

ELECTRONIC TUBE REFERENCE

CONSOLIDATED TECHNICAL DATA  
**1 SECTION**  
CONSTRUCTION  
**CATHODERAY**

# 19AYP4

Specialized - Cathode Ray electronic tube

Nineteen-inch direct-view monochrome television picture tube with electrostatic focusing, magnetic deflection, and an aluminized P4 screen. Manufacturer documentation places it in the high-voltage picture-tube family used for bright, high-contrast receiver display.

## GENERAL CHARACTERISTICS

|                     |                   |                      |               |
|---------------------|-------------------|----------------------|---------------|
| BASE DESIGNATION    | 8HR               | BASE PINS            | —             |
| NOMINAL HEATER      | 6.3 V / 450 mA    | PARALLEL HEATER      | — / —         |
| HEATING             | Indirect          | SERIES OPERATION     | Not specified |
| CATHODE ARRANGEMENT | Separate cathodes | SECTION CONSTRUCTION | Similar       |

## SECTION RATINGS

|                                                        |         |
|--------------------------------------------------------|---------|
| SECTION1 Cathode Ray                                   |         |
| MAXIMUM PLATE VOLTAGE                                  | 23000 V |
| MAXIMUM SCREEN VOLTAGE                                 | 1550 V  |
| Same electrical system as 19AVP4 except 450 mA heater. |         |

19AY direct-view monochrome television CRT with electrostatic focus, magnetic deflection, aluminized P4 screen, and gray/filter faceplate construction.



## SOURCE OPERATING CONDITIONS

# 1950 Sylvania

Published test conditions and operating points. Values on this page are preserved as reported by this source.

## 1950 SYLVANIA

## Section 1 · Cathode Ray

## CHARACTERISTICS

| PARAMETER         | PUBLISHED VALUE | CONDITION / NOTE |
|-------------------|-----------------|------------------|
| Phosphor          | P4              | —                |
| Focusing method   | Electrostatic   | —                |
| Deflection method | Magnetic        | —                |

## OTHER

| PARAMETER      | PUBLISHED VALUE | CONDITION / NOTE |
|----------------|-----------------|------------------|
| Heater voltage | 6.3 V           | —                |
| Heater current | 450 mA          | —                |



## SOURCE OPERATING CONDITIONS

[SOURCE PDF](#)

# 1965 Sylvania Electronic Tubes Vol3

Published test conditions and operating points. Values on this page are preserved as reported by this source.

## 1965 SYLVANIA ELECTRONIC TUBES VOL3

## Section 1 · Cathode Ray

## CHARACTERISTICS

| PARAMETER                   | PUBLISHED VALUE | CONDITION / NOTE |
|-----------------------------|-----------------|------------------|
| Focusing method             | Electrostatic   | —                |
| Deflection method           | Magnetic        | —                |
| Horizontal deflection angle | 102 deg         | —                |
| Diagonal deflection angle   | 114 deg         | —                |
| Vertical deflection angle   | 86 deg          | —                |

| PARAMETER      | PUBLISHED VALUE | CONDITION / NOTE |
|----------------|-----------------|------------------|
| Fluorescence   | White           | —                |
| Persistence    | Short to medium | —                |
| Heater voltage | 6.3 V           | —                |
| Heater current | 600 mA          | —                |

| CONSTRUCTION |                 |                  |
|--------------|-----------------|------------------|
| PARAMETER    | PUBLISHED VALUE | CONDITION / NOTE |
| Phosphor     | Aluminized P4   | —                |

| OTHER                                   |                 |                  |
|-----------------------------------------|-----------------|------------------|
| PARAMETER                               | PUBLISHED VALUE | CONDITION / NOTE |
| Maximum anode voltage                   | 20000 V         | —                |
| Typical anode voltage                   | 20000 V         | —                |
| Typical focus-electrode voltage maximum | 400 V           | —                |
| Typical grid2 voltage                   | 500 V           | —                |
| Cutoff voltage range                    | -43 to -78 V    | —                |
| Grid1 circuit resistance maximum        | 1.5 Mohm        | —                |
| Anode voltage minimum                   | 11000 V         | —                |
| Focus-electrode voltage range           | -400 to +1250 V | —                |
| Grid2 voltage minimum                   | 350 V           | —                |
| Grid2 voltage maximum                   | 700 V           | —                |

| CAPACITANCE                                              |                 |                  |
|----------------------------------------------------------|-----------------|------------------|
| PARAMETER                                                | PUBLISHED VALUE | CONDITION / NOTE |
| Grid1-to-all capacitance                                 | 6 pF            | —                |
| External conductive coating to anode capacitance maximum | 1500 pF         | —                |

| APPLICATION |                                       |                  |
|-------------|---------------------------------------|------------------|
| PARAMETER   | PUBLISHED VALUE                       | CONDITION / NOTE |
| Application | Monochrome television picture display | —                |

## SOURCE OPERATING CONDITIONS

[SOURCE PDF](#)

# 1971 RCA HB3 Binder 1 of 7

Published test conditions and operating points. Values on this page are preserved as reported by this source.

1971 RCA HB3 BINDER 1 OF 7

## Section 1 · Cathode Ray

| OTHER                                      |                 |                            |
|--------------------------------------------|-----------------|----------------------------|
| PARAMETER                                  | PUBLISHED VALUE | CONDITION / NOTE           |
| Heater voltage                             | 6.3 V           | —                          |
| Heater current                             | 450 mA          | —                          |
| Heater warm-up time                        | 11 s            | —                          |
| Maximum anode/ultor voltage                | 23000 V         | —                          |
| Minimum anode/ultor voltage                | 15000 V         | —                          |
| Typical anode/ultor voltage                | 20000 V         | PictureTubeService         |
| Maximum grid No.2 voltage                  | 1550 V          | —                          |
| Typical grid No.2 voltage                  | 900 V           | PictureTubeService         |
| Focus-voltage range minimum                | 0 V             | OptimumFocus               |
| Focus-voltage range maximum                | 400 V           | OptimumFocus               |
| Visual-extinction voltage range minimum    | -94 V           | FocusedRasterExtinction    |
| Visual-extinction voltage range maximum    | -36 V           | FocusedRasterExtinction    |
| Maximum grid No.1 circuit resistance       | 1.5 megohm      | —                          |
| X-ray shielding warning                    | Present         | HighAnodeVoltage           |
| Maximum negative grid No.1 peak voltage    | 220 V           | —                          |
| Maximum negative grid No.1 bias magnitude  | 155 V           | —                          |
| Maximum positive grid No.1 peak voltage    | 2 V             | —                          |
| Peak heater-cathode voltage during warm-up | 450 V           | HeaterNegative;Warmup<=15s |

| PARAMETER                                          | PUBLISHED VALUE | CONDITION / NOTE |
|----------------------------------------------------|-----------------|------------------|
| Peak heater-cathode voltage after warm-up          | <b>200 V</b>    | HeaterNegative   |
| Peak heater-cathode voltage heater positive        | <b>200 V</b>    | HeaterPositive   |
| Adjustable centering magnet field strength maximum | <b>9 gauss</b>  | Approximate      |

| CONSTRUCTION      |                                |                  |
|-------------------|--------------------------------|------------------|
| PARAMETER         | PUBLISHED VALUE                | CONDITION / NOTE |
| Focusing method   | <b>LowVoltageElectrostatic</b> | —                |
| Deflection method | <b>Magnetic</b>                | —                |
| Phosphor          | <b>P4</b>                      | —                |
| Screen type       | <b>White</b>                   | P4               |

| CHARACTERISTIC   |                 |                  |
|------------------|-----------------|------------------|
| PARAMETER        | PUBLISHED VALUE | CONDITION / NOTE |
| Deflection angle | <b>114 deg</b>  | Approximate      |

| CAPACITANCE                                 |                 |                  |
|---------------------------------------------|-----------------|------------------|
| PARAMETER                                   | PUBLISHED VALUE | CONDITION / NOTE |
| Cathode to all other electrodes capacitance | <b>5 pF</b>     | Approximate      |

## TUBE TINKER

An independent reference for electronic tubes, vacuum tubes, and their source documents.

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