



## Raising the bar

**Philips Advance Optanium®** high efficiency instant start T8 ballasts have set new standards for maximizing energy savings

Philips Advance Optanium high-efficiency electronic ballasts are engineered to optimize lighting performance and maximize energy savings are now available in a 347V version. These ballasts provide an unparalleled package of features and benefits to support the wide variety of T8 fluorescent lamps in the market place.

These Optanium ballasts for T8 lamps are part of the NEMA Premium® Ballast Program, meet Hydro Quebec and BC Hydro energy efficiency requirements and meet CEE high performance T8 lighting system specifications. All of this makes these ballasts part of an overall high-efficiency lighting system that may help you meet codes you or your customers need to be in compliance.

Optanium ballasts are optimized for a variety of applications. Optanium 347V ballasts are available in both a standard light output design and a low-watt design. These ballasts have cold-starting capability

down to -20°F (with standard lamps). Light output variety and cold starting combine to make them ideal for just about any T8 fixture design and application. Optanium ballasts enable T8 lighting systems to reach their full potential and represent the industry's most comprehensive family of high-efficiency lighting solutions.

### High-efficiency

- Promotes sustainability by consuming less input watts than standard efficiency electronic ballasts

### Striation Reduction Circuitry

- Reduces the potential for lamp striation typically seen when using energy saving lamps

### -20°F Starting Temperature

- Cold starting for a range of indoor and outdoor applications

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ADVANCE**

No. Of Lamps	Input Volts	Lamp Starting Method	Ballast Family	Catalog Number	Input Power ANSI (Watts)	Ballast Factor	Max.TH D %	Line Current (Amps)	Min. Starting Temp. (°F/°C)	Dim.	Wiring Diagram
<b>F17T8 (17W) Normal Ballast Factor</b>											
1	347	IS	Optanium	GOPA-1P32-SC	16	0.93	10	0.06	-20/-29	B	36A
				GOPA-2P32-SC	20	1.07	15	0.06	0 / -18		64
2	347	IS	Optanium	GOPA-2P32-SC	30	0.88	15	0.09	0 / -18	B	64
				GOPA-3P32-SC	34	1.01	15	0.10	-20/-29		65
3	347	IS	Optanium	GOPA-3P32-SC	44	0.92	15	0.13	-20/-29	B	65
				GOPA-4P32-SC	50	1.00	15	0.15	0/-18		71
4	347	IS	Optanium	GOPA-4P32-SC	60	0.93	15	0.17	0/-18	B	71
<b>F17T8 (17W) Low Ballast Factor</b>											
1	347	IS	Optanium	GOPA-1P32-LW-SC	22	0.91	10	0.07	-20/-29	B	63A
				GOPA-2P32-LW-SC	27	1.05	10	0.08	0 / -18		64
2	347	IS	Optanium	GOPA-2P32-LW-SC	44	0.88	10	0.13	0 / -18	B	64
				GOPA-3P32-LW-SC	48	1.01	10	0.14	-20/-29		65
3	347	IS	Optanium	GOPA-3P32-LW-SC	63	0.90	10	0.18	-20/-29	B	65
				GOPA-4P32-LW-SC	70	0.96	10	0.20	0 / -18		71
4	347	IS	Optanium	GOPA-4P32-LW-SC	86	0.91	10	0.25	0 / -18	B	71
<b>F25T8 (25W) Normal Ballast Factor</b>											
1	347	IS	Optanium	GOPA-1P32-SC	22	0.91	10	0.07	-20/-29	B	63A
				GOPA-2P32-SC	27	1.05	10	0.08	0 / -18		64
2	347	IS	Optanium	GOPA-2P32-SC	44	0.88	10	0.13	0 / -18	B	64
				GOPA-3P32-SC	48	1.01	10	0.14	-20/-29		65
3	347	IS	Optanium	GOPA-3P32-SC	63	0.90	10	0.18	-20/-29	B	65
				GOPA-4P32-SC	70	0.96	10	0.20	0/-18		71
4	347	IS	Optanium	GOPA-4P32-SC	86	0.91	10	0.25	0/-18	B	71
<b>F25T8 (25W) Low Ballast Factor</b>											
1	347	IS	Optanium	GOPA-1P32-LW-SC	20	0.80	10	0.07	-20/-29	B	63A
				GOPA-2P32-LW-SC	24	0.88	10	0.08	0 / -18		64
2	347	IS	Optanium	GOPA-2P32-LW-SC	38	0.78	10	0.12	0 / -18	B	64
				GOPA-3P32-LW-SC	42	0.85	10	0.12	-20/-29		65
3	347	IS	Optanium	GOPA-3P32-LW-SC	56	0.77	10	0.16	-20/-29	B	65
				GOPA-4P32-LW-SC	62	0.81	10	0.18	0/-18		71
4	347	IS	Optanium	GOPA-4P32-LW-SC	74	0.79	10	0.22	0/-18	B	71
<b>F32T8 (32W) Normal Ballast Factor</b>											
1	347	IS	Optanium	GOPA-1P32-SC	30	0.88	10	0.09	-20/-29	B	63A
				GOPA-2P32-SC	34	1.03	10	0.10	0 / -18		64
2	347	IS	Optanium	GOPA-2P32-SC	54	0.88	10	0.16	0 / -18	B	64
				GOPA-3P32-SC	63	1.00	10	0.18	-20/-29		65
3	347	IS	Optanium	GOPA-3P32-SC	84	0.88	10	0.24	-20/-29	B	65
				GOPA-4P32-SC	89	0.96	10	0.26	0/-18		71
4	347	IS	Optanium	GOPA-4P32-SC	107	0.88	10	0.31	0/-18	B	71
<b>F32T8 (32W) Low Ballast Factor</b>											
1	347	IS	Optanium	GOPA-1P32-LW-SC	26	0.77	10	0.08	-20/-29	B	63A
				GOPA-2P32-LW-SC	31	0.88	10	0.09	0 / -18		64
2	347	IS	Optanium	GOPA-2P32-LW-SC	48	0.78	10	0.14	0 / -18	B	64
				GOPA-3P32-LW-SC	55	0.86	10	0.16	-20/-29		65
3	347	IS	Optanium	GOPA-3P32-LW-SC	74	0.77	10	0.21	-20/-29	B	65
				GOPA-4P32-LW-SC	77	0.81	10	0.23	0/-18		71
4	347	IS	Optanium	GOPA-4P32-LW-SC	92	0.77	10	0.27	0/-18	B	71
<b>F32T8/ES (25W) Normal Ballast Factor</b>											
1	347	IS	Optanium	GOPA-1P32-SC	27	0.88	10	0.08	60/16	B	63A
				GOPA-2P32-SC	27	1.04	10	0.09			64
2	347	IS	Optanium	GOPA-2P32-SC	44	0.88	10	0.12	60/16	B	64
				GOPA-3P32-SC	48	1.00	10	0.14			65

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 Diagram
3	347	IS	Optanium	GOPA-3P32-SC	64	0.88	10	0.19	60/16	B	65
				GOPA-4P32-SC	74	0.95	10	0.21			71
4	347	IS	Optanium	GOPA-4P32-SC	89	0.88	10	0.26	60/16	B	71
<b>F32T8/ES (25W) Low Ballast Factor</b>											
1	347	IS	Optanium	GOPA-1P32-LW-SC	21	0.77	10	0.06	60/16	B	63A
				GOPA-2P32-LW-SC	25	0.88	10	0.07			64
2	347	IS	Optanium	GOPA-2P32-LW-SC	39	0.78	10	0.12	60/16	B	64
				GOPA-3P32-LW-SC	43	0.86	10	0.13			65
3	347	IS	Optanium	GOPA-3P32-LW-SC	58	0.77	10	0.17	60/16	B	65
				GOPA-4P32-LW-SC	65	0.81	10	0.19			71
4	347	IS	Optanium	GOPA-4P32-LW-SC	78	0.78	10	0.22	60/16	B	71
<b>F32T8/ES (28W) Normal Ballast Factor</b>											
1	347	IS	Optanium	GOPA-1P32-SC	25	0.88	10	0.07	60/16	B	63A
				GOPA-2P32-SC	29	1.04	10	0.09			64
2	347	IS	Optanium	GOPA-2P32-SC	47	0.88	10	0.14	60/16	B	64
				GOPA-3P32-SC	52	1.00	10	0.16			65
3	347	IS	Optanium	GOPA-3P32-SC	70	0.88	10	0.20	60/16	B	65
				GOPA-4P32-SC	79	0.97	10	0.23			71
4	347	IS	Optanium	GOPA-4P32-SC	96	0.88	10	0.28	60/16	B	71
<b>F32T8/ES (28W) Low Ballast Factor</b>											
1	347	IS	Optanium	GOPA-1P32-LW-SC	22	0.77	10	0.07	60/16	B	63A
				GOPA-2P32-LW-SC	26	0.88	10	0.08			64
2	347	IS	Optanium	GOPA-2P32-LW-SC	42	0.78	10	0.12	60/16	B	64
				GOPA-3P32-LW-SC	46	0.77	10	0.13			65
3	347	IS	Optanium	GOPA-3P32-LW-SC	62	0.77	10	0.18	60/16	B	65
				GOPA-4P32-LW-SC	70	0.81	10	0.20			71
4	347	IS	Optanium	GOPA-4P32-LW-SC	84	0.78	10	0.24	60/16	B	71
<b>F32T8/ES (30W) Normal Ballast Factor</b>											
1	347	IS	Optanium	GOPA-1P32-SC	23	0.88	10	0.06	60/16	B	63A
				GOPA-2P32-SC	32	1.04	10	0.10			64
2	347	IS	Optanium	GOPA-2P32-SC	51	0.88	10	0.15	60/16	B	64
				GOPA-3P32-SC	57	1.00	10	0.17			65
3	347	IS	Optanium	GOPA-3P32-SC	76	0.88	10	0.22	60/16	B	65
				GOPA-4P32-SC	84	0.95	10	0.25			71
4	347	IS	Optanium	GOPA-4P32-SC	102	0.88	10	0.30	60/16	B	71
<b>F32T8/ES (30W) Low Ballast Factor</b>											
1	347	IS	Optanium	GOPA-1P32-LW-SC	24	0.77	10	0.07	60/16	B	63A
				GOPA-2P32-LW-SC	28	0.88	10	0.08			64
2	347	IS	Optanium	GOPA-2P32-LW-SC	46	0.78	10	0.13	60/16	B	64
				GOPA-3P32-LW-SC	50	0.86	10	0.15			65
3	347	IS	Optanium	GOPA-3P32-LW-SC	67	0.77	10	0.19	60/16	B	65
				GOPA-4P32-LW-SC	74	0.81	10	0.22			71
4	347	IS	Optanium	GOPA-4P32-LW-SC	89	0.78	10	0.26	60/16	B	71
<b>F40T8 Normal Ballast Factor</b>											
1	347	IS	Optanium	GOPA-2P32-SC	42	1.02	10	0.12	32/00	B	64
2	347	IS	Optanium	GOPA-3P32-SC	75	1.00	10	0.22	32/00	B	65
3	347	IS	Optanium	GOPA-3P32-SC	113	0.93	10	0.28	32/00	B	71
<b>F40T8 Low Ballast Factor</b>											
1	347	IS	Optanium	GOPA-2P32-SC	37	0.86	10	0.11	32/00	B	64
2	347	IS	Optanium	GOPA-3P32-SC	65	0.85	10	0.19	32/00	B	65
3	347	IS	Optanium	GOPA-4P32-SC	97	0.84	10	0.28	32/00	B	71

## Ballast Specifications:

### Section I - Physical Characteristics

- 1.1 Ballast shall be physically interchangeable with standard magnetic or standard electronic ballasts, where applicable.
- 1.2 Ballast shall be provided with integral leads color-coded per ANSI C82.11.

### Section II - Performance Requirements

- 2.1 Ballast shall be Instant Start.
- 2.2 Ballast shall provide Independent Lamp Operation (ILO) for Instant Start ballasts allowing remaining lamp(s) to maintain full light output when one or more lamps fail.
- 2.3 Ballast shall contain auto restart circuitry in order to restart lamps without resetting power.
- 2.4 Ballast shall operate from 60 Hz input source of 347V as applicable with sustained variations of +/- 10% (voltage and frequency).
- 2.5 Ballast shall be high frequency electronic type and operate lamps at a frequency between 42kHz and 52kHz to avoid interference with infrared devices, eliminate visible flicker and avoid Article Surveillance System, such as anti-theft devices.
- 2.6 Ballast shall have a Power Factor greater than 0.98 for primary lamp.
- 2.7 Ballast shall have a minimum ballast factor for primary lamp application as follows: 0.77 for Low Watt and 0.88 for Normal Light Output.
- 2.8 Ballast shall provide for a Lamp Current Crest Factor of 1.7 or less in accordance with lamp manufacturer recommendations.
- 2.9 Ballast input current shall have Total Harmonic Distortion (THD) of less than 10% when operated at nominal line voltage with primary lamp.
- 2.10 Ballast shall have a Class A sound rating for all 4-foot lamps and smaller.
- 2.11 Ballast shall have a minimum starting temperature of 0F (-20°C) for standard lamps and 60F (16°C) for energy-saving T8 lamps.
- 2.12 Ballast shall tolerate sustained open circuit and short circuit output conditions.
- 2.13 Ballast shall have lamp striation-reduction circuitry.

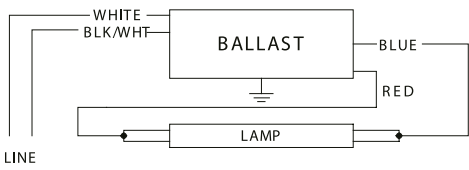
### Section III - Regulatory Requirements

- 3.1 Ballast shall not contain any Polychlorinated Biphenyl (PCB).
- 3.2 Ballast shall be Underwriters Laboratories (UL) listed, Class P and Type I Outdoor; and Canadian Standards Association (CSA) certified where applicable.
- 3.3 Ballast shall comply with ANSI C62.41 Category A for Transient protection.
- 3.4 Ballast shall comply with ANSI C82.11 where applicable.
- 3.5 Ballast shall comply with the requirements of the Federal Communications Commission (FCC) rules and regulations, Title 47 CFR part 18, Non-Consumer (Class A) for EMI/RFI (conducted and radiated).
- 3.6 Ballast shall meet NEMA/CEE High Performance T8 Lighting System Specifications.

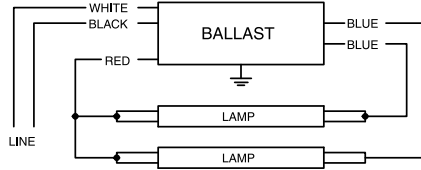
### Section IV - Other

- 4.1 Ballast shall be manufactured in a factory certified to ISO 9002 Quality System Standards.
- 4.2 Ballast shall carry a \_\_\_ limited warranty from date of manufacture against defects in material or workmanship. This warranty is conditioned upon operation at a maximum case temperature of \_\_\_\_\_, among other items. (Go to our website for up-to-date warranty information, [www.philips.com/advancewarranty](http://www.philips.com/advancewarranty)).
- 4.3 Manufacturer shall have a twenty-year history of producing electronic ballasts for the North American market.
- 4.4 Ballast shall be Philips Advance part # \_\_\_\_\_ or approved equal.

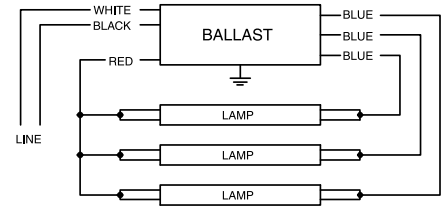
## Wiring diagrams and Dimensions



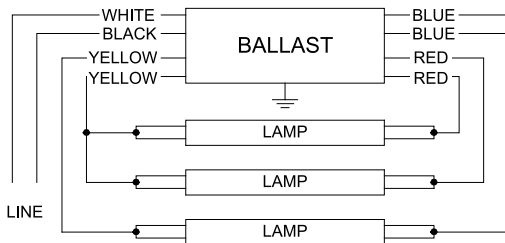
Diag. 63A



Diag. 64

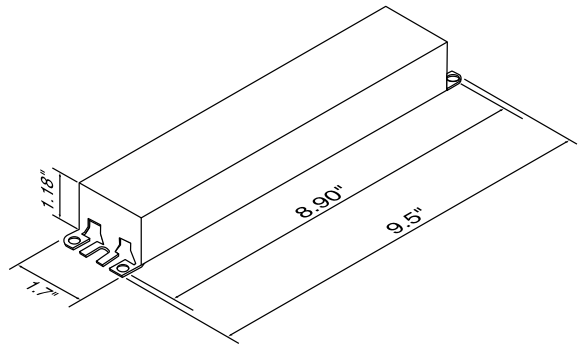


Diag. 65



Diag. 71

Insulate unused blue lead for 1000V



## Setting industry standards for ballast efficiency

As charter product in the NEMA Premium<sup>®</sup> 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,



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



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