



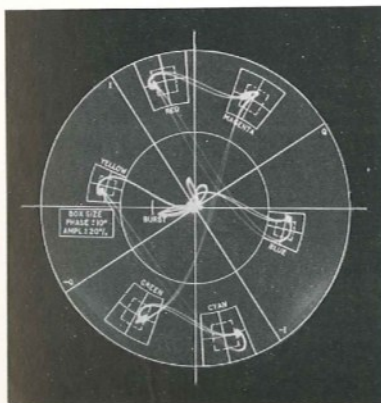
## Vectorscope Type V 4610

THE Vectorscope Type V 4610, used in conjunction with a standard test signal (derived from a colour bar generator), enables a rapid check to be made on the accuracy of alignment of the encoding and transmission circuits of a colour system. The colour information may be displayed in either its vector form or as a line-waveform display.

The display is given on a 5 in. electrostatic cathode ray tube. The vectors are displayed as a series of dots corresponding to the individual colour components of the colour bar signal, the amplitude of the vector being given by the radial distance from the centre of the screen, whilst the phase is given by the angular displacement from a fixed phase reference point.



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Enlarged view of graticule.

8439

### Features

The unit may be readily adapted to work on 405, 525 or 625-line systems, all frequency sensitive circuits being easily converted.

Majority of circuits are contained on three main plug-in printed wiring boards, simplifying rapid maintenance.

High degree of valve standardization using a close-tolerance long-life type of valve.

Use of both vector display and conventional display for accurate measurements.

Null deflection system and 'windowing' circuit enables the measurements to be carried out simply and rapidly.

Built-in power supply unit.

### EQUIPMENT

The graticule in front of the instrument screen is engraved with the correct vector positions for a 100% saturated colour-bar signal and tolerance limits are engraved for both phase and amplitude measurements. A phase accuracy of 1° may be obtained by a direct reference to the graticule. A test circle, the amplitude of which is controlled by precision attenuators, may be produced on the screen and the amplitude of any vector be accurately measured by adjusting the test circle to correspond with the tip of the vector.

To measure the relative phase of any part of the waveform a half line frequency timebase may be connected to the X deflection plates resulting in a display of two lines of demodulated chrominance signal. The resulting phase of any part of the waveform may then be accurately determined by the adjustment of a precision calibrated delay line to null out that part of the waveform. A  $\times 10$  amplifier and 'windowing' circuit enables the null point to be determined with greater accuracy.

In addition to the vector display the timebase may be switched to give a conventional oscilloscope display to permit examination of the luminance component. Again the  $\times 10$  amplifier and windowing circuit enables any part of the waveform to be examined in detail. The amplitude of any part of the luminance waveform may be accurately measured by means of a test pattern which takes the form of two horizontal lines which can be shifted vertically with respect to the luminance waveform

and controlled in amplitude by the precision attenuators. Two signals may be readily compared by means of a built in switching circuit which selects the two signals sequentially at field frequency.

The equipment contains a built in power supply unit. It is designed to match the standard range of Marconi display units and may be used as a rack-mounted, console-mounted or free-standing unit.

### Data Summary

#### INPUT

**Mains:** 100-125 V or 200-250 V, 50 or 60 c/s with a total power consumption of approx. 360 VA.

**Vision:** Accepts two standard level composite or non-composite colour signals which may be displayed sequentially at field frequency for direct comparison.

**Sync:** 2 V peak-to-peak.

**External sub-carrier:** 1 to 2 V peak-to-peak.

#### TYPES OF DISPLAY

**Vector:** Vector display of demodulated chrominance signal.

**Chroma:** Line waveform of demodulated chrominance.

**Chroma  $\times 10$ :** Line waveform of demodulated chrominance with ten times sensitivity and  $\frac{1}{10}$  adjustable window.

**Y:** Line waveform of luminance signal.

**Y  $\times 10$ :** Line waveform of luminance signal with ten times sensitivity and  $\frac{1}{10}$  adjustable window.

#### Measurement accuracy vector display:

Amplitude  $\pm 2\%$ . Phase 1°.

#### Dimensions:

Height 26 in. (66 cm)

Width 15½ in. (39 cm)

Length 11½ in. (29 cm)

Weight 95 lb (43 kg)

### Marconi

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