THE Westinghouse ELECTRONIC TUBE *Easy Guide*

PHOTOTUBES

KENOTRONS

PLIOTRONS

PHANOTRONS

IGNITRONS

THYRATRONS

WESTINGHOUSE ELECTRIC & MANUFACTURING CO.

Lamp Division

BLOOMFIELD • NEW JERSEY

HOW TO USE THE EASY GUIDE

Electronic Tubes are grouped by functional classification as follows:

Phototubes—Light Sensitive Tubes
Kenotrons—High Voltage Vacuum Rectifiers
Pliotrons—Modulators, Amplifiers, Oscillators
Phanotrons—Gas or Mercury Vapor Rectifiers
Ignitrons—Ignitor Controlled Rectifiers
Thyratrons—Grid Controlled Rectifiers

and a Miscellaneous Group which includes **Protector, Regulator** and **Pressure Indicator Tubes.** Technical and ordering data for each tube is given in the section covering that class of tubes. To find the tube class in which a given tube type number is listed, consult the index below. Then refer to that particular classification for Price Information and summary of tube data. The data sheet number shown in the index indicates the sheet which gives complete technical information. These sheets may be obtained from your Westinghouse Electric & Mfg. Co. district office.

INDEX—DATA INFORMATION

PHOTOTUBES — Light Sensitive Tubes

SR50, SR53

PHOTOTUBES are electronic devices which permit the passage of electrons from cathode to anode when the cathode is exposed to visible light, ultra-violet or infra-red. They are suited to the control of lighting. Used for starting, stopping, or controlling mechanical operations. Phototubes are an essential part of apparatus used for counting such objects as cartons, sheets of paper, steel ingots, vehicles or pedestrians, matching colors, keeping printing presses in registry, rejecting packages which are not labeled or are incorrectly labeled, opening doors, detect and record the density of smoke, control of temperature of furnaces, detect the difference between flame and solids heated in the flame.

Type Number	DISCOUNTS		Warranty Class	Shipping Weight Lbs.	Price	Spectral Range, Au.	Vacuum or Gas	Cathode Surface	Sensitivity Microamperes per lumen	Anode Volts, Max.	Max. Length Inches	Max. Diameter Inches
	Min. Quan.	Schedule										
SR-50	12	L 31	F	½	**$5.00**	4000 10000	Vac.	Sl	15	500	4.50	1.45
SR-53	12	L 31	F	½	**7.50**	4000 10000	Vac.	Sl	25	500	4.50	1.45
SK-60	12	L 31	F	½	**5.00**	4000 10000	Gas	Sl	60	90	4.50	1.45
SK-63	12	L 31	F	½	**7.50**	4000 10000	Gas	Sl	125	90	4.50	1.45
WL-734	25	L 31	F	½	**2.60**	4000 10000	Vac.	Sl	15	500	3.94	1.16
WL-735	25	L 31	F	½	**2.60**	4000 10000	Gas	Sl	60	90	3.94	1.16
WL-767	6	L 31	F	3	**50.00**	2000 3150	Vac.	Zirconium	...	500	8.0	3.19
WL-773	6	L 31	F	3	**50.00**	2000 3675	Vac.	Thorium	...	500	8.0	3.19
WL-775	6	L 31	F	3	**50.00**	2000 3000	Vac.	Tantalum	...	500	8.0	3.19
WL-789	6	L 31	F	3	**75.00**	Below 2100	Vac.	Platinum	...	500	8.0	3.50

KENOTRONS — High Voltage Vacuum Rectifiers

KENOTRONS, High Voltage Vacuum Rectifiers, are specially designed to provide high voltage direct current for X-ray, electro-static testing and electro-static precipitation. Westinghouse offers a group of top quality Kenotrons to meet the requirements of these and other applications.

WL-579-B

Type Number	DISCOUNTS		Warranty Class	Shipping Weight Lbs.	Price	FILAMENT		ANODE			Type of Cooling	Max. Length Inches	Max. Diam. Inches
	Min. Quan.	Schedule				Volts	Amps.	Volts, Peak Inverse	Amps. Peak	Amps. Ave.			
WL-456	Any	Net	C	6	**$95.00**	11.0	20	140000	0.50	0.06	Air	18.75	5.06
WL-531	Any	Net	E	6	**125.00**	11.5	20	50000	0.75	0.29	Forced Air	9.5	3.75
WL-579-B	12	L 31	F	1½	**9.50**	2.5	6	20000	0.27	0.025	Air	7.38	2.13
RO-585	12	L 31	F	½	**12.00**	5.0	1.1	1500	0.04	0.003	Air	4.38	1.56
WL-608	2	L 32	C	5	**120.00**	10.0	10	60000	0.20	0.06	Oil	14.75	5.13
WL-612	Any	Net	A	23½	**195.00**	10.0	50	150000	0.75	0.24	Air	25.16	6.13
WL-613	2	L 32	C	5½	**150.00**	11.0	10	140000	0.20	0.06	Air	19	5.06
WL-616	Any	Net	C	9½	**140.00**	20.0	24.5	150000	1.00	0.25	Air	25.25	6.06
WL-660	2	L 32	C	23	**200.00**	10.0	10	230000	0.10	0.03	Air	32.88	6.06

PLIOTRONS—Modulators, Amplifiers, Oscillators


WL-473

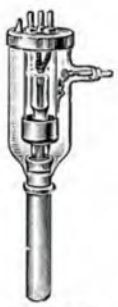
PLIOTRONS are high vacuum Electronic tubes having a great variety of applications which may be listed under three main headings: Amplification, Modulation and Oscillation. Because of the wide range of conditions, Pliotrons are made in many sizes and with different characteristics. They are designed for countless purposes, ranging from radio broadcasting to tin reflow application of induction heating.

Following are some of the principal applications for Pliotrons:

- Induction Heating.
- Dielectric Heating.
- Diathermy.
- Amplification of Voltage and Current of both Radio and Audio Frequency in Radio and Industrial Circuits.


WL-468


WL-880


WL-891


WL-892R

Type Number	DISCOUNTS Min. Quan.	DISCOUNTS Schedule	Warranty Class	Shipping Weight Lbs.	Price	FILAMENT Volts	FILAMENT Amps.	PLATE D-C Volts	PLATE D-C Ma.	PLATE Diss. Watts	PLATE Output Watts	Ampl. Factor	Max. MC for 100% Input	Max. Length Inches	Max. Diam. Inches
WL-195	4	L 32	C	4	$26.00	10.0	3.25	3000	150	125	325	12	15	8.75	4.25R
WL-196	4	L 32	C	4	26.00	10.0	3.25	3000	150	125	325	35	15	8.75	4.25R
WL-203-A	Any	Net	E	1½	10.00	10.0	3.25	1250	175	100	120	25	15	7.88	2.31
WL-204-A	Any	Net	E	5	85.00	11.0	3.85	2500	275	250	450	23	3	14.38	4.06
WL-207	Any	Net	E	8	220.00	22.0	52.00	15000	2000	10000	20000	20	1.6	20.25	6.50R
WL-211	Any	Net	E	1½	10.00	10.0	3.25	1250	175	100	130	12	15	7.88	2.31
WL-460	4	L 32	C	2	26.00	10.0	3.85	3000	200	150	450	18	30	11.00	2.5R
WL-463	4	L 32	C	2	37.00	11.0	5.0	2500	275	200	550	22	30	11.25	2.5R
WL-468	4	L 32	C	2	24.75	10.0	3.85	2500	200	150	400	18	6	10.88	3.06
WL-473	Any	Net	E	8½	125.00	6.0	60.0	3000	1400	2500	3250	22	60	7.25	3.63
RH-507	12	L 31	F	½	24.50	2.0	0.06	9	0.006	.....	.....	0.8	....	5.00	1.56
*WL-787	Any	Net	F	2	15.00	6.0	1.6	100	100	.....	.....	2	....	10.00	2.63
WL-802	Any	Net	F	1	3.50	6.3	0.9	600	60	13	23	....	30	5.75	2.06
WL-803	Any	Net	E	2	25.00	10.0	5.0	2000	175	125	225	....	20	9.38	2.56
WL-805	Any	Net	E	1½	10.00	10.0	3.25	1500	210	125	215	50	30	8.50	2.31
WL-806	Any	Net	E	2½	22.00	5.0	9.5	3300	300	225	780	12.6	30	10.00	3.82
WL-807	Any	Net	F	1	2.25	6.3	0.9	750	100	30	50	....	60	5.75	2.06
WL-809	Any	Net	F	1	2.50	6.3	2.5	1000	100	30	75	50	60	6.56	2.43
WL-810	Any	Net	E	2½	13.50	10.0	4.5	2250	275	150	475	36	30	9.06	2.25R
WL-811	Any	Net	F	1½	3.50	6.3	4.0	1500	150	55	170	160	60	6.56	2.43
WL-812	Any	Net	F	1½	3.50	6.3	4.0	1500	150	55	170	29	60	6.56	2.43
WL-813	Any	Net	E	2½	22.00	10.0	5.0	2000	180	100	260	....	30	7.5	2.56
WL-814	Any	Net	E	1½	15.50	10.0	3.25	1500	150	65	160	....	30	7.75	2.06
WL-815	Any	Net	F	1	4.50	6.3	1.6	500	150	25	56	....	150	4.56	2.38
WL-828	Any	Net	E	1½	17.50	10.0	3.25	1500	180	80	200	....	30	7.75	2.06
WL-833-A	Any	Net	E	3	76.50	10.0	10.0	4000	500	450	1600	35	30	8.82	4.6
WL-837	Any	Net	F	1	2.80	12.6	0.7	500	80	12	22	....	20	5.88	2.06
WL-838	Any	Net	E	1½	9.00	10.0	3.25	1250	175	100	130	54	30	7.88	2.31
WL-845	Any	Net	E	1½	10.00	10.0	3.25	1250	120	100	115	5.3	6	7.88	2.31
WL-849	Any	Net	E	5½	120.00	11.0	5.0	2500	350	400	510	19	3	14.38	4.06
WL-851	Any	Net	E	7½	160.00	11.0	15.5	2500	1000	750	1750	20.5	3	17.63	6.13
WL-860	Any	Net	E	4	21.50	10.0	3.25	3000	150	100	200	....	30	8.75	4.25R
WL-861	Any	Net	E	17	155.00	11.0	10.0	3500	350	400	800	....	20	17.22	6.63R
WL-880	Any	Net	E	21	350.00	12.6	320.0	10500	6000	20000	45000	20	25	11.50	7.00
WL-889	Any	Net	E	9	175.00	11.0	125.0	8500	2000	5000	11000	21	50	10.63	3.63
WL-889-R	Any	Net	E	52	325.00	11	125	8500	2000	5000	11000	21	25	11.75	11.00
§WL-891	Any	Net	E	8	285.00	22	60	12000	2000	6000	12000	8	1.6	20.63	6.5R
§WL-891-R	Any	Net	E	94	410.00	22	60	10000	2000	4000	11000	8	1.6	22.00	6.5R
§WL-892	Any	Net	E	8	190.00	22	60	15000	2000	10000	20000	50	1.6	20.63	6.5R
§WL-892-R	Any	Net	E	94	410.00	22	60	12500	2000	4000	14000	50	1.6	22.00	6.5R
†WL-893	Any	Net	E	27	450.00	20	183	20000	4000	20000	50000	36	5	26.75	6.38R
†WL-893-R	Any	Net	E	455	800.00	20	183	20000	4000	20000	50000	36	5	28.50	16.75
‡WL-895	Any	Net	E	85	950.00	19*	138*	17000	9000	40000	100000	37	6	23.44	4.65R
‡WL-895-R	Any	Net	E	465	1250.00	19*	138*	17000	9000	20000	90000	37	6	24.50	16.75
WL-899-A	Any	Net	E	125	750.00	14.5	180	18000	5000	30000	35000	27	5	40.00	6.13

* Demonstration Pliotron.
§ Two filament strands in series with large post at neutral junction; operate in series or two phase.
† Six filament strands connected each post to floating neutral, 61 amperes per strand.
‡ Three filament strands connected from black posts to neutral center post.
R—Indicates Air-Cooled Radiator in column headed Type Number and clearance radius in column headed Diameter.

PHANOTRONS — Gas or Mercury Vapor Rectifiers

PHANOTRONS, Gas or Mercury Vapor Rectifiers, can supply moderate amounts of Direct Current at Voltages up to 20,000 volts for general power applications, plate supply for Amplifiers and Oscillators, etc. The Westinghouse list of Phanotrons includes tubes of ratings to meet all needs.

WL866A/866

Type Number	DISCOUNTS		Warranty Class	Shipping Weight	Price	FILAMENT		ANODE			Type of Cooling	Max. Length Inches	Max. Diam. Inches
	Min. Quan.	Schedule				Volts	Amps.	Volts, Peak Inverse	Amps. Peak	Amps. Ave.			
WL-670-A	12	L 31	A	1½	$15.00	2.5	24	1000	9.5	6.0	Air	8	2.06
WL-857-B	Any	Net	E	7½	160.00	5	30	22000	40	10.0	Air	19.88	7.13
WL-866-A/866	Any	Net	F	¾	1.50	2.5	5	10000	1	0.25	Air	6.63	2.44
WL-869-B	Any	Net	E	5	100.00	5	18	20000	10	2.5	Air	14.37	5.06
WL-872-A/872	Any	Net	F	1	7.50	5	7.5	10000	5	1.25	Air	8.5	2.31
WL-881	Any	Net	E	5	100.00	5	9.5	15000	15	5	Air	14.50	5.06

IGNITRONS — Ignitor Controlled Rectifiers

IGNITRONS, Ignitor - Controlled Rectifiers, are metal shell tubes capable of supplying large impulses of closely controlled alternating current or continuous direct current. Tube passes current only in one direction. Westinghouse line of Ignitrons comprises tubes capable of outputs for welding of 300 KVA to 2400 KVA, and rectified current capacity up to 200 Amperes continuous per tube at 600 volts.

WL-651/656

Type Number	DISCOUNTS		Warranty Class	Shipping Weight Lbs.	Price	OUTPUT AND CURRENT				Type of Cooling	Size or Service	Length + Lead Inches	Max. Diam. Inches
	Min. Quan.	Schedule				Supply Volts RMS	Max. KVA	At Ave. Amps.	KVA At / Max. Ave. Amps.				
WL-651/656	Any	Net	B	14½	$75.00	200-600	1200	75 6	400 / 140	Water	C	12 +15	4.25
WL-652/657	Any	Net	B	9	51.00	200-600	600	30 2	200 / 56.0	Water	B	14.75+12	2.75
WL-653-B	Any	Net	D	36	220.00	2400	2400	135	1150 / 207	Water	Rect.	21.4 +8.75	5.75
WL-654/659	Any	Net	B	3¼	50.00	REPLACEMENT ONLY				REPLACEMENT ONLY			
WL-655/658	Any	Net	B	32	165.00	200-600	2400	192	800 / 355	Water	D	21 +15.38	5.63
WL-679	Any	Net	D	20	120.00	2400	1200	75	600 / 113	Water	Rect.	17.95+9.38	4.06
WL-681/686	Any	Net	B	2¼	30.00	200-600	300	12.1	100 / 22.4	Clamp	A	8.38+7.38	2.13
WL-682	Any	Net	B	3	33.00	REPLACEMENT ONLY				REPLACEMENT ONLY			

KU-627

THYRATRONS — Grid Controlled Rectifiers

THYRATRONS, Grid-Controlled Rectifiers, are used to close circuits and start and stop operations instantly, silently, and without moving parts. Westinghouse supplies a group of Thyratrons covering all applications.

Type Number	DISCOUNTS		Warranty Class	Shipping Weight Lbs.	Price	FILAMENT		ANODE			Gas	Control	Max. Length Inches	Max. Diam.* Inches
	Min. Quan.	Schedule				Volts	Amps.	Volts, Peak Inverse	Amps. Peak	Amps. Ave.				
WL-414	Any	Net	B	9	$70.00	5.0	20.0	2000	100.0	12.5	Hg	Neg.	15.25	3.12
KU-610	12	L 31	F	1	17.50	2.5	6.5	500	0.4	0.1	Inert	Pos.	6.5	2.44
KU-618	12	L 31	F	1	9.50	Cold	Cath.	800	0.1	0.015	Inert	Pos.	5.75	2.18
KU-627	12	L 31	B	1	11.00	2.5	6.0	2500	2.5	0.64	Hg.	Neg.	7.0	2.44
KU-628	12	L 31	B	1¾	22.00	5.0	11.5	2500	8.0	2.0	Hg.	Neg.	9.00	3.18
WL-629	12	L 31	F	½	4.50	2.5	2.6	350	0.2	0.04	Inert	Neg.	4.25	1.56
WL-631	Any	Net	B	1½	13.50	5.0	4.5	1000	15.0	2.5	Hg.	Neg.	7.25	3.00
WL-632-A	Any	Net	B	1¾	16.00	5.0	6.0	1500	30.0	2.5	Hg.	Neg.	8.69	1.75R
KU-636	12	L 31	A	1½	15.00	2.5	7.0	350	0.4	0.1	Inert	Neg.	7.0	2.44
WL-672	12	L 31	B	1¾	19.00	5.0	6.0	1500	30.0	2.5	Hg.	Neg.	8.38	2.31
KU-676	6	L 32	B	2	34.00	5.0	9.5	2500	40.0	6.4	Hg.	Neg.	11.75	3.81
WL-677	6	L 32	B	2	34.00	5.0	9.5	10000	15.0	4.0	Hg.	Neg.	11.75	3.81
WL-2050	Any	Net	F	½	1.35	6.3	0.6	1300	0.5	0.1	Inert	Neg.	4.13	1.56

* R Indicates clearance radius in column headed "Diameter".

MISCELLANEOUS GROUP

This group of tubes includes Protector Tubes, Current Regulator Tubes, Low Pressure Measuring Tubes.

Protector tubes are normally used in protecting supervisory control lines from high voltage surges which might endanger the insulation of instruments, transformers, etc.

Current Regulator Tubes are used to maintain constant current in a circuit with fluctuating voltage. They are ordinarily used in connection with instrumentation circuits.

Low Pressure Measuring Tubes are used for continuous indication of degree of vacuum in low pressure systems.

PROTECTOR

Type Number	DISCOUNTS		Warranty Class	Shipping Weight Lbs.	Price	VOLTS RMS		CURRENT		Max. Length	Max. Diameter
	Min. Quan.	Schedule				Breakdown	Max. Operating	Max. 2 Sec.	Max. 10 Min.		
KX-642	12	L 31	F	½	**$10.00**	300-500	230	50 Amp.	7 Amp.	4.75	2.19

REGULATOR

Type Number	DISCOUNTS		Warranty Class	Shipping Weight Lbs.	Price	Voltage Range Filament Volts	CURRENT			Length Max.	Diameter Max.
	Min. Quan.	Schedule					Normal	Change per Volt	Total		
WL-710	Any	Net	F	½	**$3.00**	20-30	250 Ma.	1.4 Ma.	10 Ma.	2.50	1.19
WL-711	Any	Net	F	½	**3.00**	7-11	500 Ma.	4 Ma.	12 Ma.	2.50	1.19
WL-712	Any	Net	F	½	**3.00**	19-25	500 Ma.	3.8 Ma.	19 Ma.	2.50	1.19
WL-788	Any	Net	F	½	**3.00**	8-18	250 Ma.	1.7 Ma.	10 Ma.	2.50	1.19
WL-896	Any	Net	F	½	**3.00**	4- 9	250 Ma.	2 Ma.	8 Ma.	2.50	1.19

PRESSURE INDICATOR

WL-762	12	L 31	F	1	**15.00**	10 -13	0.3 Ampere	7.88	1.56

INTERCHANGEABILITY CHART

This chart shows all tubes which are completely interchangeable with Westinghouse Tubes. Competitive tubes are arranged in numerical order. Tubes listed in this section are completely interchangeable.

Competitive Tube	Class	Westinghouse Equal
CEID	Phototube	**WL-735**
CEIVD	Phototube	**WL-734**
NU-1	Phototube	**WL-735**
KC-4	Kenotron	**WL-616**
G-9	Phototube	**WL-735**
V-9	Phototube	**WL-734**
PJ-22	Phototube	**WL-734**
PJ-23	Phototube	**WL-735**
FB-50	Regulator	**WL-896**
FG-57	Thyratron	**WL-631**
RK-57	Pliotron	**WL-805**
59-A	Phototube	**WL-735**
59-AV	Phototube	**WL-734**
HY-61/807	Pliotron	**WL-807**
F-204A	Pliotron	**WL-204A**
204A	Pliotron	**WL-204A**
GL-204A	Pliotron	**WL-204A**
207	Pliotron	**WL-207**
GL-207	Pliotron	**WL-207**
211	Pliotron	**WL-211**
GL-211	Pliotron	**WL-211**
FG-235A	Ignitron	**WL-651/656**
FG-238B	Ignitron	**WL-653B**
FG-258A	Ignitron	**WL-655/658**
FG-258B	Ignitron	**WL-655/658**
FG-259B	Ignitron	**WL-679**
FG-271	Ignitron	**WL-652/657**

Competitive Tube	Class	Westinghouse Equal
295A	Pliotron	**WL-203A**
303	Pliotron	**WL-203A**
304A	Pliotron	**WL-204A**
F-307A	Pliotron	**WL-207**
311	Pliotron	**WL-211**
311T	Pliotron	**WL-211**
WE-322A	Pliotron	**WL-803**
F-353A	Phanotron	**WL-872A/872**
369A2	Phanotron	**WL-869B**
369B3	Phanotron	**WL-869B**
376A	Pliotron	**WL-469**
GL-414	Thyratron	**WL-414**
GL-415	Ignitron	**WL-681/686**
509	Pliotron	**WL-889**
GL-509	Pliotron	**WL-889**
GL-509R	Pliotron	**WL-889R**
WL-630 & 630A	Pliotron	**WL-2050**
KU-634	Pliotron	**WL-677**
GL-802	Pliotron	**WL-802**
GL-803	Pliotron	**WL-803**
GL-805	Pliotron	**WL-805**
GL-806	Pliotron	**WL-806**
RCA-806	Pliotron	**WL-806**
GL-807	Pliotron	**WL-807**
RCA-807	Pliotron	**WL-807**
GL-809	Pliotron	**WL-809**
GL-810	Pliotron	**WL-810**

INTERCHANGEABILITY CHART (cont.)

Competitive Tube	Class	Westinghouse Equal
GL-811	Pliotron	**WL-811**
GL-812	Pliotron	**WL-812**
GL-813	Pliotron	**WL-813**
GL-814	Pliotron	**WL-814**
GL-815	Pliotron	**WL-815**
GL-828	Pliotron	**WL-828**
833	Pliotron	**WL-833A**
GL-833A	Pliotron	**WL-833A**
GL-837	Pliotron	**WL-837**
GL-838	Pliotron	**WL-838**
845	Pliotron	**WL-845**
GL-845	Pliotron	**WL-845**
849	Pliotron	**WL-849**
F-849	Pliotron	**WL-849**
GL-849	Pliotron	**WL-849**
GL-851	Pliotron	**WL-851**
857A	Phanotron	**WL-857B**
857B	Phanotron	**WL-857B**
GL-857B	Phanotron	**WL-857B**
GL-860	Pliotron	**WL-860**
RCA-860	Pliotron	**WL-860**
861	Pliotron	**WL-861**
GL-861	Pliotron	**WL-861**
RCA-861	Pliotron	**WL-861**
866	Phanotron	**WL-866A/866**
866A	Phanotron	**WL-866A/866**
866A/866	Phanotron	**WL-866A/866**
GL-866A/866	Phanotron	**WL-866A/866**
868	Phototube	**WL-735**
GL-868 (PJ-23)	Phototube	**WL-735**
869A	Phanotron	**WL-869B**
GL-869A	Phanotron	**WL-869B**
869B	Phanotron	**WL-869B**
GL-869B	Phanotron	**WL-869B**
872	Phanotron	**WL-872A/872**
GL-872	Phanotron	**WL-872A/872**
872A	Phanotron	**WL-872A/872**
GL-872A	Phanotron	**WL-872A/872**
872A/872	Phanotron	**WL-872A/872**
GL-872A/872	Phanotron	**WL-872A/872**
GL-880	Pliotron	**WL-880**
GL-889	Pliotron	**WL-889**
GL-889R	Pliotron	**WL-889R**
F-891	Pliotron	**WL-891**
GL-891	Pliotron	**WL-891**
F-891R	Pliotron	**WL-891R**
GL-891R	Pliotron	**WL-891R**
GL-892	Pliotron	**WL-892**
GL-892R	Pliotron	**WL-892R**
GL-893	Pliotron	**WL-893**
905	Pliotron	**WL-805**
938	Pliotron	**WL-838**
945	Pliotron	**WL-845**
949	Pliotron	**WL-849**
951	Pliotron	**WL-851**
952	Pliotron	**WL-195**
966	Phanotron	**WL-866A/866**
966A	Phanotron	**WL-866A/866**
972A	Phanotron	**WL-872A/872**
2050	Thyratron	**WL-2050**
GL-2050	Thyratron	**WL-2050**
2051	Thyratron	**WL-2050**
GL-2051	Thyratron	**WL-2050**
3119	Pliotron	**WL-860**
3124A	Pliotron	**WL-861**

Tubes listed in this section are interchangeable except as noted.

Competitive Tube	Westinghouse Equal with noted differences	
HV-12	**WL-468**	WL-468—1⅜" longer, ⅝" greater diameter. Usually interchangeable in diathermy applications.
HV-18	**WL-460**	Interchangeable for diathermy applications.
RK-25/25B	**WL-802**	WL-802—¼" shorter. Usually interchangeable.
HV-27	**WL-468**	WL-468—1⅜" longer, ⅝" greater diameter. Interchangeable in diathermy applications.
RK-28	**WL-803**	WL-803—⅛" shorter, ¼" greater diameter.
HY-30	**WL-809**	WL-809—9/16" longer, ⅜" greater diameter.
RK-44	**WL-837**	WL-837—⅛" shorter.
RK-47	**WL-814**	WL-814—1" shorter.
FG-95	**WL-632A**	Completely interchangeable except WL-632A is ¾" longer and is not interchangeable in Unionmelt equipment.
T-200	**WL-460**	WL-460—1½" longer, ¾" greater diameter. Interchangeable in diathermy applications.
EE-200	**WL-460**	WL-460—2¼" longer, 3/16" greater diameter. Interchangeable in diathermy applications.
HF-200	**WL-460**	WL-460—¾" longer. Interchangeable in diathermy applications.
GL-203	**WL-203A**	WL-203A—⅛" longer.
HD-203A	**WL-468**	Interchangeable in diathermy applications.
266B	**WL-857B**	Cathode base only difference.
WE-319A	**WL-872A/872**	Fully interchangeable except for guadrature operation.
T-814	**WL-468**	WL-468—1⅜" longer, ⅝" greater diameter. Interchangeable in diathermy applications.
T-822	**WL-468**	WL-468—1⅜" longer, ⅝" greater diameter. Interchangeable in diathermy applications.
F-891	**WL-891**	WL-891—¾" longer, 7/16" greater diameter.
F-891R	**WL-891R**	WL-891R—15/16" greater diameter.
F-892	**WL-892**	WL-892—¾" longer, 7/16" greater diameter.
F-892R	**WL-892R**	WL-892R—15/16" longer, 3/16" greater diameter.

WARRANTY POLICY

*Warranty Classes

All Westinghouse Electronic tubes listed are sold with a minimum life warranty, as outlined in following paragraphs, which, in effect, assures the user a limited periodic replacement cost of tubes. Some of the tubes listed have not been given pro-rata life warranty because service hazards are small or the price will not bear the expense of administering such pro-rata warranty, which would include serial numbering, shipping records, and life performance records by the customer. Assurance is given that the quality of design, workmanship and material is the equal of those tubes for which pro-rata life warranties are given. Consideration will be given to claims for adjustment if abnormally short average operating life is obtained in properly designed equipment. Various classes of warranties are given because of the many different conditions which exist in applications of electronic tubes.

Class A Warranty

1. The tube is warranted to be free of defects in design, material and workmanship and no other warranty may be implied. If such defects appear within one year after the tube is placed in service (or before 3000 hours of service, whichever occurs first) and "Return Tube Procedure" has been followed, a pro-rata adjustment will be made, based on the difference between the elapsed life in months at failure and twelve months, provided that the tube has not been used at an average rate greater than 3000 hours per year. A fraction of a month consisting of sixteen days or more, will be considered a full month of life, while a period of fifteen days or less will be deducted from the tube life.

2. If used at a greater rate than 3000 hours per year, the pro-rata adjustment will be based upon the difference between the elapsed life in hours at failure and 3000 hours.

3. The life of the tube (when used at an average rate of 3000 hours per year or less) is the elapsed time in months from the time the tube is first placed in service until failure. Once a tube has been installed in regular service, its life will be considered continuous, even though it be removed and used as a spare.

4. No adjustment will be made if the tube life exceeds either 3000 hours or one year. This warranty expires eighteen months after shipment by the Westinghouse Company.

Class B Warranty

1. The tube is warranted to be free from defects in design, material and workmanship and no other warranty may be implied. If such defects appear within one year after the tube is placed in service and "Return Tube Procedure" has been followed, a pro-rata adjustment will be made, based upon the difference between the elapsed life in months at failure and one year. A fraction of a month, consisting of sixteen days or more, will be considered a full month of life. A period of fifteen days or less, will be deducted from the tube life.

2. The life of the tube is the elapsed time in months from the date the tube is first placed in service until failure. Once a tube has been installed in regular service its life will be considered continuous.

3. No adjustment will be made if the tube life exceeds one year. This warranty expires eighteen months after shipment by the Westinghouse Company.

Class C Warranty

1. The tube is warranted to be free of defects in design, material and workmanship and no other warranty may be implied. If such defects appear within one year after the tube is placed in service (or before 1000 hours of service, whichever occurs first) and "Return Tube Procedure" has been followed, a pro-rata adjustment will be made, based on the difference between the elapsed life in months at failure and twelve months, provided that the tube has not been used at an average rate greater than 1000 hours per year. A fraction of a month of sixteen days or more, will be considered a full month of tube life, while fifteen days or less will be deducted from the tube life.

2. If used at a rate greater than 1000 hours per year, the pro-rata adjustment will be based upon the difference between the elapsed life in hours at failure and 1000 hours.

3. The life of the tube (when used at an average rate of 1000 hours per year or less) is the elapsed time in months from the date the tube is first placed in service until failure. Once a tube has been installed in regular service, its life will be considered continuous even though it be removed and used as a spare.

*4. No adjustment will be made if the tube life exceeds either 1000 hours or one year. This warranty expires fifteen months after shipment by the Westinghouse Company.

Class D Warranty

1. Tubes listed under Class D Warranty are only for rectifier service.

2. The tube is warranted to be free from defects in design, material and workmanship and no other warranty may be implied. If such defects appear within three years after the tube is placed in service and "Return Tube Procedure" has been followed, a pro-rata adjustment will be made, based upon the difference between the elapsed life in months at failure and three years. A fraction of a month, consisting of sixteen days or more, will be considered a full month of life. A period of fifteen days or less, will be deducted from the tube life.

3. The life of the tube is the elapsed time in months from the date the tube is first placed in service until failure. Once a tube has been installed in regular service its life will be considered continuous.

*4. No adjustment will be made if the tube life exceeds three years. This warranty expires 60 months after shipment by the Westinghouse Company.

5. The equipment manufacturer must assume all responsibility for the circuits used to control the tubes and for applying the tubes within their design limitations.

6. Tubes sold under this guarantee use stainless steel to minimize corrosion. This guarantee, however, does not cover corrosion or sludging of the tube envelope or water jacket and the equipment manufacturer must assume full responsibility for investigation of water conditions on each application and furnish adequate corrosion preventative equipment, such as heat exchangers, wherever necessary.

*Class E Warranty

The tube is warranted to be free from defects in design, material and workmanship, and no other warranty may be implied. If such defects appear, the tube will be subject to full adjustment for failures within 50 hours service or proportional adjustment for the difference between elapsed life and 1000 hours for failures up to 1000 hours service, provided service has been within published tube ratings and "Return Tube Procedure" has been followed. No adjustment will be made if the tube life exceeds either 1000 hours or one year.

For users the warranty period extends for 12 months after receipt of tube while for dealers and equipment manufacturers the warranty period extends 18 months after receipt.

*Class F Warranty

The tube is warranted to be free from defects in design, material and workmanship, and no other warranty may be implied. If such defects appear within one month after the tube is placed in service and "Return Tube Procedure" has been followed, full credit will be allowed. No adjustment will be made if tube life exceeds one month. This warranty expires 12 months after shipment by the Westinghouse Company.

Return Tube Procedure

1. **Permission and Shipping Instructions** for returning any tube must be secured from the nearest sales office or representative before return of tube for inspection or credit consideration.

2. **Service Report Form** supplied by the Company must be completely filled out by the user and returned with the tube in order to obtain credit consideration.

3. Since evidence of improper handling or abuse automatically voids guarantees, all tubes should be used in properly designed and protected equipments and in conformity with published recommendations and ratings. Tubes which are so used, but which may fail by reason of manufacturing defect in design, material or workmanship within the warranty period, should be returned as promptly as possible.

4. For the purchaser's protection it is important that all tubes be mechanically inspected and electrically tested upon receipt. This enables customer to file with the carrier a concealed damage claim, if such is in order, within the carrier's specified time limit; and enables the Company to render assistance to the customer, if desired, in the prosecution of any justified carrier claim.

License Notice

The sale of these tubes conveys no license for use in connection with public service communication, sound or picture recording or reproduction of sound or pictures from records for motion picture audience purposes where an admission fee is charged. Furthermore, the sale of these tubes conveys no license, either expressed or implied, under any patents owned by the Westinghouse Electric & Manufacturing Company, its owned or controlled companies, or under which it is licensed, other than patents covering the tubes themselves.

Conditions

The Company shall not be liable for loss, damage, detention or delay resulting from causes beyond its reasonable control or caused by fire, strike, civil or military authority, priority requests of the United States Government or any department, branch or representative thereof, insurrection or riot, embargoes, car shortages, wrecks or delays in transportation, or inability to obtain necessary labor, materials, or manufacturing facilities due to such causes; nor, in any event, for consequential damages.

*Denotes change from previous issue.

WESTINGHOUSE ELECTRIC & MANUFACTURING CO.

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