

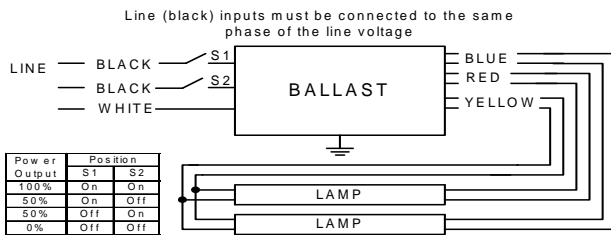


Electrical Specifications

IOP-2S32-SC-SD@120	
Brand Name	STEP-DIM
Ballast Type	Electronic Dimming
Starting Method	Programmed Start
Lamp Connection	Series
Input Voltage	120-277
Input Frequency	50/60 HZ
Status	Active

Lamp Type	Num. of Lamps	Rated Lamp Watts	Min. Start Temp (°F/°C)	Input Current (Amps)	Input Power (Watts)	Ballast Factor	MAX THD %	Power Factor	Lamp Current Crest Factor	B.E.F.
F17T8	1	17	0/-18	0.13	15	0.88	10	0.99	1.7	5.87
F17T8	2	17	0/-18	0.24	29	0.88	10	0.99	1.7	3.03
F25T8	1	25	0/-18	0.18	22	0.88	10	0.99	1.7	4.00
F25T8	2	25	0/-18	0.34	40	0.88	10	0.99	1.7	2.20
F32T8/ES (25W)	2	25	60/16	0.38	45	0.88	10	0.99	1.7	1.96
F32T8/ES 28W @100%	2	28	60/16	0.40	48	0.88	10	0.99	1.7	1.83
F32T8/ES 28W @50%	2	28	60/16	0.20	24	0.28	10	0.99	1.7	1.17
F32T8@100%	1	32	0/-18	0.24	29	0.87	10	0.99	1.7	3.00
* F32T8@100%	2	32	0/-18	0.47	56	0.87	10	0.99	1.7	1.55
F32T8@50%	1	32	0/-18	0.11	13	0.28	10	0.99	1.7	2.15
F32T8@50%	2	32	0/-18	0.21	25	0.28	10	0.99	1.7	1.12

Wiring Diagram



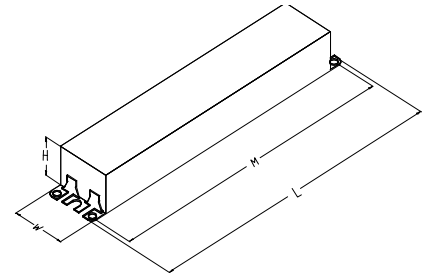
Diag. 173A

The wiring diagram that appears above is for the lamp type denoted by the asterisk (*)

Standard Lead Length (inches)

	in.	cm.		in.	cm.
Black	25	63.5	Yellow/Blue		0
White	25	63.5	Blue/White		0
Blue	33	83.8	Brown		0
Red	33	83.8	Orange		0
Yellow	48	121.9	Orange/Black		0
Gray		0	Black/White		0
Violet		0	Red/White		0

Enclosure



Enclosure Dimensions

OverAll (L)	Width (W)	Height (H)	Mounting (M)
9.50 "	1.7 "	1.18 "	8.90 "
24.1 cm	4.3 cm	3 cm	22.6 cm



Revised 01/16/13

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ADVANCE TRANSFORMER CO.

O'HARE INTERNATIONAL CENTER · 10275 WEST HIGGINS ROAD · ROSEMONT, IL 60018

Customer Support/Technical Service: Phone: 800-372-3331 · Fax: 847-768-7768

Corporate Offices: Phone: 800-322-2086



Electrical Specifications

IOP-2S32-SC-SD@120	
Brand Name	STEP-DIM
Ballast Type	Electronic Dimming
Starting Method	Programmed Start
Lamp Connection	Series
Input Voltage	120-277
Input Frequency	50/60 HZ
Status	Active

Notes:

Section I - Physical Characteristics

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

Section II - Performance

- 2.1 Ballast shall be Programmed Start.
- 2.2 Ballast shall contain auto restart circuitry in order to restart lamps without resetting power.
- 2.3 Ballast shall operate from 50/60 Hz input source of 120V through 277V with sustained variations of +/- 10% (voltage and frequency).
- 2.4 Ballast shall be high frequency electronic type and operate lamps at a frequency above 42 kHz to avoid interference with infrared devices and eliminate visible flicker.
- 2.5 Ballast shall have a Power Factor greater than 0.98 at 100% power and greater than 0.90 at 50% power for primary lamp.
- 2.6 Ballast shall have a ballast factor of 0.87 for primary T8 lamps or a ballast factor of 0.95 or 1.15 for primary T5HE lamps at full light output.
- 2.7 Ballast shall provide for a Lamp Current Crest Factor of 1.7 or less.
- 2.8 Ballast input current shall have Total Harmonic Distortion (THD) of less than 10% when operated at nominal line and 100% power.
- 2.9 Ballast shall have a Class A sound rating.
- 2.10 Ballast shall have a minimum starting temperature of 0C (32F) for standard T5HE lamps or -18C (0F) for standard T8 lamps and 16C (60F) for energy-saving T8 lamps. Consult lamp manufacturer for temperature versus light output characteristics.
- 2.11 Ballast shall tolerate sustained open circuit and short circuit output conditions.
- 2.12 Ballast shall provide Lamp EOL Protection Circuit for T5 lamps.
- 2.13 Ballast shall control light output in two steps: 100% power and 50% power. Control shall be any device that switches the line voltage input. Both line voltage inputs must be on the same phase.
- 2.14 Ballast shall ignite the lamps at any light output setting without first going to another output setting.

Section III - Regulatory

- 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 with ANSI C82.11 where applicable.
- 3.5 Ballast shall comply with applicable requirements of the Federal Communications Commission (FCC) rules and regulations, Title 47 CFR part 18, for Non-Consumer equipment.
- 3.6 Ballast shall comply with UL Type CC rating.
- 3.7 Ballast shall comply with NEMA 410 for in-rush current limits.

Section IV - Other

- 4.1 Ballast shall be manufactured in a factory certified to ISO 9001 Quality System Standards.
- 4.2 Ballast shall carry a five-year warranty from date of manufacture against defects in material or workmanship, including replacement, for operation at a maximum case temperature of 70C.
- 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.



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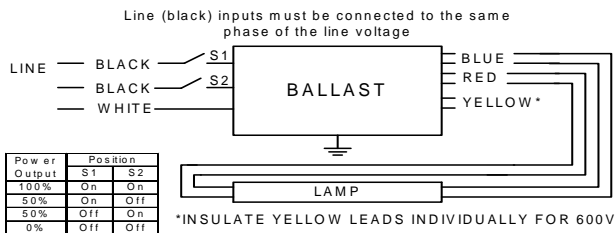


Electrical Specifications

IOP-2S32-SC-SD@120	
Brand Name	STEP-DIM
Ballast Type	Electronic Dimming
Starting Method	Programmed Start
Lamp Connection	Series
Input Voltage	120-277
Input Frequency	50/60 HZ
Status	Active

Lamp Type	Num. of Lamps	Rated Lamp Watts	Min. Start Temp (°F/°C)	Input Current (Amps)	Input Power (Watts)	Ballast Factor	MAX THD %	Power Factor	Lamp Current Crest Factor	B.E.F.
F17T8	1	17	0/-18	0.13	15	0.88	10	0.99	1.7	5.87
F17T8	2	17	0/-18	0.24	29	0.88	10	0.99	1.7	3.03
F25T8	1	25	0/-18	0.18	22	0.88	10	0.99	1.7	4.00
F25T8	2	25	0/-18	0.34	40	0.88	10	0.99	1.7	2.20
F32T8/ES (25W)	2	25	60/16	0.38	45	0.88	10	0.99	1.7	1.96
F32T8/ES 28W @100%	2	28	60/16	0.40	48	0.88	10	0.99	1.7	1.83
F32T8/ES 28W @50%	2	28	60/16	0.20	24	0.28	10	0.99	1.7	1.17
F32T8@100%	1	32	0/-18	0.24	29	0.87	10	0.99	1.7	3.00
F32T8@100%	2	32	0/-18	0.47	56	0.87	10	0.99	1.7	1.55
* F32T8@50%	1	32	0/-18	0.11	13	0.28	10	0.99	1.7	2.15
F32T8@50%	2	32	0/-18	0.21	25	0.28	10	0.99	1.7	1.12

Wiring Diagram



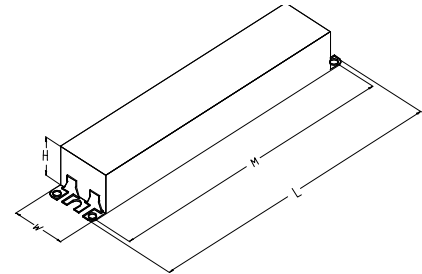
Diag. 170A

The wiring diagram that appears above is for the lamp type denoted by the asterisk (*)

Standard Lead Length (inches)

	in.	cm.		in.	cm.
Black	25	63.5	Yellow/Blue		0
White	25	63.5	Blue/White		0
Blue	33	83.8	Brown		0
Red	33	83.8	Orange		0
Yellow	48	121.9	Orange/Black		0
Gray		0	Black/White		0
Violet		0	Red/White		0

Enclosure



Enclosure Dimensions

OverAll (L)	Width (W)	Height (H)	Mounting (M)
9.50 "	1.7 "	1.18 "	8.90 "
24.1 cm	4.3 cm	3 cm	22.6 cm



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Electrical Specifications

IOP-2S32-SC-SD@120	
Brand Name	STEP-DIM
Ballast Type	Electronic Dimming
Starting Method	Programmed Start
Lamp Connection	Series
Input Voltage	120-277
Input Frequency	50/60 HZ
Status	Active

Notes:

Section I - Physical Characteristics

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

Section II - Performance

- 2.1 Ballast shall be Programmed Start.
- 2.2 Ballast shall contain auto restart circuitry in order to restart lamps without resetting power.
- 2.3 Ballast shall operate from 50/60 Hz input source of 120V through 277V with sustained variations of +/- 10% (voltage and frequency).
- 2.4 Ballast shall be high frequency electronic type and operate lamps at a frequency above 42 kHz to avoid interference with infrared devices and eliminate visible flicker.
- 2.5 Ballast shall have a Power Factor greater than 0.98 at 100% power and greater than 0.90 at 50% power for primary lamp.
- 2.6 Ballast shall have a ballast factor of 0.87 for primary T8 lamps or a ballast factor of 0.95 or 1.15 for primary T5HE lamps at full light output.
- 2.7 Ballast shall provide for a Lamp Current Crest Factor of 1.7 or less.
- 2.8 Ballast input current shall have Total Harmonic Distortion (THD) of less than 10% when operated at nominal line and 100% power.
- 2.9 Ballast shall have a Class A sound rating.
- 2.10 Ballast shall have a minimum starting temperature of 0C (32F) for standard T5HE lamps or -18C (0F) for standard T8 lamps and 16C (60F) for energy-saving T8 lamps. Consult lamp manufacturer for temperature versus light output characteristics.
- 2.11 Ballast shall tolerate sustained open circuit and short circuit output conditions.
- 2.12 Ballast shall provide Lamp EOL Protection Circuit for T5 lamps.
- 2.13 Ballast shall control light output in two steps: 100% power and 50% power. Control shall be any device that switches the line voltage input. Both line voltage inputs must be on the same phase.
- 2.14 Ballast shall ignite the lamps at any light output setting without first going to another output setting.

Section III - Regulatory

- 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 with ANSI C82.11 where applicable.
- 3.5 Ballast shall comply with applicable requirements of the Federal Communications Commission (FCC) rules and regulations, Title 47 CFR part 18, for Non-Consumer equipment.
- 3.6 Ballast shall comply with UL Type CC rating.
- 3.7 Ballast shall comply with NEMA 410 for in-rush current limits.

Section IV - Other

- 4.1 Ballast shall be manufactured in a factory certified to ISO 9001 Quality System Standards.
- 4.2 Ballast shall carry a five-year warranty from date of manufacture against defects in material or workmanship, including replacement, for operation at a maximum case temperature of 70C.
- 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.



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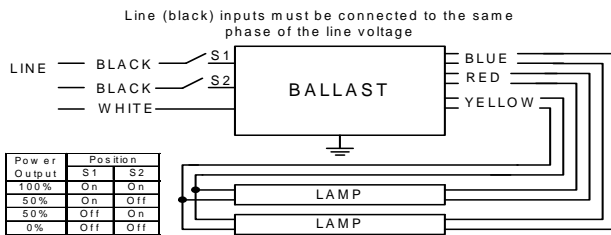


Electrical Specifications

IOP-2S32-SC-SD@277	
Brand Name	STEP-DIM
Ballast Type	Electronic Dimming
Starting Method	Programmed Start
Lamp Connection	Series
Input Voltage	120-277
Input Frequency	50/60 HZ
Status	Active

Lamp Type	Num. of Lamps	Rated Lamp Watts	Min. Start Temp (°F/C)	Input Current (Amps)	Input Power (Watts)	Ballast Factor	MAX THD %	Power Factor	Lamp Current Crest Factor	B.E.F.
F17T8	1	17	0/-18	0.07	16	0.88	10	0.90	1.7	5.50
F17T8	2	17	0/-18	0.11	29	0.88	10	0.96	1.7	3.03
F25T8	1	25	0/-18	0.09	23	0.88	10	0.94	1.7	3.83
F25T8	2	25	0/-18	0.15	40	0.88	10	0.97	1.7	2.20
F32T8/ES (25W)	2	25	60/16	0.17	45	0.88	10	0.98	1.7	1.96
F32T8/ES 28W @100%	2	28	60/16	0.18	48	0.88	10	0.98	1.7	1.83
F32T8/ES 28W @50%	2	28	60/16	0.09	24	0.28	10	0.96	1.7	1.17
F32T8@100%	1	32	0/-18	0.11	29	0.87	10	0.99	1.7	3.00
* F32T8@100%	2	32	0/-18	0.21	56	0.87	10	0.98	1.7	1.55
F32T8@50%	1	32	0/-18	0.05	14	0.28	10	0.93	1.7	2.00
F32T8@50%	2	32	0/-18	0.10	26	0.28	10	0.95	1.7	1.08

Wiring Diagram



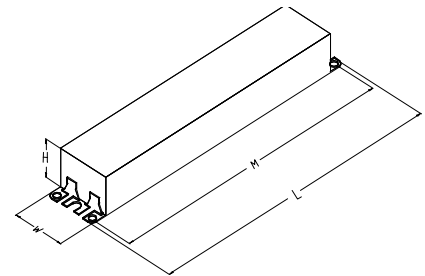
Diag. 173A

The wiring diagram that appears above is for the lamp type denoted by the asterisk (*)

Standard Lead Length (inches)

	in.	cm.		in.	cm.
Black	25	63.5	Yellow/Blue		0
White	25	63.5	Blue/White		0
Blue	33	83.8	Brown		0
Red	33	83.8	Orange		0
Yellow	48	121.9	Orange/Black		0
Gray		0	Black/White		0
Violet		0	Red/White		0

Enclosure



Enclosure Dimensions

OverAll (L)	Width (W)	Height (H)	Mounting (M)
9.50 "	1.7 "	1.18 "	8.90 "
24.1 cm	4.3 cm	3 cm	22.6 cm



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Corporate Offices: Phone: 800-322-2086



Electrical Specifications

IOP-2S32-SC-SD@277	
Brand Name	STEP-DIM
Ballast Type	Electronic Dimming
Starting Method	Programmed Start
Lamp Connection	Series
Input Voltage	120-277
Input Frequency	50/60 HZ
Status	Active

Notes:

Section I - Physical Characteristics

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

Section II - Performance

- 2.1 Ballast shall be Programmed Start.
- 2.2 Ballast shall contain auto restart circuitry in order to restart lamps without resetting power.
- 2.3 Ballast shall operate from 50/60 Hz input source of 120V through 277V with sustained variations of +/- 10% (voltage and frequency).
- 2.4 Ballast shall be high frequency electronic type and operate lamps at a frequency above 42 kHz to avoid interference with infrared devices and eliminate visible flicker.
- 2.5 Ballast shall have a Power Factor greater than 0.98 at 100% power and greater than 0.90 at 50% power for primary lamp.
- 2.6 Ballast shall have a ballast factor of 0.87 for primary T8 lamps or a ballast factor of 0.95 or 1.15 for primary T5HE lamps at full light output.
- 2.7 Ballast shall provide for a Lamp Current Crest Factor of 1.7 or less.
- 2.8 Ballast input current shall have Total Harmonic Distortion (THD) of less than 10% when operated at nominal line and 100% power.
- 2.9 Ballast shall have a Class A sound rating.
- 2.10 Ballast shall have a minimum starting temperature of 0C (32F) for standard T5HE lamps or -18C (0F) for standard T8 lamps and 16C (60F) for energy-saving T8 lamps. Consult lamp manufacturer for temperature versus light output characteristics.
- 2.11 Ballast shall tolerate sustained open circuit and short circuit output conditions.
- 2.12 Ballast shall provide Lamp EOL Protection Circuit for T5 lamps.
- 2.13 Ballast shall control light output in two steps: 100% power and 50% power. Control shall be any device that switches the line voltage input. Both line voltage inputs must be on the same phase.
- 2.14 Ballast shall ignite the lamps at any light output setting without first going to another output setting.

Section III - Regulatory

- 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 with ANSI C82.11 where applicable.
- 3.5 Ballast shall comply with applicable requirements of the Federal Communications Commission (FCC) rules and regulations, Title 47 CFR part 18, for Non-Consumer equipment.
- 3.6 Ballast shall comply with UL Type CC rating.
- 3.7 Ballast shall comply with NEMA 410 for in-rush current limits.

Section IV - Other

- 4.1 Ballast shall be manufactured in a factory certified to ISO 9001 Quality System Standards.
- 4.2 Ballast shall carry a five-year warranty from date of manufacture against defects in material or workmanship, including replacement, for operation at a maximum case temperature of 70C.
- 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.



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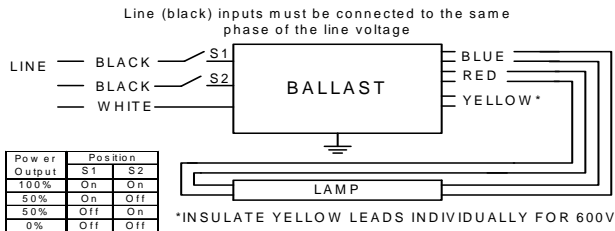


Electrical Specifications

IOP-2S32-SC-SD@277	
Brand Name	STEP-DIM
Ballast Type	Electronic Dimming
Starting Method	Programmed Start
Lamp Connection	Series
Input Voltage	120-277
Input Frequency	50/60 HZ
Status	Active

Lamp Type	Num. of Lamps	Rated Lamp Watts	Min. Start Temp (°F/°C)	Input Current (Amps)	Input Power (Watts)	Ballast Factor	MAX THD %	Power Factor	Lamp Current Crest Factor	B.E.F.
F17T8	1	17	0/-18	0.07	16	0.88	10	0.90	1.7	5.50
F17T8	2	17	0/-18	0.11	29	0.88	10	0.96	1.7	3.03
F25T8	1	25	0/-18	0.09	23	0.88	10	0.94	1.7	3.83
F25T8	2	25	0/-18	0.15	40	0.88	10	0.97	1.7	2.20
F32T8/ES (25W)	2	25	60/16	0.17	45	0.88	10	0.98	1.7	1.96
F32T8/ES 28W @100%	2	28	60/16	0.18	48	0.88	10	0.98	1.7	1.83
F32T8/ES 28W @50%	2	28	60/16	0.09	24	0.28	10	0.96	1.7	1.17
* F32T8@100%	1	32	0/-18	0.11	29	0.87	10	0.99	1.7	3.00
F32T8@100%	2	32	0/-18	0.21	56	0.87	10	0.98	1.7	1.55
F32T8@50%	1	32	0/-18	0.05	14	0.28	10	0.93	1.7	2.00
F32T8@50%	2	32	0/-18	0.10	26	0.28	10	0.95	1.7	1.08

Wiring Diagram



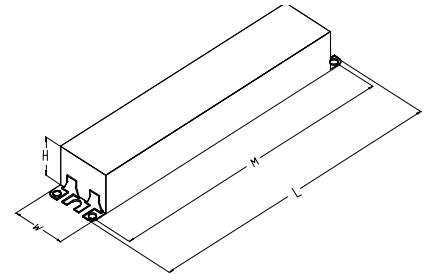
Diag. 170A

The wiring diagram that appears above is for the lamp type denoted by the asterisk (*)

Standard Lead Length (inches)

	in.	cm.		in.	cm.
Black	25	63.5	Yellow/Blue		0
White	25	63.5	Blue/White		0
Blue	33	83.8	Brown		0
Red	33	83.8	Orange		0
Yellow	48	121.9	Orange/Black		0
Gray		0	Black/White		0
Violet		0	Red/White		0

Enclosure



Enclosure Dimensions

OverAll (L)	Width (W)	Height (H)	Mounting (M)
9.50 "	1.7 "	1.18 "	8.90 "
24.1 cm	4.3 cm	3 cm	22.6 cm



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Corporate Offices: Phone: 800-322-2086



Electrical Specifications

IOP-2S32-SC-SD@277	
Brand Name	STEP-DIM
Ballast Type	Electronic Dimming
Starting Method	Programmed Start
Lamp Connection	Series
Input Voltage	120-277
Input Frequency	50/60 HZ
Status	Active

Notes:

Section I - Physical Characteristics

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

Section II - Performance

- 2.1 Ballast shall be Programmed Start.
- 2.2 Ballast shall contain auto restart circuitry in order to restart lamps without resetting power.
- 2.3 Ballast shall operate from 50/60 Hz input source of 120V through 277V with sustained variations of +/- 10% (voltage and frequency).
- 2.4 Ballast shall be high frequency electronic type and operate lamps at a frequency above 42 kHz to avoid interference with infrared devices and eliminate visible flicker.
- 2.5 Ballast shall have a Power Factor greater than 0.98 at 100% power and greater than 0.90 at 50% power for primary lamp.
- 2.6 Ballast shall have a ballast factor of 0.87 for primary T8 lamps or a ballast factor of 0.95 or 1.15 for primary T5HE lamps at full light output.
- 2.7 Ballast shall provide for a Lamp Current Crest Factor of 1.7 or less.
- 2.8 Ballast input current shall have Total Harmonic Distortion (THD) of less than 10% when operated at nominal line and 100% power.
- 2.9 Ballast shall have a Class A sound rating.
- 2.10 Ballast shall have a minimum starting temperature of 0C (32F) for standard T5HE lamps or -18C (0F) for standard T8 lamps and 16C (60F) for energy-saving T8 lamps. Consult lamp manufacturer for temperature versus light output characteristics.
- 2.11 Ballast shall tolerate sustained open circuit and short circuit output conditions.
- 2.12 Ballast shall provide Lamp EOL Protection Circuit for T5 lamps.
- 2.13 Ballast shall control light output in two steps: 100% power and 50% power. Control shall be any device that switches the line voltage input. Both line voltage inputs must be on the same phase.
- 2.14 Ballast shall ignite the lamps at any light output setting without first going to another output setting.

Section III - Regulatory

- 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 with ANSI C82.11 where applicable.
- 3.5 Ballast shall comply with applicable requirements of the Federal Communications Commission (FCC) rules and regulations, Title 47 CFR part 18, for Non-Consumer equipment.
- 3.6 Ballast shall comply with UL Type CC rating.
- 3.7 Ballast shall comply with NEMA 410 for in-rush current limits.

Section IV - Other

- 4.1 Ballast shall be manufactured in a factory certified to ISO 9001 Quality System Standards.
- 4.2 Ballast shall carry a five-year warranty from date of manufacture against defects in material or workmanship, including replacement, for operation at a maximum case temperature of 70C.
- 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.



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Data is based upon tests performed by Advance Transformer in a controlled environment and representative of relative performance. Actual performance can vary depending on operating conditions. Specifications are subject to change without notice. All specifications are nominal unless otherwise noted.

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