

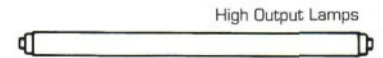
T12 SLIMLINE INSTANT-START NORMAL LIGHT OUTPUT PARALLEL



HIGH POWER FACTOR SOUND RATED A

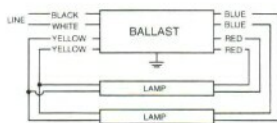
Lamp Data		Min. Starting Temp. (F/C)	Input Volts	Catalog Number	Certifications					Line Current (Amps)	Input Power ANSI (Watts)	Ballast Factor	THD %	Power Factor	Dim./ Wiring Diagram
Number	Watts				UL	CSA	E	IEC	CBM						
F72T12															
1	57	50/10	120	REL-2P60-S	✓	✓			0.62	70	1.10	30	0.95	*64	
			277	VEL-2P75-S	✓	✓			0.27						
2	57	50/10	120	REL-2P60-S	✓	✓			0.95	110	0.92	20	0.97	64	
			277	VEL-2P75-S	✓	✓			0.41						
F96T12															
1	60	60/16	120	REL-2P60-S	✓	✓			0.62	70	1.05	30	0.95	*64	
			277	VEL-2P75-S	✓	✓			0.27						
	75	50/10	120	REL-2P60-S	✓	✓			0.75	85					
			277	VEL-2P75-S	✓	✓			0.32						
2	60	60/16	120	REL-2P60-S	✓	✓			0.91	107	0.85	20	0.98	64	
			277	VEL-2P75-S	✓	✓			0.39						
	75	50/10	120	REL-2P60-S	✓	✓			1.12	132					
			277	VEL-2P75-S	✓	✓			0.49						

T12/HO RAPID-START NORMAL LIGHT OUTPUT PARALLEL

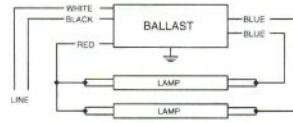


HIGH POWER FACTOR SOUND RATED A

Lamp Data		Min. Starting Temp. (F/C)	Input Volts	Catalog Number	Certifications					Line Current (Amps)	Input Power ANSI (Watts)	Ballast Factor	THD %	Power Factor	Dim./ Wiring Diagram
Number	Watts				UL	CSA	E	IEC	CBM						
F48T12HO															
2	60	-20/-28	120	REL-2S110	✓	✓			1.13	125	1.15	30	0.90	21	
			277	VEL-2S110	✓	✓			0.48						
F60T12HO															
2	75	-20/-28	120	REL-2S110	✓	✓			1.29	147	1.00	30	0.95	21	
			277	VEL-2S110	✓	✓			0.53						
F72T12HO															
2	85	-20/-28	120	REL-2S110	✓	✓			1.40	164	0.90	20	0.98	21	
			277	VEL-2S110	✓	✓			0.61						
F96T12HO Energy Saver															
2	95	60/18	120	REL-2S110	✓	✓			1.44	170	0.89	20	0.98	21	
			277	VEL-2S110	✓	✓			0.63						
F96T12HO															
2	110	-20/-28	120	REL-2S110	✓	✓			1.74	205	0.89	20	0.98	21	
			277	VEL-2S110	✓	✓			0.76						

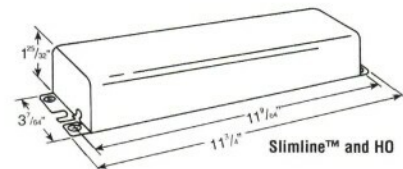


Diag. 21



Diag. 64

* For Single Lamp Operation, insulate unused blue lead for 600 volts.



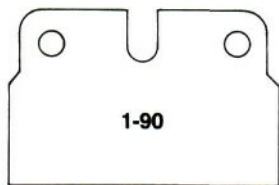
Refer to pages 208 to 215 for lead lengths and shipping data



HIGH FREQUENCY ELECTRONIC STANDARD

Ballast Date Codes

Advance electromagnetic fluorescent lamp ballasts are date stamped on the ballast cover to designate month and year of manufacture. The month is indicated first, followed by the year. In the example shown (1-90), the manufacturing date is January, 1990. See inside front cover for warranty information.



Certifications



All Advance ballasts unless otherwise indicated bear the seal of Underwriters' Laboratories, Inc. in accordance with UL935 Standard for Fluorescent Ballasts. File No. E14927



Component recognition - yellow card listing in accordance with UL935 Standard for Fluorescent Ballasts. File No. E14927



Advance ballasts which meet the Canadian Standards Association requirements for Fluorescent Ballasts per CAN/CSA-22.2 No. 74-92 bear the CSA seal. File No. LR7310



Indicates ballast complies with National Energy Conservation Amendments (NAECA) of 1988 to Energy Policy and Conservation Act (EPCA) of 1987.



Indicates ballast complies with Canadian Energy Standards.



Advance ballasts meeting the rigid standards of Certified Ballast Manufacturers bear the CBM seal.



Advance fluorescent ballasts are designed and manufactured in accordance with the American National Standards Institute standard for fluorescent ballasts, ANSI C82.1.

Class P Ballasts — Section 410-73(e) of the National Electrical Code (NEC) requires that all indoor fluorescent fixtures shall incorporate ballast protection. Those fixtures employing a simple reactive type ballast are exempted.

The protector is located within the ballast case to prevent physical damage and tampering.

Advance electromagnetic ballasts ordered with ADVAN-guard® Class P ballast protection (TP suffix) are equipped with a thermally actuated automatic reclosing protective device. This revolutionary development was originally designed and introduced by Advance, and today this Class P device is a requirement of the National Electrical Code in all indoor lighting installations.

Safety

The National Electrical Code requires grounding of fluorescent fixtures. The fluorescent ballast case must be grounded either to the fluorescent fixture or, if remote mounted, by other means such as a wire from the ballast case to ground. Without proper fixture and ballast grounding, a shock hazard may exist due to

the fluorescent fixture becoming energized by an internal ballast failure to case. Also, all ballasts have normal leakage current. When the ballast is properly grounded, the leakage current does not constitute a hazard.

Starting

The metal of a fluorescent fixture is a starting aid when properly grounded. T12 Fluorescent lamps rated at 40 watts or less used for rapid or trigger start operation must be mounted within 1/2" of a grounded metal surface. T8 Lamps must be mounted within 3/4" of a grounded metal surface. All other lamps must be mounted within 1" of a grounded metal surface.

An important additional factor for proper lamps starting is polarity. The white ballast lead must be connected to the ground of the power supply (neutral) and the black lead to the hot line wire. A reversal of polarity may result in lamp damage or improper lamp starting.

Cold Weather Operation

Lumen ratings of fluorescent lamps apply for operation in still air at a temperature of 77°F. While many fluorescent lamps and fluorescent lamp ballasts are designed to give their best performance at 77°F, they will provide reasonably good light output down to 50°F. Further decreases in ambient temperature will result in decreased light output.

Variables such as humidity, line voltage, fixture design and variations within the particular design of the lamp and the fluorescent lamp ballast play an important part in determining the low temperature starting limit.

These are the two considerations for low temperature application:

1. Starting of the lamps

Low temperatures change the electrical starting characteristics of a fluorescent lamp. As the fluorescent lamp becomes colder, it becomes more difficult to start. Therefore, a fluorescent ballast must have a higher starting voltage; thus, follow the temperature recommendations shown in the tables.

Ballasts designed for low temperature use ensure reliable starting only and not the light output.

2. Operating the lamps

The light output of any fluorescent lamp depends on the mercury vapor pressure within the lamp. Maximum light output for most fluorescent lamps occurs when the bulb temperature is about 100°F. As bulb wall temperature goes above 100°F the mercury vapor pressure within the tube increases and the light output decreases.

Interestingly enough, at lower bulb-wall temperatures, the mercury condenses on the tube, pressure drops and the light output again decreases. This is inherent in all fluorescent lamps. In order to prevent reduction in light output at low temperatures the lamp should be enclosed so it has a chance to overcome the low bulb-wall temperature by the heat generated by the lamp.

In general, outdoor lighting installations have tended toward 800 and 1500mA lamps since the additional heat generated by these lamps will provide better illumination in cold weather than can be obtained with 430mA lamps. The 430mA lamps are not recommended by the lamp manufacturer for starting conditions below 0°F. Above this temperature, shielding is required to a greater degree than with the more heavily loaded lamps. Special low temperature lamps, which may be purchased with shields, are available for 1500mA operation.

GENERIC DCI NUMBER 781087	CATALOG NUMBER (GENERIC)	IC-PACK DCI NUMBER 781087	MID-PACK DCI NUMBER 781087	DISTRIBUTOR COST EACH	VOLUME CODE	DESCRIPTION INDICATES PRIMARY APPLICATION AND IS FOR REFERENCE ONLY. FOR COMPLETE DATA, SEE ADVANCE ATLAS.	IC-PACK MASTER PACK QTY.	MID-PACK STANDARD CARTON QTY.	UNIT WEIGHT
10169	VCN4P32SC	10169	10171	\$40.29	B	ELE BALLAST (4) F32T8 277V	10	20	1.0
08774	VCN4S32SC	08774	10393	42.30	B	ELE BALLAST (4) F32T8 277V	10	20	1.4
10673	VEL1P32HLSC	10673	10709	38.13	B	ELE BALLAST (1) F32T8 277V	10	20	1.6
10436	VEL1P32LWSC	10436	10398	29.44	A	ELE BALLAST (1) F32T8 277V	10	20	1.6
08484	VEL1P32SC	08484	08761	29.44	A	ELE BALLAST (1) F32T8 277V	10	20	1.2
11117	VEL1S40SC	11117	11118	32.31	B	ELE BALLAST (1) F40T12 277V	10	20	1.6
07313	VEL1TTS39	07313	08806	43.51	C	ELE BALLAST (1) 36/39W CFL (4-PIN) 277V	10	10	2.4
07253	VEL1TTS40	07253	10154	43.51	C	ELE BALLAST (1) 40W CFL (4-PIN) 277V	10	10	2.4
07222	VEL1TTS50	07222	08655	48.23	C	ELE BALLAST (1) 50W CFL (4-PIN) 277V	10	10	2.4
05204	VEL2P17RHTP	05204	07092	31.46	B	ELE BALLAST (2) F17T8 277V	10	10	2.4
10674	VEL2P32HLSC	10674	10710	38.13	B	ELE BALLAST (2) F32T8 277V	10	20	1.6
10438	VEL2P32LWSC	10438	10403	29.44	A	ELE BALLAST (2) F32T8 277V	10	20	1.6
08485	VEL2P32SC	08485	08762	29.44	A	ELE BALLAST (2) F32T8 277V	10	20	1.2
07268	VEL2P59HL	07268	10906	55.71	B	ELE BALLAST (2) F96T8 277V	6	6	2.75
04882	VEL2P59SRHTP	04882	08653	49.65	B	ELE BALLAST (2) F96T8 277V	10	10	2.75
07267	VEL2P75S	07267	10571	46.86	B	ELE BALLAST (2) F96T12 277V	6	6	4.5
07265	VEL2S110	07265	07333	57.12	B	ELE BALLAST (2) F96T12/HO 277V	6	6	4.5
11119	VEL2S40SC	11119	11120	32.31	B	ELE BALLAST (2) F40T12 277V	10	20	1.6
07263	VEL2S86	07263	07281	81.20	B	ELE BALLAST (2) F96T8/HO 277V	6	6	4.5
07197	VEL2TTS39	07197	08836	43.51	C	ELE BALLAST (2) 36/39W CFL (4-PIN) 277V	10	10	2.4
07199	VEL2TTS40	07199	08807	43.51	C	ELE BALLAST (2) 40W CFL (4-PIN) 277V	10	10	2.4
10362	VEL2TTS40LW	10362	08775	43.51	C	ELE BALLAST (2) 40W CFL (4-PIN) 277V	10	10	2.4
07201	VEL2TTS50	07201	08808	48.23	C	ELE BALLAST (2) 50W CFL (4-PIN) 277V	10	10	2.4
10705	VEL3P32HLSC	10705	10711	42.16	B	ELE BALLAST (3) F32T8 277V	10	10	1.0
10583	VEL3P32LWSC	10583	10585	33.36	A	ELE BALLAST (3) F32T8 277V	10	20	1.4
10183	VEL3P32SC	10183	10185	33.36	A	ELE BALLAST (3) F32T8 277V	10	20	1.0
04905	VEL3S40RHTP	04905	07248	36.35	B	ELE BALLAST (3) F40T12 277V	10	10	2.75
08643	VEL4P322LS	08643	08738	44.91	C	ELE STEP DIMMING BALLAST (4) F32T8 277V	10	10	2.75
10633	VEL4P32LWSC	10633	10635	36.81	A	ELE BALLAST (4) F32T8 277V	10	20	1.4
10187	VEL4P32SC	10187	10189	36.81	A	ELE BALLAST (4) F32T8 277V	10	20	1.0
10979	VEZ132SC	10979	10980	84.95	B	ELE DIMMING BALLAST (1) F32T8 277V	10	20	1.0
11450	VEZ1T42M2BS	-	11451	96.50	B	ELE DIM BALLAST (1) 42W CFL (4-PIN) 277V	-	16	0.75
11455	VEZ1T42M2LD	-	11456	94.40	B	ELE DIM BALLAST (1) 42W CFL (4-PIN) 277V	-	20	0.75
08860	VEZ1TTS40	-	10809	93.56	B	ELE DIM BALLAST (1) 40W CFL (4-PIN) 277V	-	10	1.5
11441	VEZ2Q26M2BS	-	11443	96.50	B	ELE DIM BALLAST (2) 26W CFL (4-PIN) 277V	-	16	0.75
11446	VEZ2Q26M2LD	-	11447	94.40	B	ELE DIM BALLAST (2) 26W CFL (4-PIN) 277V	-	20	0.75
10981	VEZ2S32SC	10981	10982	84.95	B	ELE DIMMING BALLAST (2) F32T8 277V	10	20	1.0
11459	VEZ2T42M3BS	-	11460	96.50	B	ELE DIM BALLAST (2) 42W CFL (4-PIN) 277V	-	16	1.0
11463	VEZ2T42M3LD	-	11646	94.40	B	ELE DIM BALLAST (2) 42W CFL (4-PIN) 277V	-	20	1.0
08689	VEZ2TTS40	-	10813	93.56	B	ELE DIM BALLAST (2) 40W CFL (4-PIN) 277V	-	10	1.5
10698	VEZ3S32SC	10698	10839	93.45	B	ELE DIMMING BALLAST (3) F32T8 277V	10	20	1.4
07140	VIC132	07140	10921	51.45	C	ELE BALLAST (1) F32T8 277V	10	10	1.5
07142	VIC2S32	07142	10922	51.45	C	ELE BALLAST (2) F32T8 277V	10	10	1.5
07144	VIC3S32	07144	10923	55.65	C	ELE BALLAST (3) F32T8 277V	10	10	1.5
11835	VOP2P32LWSC	-	11834	35.52	C	ELE BALLAST (2) F32T8 277V	-	20	1.6
11817	VOP2P32SC	-	11816	35.52	C	ELE BALLAST (2) F32T8 277V	-	20	1.2
11837	VOP3P32LWSC	-	11836	39.44	C	ELE BALLAST (3) F32T8 277V	-	20	1.4
11819	VOP3P32SC	-	11818	39.44	C	ELE BALLAST (3) F32T8 277V	-	20	1.0
11839	VOP4P32LWSC	-	11838	42.89	C	ELE BALLAST (4) F32T8 277V	-	20	1.4
11821	VOP4P32SC	-	11820	42.89	C	ELE BALLAST (4) F32T8 277V	-	20	1.0
07100	VZT132	-	10924	84.95	B	ELE DIMMING BALLAST (1) F32T8	-	10	1.5
08858	VZT1TTS40	-	10824	93.56	B	ELE DIM BALLAST (1) 40W CFL (4-PIN) 277V	-	10	1.5
07102	VZT2S32	07102	10925	84.95	B	ELE DIMMING BALLAST (2) F32T8 277V	10	10	1.5
08686	VZT2TTS40	-	10827	93.56	B	ELE DIM BALLAST (2) 40W CFL (4-PIN) 277V	-	10	1.5
07104	VZT3S32	07104	10926	93.56	B	ELE DIMMING BALLAST (3) F32T8 277V	10	10	1.5
10270	XEL2P32SC	-	10565	43.58	C	ELE BALLAST (2) F32T8 220V	-	20	1.6

NOTES: IC-PACK BALLASTS ARE INDIVIDUALLY PACKAGED CONTAINING A BALLAST WITH STANDARD LEAD LENGTHS. MASTER PACK QUANTITY IS A BUNDLE OF IC-PACKS.
MID-PACK BALLASTS ARE NOT INDIVIDUALLY PACKAGED AND CONTAIN BALLASTS WITH STANDARD LEAD LENGTHS. WHEN ORDERING BY CATALOG NUMBER, PLEASE ADD SUFFIX 35I TO DESIGNATE AN IC-PACK OR SUFFIX 35M TO DESIGNATE A MID-PACK EXCEPT FOR KITS WHICH NEED NO SUFFIX.
WHEN ORDERING BY DCI NUMBER, PLEASE USE CORRECT PACKAGING DCI NUMBER REFERENCED ABOVE.

EXAMPLE: REL2P32SC35I OR 08483 DENOTES IC-PACK AND REL2P32SC35M OR 08760 DENOTES MID-PACK.