1S32-LW-SC	25	0.72	10	0.20-0.09			20
				IOP-1S32-SC	28	0.88	10	0.24-0.10			
				IOP-2S32-LW-SC	25	0.73	10	0.20-0.09			39
				IOP-2S32-SC	29	0.90	10	0.24-0.11			
	347	PS	Optanium	GOP-2PSP32-SC	34	1.03	10	0.10	0/-18	B	77
				GOP-2PSP32-LW-SC	29	TBD	10	TBD			
		IS		GOPA-1P32-LW-SC	26	0.77	10	0.08	-20/29		63
				GOPA-1P32-SC	30	0.88	10	0.09			
				GOPA-2P32-LW-SC	31	0.88	10	0.09			*64
				GOPA-2P32-SC	34	1.03	10	1.03			
	347/480	PS		HOP-2PSP32-HL-SC	TBD	TBD	10	TBD	0/-18		77

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

NEMA Premium

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

Refer to page 1-38 and 1-39 for dimensions
Refer to page 1-58 and 1-59 for wiring diagrams
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F32T8, FBO31T8, F32T8/U6 (32W)											
2	120	IS	AmbiStar‡	REB-2P32-SC	56	0.88	120	0.80	0/-18	B	64
		RS	PowrKut	RK-2S32-TP	66	0.86	15	0.60	50/10	A	21
	277	RS	PowrKut	VK-2S32-TP	66	0.85	15	0.26			
	120-277	IS	Centium	ICN-2M32-MC	59	0.88	10	0.50-0.21	0/-18	A2	64
				ICN-2P32-N	59	0.88	10	0.49-0.22		N	
				ICN-3P32-N	65	1.01	10	0.54-0.24			*65
			Optanium	IOP-2P32-LW-SC	48	0.77	10	0.41-0.17	-20/-29	B	64
				IOPA-2P32-LW-N						N	
				IOP-2P32-SC	55-54	0.87	10	0.47-0.20		B	
				IOPA-2P32-N						N	
				IOP-2P32-HL-SC	74-72	1.18	10	0.62-0.26		B	
				IOPA-2P32HL-N						N	
				IOP-3P32-LW-SC	55-54	0.85	10	0.46-0.20		B	*65
				IOPA-3P32LW-N						N	
				IOP-3P32-SC	63-62	1.00	10	0.53-0.23		B	
				IOPA-3P32-N						N	
				IOP-3P32-HL-90C-SC	80-79	1.38	10	0.67-0.29		B	
				IOPA-3P32-HL-N						N	
		PS		IOP-2PSP32-LW-SC	46-45	0.71	10	0.40-0.17	0/-18	B	77
				IOP-2PSP32-SC	58	0.85	10	0.48-0.21			
				IOP-2PSP32-HL-SC	78-75	1.18	10	0.66-0.28			
				IOP-2S32-LW-SC	47-46	0.71	10	0.38-0.17			21
				IOP-2S32-SC	56-55	0.88	10	0.47-0.20			
	347	PS	Optanium	GOP-2PSP32-SC	57	0.88	10	0.17	0/-18	B	77
				GOP-2PSP32-LW-SC	52	0.71	10	TBD			
		IS		GOPA-2P32-LW-SC	48	0.78	10	0.14	-20/-29		64
				GOPA-2P32-SC	54	0.88	10	0.16			
				GOPA-3P32-LW-SC	55	0.86	10	0.16			*65
				GOPA-3P32-SC	63	1.00	10	0.18			
	347/480	PS		HOP-2PSP32-HL-SC	TBD	1.18	10	TBD	0/-18		77

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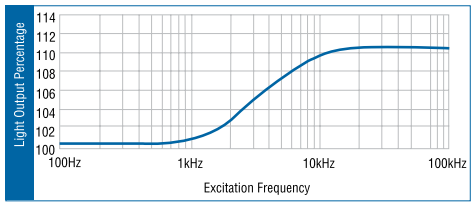

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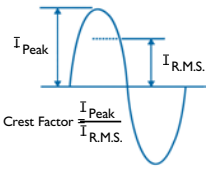

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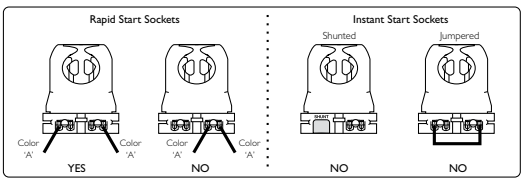

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D = 'D' can
G = 'G' can
HL = High light output
L = 'L' can
LW = Low watt
MC = Micro can
N = 'N' can
SC = Small can

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
DA = ROVR
EB = AmbiStar
EZ = Mark 10® *Powerline*
MB = AmbiStar
TR = EssentiaLine *Powerline*
ZT = Mark 7® *0-10V*
CN = Centium
DL = ROVR
ELB = AmbiStar
LV = EssentiaLine *0-10V*
OP = Optanium
UV = PureVolt

Input Voltage

G = 347V
H = IntelliVolt 347V to 480V 50/60 Hz
I = IntelliVolt 120V to 277V 50/60 Hz
R = 120V
V = 277V

Corporate Offices
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(+) 1 847 390-5000 (International)

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- 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	
ICN-2S40-N	20'	Yes	Yes	4'	10'	10'				2
ICN-2S54	20'	Yes	Yes	20'	4'	20'				3
ICN-2S54-N	20'	Yes	Yes	20'	4'	20'				3
ICN-2S54-90C-SC	20'	Yes	Yes	20'	4'	20'				3
ICN-2S86	12'	Yes	Yes	12'	4'	12'				3 (b)
ICN-2S110-SC	20'	Yes	Yes	4'	20'	20'				2
ICN-2TTP40-SC	20'	Yes	Yes	20'	20'					1
ICN-3P32-N	20'	Yes	Yes	20'	20'					1 (e)
ICN-3S14-D	No	No	No							5
ICN-3TTP40-SC	20'	Yes	Yes	20'	20'					1
ICN-4P32-N	20'	Yes	Yes	20'	20'	20'				1 (e)
ICN-4S54-90C-2LS-G	20'	Yes	Yes	20'	4'	4'	20'	20'	20'	7
IDA-128-D	6'	NA	NA							4
IDA-132-SC	No	NA	NA							5
IDA-154	No	NA	NA							5
IDA-2S28-D	6'	Yes	Yes	6'	6'	6'				1
IDA-2S32-SC	No	No	Yes	5'	4'	4'				3
IDA-2S54	No	No	Yes	5'	4'	4'				3
IDA-3S32-G	No	No	No							5
IDA-4S32	No	No	Yes-8'	1'	1.25'	5.2'	1.25'	4.2'		3
IDL-2S26-M5-BS IDL-2S26-M5-LD	No	No	No							5
IDL-2T42-M5-BS IDL-2T42-M5-LD	No	No	No							5
IEZ-2S24-D	No	No	Yes	3'	2'	2'				3
ILV-2S32-SC	6'	Yes	Yes	6'	6'	6'				1
ILV-4S32-G	No	No	Yes-8'	1'	1.25'	5.2'	1.25'	4.2'		3
IOP-1P32-HL-SC	20'	NA	NA							1 (e)
IOP-1P32-LW-SC	20'	NA	NA							1 (e)
IOP-1P32-SC	20'	NA	NA							1 (e)
IOP-1S32-LW-SC	10'	NA	NA							4
IOP-1S32-SC	10'	NA	NA							4
IOP-2P32HL-SC	20'	Yes	Yes	20'	20'					1 (e)
IOP-2P32-LW-SC	20'	Yes	Yes	20'	20'					1 (e)
IOP-2P32-SC	20'	Yes	Yes	20'	20'					1 (e)
IOP-2P59-SC	20'	Yes	Yes	20'	20'					1 (e)
IOP-2PSP32-LW-SC	20'	Yes	Yes	20'	20'	18'				1 (e)
IOP-2PSP32-SC	20'	Yes	Yes	20'	20'	18'				1 (e)
IOP-2PSP54-SC	20'	Yes	Yes	20'	20'	15'				1
IOP-2S28-95-SC-SD	7'	Yes	Yes	7'	7'	7'				1
IOP-2S28-115-SC-SD	7'	Yes	Yes	7'	7'	7'				1
IOP-2S28-95-SC	20'	Yes	Yes	20'	20'	20'				1
IOP-2S28-115-SC	20'	Yes	Yes	20'	20'	20'				1
IOP-2S32-LW-SC	10'	Yes	Yes	4'	10'	10'				2 (d)
IOP-2S32-SC	10'	Yes	Yes	4'	10'	10'				2 (d)
IOP-3P32-HL-90C-SC	20'	Yes	Yes	20'	20'					1 (e)
IOP-3P32-LW-SC	20'	Yes	Yes	20'	20'					1 (e)
IOP-3P32-SC	20'	Yes	Yes	20'	20'					1 (e)
IOP-3PSP32-LW-SC	20'	Yes	Yes	20'	20'	18'	18'			1 (e)

For nominal input voltage and 25°C ambient temperature. See all notes on page 1-19..

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.
F32T8, FBO31T8, F32T8/U6 (32W)											
1	120	IS	AmbiStar‡	REB-2P32-SC	33	1.00	140	0.48	0/-18	B	*64
	120-277	IS	Centium	ICN-132-MC	30	0.88	10	0.25-0.11	0/-18	A2	63
				ICN-1P32-N	31	0.90	10	0.26-0.12		N	
				ICN-2P32-N	36	1.03	15	0.30-0.14			*64
			Optanium	IOP-1P32-LW-SC	25	0.77	10	0.22-0.10	-20/-29	B	63
				IOPA-1P32-LW-N						N	
				IOP-1P32-SC	28	0.87	10	0.25-0.11		B	
				IOPA-1P32-N						N	
				IOP-1P32-HL-SC	39-38	1.18	10	0.33-0.14		B	
				IOPA-1P32-HL-N						N	
				IOP-2P32-LW-SC	31	0.90	10	0.26-0.11		B	*64
				IOPA-2P32-LW-N						N	
				IOP-2P32-SC	35	1.05	10	0.30-0.13		B	
				IOPA-2P32-N						N	
				IOP-2P32-HL-SC	45	1.37	10	0.37-0.17		B	
				IOPA-2P32HL-N						N	
		PS		IOP-2PSP32-LW-SC	26	0.73	10	0.22-0.10	0/-18	B	77
				IOP-2PSP32-SC	32	0.94	10	0.27-0.12			
				IOP-2PSP32-HL-SC	44	1.33	10	0.38-0.17			
				IOP-1S32-LW-SC	25	0.72	10	0.20-0.09			20
				IOP-1S32-SC	28	0.88	10	0.24-0.10			
				IOP-2S32-LW-SC	25	0.73	10	0.20-0.09			39
				IOP-2S32-SC	29	0.90	10	0.24-0.11			
	347	PS	Optanium	GOP-2PSP32-SC	34	1.03	10	0.10	0/-18	B	77
				GOP-2PSP32-LW-SC	29	TBD	10	TBD			
		IS		GOPA-1P32-LW-SC	26	0.77	10	0.08	-20/29		63
				GOPA-1P32-SC	30	0.88	10	0.09			
				GOPA-2P32-LW-SC	31	0.88	10	0.09			*64
				GOPA-2P32-SC	34	1.03	10	1.03			
	347/480	PS		HOP-2PSP32-HL-SC	TBD	TBD	10	TBD	0/-18		77

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

NEMA Premium

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

Refer to page 1-38 and 1-39 for dimensions
Refer to page 1-58 and 1-59 for 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.
F32T8, FBO31T8, F32T8/U6 (32W)											
2	120	IS	AmbiStar‡	REB-2P32-SC	56	0.88	120	0.80	0/-18	B	64
		RS	PowrKut	RK-2S32-TP	66	0.86	15	0.60	50/10	A	21
	277	RS	PowrKut	VK-2S32-TP	66	0.85	15	0.26			
	120-277	IS	Centium	ICN-2M32-MC	59	0.88	10	0.50-0.21	0/-18	A2	64
				ICN-2P32-N	59	0.88	10	0.49-0.22		N	
				ICN-3P32-N	65	1.01	10	0.54-0.24			*65
			Optanium	IOP-2P32-LW-SC	48	0.77	10	0.41-0.17	-20/-29	B	64
				IOPA-2P32-LW-N						N	
				IOP-2P32-SC	55-54	0.87	10	0.47-0.20		B	
				IOPA-2P32-N						N	
				IOP-2P32-HL-SC	74-72	1.18	10	0.62-0.26		B	
				IOPA-2P32HL-N						N	
				IOP-3P32-LW-SC	55-54	0.85	10	0.46-0.20		B	*65
				IOPA-3P32LW-N						N	
				IOP-3P32-SC	63-62	1.00	10	0.53-0.23		B	
				IOPA-3P32-N						N	
				IOP-3P32-HL-90C-SC	80-79	1.38	10	0.67-0.29		B	
				IOPA-3P32-HL-N						N	
		PS		IOP-2PSP32-LW-SC	46-45	0.71	10	0.40-0.17	0/-18	B	77
				IOP-2PSP32-SC	58	0.85	10	0.48-0.21			
				IOP-2PSP32-HL-SC	78-75	1.18	10	0.66-0.28			
				IOP-2S32-LW-SC	47-46	0.71	10	0.38-0.17			21
				IOP-2S32-SC	56-55	0.88	10	0.47-0.20			
	347	PS	Optanium	GOP-2PSP32-SC	57	0.88	10	0.17	0/-18	B	77
				GOP-2PSP32-LW-SC	52	0.71	10	TBD			
		IS		GOPA-2P32-LW-SC	48	0.78	10	0.14	-20/-29		64
				GOPA-2P32-SC	54	0.88	10	0.16			
				GOPA-3P32-LW-SC	55	0.86	10	0.16			*65
				GOPA-3P32-SC	63	1.00	10	0.18			
	347/480	PS		HOP-2PSP32-HL-SC	TBD	1.18	10	TBD	0/-18		77

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