

Ballast Selector Guide



Panasonic



No. of Lamps	Lamp	Input Volts	Catalog Nbr	Ballast Family	Start Type	Line Current (Amps)	Input Power (Watts)	Ballast Factor	Also Operates							
									F25T8	F17T8	F40T8	F32T8ES	F28T8			
F32T8 & F32T8/U																
1	F32T8 & F32T8/U	120	B132I120RH-A	Std Electronic	IS	0.26	31	0.88	X	X	X					
		277	B132I277RH-A	Std Electronic	IS	0.11	31	0.88	X	X	X					
		120 - 277	B132IUNVHP-B	HP Electronic	IS	0.26 - 0.12	30	0.88	X	X	X	X	X			
			B132IUNVEL-A	ULTim 8	IS	0.25 - 0.11	25	0.77	X	X	X	X	X			
			B132IUNVHE-A	ULTim 8	IS	0.24 - 0.12	28	0.87	X	X	X	X	X			
			B132PUNVHP-A	Accustart T8	PRS	0.26 - 0.11	31 - 30	0.88	X	X		X	X			
2	F32T8 & F32T8/U	120	B232I120L-A	Low Power	IS	0.44	51	0.78	X	X	X					
			B232I120RH-A	Std Electronic	IS	0.49	58	0.88	X	X	X					
			B232I120RHH-A	High Light	IS	0.66	77	1.18	X							
			B232I120EL	ULTim 8	IS	0.40	47	0.77	X	X		X	X			
			B232I120HE	ULTim 8	IS	0.45	54	0.87	X	X		X	X			
			B232I277L-A	Low Power	IS	0.19	51	0.78	X	X	X					
		277	B232I277RH-A	Std Electronic	IS	0.22	58	0.88	X	X	X					
			B232I277RHH-A	High Light	IS	0.29	77	1.18				X				
			B232I277EL	ULTim 8	IS	0.18	47	0.77	X	X		X	X			
			B232I277HE	ULTim 8	IS	0.20	53	0.87	X	X		X	X			
			B232IUNVHP-B	HP Electronic	IS	0.47 - 0.19	56 - 55	0.88	X	X	X	X	X			
			B232IUNVHE-A	ULTim 8	IS	0.45 - 0.20	55 - 54	0.87	X	X		X	X			
		120 - 277	B232IUNVEL-A	ULTim 8	IS	0.40 - 0.17	48	0.77	X	X		X	X			
			B232IUNVHEH-A	ULTim 8	IS	0.62 - 0.26	74 - 73	1.18	X	X		X	X			
			B232PUNVHP-A	Accustart T8	PRS	0.52 - 0.22	62 - 60	0.88	X	X		X	X			
			3	F32T8 & F32T8/U	120	B332I120L-A	Low Power	IS	0.65	76	0.78	X	X	X		
						B332I120RH-A	Std Electronic	IS	0.75	86	0.88	X	X	X		
						B332I120EL	ULTim 8	IS	0.59	70	0.77	X	X		X	X
B332I120HE	ULTim 8	IS				0.67	80	0.87	X	X		X	X			
277	B332I277L-A	Low Power			IS	0.28	76	0.78	X	X	X					
	B332I277RH-A	Std Electronic			IS	0.33	86	0.88	X	X	X					
120 - 277	B332I277EL	ULTim 8	IS	0.26	70	0.77	X	X		X	X					
	B332I277HE	ULTim 8	IS	0.30	79	0.87	X	X		X	X					
	B332IUNVHP-A	HP Electronic	IS	0.71 - 0.31	85 - 83	0.88	X	X	X	X	X					
	B332IUNVHE-A	ULTim 8	IS	0.70 - 0.30	83 - 81	0.87	X	X	X	X	X					
	B332IUNVEL-A	ULTim 8	IS	0.61 - 0.26	74 - 73	0.77	X	X	X	X	X					
	B332IUNVHEH-A	ULTim 8	IS	0.91 - 0.39	111 - 108	1.18	X	X	X	X	X					
B332PUNVHP-A	Accustart T8	PRS	0.77 - 0.34	92 - 90	0.88	X	X		X	X						



Universal voltage ballasts operate from 120-volts to 277-volts.

- Reduces ballast inventory requirements
- Installer friendly - they cannot be connected to the wrong voltage
- Low profile dimensions make installation easy
- Same wiring and mounting dimensions as standard ballasts



T8 & T8H0

No. of Lamps	Lamp	Input Volts	Catalog Nbr	Ballast Family	Start Type	Line Current (Amps)	Input Power (Watts)	Ballast Factor	Also Operates						
									F25T8	F17T8	F40T8	F32T8ES	F28T8		
F32T8 & F32T8/U															
4	F32T8 & F32T8/U	120	B432I120L-A	Low Power	IS	0.85	100	0.78	X	X	X				
			B432I120RH-A	Std Electronic	IS	0.93	112	0.88	X	X	X				
			B432I120EL	ULTim 8	IS	0.81	95	0.77	X	X		X	X		
			B432I120HE	ULTim 8	IS	0.90	106	0.87	X	X		X	X		
		277	B432I277L-A	Low Power	IS	0.36	98	0.78	X	X					
			B432I277RH-A	Std Electronic	IS	0.40	110	0.88	X	X	X				
			B432I277EL	ULTim 8	IS	0.35	93	0.77	X	X		X	X		
			B432I277HE	ULTim 8	IS	0.39	105	0.87	X	X		X	X		
		120 - 277	B432I277HEH	ULTim 8	IS	0.53	145	1.18	X	X		X	X		
			B432IUNVHP-A	HP Electronic	IS	0.93 - 0.40	112 - 108	0.88	X	X	X	X	X		
			B432IUNVEL-A	ULTim 8	IS	0.80 - 0.34	97 - 96	0.77	X	X	X	X	X		
			B432IUNVHE-A	ULTim 8	IS	0.91 - 0.38	109 - 106	0.87	X	X	X	X	X		
			B432PUNVHP-A	Accustart T8	PRS	1.00 - 0.42	119 - 115	0.88	X	X		X	X		

No. of Lamps	Lamp	Input Volts	Catalog Nbr	Ballast Family	Start Type	Line Current (Amps)	Input Power (Watts)	Ballast Factor	Also Operates			
									F96T8ES	F72T8	F48T8	
F96T8												
1	F96T8	120	B159I120RH	Std Electronic	IS	0.52	58	0.88				
		277	B159I277RH	Std Electronic	IS	0.22	58	0.88				
		120 - 277	B259IUNVHP-A	HP Electronic	IS	0.60 - 0.26	72 - 71	1.08				
2	F96T8	120	B259I120RH	Std Electronic	IS	0.95	112	0.88				
			B259I120RHH	High Light	IS	1.30	150	1.18	X			
			B259I120HPL	HP Low Power	IS	0.84	100	0.78				
		277	B259I120HE	ULTim 8	IS	0.92	111	0.88	X		X	X
			B259I277RH	Std Electronic	IS	0.41	112	0.88				
			B259I277RHH	High Light	IS	0.56	150	1.18	X			
		120 - 277	B259I277HPL	HP Low Power	IS	0.36	100	0.78				
			B259I277HE	ULTim 8	IS	0.40	109	0.88	X		X	X
			B259IUNVHP-A	HP Electronic	IS	0.95 - 0.40	113 - 110	0.88				

No. of Lamps	Lamp	Input Volts	Catalog Nbr	Ballast Family	Start Type	Line Current (Amps)	Input Power (Watts)	Ballast Factor	Also Operates		
									F48T8HO	F60T8HO	F72T8HO
T8HO											
1	F96T8HO	120	B286I120RH	Std Electronic	IS	0.79	92	0.96	X	X	X
		277	B286I277RH	Std Electronic	IS	0.32	87	0.93	X	X	X
2	F96T8HO	120	B286I120RH	Std Electronic	IS	1.30	151	0.81	X	X	X
		277	B286I277RH	Std Electronic	IS	0.53	144	0.81	X	X	X



ULTim8 High Efficiency Electronic Ballasts

- Improved energy savings over standard electronic ballasts
- Dedicated and universal voltage models available
- .77 Ballast Factor models provide equivalent light levels as magnetic ballast F34T12 systems

AccuStart8 Programmed Rapid Start Ballasts:

- Programmed Rapid Start (PRS) exceeds Rapid Start starting requirements to maintain long lamp life in frequently switched applications
 - Direct replacement for electronic rapid start ballasts
- Universal voltage and low profile dimensions simplify installation



T12



No. of Lamps	Lamp	Input Volts	Catalog Nbr	Ballast Family	Start Type	Standard Lamps			Energy Saving Lamps		
						Line Current (Amps)	Input Power (Watts)	Ballast Factor	Line Current (Amps)	Input Power (Watts)	Ballast Factor
F30T12											
1	F30T12	120	B140R120HP	HP Electronic	RS	0.26	30	0.91	0.24	27	0.86
		277	B140R277HP	HP Electronic	RS	0.11	30	0.91	0.10	27	0.86
2	F30T12	120	B240R120HP	HP Electronic	RS	0.50	60	0.92	0.46	53	0.88
		277	B240R277HP	HP Electronic	RS	0.22	60	0.92	0.20	53	0.88
3	F30T12	120	B340R120HP	HP Electronic	RS	0.75	90	0.91	0.64	76	0.88
		277	B340R277HP	HP Electronic	RS	0.33	90	0.91	0.28	76	0.88
F40T12 & F40T12/U											
1	F40T12	120	B134R120M-A	Basic-12 MR	RS	0.36	36	0.86	0.30	31	0.86
			B140R120HP	Basic-12 HP	RS	0.33	39	0.88	0.28	33	0.86
1	F40T12	277	B234SR277M-A	Basic-12 MR	RS	0.17	42	0.94	0.15	35	0.94
			B140R277HP	HP Electronic	RS	0.14	39	0.88	0.12	33	0.86
1	F40T12/U	120	B134R120M-A	Basic-12 MR	RS	0.36	36	0.86	0.30	31	0.86
			B140R120HP	Basic-12 HP	RS	0.33	39	0.88	0.28	33	0.86
		277	B234SR277M-A	Basic-12 MR	RS	0.17	42	0.94	0.15	35	0.94
			B140R277HP	HP Electronic	RS	0.14	39	0.88	0.12	33	0.86
2	F40T12 & F40T12/U	120	B234SR120M-A	Basic-12 MR	RS	0.63	71	0.90	0.49	59	0.86
			B240R120HP	Basic-12 HP	RS	0.65	75	0.88	0.54	64	0.86
		277	B234SR277M-A	Basic-12 MR	RS	0.26	70	0.87	0.23	60.00	0.87
			B240R277HP	HP Electronic	RS	0.28	74	0.90	0.23	64	0.86
3	F40T12	120	B340R120HP	HP Electronic	RS	0.94	113	0.88	0.78	93	0.86
		277	B340R277HP	HP Electronic	RS	0.41	113	0.88	0.34	93	0.86



Basic-12 Electronic T12 Ballasts

- Designed as replacements for magnetic ballasts
- 1 & 2-Lamp rapid start models are direct replacements
- Saves more than 20% in energy operating costs
- Light weight, low profile case simplifies installation



T12: HO & VHO



No. of Lamps	Lamp	Input Volts	Catalog Nbr	Ballast Family	Start Type	Standard Lamps			Also Operates	
						Line Current (Amps)	Input Power (Watts)	Ballast Factor	F72T12HO	F60T12HO
T12HO										
1	F48T12HO	120	481-LH-TC-P	Std Magnetic	RS	0.79	82	0.84	X	X
			490-XLH-TC-P	Std Magnetic	RS	0.82	82	0.81	X	X
			631-LH-TC-P	Std Magnetic	RS	1.05	82	0.83		X
2	F48T12HO	120	490-XLH-TC-P	Std Magnetic	RS	1.18	139	0.87	X	X
			631-LH-TC-P	Std Magnetic	RS	1.25	137	0.85		X
		120 - 277	B295SRUNVHP	HP Electronic	SER-RS	0.92 - 0.40	110 - 109	0.88	X	X
1	F96T12HO	120	481-LH-TC-P	Std Magnetic	RS	1.16	136	0.91	X	X
			490-XLH-TC-P	Std Magnetic	RS	1.10	124	0.85	X	X
2	F96T12HO	120	B295SR120HP	HP Electronic	SER-RS	1.77	208	0.90	X	X
			480-SLH-TC-P	ES Magnetic	RS	1.99	237	0.96	X	X
		277	487-SLH-TC-P	ES Magnetic	RS	0.87	237	0.95	X	X
		120 - 277	B295SRUNVHP	HP Electronic	SER-RS	1.71 - 0.73	205 - 199	0.88	X	X

No. of Lamps	Lamp	Input Volts	Catalog Nbr	Ballast Family	Start Type	Standard Lamps		
						Line Current (Amps)	Input Power (Watts)	Ballast Factor
T12VHO								
2	F72T12VHO	120	931-LH-TC-P	Std Magnetic	RS	3.05	360	0.95
		277	937-K-TC-P	Std Magnetic	RS	1.26	341	0.91
			931-LH-TC-P	Std Magnetic	RS	3.83	431	0.93
		277	937-K-TC-P	Std Magnetic	RS	1.64	450	0.95



Basic-12 Electronic T12HO - B295SRUNVHP Ballasts

- Designed as direct replacement for magnetic ballasts
- 13% Energy savings over magnetic ballasts
- Quiet operation
- Universal input voltage
- Light weight, low profile case simplifies installation

T12 SLIMLINE

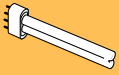


No. of Lamps	Lamp	Input Volts	Catalog Nbr	Ballast Family	Start Type	Standard Lamps			Energy Saving Lamps		
						Line Current (Amps)	Input Power (Watts)	Ballast Factor	Line Current (Amps)	Input Power (Watts)	Ballast Factor
1	F48T12	120 - 277	B260IUNVHP	Basic-12 HP	IS	.39 - .18	47	1.10	.32 - .15	38 - 39	1.10
2	F48T12	120	B260I120RH	Std Electronic	IS	0.68	76	0.92	0.60	64	0.92
		120 - 277	B260IUNVHP	Basic-12 HP	IS	.61 - .27	75 - 74	0.95	.57 - .25	67 - 66	0.93
1	F60T12	120 - 277	B260IUNVHP	Basic-12 HP	IS	0.49 - 0.22	58	1.10	-	-	-
		120 - 277	B260IUNVHP	Basic-12 HP	IS	0.77 - 0.33	92 - 91	0.92	-	-	-
1	F72T12	120	B260I120RH	Std Electronic	IS	0.60	66	1.04	-	-	-
		120 - 277	B260IUNVHP	Basic-12 HP	IS	0.55 - 0.25	68 - 67	1.06	-	-	-
2	F72T12	120	B260I120RH	Basic-12 RH	IS	0.92	107	0.90	-	-	-
		120 - 277	B260IUNVHP	Basic-12 HP	IS	0.09 - 0.39	109 - 107	0.91	-	-	-
1	F96T12	120	B260I120RH	Basic-12 RH	IS	0.73	83	1.02	0.60	66	1.05
			B260I120HP	Basic-12 HP	IS	0.70	84	1.05	0.59	70	1.05
		120 - 277	B260IUNVHP	Basic-12 HP	IS	0.70 - 0.31	85 - 84	1.05	0.59 - 0.26	72 - 70	1.03
2	F96T12	120	B260I120M-A	Basic-12 MR	IS	For use only with Energy Saving Lamps			0.93	107	0.88
			B260I120RH	Basic-12 RH	IS	1.16	133	0.86	0.93	107	0.88
		120 - 277	B260IUNVHP	Basic-12 HP	IS	1.16 - 0.50	139 - 137	0.88	0.96 - 0.40	112 - 110	0.88



Basic-12 Electronic Instant Start - B260IUNVHP Ballasts

- Operates 1 or 2 F96T12 or F96T12/ES Lamps
- Parallel lamp operation
- 17% Energy savings over magnetic ballasts
- Quiet operation
- Universal input voltage
- Light weight case simplifies installation



LONG TWIN T5

No. of Lamps	Lamp	Input Volts	Catalog Nbr	Ballast Family	Start Type	Line Current (Amps)	Input Power (Watts)	Ballast Factor	Also Operates		
									F54T5HO	F24T5HO	F39T5HO
1	FT24W/2G11	120 - 277	B224PUNV-C	Accustart T5	PRS	0.23 - 0.10	27	1.02		X	X
2	FT24W/2G11	120 - 277	B224PUNV-C	Accustart T5	PRS	0.43 - 0.18	52 - 51	1.00		X	
1	FT36W/2G11	120 - 277	B224PUNV-C	Accustart T5	PRS	0.30 - 0.13	36	0.90		X	X
			B254PUNV-D	Accustart T5	PRS	0.37 - 0.18	45	1.22	X		
2	FR36W/2G11	120 - 277	B239PUNV-D	Accustart T5	PRS	0.59 - 0.26	71 - 70	0.94		X	X
			B254PUNV-D	Accustart T5	PRS	0.73 - 0.30	87	1.20	X		
1	FT40W/2G11	120	C240SI120RH	Std Electronic	IS	0.40	40	1.02			
		277	C240SI277RH	Std Electronic	IS	0.17	40	1.02			
		120 - 277	C240PUNVHP-B	HP Electronic	PRS	0.34 - 0.15	41 - 40	1.00			
2	FT40W/2G11	120	C240SI120RH	Std Electronic	IS	0.61	67	0.88			
		277	C240SI277RH	Std Electronic	IS	0.27	67	0.88			
		120 - 277	C240PUNVHP-B	HP Electronic	PRS	0.63 - 0.27	76 - 73	0.90			
3	FT40W/2G11	120	C340SI120RH	Std Electronic	IS	0.88	98	0.88			
		277	C340SI277RH	Std Electronic	IS	0.39	98	0.88			



T5: STD & HO

No. of Lamps	Lamp	Input Volts	Catalog Nbr	Ballast Family	Start Type	Primary Lamp			Also Operates	
						Line Current (Amps)	Input Power (Watts)	Ballast Factor	F14T5	F21T5
1	F28T5	120 - 277	B228PUNV-C	Accustart T5	PRS	0.28 - 0.12	33	1.00	X	X
2	F28T5	120 - 277	B228PUNV-C	Accustart T5	PRS	0.55 - 0.23	66 - 64	1.00	X	X

No. of Lamps	Lamp	Input Volts	Catalog Nbr	Ballast Family	Start Type	Line Current (Amps)	Input Power (Watts)	Ballast Factor	F39T5HO	FT36W/2G11
1	F24T5HO	120 - 277	B224PUNV-C	Accustart T5	PRS	0.19 - 0.10	28	1.02	X	X
2	F24T5HO	120 - 277	B224PUNV-C	Accustart T5	PRS	0.45 - 0.23	53 - 52	1.00	X	X

No. of Lamps	Lamp	Input Volts	Catalog Nbr	Ballast Family	Start Type	Line Current (Amps)	Input Power (Watts)	Ballast Factor	F24T5HO	FT36W/2G11
1	F39T5HO	120 - 277	B239PUNV-D	Accustart T5	PRS	0.32 - 0.18	47	1.02	X	X
2	F39T5HO	120 - 277	B239PUNV-D	Accustart T5	PRS	0.75 - 0.39	89 - 88	1.00	X	X

No. of Lamps	Lamp	Input Volts	Catalog Nbr	Ballast Family	Start Type	Line Current (Amps)	Input Power (Watts)	Ballast Factor	FT50W/2G11	FT55W/2G11
1	F54T5HO	120 - 277	B254PUNV-D	Accustart T5	PRS	0.54 - 0.24	64	1.02	X	X
		347 - 480	B254PHRVHB-E	Accustart T5	PRS	0.19 - 0.15	66	1.02	X	X
2	F54T5HO	120 - 277	B254PUNV-D	Accustart T5	PRS	1.03 - 0.43	120 - 117	1.00	X	X
		347 - 480	B254PHRVHB-E	Accustart T5	PRS	0.35 - 0.26	120 - 119	1.00	X	X
3	F54T5HO	120 - 277	B454PUNV-E	Accustart T5	PRS	1.52 - 0.66	181 - 178	1.05	X	X
4	F54T5HO	120 - 277	B454PUNVHB-E	Accustart T5	PRS	1.96 - 0.84	235 - 229	1.00	X	X
			B454PUNV-E	Accustart T5	PRS	2.01 - 0.86	240 - 234	1.00	X	X

PREHEAT



No. of Lamps	Lamp	Input Volts	Catalog Nbr	Ballast Family	Start Type	Line Current (Amps)	Input Power (Watts)	Ballast Factor	Also Operates			
									F15T8	F15T12	F14T12	FC12T9
1	F20T12	120	200-H2	Low PF Magnetic	Rapid	0.30	20	0.83	X	X	X	
			546-B-TC-P	Low PF Magnetic	Trigger	0.58	29	0.82	X	X	X	
			564-L-TC-P	Std Magnetic	Trigger	0.51	55	0.85	X	X	X	
1	F40T12ES	120	202-B-TC-P ♦	Low PF Magnetic	Preheat	0.68	37	0.82				

♦ Requires external starter

CIRCLINE



No. of Lamps	Lamp	Input Volts	Catalog Nbr	Ballast Family	Start Type	Line Current (Amps)	Input Power (Watts)	Ballast Factor
1	FC8T9	120	547-RS-WS-TC-P	Low PF Magnetic	Rapid	0.60	30	0.85
1	FC12T9	120	202-B-TC-P ♦	Low PF Magnetic	Preheat	0.67	37	0.91

♦ Requires external starter



COMPACT

Lamp	Input Volts	Catalog Nbr	Ballast Family	Start Type	One Lamp			Two Lamp		
					Line Current (Amps)	Input Power (Watts)	Ballast Factor	Line Current (Amps)	Input Power (Watts)	Ballast Factor
3W 4-Pin	120 - 277	C213UNVBE/BES/ME	CF Electronic	PRS	0.15 - 0.07	18	1.00	0.26 - 0.11	30	1.00
18W 4-Pin	120 - 277	C218UNVBE/BES/ME	CF Electronic	PRS	0.16 - 0.07	19	1.00	0.30 - 0.13	35	0.95
126W 4-Pin	120 - 277	C242UNVBE/BES/ME	CF Electronic	PRS	-	-	-	0.46 - 0.20	56 - 55	1.02
		C2642UNV/BE/BES/ME	CF Electronic	PRS	0.25 - 0.11	28	1.02	0.47 - 0.21	56	0.98
32W	120 - 277	C242UNVBE/BES/ME	CF Electronic	PRS	-	-	-	0.58 - 0.26	69 - 67	1.00
		C2642UNVBE/BES/ME	CF Electronic	PRS	0.30 - 0.13	36	1.00	-	-	-
42W	120 - 277	C242UNVBE/BES/ME	CF Electronic	PRS	0.40 - 0.18	45	1.00	0.76 - 0.32	91 - 90	0.98
		C2642UNVBE/BES/ME	CF Electronic	PRS	0.41 - 0.18	48	0.98	-	-	-
57W	120 - 277	C242UNVBE/BES/ME	CF Electronic	PRS	0.52 - 0.21	58 - 57	1.00	-	-	-
70W	120 - 277	C242UNVBE/BES/ME	CF Electronic	PRS	0.61 - 0.27	73 - 72	1.00	-	-	-

Suffix: BE - Bottom Exit Terminals BES: Bottom Lead Exit Terminals ME - Side and Bottom Exit Terminals

CFL MULT-E KIT



Multi-E Kit Products:

C213UNVME000K
C218UNVME000K
C2642UNVME000K

Multi-E Kits Contain

Multi-Exit Ballast
Snap-mount adapter plate
Lead wire set
Wire extraction tool
Instructions

Fits Virtually every j-box cover and fixture application

The Multi-Exit ballast lead wire connectors accommodate side and bottom lead exit requirements, and the Snap mount adapter plate adds bottom-exit studs and additional flexibility for replacement of older magnetic ballasts.





Lamp Type	Lamp Watts	ANSI Code	Input Volts	Catalog Nbr	Circuit Type	Input Power (Watts)	Max. Input Current
High Pressure Sodium	35 W	S76	120	S35120RCEM000K	Reactor	43	1.15/0.68
	50 W	S68	120	S50120RCEM000K	Reactor	60	1.50/0.90
			120/208/240/277	S50MLTLC3M500K	HX-HPF	64	1.24/0.60/0.52/0.45
	70 W	S62	120	S70120RCEM000K	Reactor	83	2.10/0.90
			480	S7048TLC3M500K	HX-HPF	94	0.34
			120/208/240/277	S70MLTLC3M500K	HX-HPF	94	1.40/0.83/0.72/0.62
	100 W	S54	120	S100120RCEM000K	Reactor	117	2.90/1.80
			480	S10048TLC3M500K	HX-HPF	135	0.57
			120/208/240/277	S100MLTLC3M500K	HX-HPF	122	2.20/1.30/1.10/0.95
	150 W	S55	120	S150120RCEM000K	Reactor	171	4.40/2.20
			480 (120V Aux)	S15048TLC3M500K	HX-HPF	189	0.72
			120/208/240/277	S150MLTLC3M500K	HX-HPF	190	3.00/1.70/1.50/1.30
	200 W	S66	480 (120V Aux)	S20048TAC4M500K	CWA	245	0.56
			120/208/240/277	S200MLTAC4M500K	CWA	230	2.10/1.20/1.00/0.88
	250 W	S50	480	S25048TAC4M500K	CWA	285	0.62
			120/208/240/277/480	S250ML5AC4M500K	CWA	300	2.55/1.45/1.30/1.10/0.65
			120/208/240/277	S250MLTAC4M500K	CWA	300	2.60/1.55/1.30/1.15
	400 W	S51	480	S40048TAC4M500K	CWA	465	1.10
				S40048TAC5M500K	CWA	467	1.05
			120/208/240/277/480	S400ML5AC4M500K	CWA	465	4.00/2.30/2.00/1.70/1.10
				S400ML5AC5M500K	CWA	468	4.40/2.62/2.21/1.90/1.05
				S400MLTAC4M500K	CWA	440	3.80/2.20/1.80/1.60
	1000 W	S52	480 (120V Aux)	S100048TAC5M500K	CWA	1100	2.45
				S1000ML5AC5M500K	CWA	1048	9.10/5.40/4.60/4.10/2.45
120/208/240/277/480			S1000ML5AW5M500K	CWA	1048	9.10/5.40/4.60/4.10/2.40	
			S1000MLTAC5M500K	CWA	1100	9.50/5.50/4.80/4.20	



Universal HID Ballast Kits provide everything you need for an easy ballast replacement:

- Adjustable mounting brackets for various mounting configurations
- Pre-wired Capacitor and Ignitor to speed and simplify installation
- Color Coded Leads for easy identification
- Vacuum impregnated for cool and quiet operation



HID

Lamp Type	Lamp Watts	ANSI Code	Input Volts	Catalog Nbr	Circuit Type	Input Power (Watts)	Max. Input Current
Metal Halide	175 W	M57	120/277	1110-245SC-TC	F-Can	205	1.75/0.75
		M57 or M107	480	M17548TAC3M500K	CWA	200	0.51
			120/208/240/277/480	M175ML5AC3M500K	CWA	208/210	1.90/1.10/0.95/0.85/0.50
			120/208/240/277	M175MLTAC3M500K	CWA	205	1.82/1.13/0.93/0.85
	250 W	M58	120/208/240/277	M250MLTAE3M	CWA	294	2.60/1.58/1.30/1.12
			120/277	1110-246SC-TC	F-Can	295	2.50/1.10
			480	M25048TAC4M500K	CWA	284	0.61
			120/208/277/480	M250ML5AC3M500K	CWA	280	2.50/1.50/1.25/1.10/0.65
			120/208/240/277/480	M250ML5AC4M500K	CWA	282	2.42/1.40/1.20/1.00/0.60
			120/208/240/277	M250MLTAC3M500K	CWA	297	2.65/1.58/1.30/1.13
			120/208/240/277	M250MLTAC4M500K	CWA	290	3.05/1.65/1.55/1.25
	400 W	M59	120/277	1110-247SC-TC	F-Can	455	3.90/1.70
			480	M40027TAC4M	CWA	458	3.94/1.69
			480	M400480AC4M	CWA	458	1.00
			120/208/240/277/480	M400ML5AC4M500K	CWA	458	4.00/2.30/2.00/1.70/1.00
			120/208/240/277	M400MLTAC4M500K	CWA	458	3.94/2.20/1.93/1.69
	1000 W	M47	480	M40048TAC4M500K	CWA	458	1.00
			120/480	M100048TAC5M500K	CWA	1060	8.80/2.30
			120/208/240/277/480	M1000ML5AC5M500K	CWA	1060	8.80/5.20/4.40/3.90/2.30
	1500 W	M48	120/208/240/277	M1000MLTAC5M500K	CWA	1080	8.50/5.00/4.50/3.80
			480 (120V Aux)	M150048TAC5M500K	CWA	1610	3.50
1500 W	M48	120/208/240/277	M1500MLTAC5M500K	CWA	1610	14.00/8.00/7.00/6.00	
		480 (120V Aux)	M150048TAC5M500K	CWA	1610	3.50	
Pulse Start Metal Halide	35 W	M130	120/208/240/277	M35MLTLC3M500K	HX-HPF	50	0.82/0.48/0.42/0.36
	50 W	M110	120/277	11210-236C-TC	F-Can	70	0.64/0.65
			120/208/240/277	M50MLTLC3M500K	HX-HPF	67	1.16/0.67/0.57/0.50
	70 W	M85 (Double Ended)	120/277	11210-277C-TC	F-Can	98	2.00/0.90
			120/208/240/277	M70MLTLC3D500K	HX-HPF	95	1.70/1.04/0.87/0.78
		M98	120/277	11210-506C-TC	F-Can	90	2.00/0.90
			480	M7048TLC3M500K	HX-HPF	95	0.50
	100 W	M90, M92, or M140	120/208/240/277	M70MLTLC3M500K	HX-HPF	95	1.70/1.04/0.87/0.78
			120/277	11210-239C-TC	F-Can	125	2.20/1.00
			480	M10048TLC3M500K	HX-HPF	140	0.62
	100 W	M91 (double ended)	120/208/240/277	M100MLTLC3M500K	HX-HPF	130	2.30/1.30/1.10/0.95
			120/208/240/277	M100MLTLC3D500K	HX-HPF	130	2.30/1.30/1.10/0.95
			120/277	11210-539C-TC	F-Can	185	3.70/1.60
	150 W	M102 or M142	120/208/240/277	M150MLTLC3M500K	HX-HPF	185	3.32/1.93/1.66/1.48
			120/208/240/277	M150MLTAC3M500K	CWA	188	1.60/1.00/0.80/0.70
			480	M15048TLC3M500K	HX-HPF	180	1.00
		M81 (double ended)	120/277	11210-242C-TC	F-Can	185	3.70/1.60
			120/208/240/277	M150MLTLC3D500K	HX-HPF	185	3.32/1.93/1.66/1.48
	175 W	M137 or M152	277	P175277RCEM500K	Reactor	202	1.50/1.25
			480-120	P17548TAC3M500K	CWA	285	0.46
			480-120	P17548TAC4L500K	CWA	198	0.40
120/208/240/277/480			P175ML5AC3M500K	CWA	285	1.80/1.10/0.90/0.78/0.45	
120/208/240/277			P175MLTAC3M500K	CWA	208	1.86/1.23/0.98/0.87	
120/208/240/277			P175MLTAC3L500K	CWA	198	1.95/1.10/1.00/0.80	
120/208/240/277			P175MLTAC4L500K	CWA	198	1.70/0.95/0.85/0.75	
200 W	M136	277	P200277RCEM500K	Reactor	218	1.80/1.35	
		120/208/240/277/480	P200ML5AC3M500K	CWA	233	2.66/1.52/1.31/1.12/0.68	
250 W	M138 or M153	277	P250277RCEM500K	Reactor	278	2.00/1.82	
		480-120	P25048TAC4L500K	CWA	275	0.60	
		120/208/240/277/480	P250ML5AC4M500K	CWA	285	2.45/1.42/1.22/1.05/0.62	
		120/208/240/277	P250MLTAC4L500K	CWA	283	2.60/1.50/1.30/1.10	
320 W	M132	277	P320277RCEM500K	Reactor	358	3.70/1.65	
		120/480	P32048TAC4L500K	CWA	364	0.80/1.06	
	M132 or M154	120/208/240/277/480	P320ML5AC4L500K	CWA	363	3.10/1.80/1.55/1.35/0.80	
		120/208/240/277	P320MLTAC4O500K	CWA	365	4.10/2.50/2.00/1.85	

HID



Lamp Type	Lamp Watts	ANSI Code	Input Volts	Catalog Nbr	Circuit Type	Input Power (Watts)	Max. Input Current
Pulse Start Metal Halide	350 W	M131	277	P350277RCEM500K	Reactor	377	3.80/2.34
			480-120	P35048TAC4L500K	CWA	397	0.85
			120/208/240/277/480	P350ML5AC4M500K	CWA	405	4.22/2.49/2.16/1.87/1.09
			120/208/240/277/480	P350ML5AC4L500K	CWA	397	3.35/1.90/1.65/0.85
			120/208/240/277	P350MLTAC4M500K	CWA	425	4.10/2.50/2.09/1.85
	400 W	M135 or M155	277	P400277RCEM500K	Reactor	420	3.40/2.50
			480-120	P40048TAC4M500K	CWA	458	1.06
			120/208/240/277/480	P400ML5AC4M500K	CWA	458	4.00/2.40/2.10/1.85/1.06
			120/208/240/277	P400MLTAC4L500K	CWA	454	3.90/2.25/1.95/1.70
	450 W	M144	120/480	P45048TAC4M500K	CWA	528	5.20/1.40
			120/208/240/277/480	P450ML5AC4M500K	CWA	510	4.44/2.56/2.38/1.92/1.22
			120/208/240/277	P450MLTAC4M500K	CWA	511	4.40/2.60/2.20/1.90
	750 W	M149	480 (120V Aux)	P75048TAC5M500K	CWA	810	1.90
			120/208/240/277/480	P750ML5AC5M500K	CWA		
			120/208/240/277	P750MLTAC5M500K	CWA	810	7.10/4.00/3.50/3.10
	875W	M166	120/208/240/277	P875MLTAC5M500K	CWA	945	7.90/4.55/3.95/3.45
	1000 W	M141	480 (120V Aux)	P100048TAC5M500K	CWA	1080	2.25
			120/208/240/277/480	P1000ML5AC5M500K	CWA	1080	8.95/5.15/4.45/3.85/2.25
			120/208/240/277	P1000MLTAC5M500K	CWA	1070	8.80/5.10/4.50/4.10

MULTI-5™ UNI-PAK™

Lamp Type	Lamp Watts	ANSI Code	Input Volts	Catalog Nbr	Circuit Type	Input Power (Watts)	Max. Input Current
High Pressure Sodium	250 W	S50	120/208/240/277/480	S250ML5AC4M555K	CWA	300	2.55/1.45/1.30/1.10/0.65
	500 W	S51	120/208/240/277/480	S400ML5AC4M555K	CWA	465	4.00/2.30/2.00/1.70/1.10
	1000 W	S52	120/208/240/277/480	S1000ML5AC5M555K	CWA	1048	9.10/5.40/4.60/4.10/2.45
Metal Halide	175 W	M57	120/208/240/277/480	M175ML5AC3M555K	CWA	208/210	1.90/1.10/0.95/0.85/0.50
	250 W	M58	120/208/277/480	M250ML5AC3M555K	CWA	280	2.50/1.50/1.25/1.10/0.65
	400 W	M59	120/208/240/277/480	M400ML5AC4M555K	CWA	458	4.00/2.30/2.00/1.70/1.00
	1000 W	M47	120/208/240/277/480	M1000ML5AC5M555K	CWA	1060	8.80/5.20/4.40/3.90/2.30



Multi-5™ Uni-Pak™ is the only HID replacement kit that offers these great benefits:

1. Gives you five taps in one: 120, 208, 240, 277 and 480 volt.
2. Packages the right ballast and lamp to ensure system compatibility — all in an easy-to-carry box.
3. Prewired capacitor (plus ignitor if needed) saves installation time and reduces wiring errors
4. Color-coded leads to reduce the risk of incorrect wiring.
5. Simple installation instruction and troubleshooting tips included.

UNIVERSAL SIGN

No. of Lamps	Total Lamp Footage (T12HO Style Lamps)		Catalog Nbr
	Minimum	Maximum	
1 - 2	4'	12'	USB-0412-12
1 - 4	8'	16'	USB-0816-14
1 - 4	10'	24'	USB-1024-14
2 - 4	16'	32'	USB-1632-24
4 - 6	20'	36'	USB-2036-46
4 - 6	20'	48'	USB-2048-46

MAX-3 SERIES UNIVERSAL SIGN

No. of Lamps	Total Lamp Footage (T12HO Style Lamps)		Catalog Nbr
	Minimum	Maximum	
1 - 6	2'	18'	USB-0218-16
1 - 6	12'	32'	USB-1232-16
1 - 6	10'	48'	USB-1048-16

ELECTRONIC SIGN

No. of Lamps	Total Lamp Footage (T12HO & T8HO Style Lamps)		Catalog Nbr
	Minimum	Maximum	
1 - 2	2'	16'	ESB216-12
1 - 4	4'	32'	ESB432-14
4 - 6	8'	48'	ESB848-46
1 - 4	10'	40'	ESB1040-14

MAX-3 Sign Ballasts for Maximum Flexibility

- 3 Ballasts cover all sign ballast applications
- 1 to 6-Lamp operation with each ballast
- From 2' to 48' Lamp applications

Electronic Sign Ballasts

- Instant start wiring minimizes connection requirements
- Universal input voltage
- Significant energy savings compared to standard sign ballasts



DIMMING



	LAMP TYPE	QTY	Analog Dimming	Light Level Switching	Digital Dimming Ballasts & Controls	DALI Digital Dimming Ballasts
T8	F17T8	1	ES5818K / ES5833B		ES5829K / ES5831B	
		2	ES5817K / ES5834B		ES5830K / ES5832B	
	F25T8	1	ES5821B / ES5835K		ES58327B / ES5825K	
		2	ES5822B / ES5836K		ES5828B / ES5826K	
	F32T8	1	ES5821B / ES5835K B132PUNVSV3-A	B232PUS50-A B132R120S30 B132R277S30	ES5827B / ES5825K	B132PUNVDV1
		2	ES5822B / ES5836K B232PUNVSV3-A	B232PUS50-A B232SR120S30 B232SR277S30	ES5828B / ES5826K	B232PUNVDV1
		3	B332SR120V5 B332SR277V5	B332SR120S30 B332SR277S30		
4		B432P277V5-E				
T5T5 & T5HO	F14T5	1	ES5849K	B214PU115S50A	ES5848K	B114PUNVDV1
		2	ES5851K	B228PU95S50D & B214PU115S50A	ES5850K	B214PUNVDV1
	F21T5	1	ES5839K		ES5838K	
		2	ES5861K	B228PU95S50D	ES5860K	
	F28T5	1	ES5846K		ES5842K	B128PUNVDV1
		2	ES5847K	B228PU95S50D & B228PU115S50D	ES5843K	B228PUNVDV1
	F35T5	1	ES5853K		ES5852K	
		2				
	F54T5HO	1				B154PUNVDV1
		2				B254PUNVDV1
CFL	CFQ/TR13W	1	ES5011GT / ES5011HT		ES5001GT / ES5001HT	
		2	ES5011GT / ES5011HT		ES5001GT / ES5001HT	
	CFQ/TR18W	1	ES5012GT / ES5012HT		ES5002GT / ES5002HT	C118PUNVDV3
		2	ES5012GT / ES5012HT		ES5002GT / ES5002HT	C218PUNVDV3
	CFQ/TR26W	1	ES5013GT / ES5013HT		ES5003GT / ES5003HT	C126PUNVDV3
		2	ES5013GT / ES5013HT		ES5003GT / ES5003HT	C226PUNVDV3
	CFTR32W	1	ES5010GT / ES5010HT		ES5000GT / ES5000HT	C132PUNVDV3
		2				C232PUNVDV3
CFM42W	1	ES5010GT / ES5010HT		ES5000GT / ES5000HT	C142PUNVDV3	
	2				C242PUNVDV3	
T5	FT40W/2G11	1	ES5006BM		ES5008BM	C140PUNVDV3
		2	ES5007BMT		ES5009BMT	C240PUNVDV3

- SuperDim Analog dimming ballasts operate with numerous industry standard compatible 0 to 10-volt controls. Most SuperDim ballasts feature universal input voltage and a dimming range down to 1% for T5 lamps and 3% for T8 and CF lamps.

- BallastAR Analog dimming ballasts operate with numerous industry standard compatible 0 to 10-volt controls. BallastAR dimming ballasts feature dimming range down to 5%.

- BallastAR light level switching ballasts operate with standard wall switches or relays to provide switching between 100% and 50% light levels or 100%/ 60%/ 30% light levels while keeping all lamps operating for full fixture illumination.

- AddressPro digital dimming ballasts are designed for use with Universal AddressPro dimming controls. With AddressPro digital dimming technology, all fixtures are connected to the same control for simple wiring and the initial programming of lighting zones and scenes is accomplished with a handheld remote control. AddressPro ballasts feature universal input voltage and a dimming range down to 1% for T5 lamps and 3% for T8 and CF lamps. Visit the AddressPro digital dimming tutorial at www.universalballast.com for more information.

- DALI-Pro digital dimming ballasts are designed for use with industry standard DALI controls. DALI-Pro ballasts feature universal input voltage and dimming range down to 1% for linear lamps and 3% for CF lamps.

- For more information on all of the dimming ballasts and controls, visit www.universalballast.com

GLOSSARY

AccuStart T5	- Programmed rapid start (PRS) electronic ballast, <10% THD, T5 lamps
AccuStart T8	- Programmed rapid start electronic ballast, <10% THD, T8 lamps
Basic-12	- Electronic ballast for T12 lamps, for additional suffix, refer to glossary
CF Electronic	- Compact fluorescent electronic ballast, THD<10, E.O.L.L. Auto-reset shutdown Circuit
CF Magnetic	- Compact fluorescent magnetic ballast
ES Magnetic	- Energy saving magnetic fluorescent ballast
HP Electronic	- High Performance Linear electronic ballast, <10% THD
High Light	- Linear electronic ballast, high light output, <20% THD
Low Power	- Linear electronic ballast, reduced light output, <20% THD
Low PF Magnetic	- Magnetic fluorescent ballast, low power factor
Magnetic (0° F)	- Magnetic fluorescent ballast, 0° F minimum starting temperature
MR (Basic-12)	- Electronic ballast designed as a Magnetic Replacement
Std Electronic	- Standard Linear electronic ballast, < 20% THD
Std Magnetic	- Standard Magnetic fluorescent ballast
ULTim8 T8	- High efficiency electronic ballast, T8 lamp applications

WARRANTY

Universal Lighting Technologies, 26 Century Blvd., Suite 500, Nashville, TN 37214-4602, 1-800-BALLAST, (hereinafter called "Universal") warrants to the purchaser that its lamp ballasts and neon transformers, (hereinafter called "Lighting Products"), will be free from defects in material and workmanship for the specified warranty periods beginning from the date of manufacture.

TRIAD Electronic Fluorescent Ballasts	up to 60 Months*
Universal, Energy Saving	
Electromagnetic Fluorescent Ballasts	36 Months
AddressPro, SuperDim, and DaliPro Ballasts	36 Months
Basic-12 and HomeStar Electronic	
Fluorescent Ballasts	up to 36 Months*
Standard Universal Electromagnetic,	
Fluorescent & HID Ballasts	24 Months
Universal Sign Ballasts	24 Months
MAX-3 Series Sign Ballasts	36 Months

* Consult individual product information sheets at www.unvlt.com for specific warranty information.

If it appears within the specified warranty period that any Universal Lighting Product does not meet the warranty specified above, Universal, at its option, will either repair or replace the Lighting Product at Universal's expense. Universal extends this limited warranty to the original or first end-user purchaser only. This warranty is conditional based upon proper storage, installation, use and maintenance.

This warranty is not applicable to, and Universal makes no warranty whatsoever with respect to, any Lighting Product not installed and operated in accordance with the National Electric Code (NEC), the Standards for Safety of Underwriters Laboratories, Inc. (UL), Standards for the American National Standards Institute (ANSI) or, in Canada, the Canadian Standards Association (CSA). Nor is this warranty applicable to any Lighting Product which has not been installed and operated in accordance with Universal's specifications and connection diagrams or Lighting Products which have

been subjected to abnormal operating conditions. This includes, but is not limited to, excessive temperatures as specified in Universal's published literature. The conditions for any tests (to be) performed on Lighting Products which are claimed to have not performed in accordance with the terms of the warranty shall be mutually agreed upon in writing and Universal may be represented at any such tests.

NO IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE SHALL APPLY BEYOND THE AFOREMENTIONED WARRANTY PERIOD. The foregoing warranty is exclusive of all other statutory, written or oral warranties and no other warranties of any kind, statutory or otherwise, are given or herein expressed. Warranty claims are to be made in accordance with Universal's published Warranty Service Program which is available upon request. This warranty sets forth Universal's obligations and responsibilities regarding its Lighting Products and is the exclusive remedy available to the claimant.

Limitations of Liability, under no circumstances, whether as a result of breach of contract, breach of warranty, tort, strict liability or otherwise, will Universal be liable for consequential, incidental, special or exemplary damages, including, but not limited to, loss of profits, loss of use or damage to any property or equipment, cost of capital, cost of substitute product, facilities or services, down time costs or claims of claimant's customers. Universal's liability for all claims of any kind or for any loss or damages arising out of, resulting from or concerning any aspect of this warranty or from the Lighting Products or services furnished hereunder, shall not exceed the price of the specific Lighting Product which gives right to the claim, except in accordance with Universal's Technical Engineering Service Program.

State Law Right, some states do not allow the exclusion or limitation of consequential or incidental damages or the duration of time for an implied warranty. Therefore, the limitations or exclusions of consequential or incidental damage and implied warranties may not apply to certain claimants. This warranty provides the claimant with specific legal rights and claimants may have other rights that vary from state to state.

Effective: 4/9/2008



IT'S EASY TO REACH US...



Universal Lighting Technologies, Inc.
26 Century Blvd., Suite 500
Nashville, TN 37214-3683



General Info: (615) 316-5100
For Technical Engineering Services (TES), application support and warranty information, call 1-800-BALLAST



Website: www.unvlt.com
Email: webmaster@unvlt.com

LIT#BSG0310

