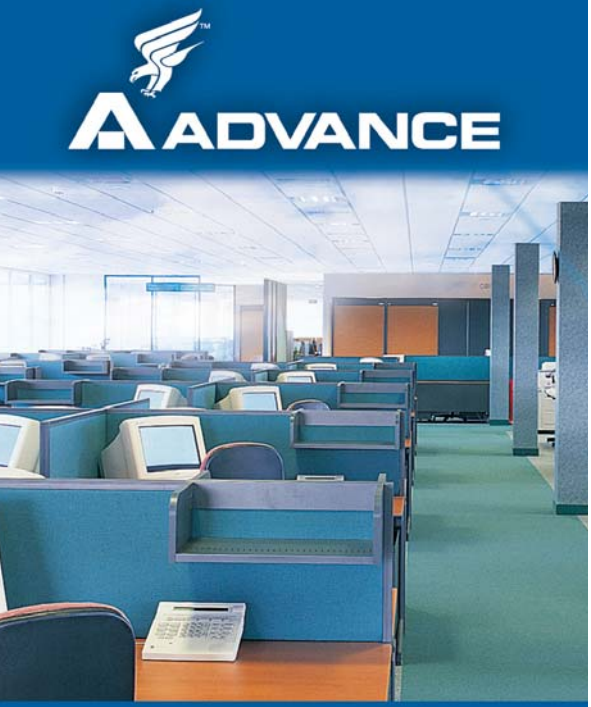

ELECTRONIC FLUORESCENT

Optanium®

High Efficiency IntelliVolt® Programmed Start Ballasts for High Efficiency T8 Lamps

NEMA Premium

PRODUCT OVERVIEW:

Introducing **Optanium**, built on the True Performance Technology℠ Platform.

The demand for more energy savings continues to rise. And, at the same time, all those involved in the design, specification and installation of T8 lighting must address specific application challenges. As these needs come together, a new approach is required. This approach redefines "T8 system" and means more than the lamp-ballast-fixture combination. The term "approach" is changed to platform and considers fixture design, installation, maintenance, application nuances and evolving lamp technology.

Advance engineers took all factors into account when designing the **Optanium** offering with True Performance Technology (or TPT). More than a high efficiency ballast, **Optanium** enables the most advanced T8 Lighting Systems, realizing the potential energy savings of all T8 lamps, wherever they're used.

High-efficiency Programmed Start **Optanium** ballasts are available to meet specific needs in two versions - a standard light output design (0.88 Ballast Factor) and a low-watt design (0.71 Ballast Factor). All have cold-start capability down to 0°F and a low-profile design optimized for today's fixture designs. The ballast also meets the new NEMA/CEE high performance T8 lighting system specifications.

The ballast's programmed start ignition lamp provides extended lamp life in frequent switching applications and supports the frequent lamp on/off cycles associate with the use of occupancy sensors or motion detectors.

DESIGN HIGHLIGHTS:

- Hi-efficiency
  - ❍ Ballast consumes less input watts than a standard efficiency electronic ballast
- Programmed Start lamp ignition
  - ❍ Suitable for ON/OFF cycling applications
- UL Type CC Rated
  - ❍ Meets UL criteria for arcing protection
- IntelliVolt® technology (108-305V, 50/60Hz)
  - ❍ Ensures shipment of correct voltage ballast or fixture for all applications
- Low-profile, lightweight housing
  - ❍ Physically interchangeable with standard electromagnetic and electronic ballasts
  - ❍ Facilitates shipping, handling and installation
  - ❍ Provides flexibility in new generation fixture designs
- Semi-Independent lamp operation
  - ❍ Ensures that partial light from a fixture remains when a lamp burns out
- Striation Reduction circuitry
  - ❍ Reduces potential for lamp striation typically seen in energy saving lamps.
- Operates between 40 kHz and 52 kHz
  - ❍ Eliminates interference with Infrared Control Systems or commonly used Electronic Article Surveillance (EAS) systems
- 0°F starting capability
  - ❍ Suitable for cold temperature situations using standard F32T8 lamps
- <10 THD, >0.98 PF
  - ❍ Meets most demanding power quality requirements
  - ❍ Perfect for applications where harmonics are a concern
- Lamp EOL protection circuit
  - ❍ Safely removes power from the lamp at end-of-life
- Operates standard F32T8, F25T8, F17T8, F40T8 and F32T8/ES energy saving lamps
  - ❍ Provides maximum versatility

Note: 1. All standard models may experience lamp striations when operating with 25W, 28W, or 30W energy saving T8 lamps. The use of the Optanium (IOP) models is recommended to reduce lamp striation.
2. Only the Optanium (IOP) models are suitable for tandem-wiring applications operating 25W, 28W or 30W energy saving T8 lamps.

APPLICATIONS:

- ***General Lighting***
- ***Retail Lighting***
- ***Decorative Lighting***
- ***Indirect Lighting***

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Lamp Data		Min. Starting Temp. (°F/°C)	Input Volts	Catalog Number	Line Current (Amps)	Input Power ANSI (Watts)	Ballast Factor	Max THD % (Measured)	Min Power Factor (Measured)
Number	Watts								
F17T8 (17W)									
1	17	0/-18	120	IOP-2S32-SC	0.14	17	0.97	15	0.99
			230		0.08	17	0.97	15	0.96
			277		0.07	17	0.97	15	0.93
2	17	0/-18	120	IOP-2S32-SC	0.24	29	0.90	10	0.99
			230		0.13	29	0.90	10	0.98
			277		0.11	29	0.90	15	0.96
3	17	0/-18	120	IOP-3S32-SC	0.36	43	0.89	10	0.99
			230		0.19	43	0.89	10	0.97
			277		0.16	43	0.89	15	0.96
4	17	0/-18	120	IOP-4S32-SC	0.47	57	0.89	10	0.99
			230		0.25	56	0.89	10	0.98
			277		0.21	56	0.89	15	0.96
F25T8(25W)									
1	25	0/-18	120	IOP-2S32-SC	0.19	23	0.90	15	0.99
			230		0.10	23	0.90	15	0.98
			277		0.09	23	0.90	15	0.94
2	25	0/-18	120	IOP-2S32-SC	0.36	43	0.89	10	0.99
			230		0.19	43	0.89	10	0.99
			277		0.16	43	0.89	10	0.98
3	25	0/-18	120	IOP-3S32-SC	0.53	64	0.88	10	0.99
			230		0.28	63	0.88	10	0.98
			277		0.23	63	0.88	15	0.97
4	25	0/-18	120	IOP-4S32-SC	0.71	84	0.88	10	0.99
			230		0.37	83	0.88	10	0.99
			277		0.31	82	0.88	10	0.97
F32T8, FBO32T8, F32T8/U6									
1	32	0/-18	120	IOP-2S32-SC	0.24	29	0.90	10	0.99
			230		0.13	29	0.90	15	0.98
			277		0.11	29	0.90	15	0.96
2	32	0/-18	120	IOP-2S32-SC	0.47	56	0.88	10	0.99
			230		0.24	55	0.88	10	0.99
			277		0.20	55	0.88	10	0.98
3	32	0/-18	120	IOP-3S32-SC	0.70	83	0.88	10	0.99
			230		0.36	82	0.88	10	0.99
			277		0.30	81	0.88	10	0.98
4	32	0/-18	120	IOP-4S32-SC	0.92	110	0.88	10	0.99
			230		0.47	108	0.88	10	0.99
			277		0.40	108	0.88	10	0.98

Note: See back page for wiring diagram and can dimensions

NEMA Premium

Lamp Data		Min. Starting Temp. (°F/°C)	Input Volts	Catalog Number	Line Current (Amps)	Input Power ANSI (Watts)	Ballast Factor	Max THD % (Measured)	Min Power Factor (Measured)
Number	Watts								
Philips F32T8 (25W)									
1	25	60/15	120	IOP-2S32-SC	0.20	24	0.89	10	0.99
			230		0.11	24	0.89	10	0.98
			277		0.90	24	0.89	15	0.96
2	25	60/15	120	IOP-2S32-SC	0.38	45	0.88	10	0.99
			230		0.19	44	0.88	10	0.99
			277		0.16	44	0.88	10	0.98
3	25	60/15	120	IOP-3S32-SC	0.56	67	0.89	10	0.99
			230		0.29	66	0.89	10	0.98
			277		0.25	66	0.89	10	0.97
4	25	60/15	120	IOP-4S32-SC	0.73	87	0.89	10	0.99
			230		0.39	87	0.89	10	0.99
			277		0.33	87	0.89	10	0.97
F32T8/ES (28W) XP F028/835/XP									
1	28	60/15	120	IOP-2S32-SC	0.21	26	0.88	10	0.99
			230		0.11	26	0.88	10	0.99
			277		0.97	26	0.88	15	0.96
2	28	60/15	120	IOP-2S32-SC	0.41	49	0.88	10	0.99
			230		0.21	48	0.88	10	0.99
			277		0.18	48	0.88	10	0.98
3	28	60/15	120	IOP-3S32-SC	0.60	72	0.89	10	0.99
			230		0.31	71	0.89	10	0.99
			277		0.26	71	0.89	10	0.97
4	28	60/15	120	IOP-4S32-SC	0.82	97	0.88	10	0.99
			230		0.42	96	0.88	10	0.99
			277		0.35	96	0.88	10	0.98
F32T8/ES (30W)									
1	30	60/15	120	IOP-2S32-SC	0.23	27	0.90	10	0.99
			230		0.12	27	0.90	15	0.98
			277		0.10	27	0.90	15	0.96
2	30	60/15	120	IOP-2S32-SC	0.44	52	0.88	10	0.99
			230		0.23	52	0.88	10	0.99
			277		0.19	52	0.88	10	0.98
3	30	60/15	120	IOP-3S32-SC	0.64	77	0.88	10	0.99
			230		0.33	76	0.88	10	0.99
			277		0.28	76	0.88	10	0.98
4	30	60/15	120	IOP-4S32-SC	0.86	102	0.88	10	0.99
			230		0.44	100	0.88	10	0.99
			277		0.37	100	0.88	10	0.98
F40T8									
1	40	0/-18	120	IOP-2S32-SC	0.30	36	0.90	10	0.99
			230		0.16	36	0.90	10	0.98
			277		0.13	36	0.90	10	0.97

Note: See back page for wiring diagram and can dimensions

NEMA Premium

Lamp Data		Min. Starting Temp. (°F/°C)	Input Volts	Catalog Number	Line Current (Amps)	Input Power ANSI (Watts)	Ballast Factor	Max THD % (Measured)	Min Power Factor (Measured)
Number	Watts								
F17T8 (17W)									
1	17	0/-18	120	IOP-2S32-LW-SC	0.12	15	0.78	15	0.99
			230		0.07	15	0.78	15	0.95
			277		0.06	15	0.78	15	0.95
2	17	0/-18	120	IOP-2S32-LW-SC	0.21	25	0.73	10	0.99
			230		0.11	25	0.73	10	0.99
			277		0.09	25	0.73	10	0.98
3	17	0/-18	120	IOP-3S32-LW-SC	0.31	37	0.72	10	0.99
			230		0.16	37	0.72	10	0.98
			277		0.14	37	0.72	10	0.97
4	17	0/-18	120	IOP-4S32-LW-SC	0.40	48	0.72	10	0.99
			230		0.21	47	0.72	10	0.98
			277		0.18	47	0.72	10	0.96
F25T8(25W)									
1	25	0/-18	120	IOP-2S32-LW-SC	0.17	20	0.73	10	0.99
			230		0.09	20	0.73	15	0.98
			277		0.08	20	0.73	15	0.98
2	25	0/-18	120	IOP-2S32-LW-SC	0.30	36	0.71	10	0.99
			230		0.16	36	0.71	10	0.98
			277		0.13	36	0.71	10	0.98
3	25	0/-18	120	IOP-3S32-LW-SC	0.45	54	0.71	10	0.99
			230		0.23	53	0.71	10	0.99
			277		0.20	53	0.71	10	0.98
4	25	0/-18	120	IOP-4S32-LW-SC	0.58	69	0.72	10	0.99
			230		0.30	68	0.72	10	0.99
			277		0.25	68	0.72	10	0.97
F32T8, FBO32T8, F32T8/U6									
1	32	0/-18	120	IOP-2S32-LW-SC	0.20	25	0.73	10	0.99
			230		0.11	25	0.73	10	0.96
			277		0.09	25	0.73	10	0.96
2	32	0/-18	120	IOP-2S32-LW-SC	0.38	47	0.71	10	0.99
			230		0.20	46	0.71	10	0.98
			277		0.17	46	0.71	10	0.98
3	32	0/-18	120	IOP-3S32-LW-SC	0.59	71	0.71	10	0.99
			230		0.31	70	0.71	10	0.99
			277		0.26	70	0.71	10	0.98
4	32	0/-18	120	IOP-4S32-LW-SC	0.77	93	0.71	10	0.99
			230		0.40	91	0.71	10	0.99
			277		0.33	91	0.71	10	0.98

Note: See back page for wiring diagram and can dimensions

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Lamp Data		Min. Starting Temp. (°F/°C)	Input Volts	Catalog Number	Line Current (Amps)	Input Power ANSI (Watts)	Ballast Factor	Max THD % (Measured)	Min Power Factor (Measured)
Number	Watts								
Philips F32T8 (25W)									
1	25	60/15	120	IOP-2S32-LW-SC	0.17	21	0.73	10	0.99
			230		0.09	21	0.73	10	0.98
			277		0.08	21	0.73	10	0.98
2	25	60/15	120	IOP-2S32-LW-SC	0.32	39	0.71	10	0.99
			230		0.17	38	0.71	10	0.98
			277		0.14	38	0.71	10	0.98
3	25	60/15	120	IOP-3S32-LW-SC	0.48	57	0.71	10	0.99
			230		0.25	56	0.71	10	0.99
			277		0.21	56	0.71	10	0.98
4	25	60/15	120	IOP-4S32-LW-SC	0.62	74	0.71	10	0.99
			230		0.32	73	0.71	10	0.99
			277		0.27	73	0.71	10	0.97
F32T8/ES (28W) XP F028/835/XP									
1	28	60/15	120	IOP-2S32-LW-SC	0.18	22	0.73	10	0.99
			230		0.10	22	0.73	10	0.95
			277		0.08	22	0.73	10	0.95
2	28	60/15	120	IOP-2S32-LW-SC	0.34	41	0.71	10	0.99
			230		0.18	40	0.71	10	0.97
			277		0.15	40	0.71	10	0.97
3	28	60/15	120	IOP-3S32-LW-SC	0.51	62	0.71	10	0.99
			230		0.27	61	0.71	10	0.99
			277		0.22	61	0.71	10	0.98
4	28	60/15	120	IOP-4S32-LW-SC	0.67	80	0.71	10	0.99
			230		0.35	79	0.71	10	0.99
			277		0.29	79	0.71	10	0.98
F32T8/ES (30W)									
1	30	60/15	120	IOP-2S32-LW-SC	0.20	24	0.73	10	0.99
			230		0.10	23	0.73	10	0.96
			277		0.09	23	0.73	10	0.96
2	30	60/15	120	IOP-2S32-LW-SC	0.36	44	0.71	10	0.99
			230		0.19	43	0.71	10	0.98
			277		0.16	43	0.71	10	0.98
3	30	60/15	120	IOP-3S32-LW-SC	0.55	66	0.71	10	0.99
			230		0.28	65	0.71	10	0.99
			277		0.24	65	0.71	10	0.98
4	30	60/15	120	IOP-4S32-LW-SC	0.71	86	0.71	10	0.99
			230		0.37	84	0.71	10	0.99
			277		0.31	84	0.71	10	0.98
F40T8									
1	40	0/-18	120	IOP-2S32-LW-SC	0.26	31	0.73	10	0.99
			230		0.13	30	0.73	10	0.97
			277		0.11	30	0.73	10	0.97

Note: See back page for wiring diagram and can dimensions

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Ballast Specifications

Section I - Physical Characteristics

1.1 The electronic ballast shall be physically interchangeable with standard electromagnetic and standard electronic ballasts.

1.2 The electronic ballast shall be furnished with integral leads, color-coded to ANSI C82.11.

Section II - Performance Requirements

2.1 Ballast shall be Programmed Start.

2.2 Programmed Start ballast shall provide semi-independent lamp operation.

2.3 Ballast shall operate from 50/60 Hz input source of 120V through 277V with sustained variations of +/-10% (voltage and frequency) with no damage to the ballast.

2.4 Ballast shall be high frequency electronic type and operate at a frequency above 42 kHz through 52 kHz to minimize interference with infrared control systems and eliminate visible flicker.

2.5 Ballast shall have a Power Factor greater than 0.98 for primary lamp.

2.6 Ballast shall have a minimum ballast factor for primary lamp application as follows: 0.71 for Low Watt and 0.88 for Normal Light Output, and 1.18 for High Light.

2.7 Ballast shall provide for a Lamp Current Crest Factor of 1.7 or less in accordance with lamp manufacturer recommendations.

2.8 Ballast input current shall have Total Harmonic Distortion (THD) of less than 10% when operated at nominal line voltage with primary lamp.

2.9 Ballast shall have a Class A sound rating for all 4-foot lamps and smaller.

2.10 Ballast shall have a minimum starting temperature of 0°F (-18°C) for standard T8 lamps and 60°F (16°C) for energy-savings T8 lamps.

2.11 Ballast shall tolerate sustained open circuit and short circuit output conditions without damage.

2.12 Ballast shall contain an anti-striation circuitry to prevent striation on energy-savings lamps.

2.13 Programmed Start ballast shall provide lamp EOL Protection Circuitry

2.14 2-lamp programmed start (normal & LW) - Tandem wiring allowed to a maximum of 20ft. between ballast and lamp holder for standard lamps and 10ft. between ballast and lamp holder for energy savings lamps.
3 & 4-lamp programmed start normal light - Tandem wiring allowed to a maximum of 20ft. between ballast and lamp holder for standard lamps and 10ft. between ballast and lamp holder for energy savings lamps. RED and YELLOW must be in the same fixture as the ballast.
3 & 4-lamp programmed start LW - Tandem wiring allowed to a maximum of 10ft. between ballast and lamp for standard and energy saving lamps. RED and YELLOW must be in the same fixture as the ballast.

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 1 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 win 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 comply with UL Type CC rating.

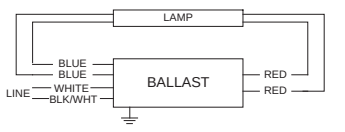
3.7 Ballast shall meet NEMA/CEE high performance T8 lighting system specification.

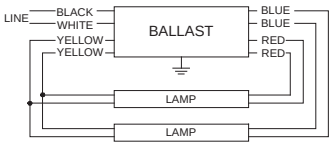
Section IV - Other

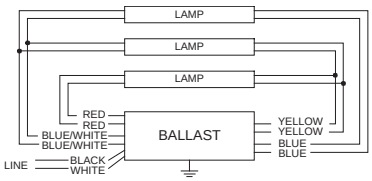
4.1 The electronic ballast shall be produced in a factory certified to ISO 9001:2000 Quality System Standards.

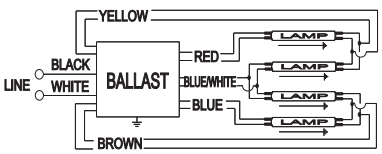
4.2 The electronic ballast shall carry a five-year warranty from the date of manufacture against defects in material or workmanship, including replacement for operation at a maximum case temperature of 70°C. Ballasts with a 90°C designation in their catalog number shall also carry a three-year warranty at a maximum case temperature of 90°C.

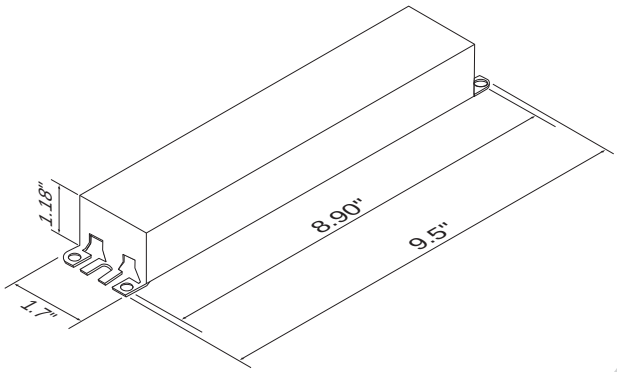
4.3 The manufacturer shall have a fifteen-year history of producing electronic ballasts for the North American market.











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NEMA Premium

As a Licensee in the NEMA Premium® Electronic Ballast Program, Advance has determined that this product meets the NEMA Premium Efficiency specifications for premium energy efficiency.

Form No. EL-2152-R09 1/08