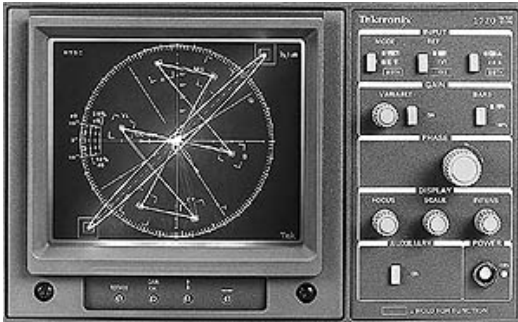


Vectorscopes/Waveform Monitors

1720 Series * 1730 Series

Characteristics



1720 Vectorscope - Vector and Stereo Audio Dual display mode.

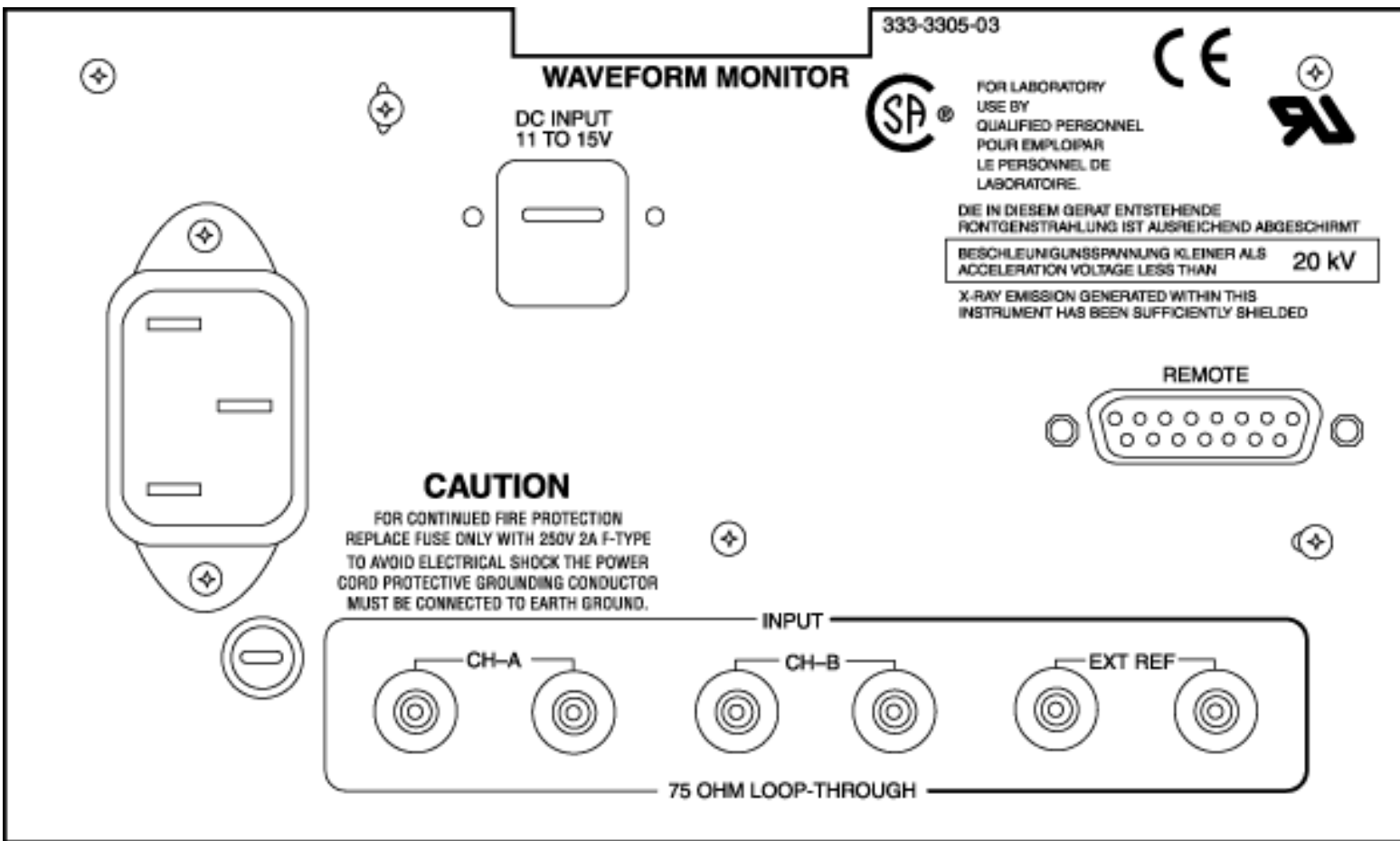
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1730 Series rear panel.

1730 Series Waveform Monitors Characteristics

Signal Input (Video and External Reference)

Return Loss - >40 dB, 50 kHz to 6 MHz, power on or off.

Maximum Input - ± 5 V DC + peak AC.

Loop-through Isolation - >80 dB at F_{SC} .

Channel Isolation - >50 dB at F_{SC} .

Impedance - >15 kilohm.

Vertical Deflection

Deflection Factor - Within 1% of 1 V.

Gain Range - Input signals between 0.8 V and 2 V can be adjusted to a 1 V display; (160 mV and 400 mV for X5 gain).

Position Range - 1 V signal can be positioned so that peak white and sync tip can be placed at blanking level regardless of gain range.

Frequency Response

Flat - 50 kHz to 6 MHz within 2% (X1), within 5% (X5).

Low Pass - 40 dB attenuation at F_{SC} ; Low pass response within 1% of flat response (1735: 30 dB).

Chroma - Nominal bandwidth 1 MHz; 2X F_{SC} attenuation >20 dB; Chroma response within 1% of flat response.

Transient Response

Preshoot - <1%.

Overshoot - <2%.

Ringing - <2%.

Tilt - <1%.

Pulse-to-bar Ratio - 0.99:1 to 1.01:1.

Differential Gain - <1%.

DC Restoration

Clamp Time - Back porch.

Frequency Response - Attenuation of 60 Hz on input signal:

Slow mode: <20%.

Fast mode: >90%.

Blanking Level Shift - A 10% to 90% APL change will cause <1% of blanking level shift. Presence or absence of color burst will cause <1% of blanking shift.

PIX Monitor Output

Frequency Response - 50 kHz to 6 MHz within 3%.

Differential Gain - <1%.

Differential Phase - <1%.

DC Level on Output - <0.5 V into 75 Ohm load.

Intensification (Brightup) - 180 mV DC offset on select lines.

Output Impedance - 75 Ohm nominal.

Return Loss - >30 dB, 50 kHz to 6 MHz.

Input to Output (PIX MON) Gain Ratio Luminance - 1:1

±5% at 15 kHz.

Calibrator

Frequency - 100 kHz ± 0.1 kHz.

Timing Accuracy - 10 μs, ±0.01 μs.

Amplitude - 1 V, ±1%.

Horizontal Deflection System

Sweep - Sweep will occur with or without input signal.

1-Line Repetition Rate - Equal to applied line rate, magnification equals 0.2 ms/div.

2-Line Repetition Rate - Equal to half applied line rate, magnification equals 1 ms/div.

2-Field Repetition Rate - Equal to applied frame rate, magnification equals approximately X25.

Timing Accuracy -

1 ms/div.: Within 2%.

0.2 ms/div.: Within 3%.

Linearity - Within 2%.

Differential Linearity - Within 2%.

Sweep Magnification Registration - Magnification occurs about the center of the screen.

Position Range - Any portion of a synchronized video sweep can be positioned on screen in all sweep modes.

Synchronization

Internal - Composite video or black burst with sync ±6 dB of nominal.

External - Sync amplitude of 143 mV to 4 V.

Remote Sync - 2.0 to 5.0 V square wave or 4.0 V comp sync (sync polarity can be internally inverted).

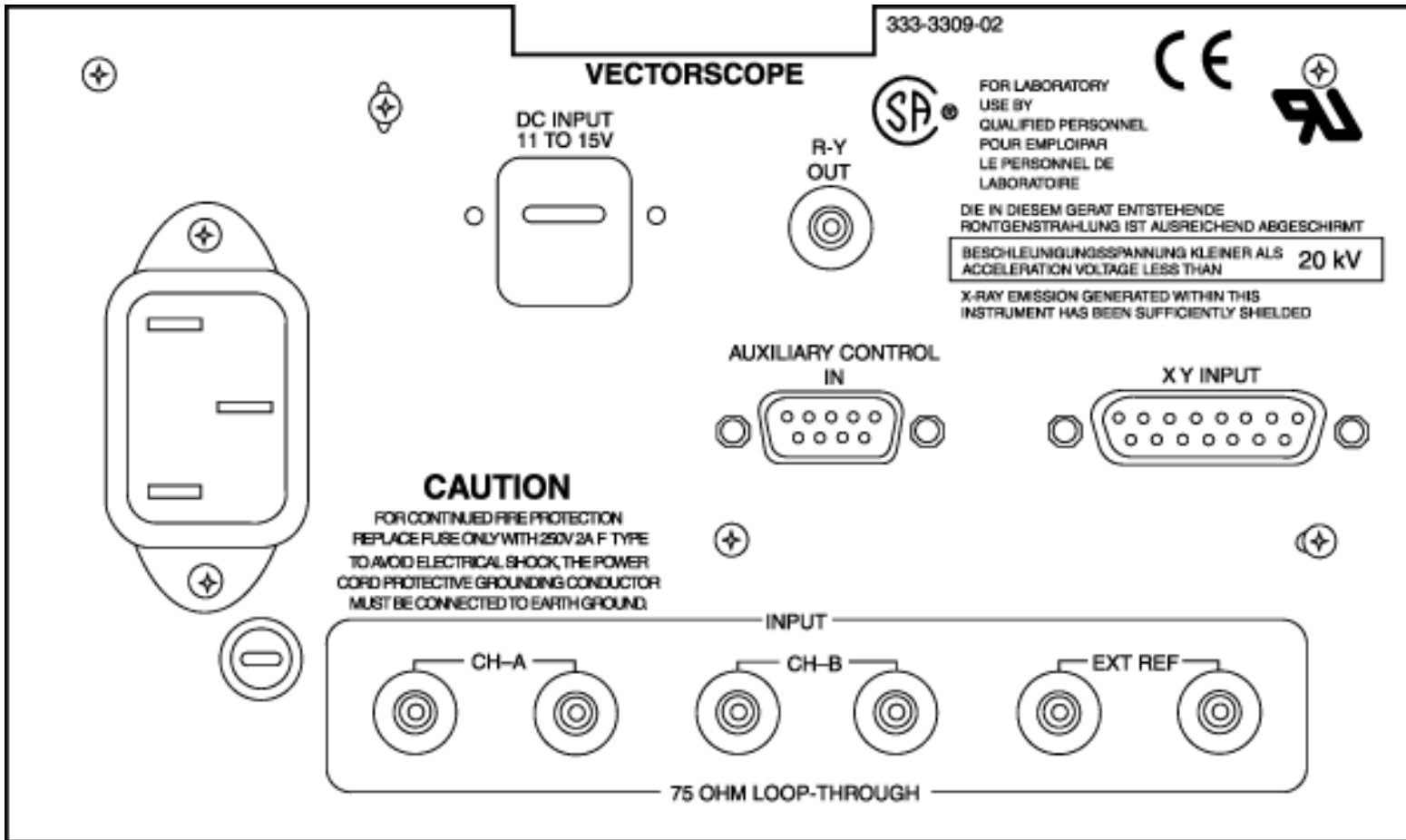
RGB/YRGB -

Repetition rate: Field rate and line rate with magnification of X25 and X10, respectively.

Sweep length:

3-Step (RGB): 3.4 to 4.1 divs.

4-Step (YRGB): 2.5 to 3.1 divs.



1720 Series rear panel.

1720 Series Vectorscopes Characteristics

Signal Input (Video and External Reference)

Return Loss - >40 dB, 50 kHz to 6 MHz, power on or off.

Maximum Input - ± 5 V DC + peak AC.

Loop-through Isolation - >70 dB at F_{SC} .

Channel Isolation - >70 dB at F_{SC} .

Impedance - >15 kilohm.

Chrominance Bandwidth

Upper - -3 dB point, $F_{SC} + 500$ kHz, ± 100 kHz.

Lower - -3 dB point, $F_{SC} - 500$ kHz, ± 100 kHz.

Vector Phase Accuracy - Within 1.25° .

Vector Gain Accuracy - Within 2.5%, typical.

Quadrature Phasing - Within 0.5° , typical.

Subcarrier Regenerator

Pull-in Range - $F_{SC} \pm 50$ Hz.

Pull-in Time - Within 1 second.

Phase Shift with Subcarrier Frequency Change - $2^\circ \pm 50$ Hz.

Phase Shift with Burst Amplitude Change - $< 2^\circ$ with ± 6 dB change from nominal.

Phase Shift with Input Channel Change - $< 0.5^\circ$.

Phase Change with Variable Gain Control - $\pm 1^\circ$.

Phase Control Range - 360° Continuous rotation.

Burst Jitter - $< 0.5^\circ$.

Display Differential Phase and Gain -
 $\pm 1^\circ$ and $\pm 1\%$.

Center Dot Clamp Stability - < 0.4 mm spot movement.

Synchronization

Internal - Composite video with sync ± 6 dB of nominal.

External Reference - Composite video or CW subcarrier.

X Y Mode

Input - Differential, DC coupled.

Input Amplitude - 2 to 9 V p-p, adjustable full scale deflection
0 dBm to +12 dBm for 600 Ohm system, factory set to 0 dBm.

Maximum Input - ± 15 V peak signal + DC.

Frequency Response - DC to 500 kHz (DC to 100 kHz
high-gain mode).

X and Y Phase Match - Less than a trace width separation at
20 kHz.

SCH Mode (1720 SCH and 1721 SCH Only)

Accuracy -

Absolute: $\pm 5^\circ$ phase at 25°C .

Relative: $\pm 2^\circ$.

Acquisition Time - Less than 1 second.

1720 and 1730 Series Common Characteristics

CRT Viewing Area - 80 x 100 mm.

Trace Rotation - 8° range, typical.

Graticule - Internal scale with variable illumination.

Power Source

Mains Voltage Ranges - 115 V, 90-132 V, 230 V, 200-250 V.

Mains Frequency Range - 48 Hz to 66 Hz.

Power Consumption - 25 watts (85 BTU/HR) maximum.

Environmental

Temperature -

Nonoperating: -55°C to +75°C.

Operating: 0°C to +50°C.

Altitude -

Nonoperating: To 18,000 M (50,000 ft.).

Operating: To 5,500 M (15,000 ft.).

Shock -

Nonoperating: 30 g's, 1/2 sine, 11 ms duration, 3 shocks per surface (18 total).

Transportation - Qualified under NSTA Test Procedure 1A, Category II (30-inch drop).

Humidity - Meets Tektronix Standard 062-2847-00.

Certifications

EMC - Certified to the EMC Directive 89/336/EEC.

Safety -

Approved to: UL1244, CSA231.

Complies with: EN61010-1, IEC61010-1.

Physical Characteristics

Dimensions	mm	in.
Height	133.4	5.25
Width	215.9	8.5
Length	460.4	8.125

Weight	kg	lbs.
Approximately	3.8	8.5

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