Dieter’s

Nixie Tube Data Archive

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If you have more datasheets, articles, books, pictures or other information about Nixie tubes or other display devices please let me know.
Thank you!

Document in this file	Amperex Catalogue CC363 - Dated 1963-03
Display devices in this document	6370, E1T, 6977, ET51, Z303C, Z502S, Z503M, Z550M, NF00649, NF00650

File created by Dieter Waechter
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REVISED MARCH
1963

Amperex®

ELECTRON TUBES

ask Amperex

Price
50¢

AMPEREX ELECTRONIC CORPORATION • 230 DUFFY AVE., HICKSVILLE, L. I., N. Y.

FOREWORD

This condensed catalog has been compiled for those in the engineering field who seek the proper tubes to suit their applications. It is also intended to serve as a quick reference guide for initial equipment as well as for replacement purposes.

Detailed data sheets on the various tubes listed in this catalog are available upon request.

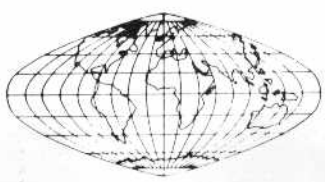
A condensed semiconductor brochure is also available upon request.

A detailed engineering Transmitting and Power Tube Manual giving complete tube characteristics and application data is available to engineers at the nominal cost of $5.50.

The Semiconductor Manual contains detailed data concerning Amperex transistors, diodes and photo-sensitive devices, and is available at $5.50. The Amperex Special Purpose Tube Manual includes complete information concerning entertainment and industrial tubes (including reliable and rugged types), cold cathode tubes, miniature tubes, tuning indicators and permanent sensitivity radiation counter tubes and is available at a cost of $5.50. The Nuclear Products Manual covering neutron detectors, thermocoax products, GM counter tubes and photomultiplier tubes is also available at $5.50.

AMPEREX is always interested in quoting on all tube and semiconductor requirements. Our research, development and manufacturing facilities are such that we welcome inquiries on new products.

AMPEREX ELECTRONIC CORPORATION



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PHOTOMULTIPLIER TUBES

TYPE NO.	Min. Useful Photocathode Diameter (mm)	Number of Stages	Base	Maximum Spectral Response (Angstroms)	Resolution Cs-137	Minimum Photocathode Sensitivity (μA/lm)	Average Photocathode Sensitivity (μA/lm)	Minimum Anode Sensitivity (A/lm)	For a Supply Voltage of (V)	Minimum Gain at 1800 V
152AVP	14	10		4200		25	40	30	1800	$5x10^6$
50 AVP	32	11	duodecal	4200		25	50	60	1800	–
51 UVP	32	11	duodecal	4000		25	50	60	1800	–
52 AVP	20	10	spec. 13 pin	4200		15	30	15	1800	–
53 AVP	44	11	diheptal	4200		25	50	60	1800	–
53 UVP	44	11	diheptal	4000		25	50	60	1800	–
54 AVP	111	11	diheptal	4200		25	50	100	1800	–
55 AVP	44	15	bidecal	4200		25	50	–	–	10^8
56 AVP	42	14	bidecal	4200		–	50	–	–	10^8
57AVP	200	11	diheptal	4200				60	1800	$5 \cdot 10^6$
58AVP	110	14	bidecal	4200		–	50	–	3000	$>10^8$
150 CVP	32	10		8000		–	20	100	1800	$5 \cdot 10^6$
153 AVP		11	diheptal		<9%	For all other chacteristics, see 53 AVP				
XP1010					<9%	Selected for low noise and resolution. For all other characteristics, see 150 AVP				
XP1030	63.5	10		4200		40	60	100	1800	$4x10^6$
XP1031	63.5	10		4200	<9%	40	70	100	1800	$4x10^6$

INSTRUCTIONS FOR USE — To take full advantage of the possibilities offered by the Amperex photomultipliers and to insure a long life of the tubes, the following rules must be observed.

Voltage distribution	A[1]	B
Between D_1 and PK	$1.5\ V_0$[2]	$2\ V_0$[2]
Between D_2 and D_1	V_0[3]	V_0[3]
Between D_3 and D_2	V_0	V_0
Between D_{n-3} and D_{n-4}	V_0	V_0
Between D_{n-2} and D_{n-3}	V_0	$1.25\ V_0$
Between D_{n-1} and D_{n-2}	V_0	$1.5\ V_0$
Between D_n and D_{n-1}	V_0	$1.75\ V_0$
Between anode and D_n	$0.75\ V_0$	$2\ V_0$

[1] When the supply voltage is low, special attention has to be paid to the fact that the voltage between photocathode and dynode No. 1 may never be less than 180 V and that the voltage between the other electrodes may never drop below 80 V. (With the tubes 50 AVP and 51 UVP between D_3 and D_1 at least 160 V.)

[2] In case of gamma-spectrometry this must be between 2 and $3V_0$.

[3] With the tubes 50 AVP and 51 UVP between D_3 and D_1: $2V_0$.

[4] n means last dynode i.e.:
n = 10 for the 150 AVP and 52 AVP
n = 11 for the 50 AVP, 51 UVP, 53 AVP, 53 UVP and 54 AVP
n = 14 for the 56 AVP
n = 15 for the 55 AVP

COUNTING, SELECTING and INDICATING TUBES

TYPE NO.	FILAMENT		Maintaining Voltage (V)	at Cathode Current (μ a)	Maximum Counting Rate (KC)	Bias (V)	Minimum A-K Ignition Voltage (V)
	Volts	Amps					
6370/E1T	6.3	0.3	–	–	100	–	–
6977[1]	1.0	0.3	Anode: 50 DC	Zero light output at 3.5 grid volts. Maximum light output at 0 grid volts.			
ET51	6.3	0.3	T:100 S: 100	T:5.5 S: 1.0	1,000	+25 V (Grid)	
Z303C	–	–	186 to 196	300	4	+35 Guide - 20 Cath.	–
Z502S	–	–	186 to 196	300	4	+35 Guide - 20 Cath.	–
Z503M	–	–	108	60	–	–	129
Z550M	–	–	82	3 ma	–	Fires on 5 V above common starter voltage	
NF00649	24	0.125	Small, compact, selective, digital indicator (Green)				
NF00650	24	0.125	Small, compact, selective, digital indicator (Orange)				

[1] Available to Military Specifications.

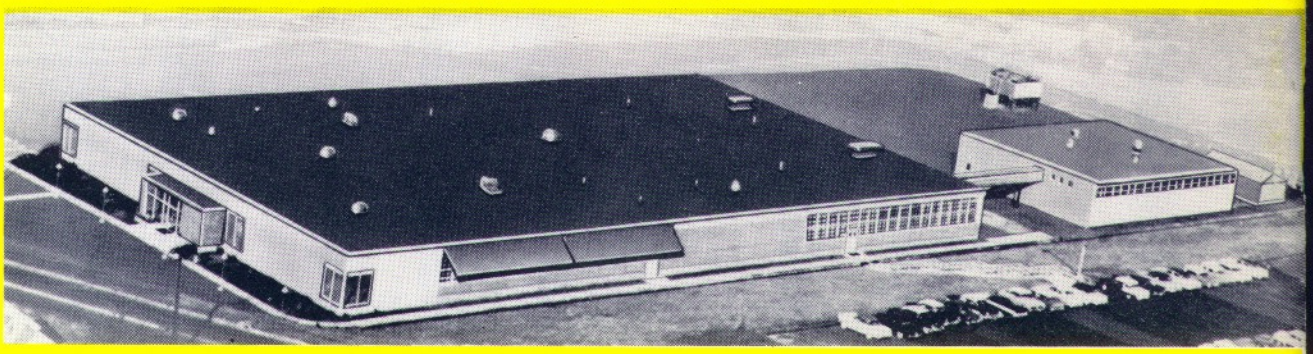
Average Anode Sensitivity (A/lm)	For a Supply Voltage of (V)	Maximum Direct Dark Current (nA)	For an Anode Sensitivity of (A/lm)	Or a Gain of	Maximum Anode Dissipation (W)	Ratio Luminous Flux/Anode Current Linear up to		TYPE NO.
						(voltage distribution A, see instr. for use) (ma)	(voltage distribution B, see instr. for use) (ma)	
150	1800	100	30	–	0.5	5	10	152 AVP
500	1800	50	60	–	0.5	30	100	50 AVP
500	1800	50	60	–	0.5	30	100	51 UVP
30	1800	100	15	–	0.5	5	10	52 AVP
500	1800	50	60	–	0.5	30	100	53 AVP
500	1800	50	60	–	0.5	30	100	53 UVP
500	2000	500	250	–	0.5	30	100	54 AVP
–	–	5000	–	10^8	0.5	30	100	55 AVP
–	–	5000	–	10^8	1	100	300	56 AVP
500	–	1000	60	–	0.5	30	100	57AVP
–	–	10000	–	10^8	1	100	300	58AVP
100	1800	10000	20	–	0.5	30	100	150CVP
								153AVP
								XP1010
250	1800	200	100		0.5	50	100	XP1030
300	1800	200	100		0.5	50	100	XP1031

TRAVELING WAVE TUBES

TYPE	Description	Freq. Range Kmc	Type Output	HEATER		Helix Voltage (volts)	Mag. Field (Gauss)	Gain (db)	Power Output Watts
				Volts	Amps				
55340	Amplifier	3.8-4.2	Waveguide	6.3	0.8	1100	600	37	5
7537	Amplifier	4.4-5	Waveguide	6.3	0.8	1100	600	34	3.5

K_o Reset Voltage (V)	DESCRIPTION	TYPE NO.
–	Special beam deflecting decade counter with numerals 0 to 9 for scalers, computers, etc.	6370/E1T
	Subminiature vacuum triode with fluorescent anode particularly suited for transistorized circuits. 20,000 hour life.	6977[1]
	Ultra-fast beam-switching decade counter for scalers, analyzers, etc.	ET51
-120	Cold cathode bi-directional visual indicating decade counting tube.	Z303C
-120	Cold cathode bi-directional visual indicating decade selector tube.	Z502S
Ext'ing 105 V	Cold cathode decade indicator tube.	Z503M
	Cold cathode decade numerical indicator tube especially designed for transistorized circuits.	Z550M
		NF00649
		NF00650

Amperex Electronic Corporation, Hicksville, Long Island, New York
Sales Offices, Applications Laboratories and Tube Manufacturing Plant



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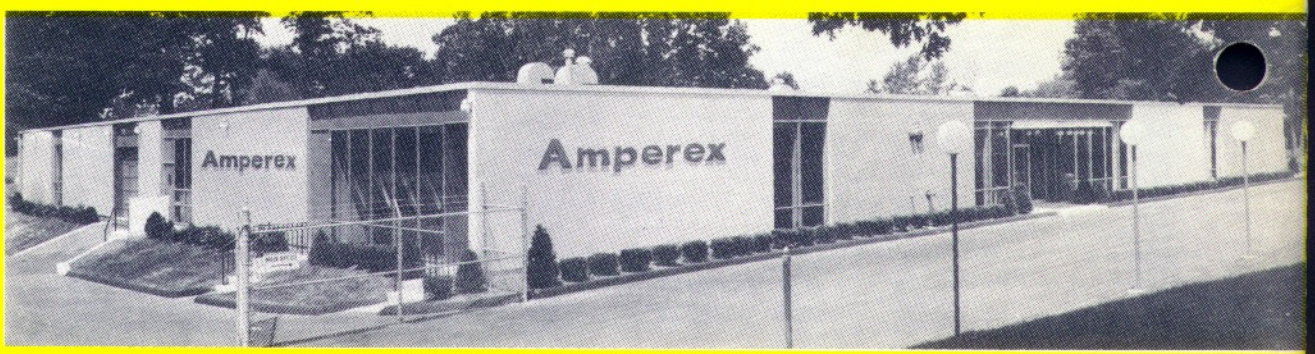
Slatersville, Rhode Island



Amperex Semiconductor Manufacturing Plant
Cranston, Rhode Island

In line with the growth, complexity and new applications of electronics, The AMPEREX ELECTRONIC CORP. research laboratories are continuously improving existing tubes and semiconductors, and developing new types.

Facilities for research and study of glass technology, metallurgy, chemistry, solid state physics, radiation detection, high voltage phenomena, etc. are utilized for the purpose of incorporating these improvements.

A modern, well-equipped Application Engineering Department is also available for the assistance of our customers who are concerned with circuit and application problems relating to tubes and semiconductors.

The latest production techniques and "know-how" are applied to the manufacture of AMPEREX products which, for over 35 years, have achieved a reputation for reliability of performance and long life.

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