



6328

6328

MULTIPLIER PHOTOTUBE

9-STAGE TYPE WITH S-4 RESPONSE

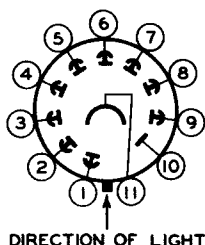
For ac automobile-headlight-control service

DATA

General:

Spectral Response	S-4
Wavelength of Maximum Response	4000 $\pm$ 500 angstroms
Cathode:	
Minimum projected length*	0.93"
Minimum projected width*	0.31"
Direct Interelectrode Capacitances:	
Anode to dynode No.9	4.2 μ f
Anode to all other electrodes	5.5 μ f
Maximum Overall Length	3.12"
Maximum Seated Length	2.69"
Length from Base Seat to Center of Useful Cathode Area	1.56" $\pm$ 0.09"
Maximum Diameter	1.31"
Operating Position	Any
Weight (Approx.)	1.6 oz
Bulb	T9
Base	Small-Shell Neosubmagnal 11-Pin (JETEC No.B11-104), Non-hygroscopic
Basing Designation for BOTTOM VIEW	11K

Pin 1—Dynode No.1
Pin 2—Dynode No.2
Pin 3—Dynode No.3
Pin 4—Dynode No.4
Pin 5—Dynode No.5
Pin 6—Dynode No.6



Pin 7—Dynode No.7
Pin 8—Dynode No.8
Pin 9—Dynode No.9
Pin 10—Anode
Pin 11—Photo-
cathode

Maximum Ratings, Absolute Values:

ANODE-SUPPLY VOLTAGE (Peak AC or DC) . . .	1250 max. volts
SUPPLY VOLTAGE BETWEEN DYNODE No.9 AND ANODE (Peak AC or DC)	250 max. volts
AVERAGE ANODE CURRENT ⁰	0.1 max. ma
AMBIENT TEMPERATURE	75 max. °C

Characteristics Range Values for Equipment Design:

Under conditions with supply voltage (E) across a voltage divider providing 1/10 of E between cathode and dynode No.1; 1/10 of E for each succeeding dynode stage; and 1/10 of E between dynode No.9 and anode

With E = 1000 volts dc

	Min.	Median	Max.
Sensitivity:			
Radiant, at 4000 angstroms	—	35000	— μ a/ μ w

*,⁰: See next page.

← Indicates a change.



6328

MULTIPLIER PHOTOTUBE

	Min.	Median	Max.	
Luminous:▲				
At 0 cps.	-	35	-	amp/lumen
At 100 Mc	-	33	-	amp/lumen
Dark Current, Any Electrode				
Except Anode at 25° C	-	-	0.75	μa
With E = adjustable ac voltage				
	Min.	Median	Max.	
Anode-to-Cathode Voltage (RMS) #	525	750	990	volts
Anode Dark Current at 25° C ♣	-	-	0.1	μa

* On plane perpendicular to the indicated direction of incident light.

○ Averaged over any interval of 30 seconds maximum.

▲ For conditions where light source is a tungsten-filament lamp operated at a color temperature of 2870° K; a light input of 10 microlumens is used; and the load resistor has a value of 0.01 megohm.

* For conditions where the light flux from a tungsten-filament lamp operated at a color temperature of 2870° K is transmitted through a filter (Corning No. 2418 having an effective transmission of luminous flux of 5%) onto the photocathode. The value of light flux incident on the filter is 10 microlumens and the load resistor is 0.01 megohm. Supply voltage (E) is adjusted to give an anode current of 8 microamperes.

♣ For conditions same as (#) except no radiant flux on photocathode.

OPERATING CONSIDERATIONS

The *operating stability* of the 6328 is dependent on the magnitude of the anode current and its duration. When the 6328 is operated at high values of anode current, a drop in sensitivity (sometimes called fatigue) may be expected. The extent of the drop below the tabulated sensitivity values depends on the severity of the operating conditions. After a period of idleness, the 6328 usually recovers a substantial percentage of such loss in sensitivity.

The use of an average anode current well below the maximum-rated value of 0.1 milliamperes is recommended when stability of operation is important. When maximum stability is required, the anode current should not exceed 10 microamperes.

A recommended design of voltage-divider network for use with the 6328 to provide stable operation and long tube life is shown in the accompanying circuit. This design provides linear operation within the range normally required for headlight control. At higher light levels, the network design limits the tube output to a safe value. The indicated design values provide headlight-control operation for an anode current in the range between 5 and 10 microamperes.

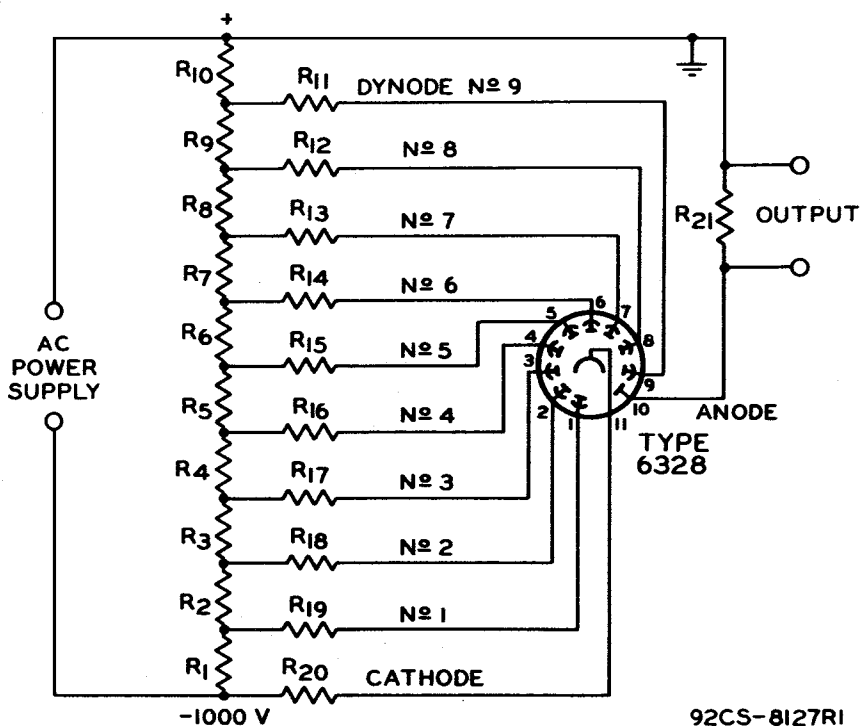
SPECTRAL-SENSITIVITY CHARACTERISTIC
of Phototube having S-4 Response
is shown at the front of this Section



6328

6328

MULTIPLIER PHOTOTUBE

RECOMMENDED VOLTAGE-DIVIDER NETWORK FOR USE
WITH TYPE 6328 IN HEADLIGHT-CONTROL SERVICER₁ R₂ R₃ R₄ R₅R₆ R₇ R₈ R₉ R₁₀: 1 megohm, 1/2 wattR₁₁: 2 megohms, 1/2 wattR₁₂: 5.1 megohms, 1/2 wattR₁₃ R₁₄ R₁₅ R₁₆R₁₇ R₁₈ R₁₉ R₂₀: 8.2 megohms, 1/2 wattR₂₁: 820,000 ohms, 1/2 watt

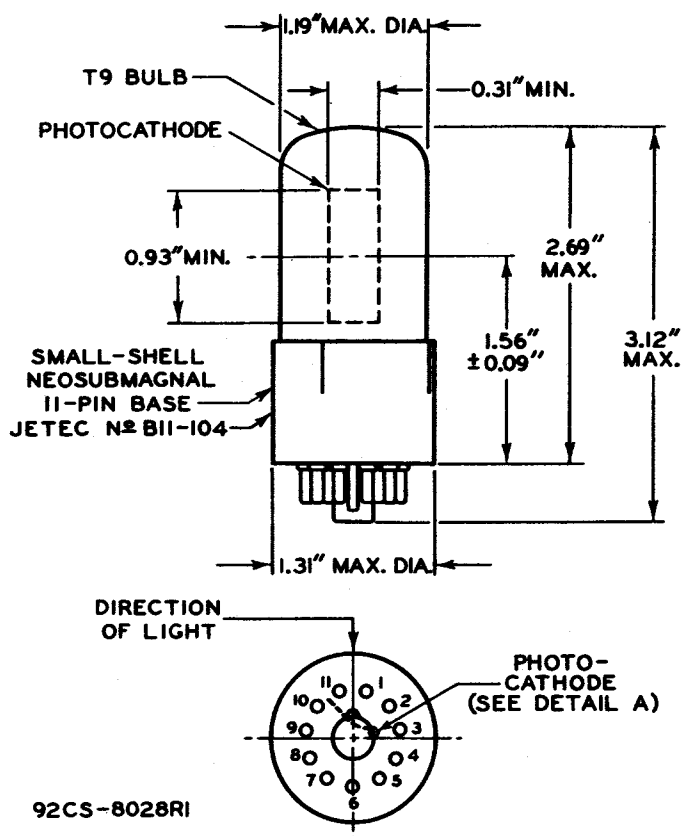
Devices and arrangements shown or described herein may use patents of RCA or others. Information contained herein is furnished without responsibility by RCA for its use and without prejudice to RCA's patent rights.

6328



6328

MULTIPLIER PHOTOTUBE



☉ OF BULB WILL NOT DEVIATE MORE THAN 2° IN ANY DIRECTION FROM THE PERPENDICULAR ERECTED AT THE CENTER OF BOTTOM OF THE BASE.

NOTE: THE MAXIMUM ANGULAR VARIATION BETWEEN THE PLANE THROUGH PINS 1 AND 11 AND THE PLANE OF THE GRILL WILL NOT EXCEED 6° .

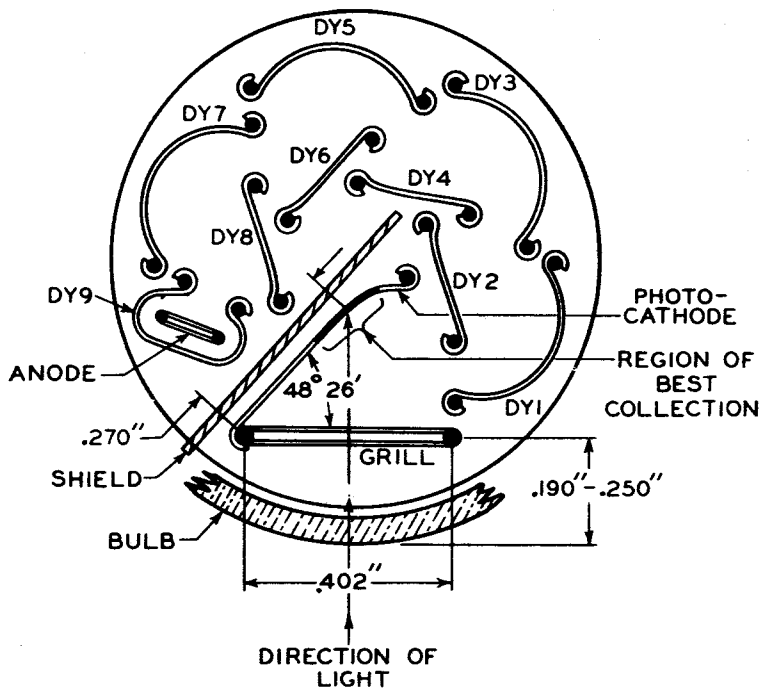


6328

6328

MULTIPLIER PHOTOTUBE

DETAIL A



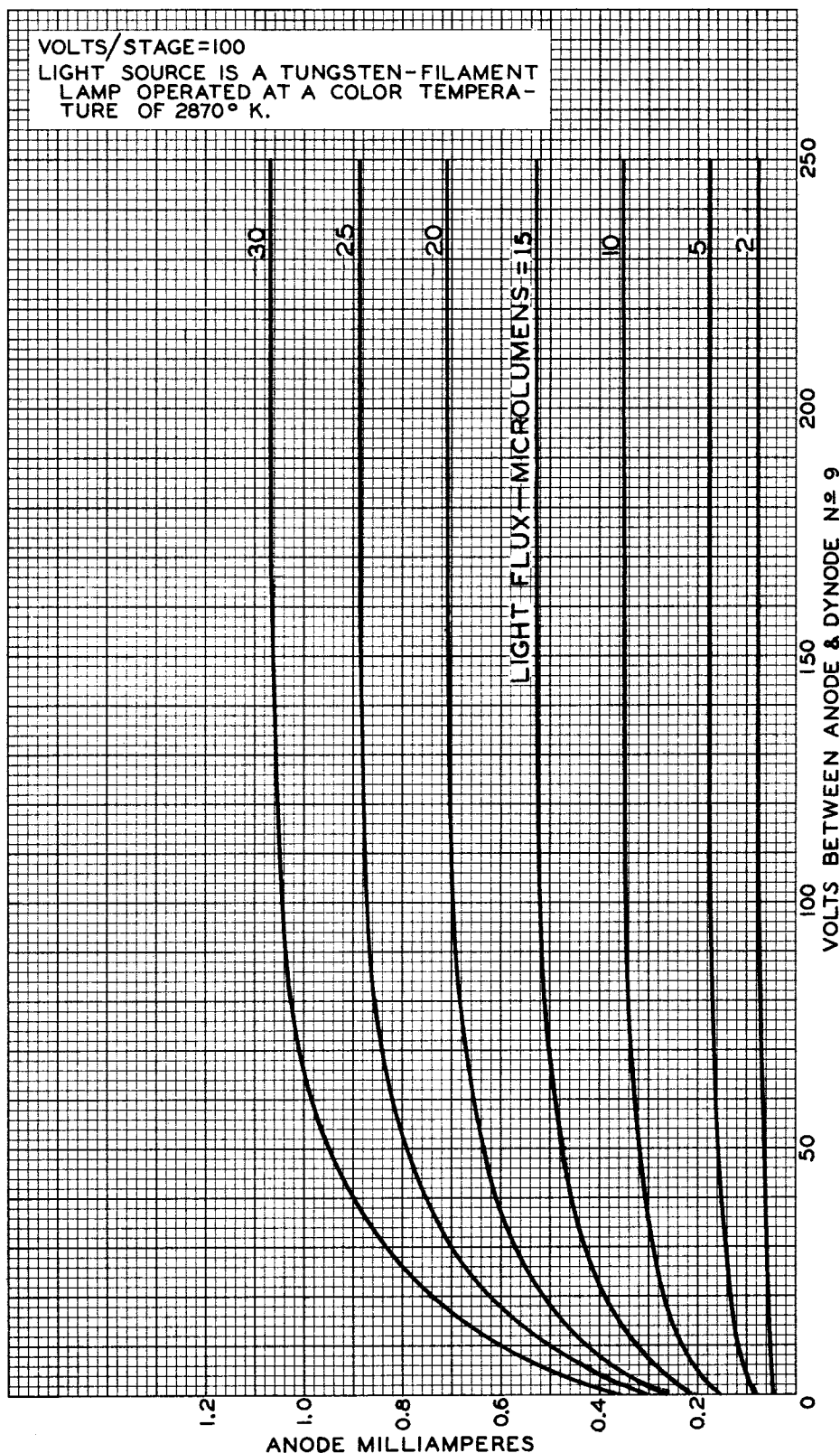
92CS-8674R1

6328



6328

AVERAGE ANODE CHARACTERISTICS



ELECTRON TUBE DIVISION

92CM-8029R2

RADIO CORPORATION OF AMERICA, HARRISON, NEW JERSEY

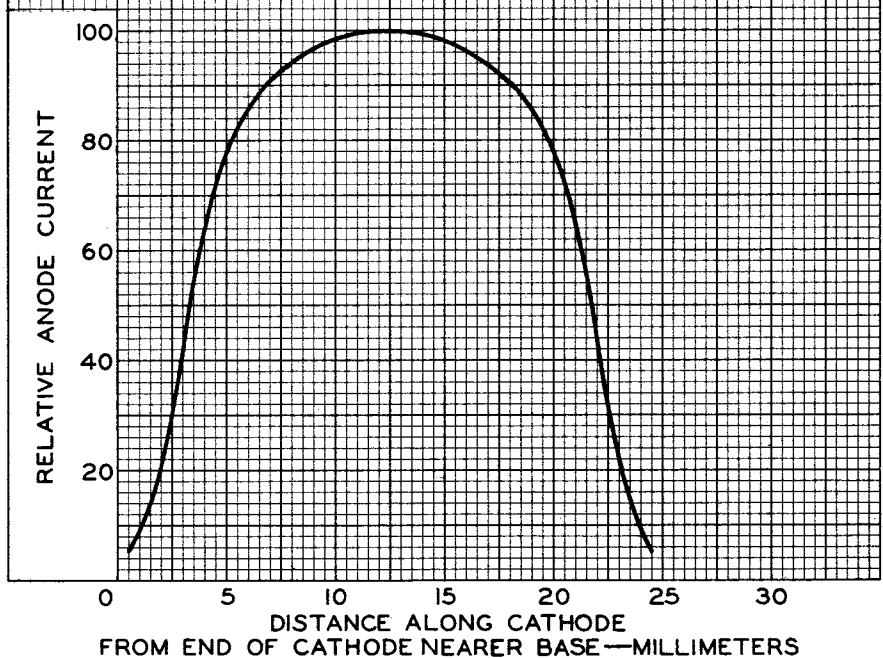


6328

6328

VARIATION IN SENSITIVITY OF PHOTOCATHODE ALONG ITS LENGTH

SPOT SIZE: 1 MM APPROX.
VARIATIONS CAUSED BY INTERCEPTION
OF LIGHT BY GRILL AS WELL AS
SURFACE IRREGULARITIES HAVE BEEN
IGNORED.



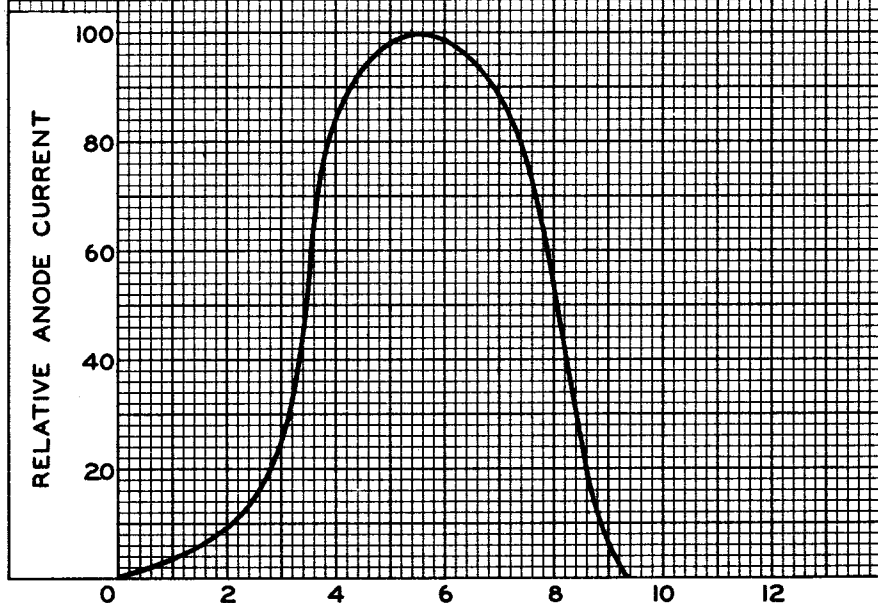
6328



6328

VARIATION IN SENSITIVITY OF PHOTOCATHODE ACROSS ITS PROJECTED WIDTH IN PLANE OF GRILL

SPOT SIZE: 1 MM APPROX.
GRILL TOWARD OBSERVER, BASE DOWN.
CATHODE WIDTH PROJECTED NORMAL
TO PLANE OF GRILL.
VARIATIONS CAUSED BY INTERCEPTION
OF LIGHT BY GRILL AS WELL AS
SURFACE IRREGULARITIES HAVE BEEN
IGNORED.



DISTANCE ALONG PLANE OF GRILL
FROM LEFT TO RIGHT—MILLIMETERS

ELECTRON TUBE DIVISION

92CM-7667R1

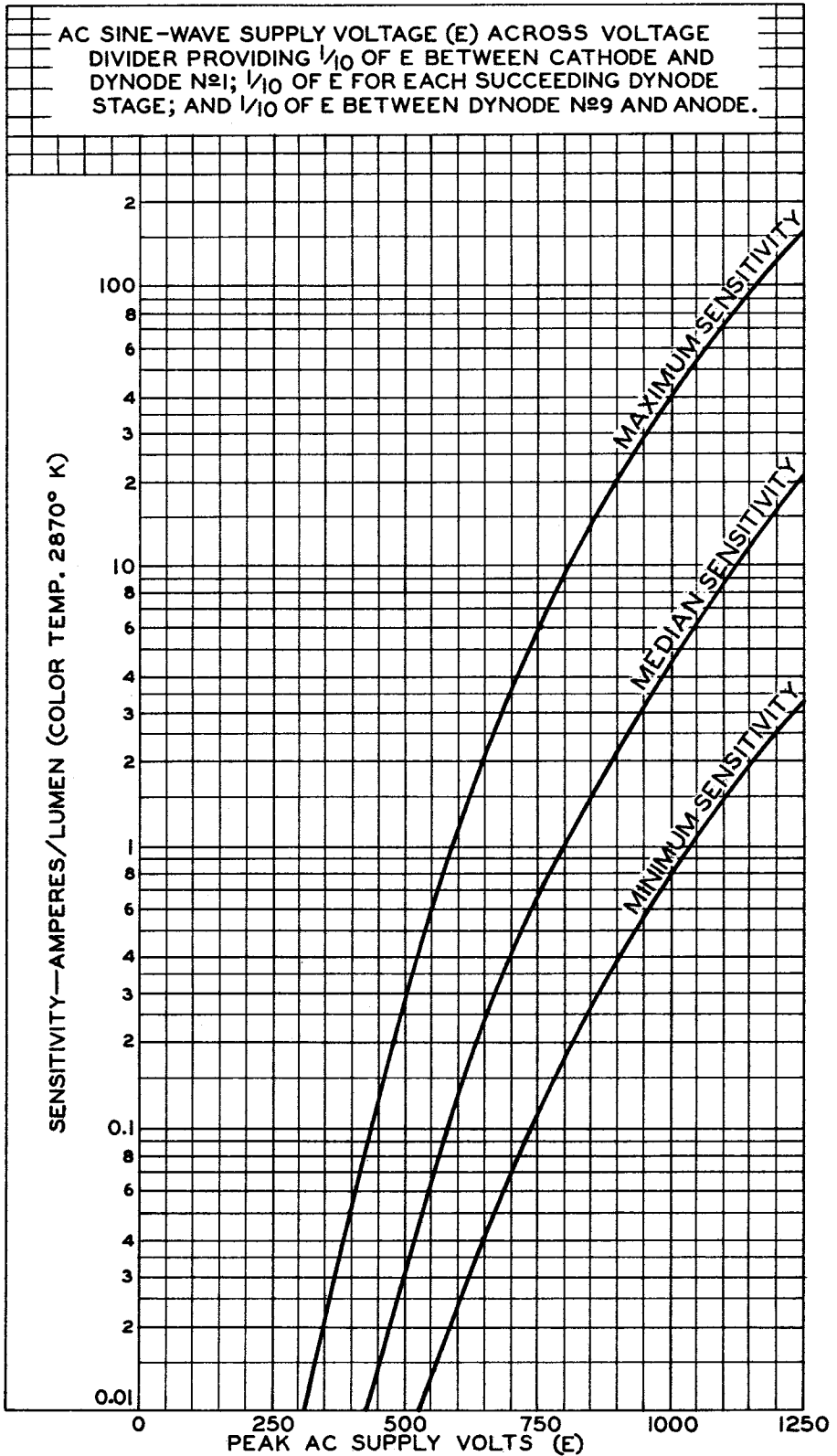
RADIO CORPORATION OF AMERICA, HARRISON, NEW JERSEY



6328

6328

LUMINOUS-SENSITIVITY RANGE



ELECTRON TUBE DIVISION

RADIO CORPORATION OF AMERICA, HARRISON, NEW JERSEY

92CM-9571