## Electron Tube News -from SYLVANIA

Announcing the Sylvania
SARONG CATHODE



## The Sylvania Sarong Cathode—A <u>New Era</u>

# Sylvania Sarong Cathodes pave the way to new performance standards for present and future tube types

Out of the advanced research laboratories of Sylvania's Electron Tube Division comes a revolutionary innovation in cathode coating, Sylvania Sarong. Sylvania scientists and engineers have succeeded in transforming conventional cathode coating into a thin uniform film that is precision-wrapped and securely bonded around each cathode sleeve.

Now in use in nearly one million Sylvania tubes, it is already contributing to a new efficiency in electron tube performance. It promises to open the way to new tube designs that will outperform many of today's advanced devices. First tubes to incorporate the Sarong Cathode are a number of Sylvania Tuner Types.

### **New Cathode Uniformity**

Sylvania Sarong insures that every cathode will be

coated uniformly and precisely because its thickness, texture, length and weight are pre-controlled before application. The thickness of Sylvania Sarong coating is held to tolerances five times closer than conventional sprayed coatings. This new superiority in coating uniformity has already contributed to a reduction in cathode-grid shorts and intermittent short circuits.

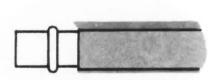
#### **Reduced Noise**

The uniformity of Sylvania Sarong coating makes it possible to obtain an over-all uniformity in spacing between cathode and grid never before achieved in mass produced electron tubes.

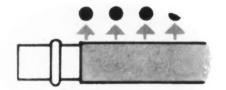
Preliminary tests indicate that this results in an improved noise figure of up to 0.6 db for TV. It also contributes to more uniform and higher levels of



## Here are some of the ways Sarong



1. Uniform coating thickness of Sylvania Sarong Cathode means more uniform plate current, higher and more uniform levels of Gm and reduced noise

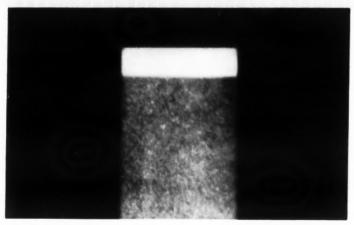


2. Sharp even edge and greater uniformity of Sarong coating virtually eliminates the possibility of end-leakage and contributes to better cut-off

## improvement in the heart of the electron tube



**Photomicrograph comparison** of a conventional cathode, left, and Sylvania's Sarong Cathode in operation shows its



superior coating uniformity contributing to better emission and more uniform heat distribution

Gm and also to a more uniform plate current.

Because Sarong coating can be held to much closer tolerances, new tube designs incorporating more closely spaced elements become possible . . . opening the way to standards of tube performance never before achieved.

### More Uniform Emission

The even distribution and smooth texture of Sylvania Sarong assures a new uniformity in cathode emission. The possibility of hot spots is virtually eliminated. Preliminary tests have already shown that Sarong Cathodes have pulse emission characteristics some 10% greater than conventional cathodes. Interface impedance due to poor coating adherence has also been improved, promoting better electron flow.

#### Better Cut-Off

Because Sylvania Sarong results in a more uniform surface and a more clearly defined coating, sharper cut-off characteristics and better control are achieved. The Sarong coating also eliminates the possibility of coating particles adhering inside the cathode sleeve.

## Improved Temperature Distribution

All of the physical properties of Sylvania Sarong coating contribute to a new uniformity in cathode temperature. This contributes to noise reduction and better over-all performance throughout life. It enables the tube to tolerate a wider range of operating conditions, such as varying heater voltages, without great changes in emission.

## Cathodes contribute to better tube performance



3. Better diameter control with Sarong coating makes a closer spaced tube structure possible with higher Gm, more gain



**4.** More uniform heat distribution is possible with Sylvania Sarong Cathodes. Hot spots are virtually eliminated and the life and over-all performance of the tube is improved



5. Sylvania Sarong Cathode coating makes possible a new uniformity of cathode emission from tube to tube