

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 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

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Ordering Information

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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									
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LD = Length mounting feet with SmartMate® dual entry color coded connectors									
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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									
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M6 = Metal case, size 6									
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S2 = Square, style 2									
Linear Fluorescent Can Description									
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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									

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* 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



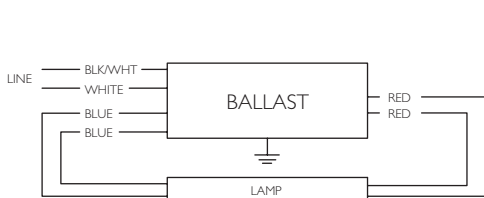
Electronic
Fluorescent Ballasts

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.					
F32T8, FBO3IT8, F32T8/U6 (32W)																
3	120	IS	AmbiStar [‡]	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					
	120-277	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				
					ICN-3P32-SC	85	0.88	10	0.71-0.31			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							
		IS	Optanium	IOPA-3P32-LW-SC	82-80	0.87	10	0.70-0.30	-20/-29	B	65					
				IOP-3P32-SC												
				IOP-3P32-HL-90C-SC	110-107	1.18	10	0.91-0.39								
				IOPA-3P32-HL-SC												
				IOP-4P32-LW-SC	80-79	0.84	10	0.67-0.29								
				IOPA-4P32-LW-SC												
				IOP-4P32-SC	90-88	0.97	10	0.75-0.32								
				IOPA-4P32-SC												
				IOP-4P32-HL-90C-G	120-119	1.26	10	1.02-0.44								
				IOPA-4P32-HL												
				PS	Optanium	IOP-3PSP32-LW-SC	TBD	0.71				10	TBD	0/-18	B	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										
GOPA-3P32-LW-SC	74	0.77	10			0.21	-20/-29	B	65							
GOPA-3P32-SC	84	0.88				0.24										
GOPA-4P32-LW-SC	77	0.81		0.23												
GOPA-4P32-SC	89	0.96		0.26												
347	IS	Optanium	GOPA-3P32-LW-SC	74	0.77	10	0.21	-20/-29	B	65						
			GOPA-3P32-SC	84	0.88		0.24									
			GOPA-4P32-LW-SC	77	0.81		0.23									
			GOPA-4P32-SC	89	0.96		0.26									

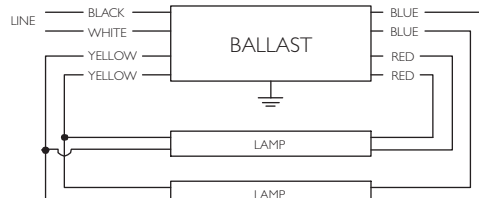
[‡] The above AmbiStar ballasts are normal power factor and labeled 'For Residential Use Only'



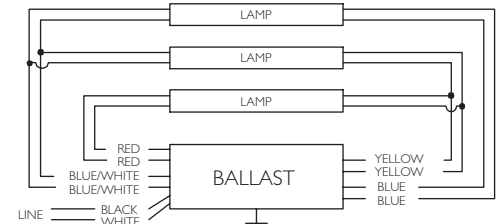
See pages 1-3 and 1-4 for specific SKU's that meet the NEMA Premium Standard



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



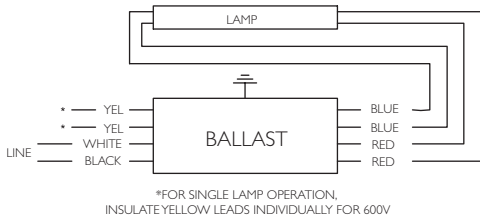
Electronic Fluorescent Ballasts

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.
F32T8, FBO3IT8, F32T8/U6 (32W)											
4	120	IS	AmbiStar [‡]	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					
	IOPA-4P32-SC										
	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	0/-18	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				

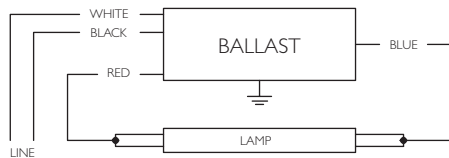
[‡] The above AmbiStar ballasts are normal power factor and labeled 'For Residential Use Only'



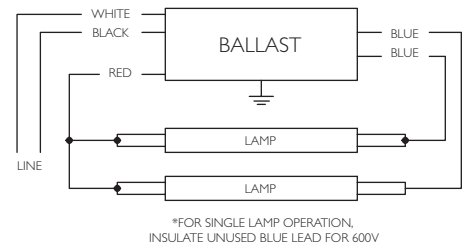
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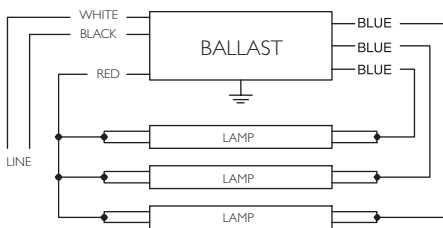
Diag. 39



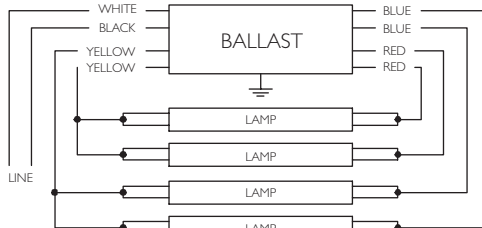
Diag. 63



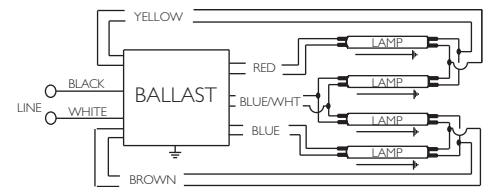
Diag. 64



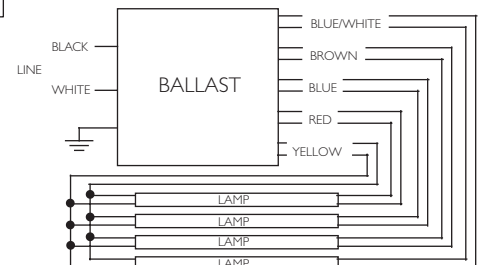
Diag. 65



Diag. 66



Diag. 138



Diag. 177

Refer to page I-62 for dimensions
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IOP-2P32-HL-SC	IOPA-1P32-SC	IOPA-3P32-HL-SC
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ZT = Mark 7® 0-10V									
Input Voltage									
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H = IntelliVolt 347V to 480V 50/60 Hz									
I = IntelliVolt 120V to 277V 50/60 Hz									
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R = 120V									
V = 277V									

Corporate Offices
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Visit our web site at
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** 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



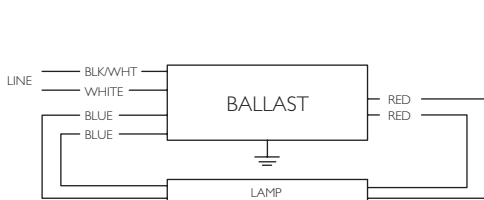
Electronic
Fluorescent Ballasts

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.					
F32T8, FBO3IT8, F32T8/U6 (32W)																
3	120	IS	AmbiStar [‡]	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					
	120-277	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				
					ICN-3P32-SC	85	0.88	10	0.71-0.31			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							
		IS	Optanium	IOPA-3P32-LW-SC	82-80	0.87	10	0.70-0.30	-20/-29	B	65					
				IOP-3P32-SC												
				IOP-3P32-HL-90C-SC	110-107	1.18	10	0.91-0.39								
				IOPA-3P32-HL-SC												
				IOP-4P32-LW-SC	80-79	0.84	10	0.67-0.29								
				IOPA-4P32-LW-SC												
				IOP-4P32-SC	90-88	0.97	10	0.75-0.32								
				IOPA-4P32-SC												
				IOP-4P32-HL-90C-G	120-119	1.26	10	1.02-0.44								
				IOPA-4P32-HL												
				PS	Optanium	IOP-3PSP32-LW-SC	TBD	0.71				10	TBD	0/-18	B	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	0.21	-20/-29	B	65						
			GOPA-3P32-SC	84	0.88		0.24									
			GOPA-4P32-LW-SC	77	0.81		0.23									
			GOPA-4P32-SC	89	0.96		0.26			*66						

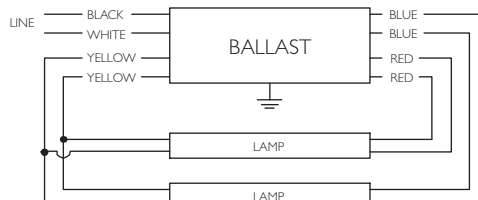
[‡] The above AmbiStar ballasts are normal power factor and labeled 'For Residential Use Only'



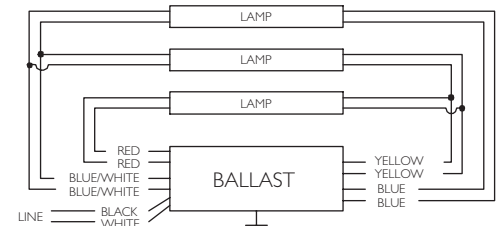
See pages 1-3 and 1-4 for specific SKU's that meet the NEMA Premium Standard



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



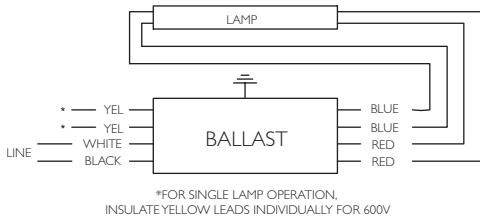
Electronic Fluorescent Ballasts

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.	
F32T8, FBO3IT8, F32T8/U6 (32W)												
4	120	IS	AmbiStar [‡]	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	66
			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						
	IOPA-4P32-SC											
	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	0/-18	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	
GOPA-4P32-LW-SC				92	0.78	10	0.27	-20/-29			B	138
												GOPA-4P32-SC
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	-20/-29	B	66		

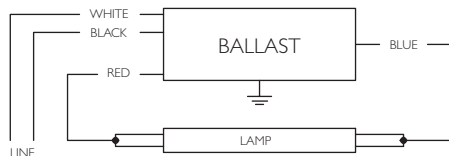
[‡] The above AmbiStar ballasts are normal power factor and labeled 'For Residential Use Only'



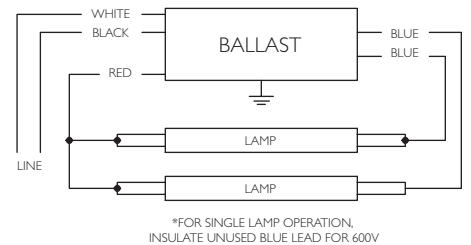
See pages I-3 and I-4 for specific SKU's that meet the NEMA Premium Standard



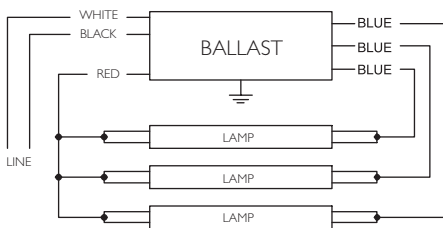
Diag. 39



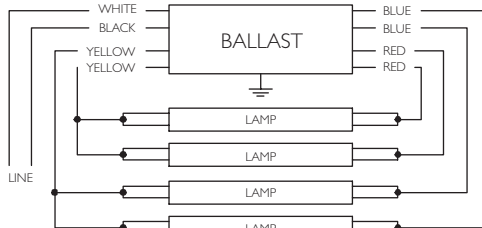
Diag. 63



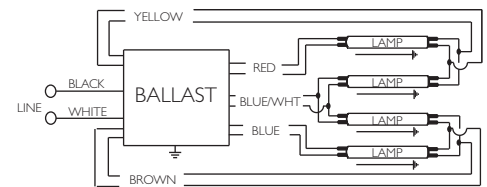
Diag. 64



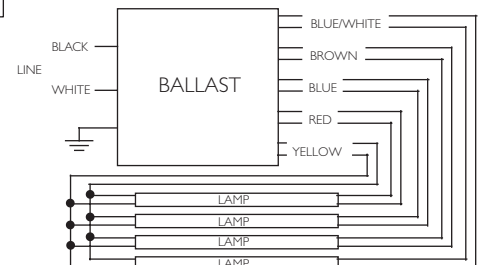
Diag. 65



Diag. 66



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