

# LA302 & LA303 Analog Scopes

## Main Features

- 100 & 200 MHz
- 2 + 1 channels
- Sensitivity of 2 mV/div max
- Max sweep speed of 1 ns/div
- High-speed auto setup
- Cursor measurements
- Full TV trigger with field and line selection
- Save and recall panel settings
- Frequency counter
- High-intensity CRT



The LA302 and LA303 analog oscilloscopes offer three channels and up to 200 MHz bandwidth. They have high-level performance and low cost.

They are perfect instruments for service and educational applications. Equipped with extensive TV triggering, both scopes are excellent for video testing.

Like the other LeCroy analog scopes, their standard multipurpose trigger, five-digit counter, and comprehensive cursors make them useful and universal Instruments.

## Features

### Convenient Fine-Adjustment Mode

Pressing FINE and turning the knob enables slow scrolling of waveforms – a function comparable to a digital storage scope's roll mode.

### Line Triggering Provided for AC Line Measurement

AC line-related measurement of various frequencies can be obtained.

### Third-Channel Input

CH3 provides three sensitivity levels for a wider range of measurements.

### Input with Probe Sensor Function

When using a probe, the range display is automatically calibrated by detecting 10:1 or 100:1 with the probe sensor.

## Specifications

### Display

**CRT:** 6-inch rectangular, internal graticule (8 x 10 div with scale illumination), meshless CRT

**Accelerating Voltage:** Nominal 16 kV

### Vertical Deflection System

**Mode:** CH1, CH2, CH3, ADD, ALT, CHOP

### Frequency Response:

#### Model LA302:

5 mV/div - 5 V/div, DC 100 MHz;  
2 mV/div, DC 50 MHz

#### Model LA303:

5 mV/div - 5 V/div, DC 200 MHz;  
2 mV/div, DC 50 MHz

**Accuracy:**  $\pm 2\%$

**Bandwidth Limiter:** 20 MHz

### Risetime:

**Model LA302:** 3.5 ns or less

**Model LA303:** 1.75 ns or less

**Signal Delay Time:** At least 30 ns

**Input RC Direct:** 1 M $\Omega$   $\pm 1.5\%$  //  
20 pF  $\pm 2$  pF

**Input RC with Probe:** 10 M $\Omega$   $\pm 3\%$  //  
12.5 pF  $\pm 2$  pF

**Max Input:** Direct,  $\pm 400$  V max, with  
10:1 probe,  $\pm 600$  V max

**Polarity Switching:** Possible only for  
CH2

### Channel 1 & 2

**Sensitivity:** 2 mV/div - 5 V/div, 11 step  
(1-2-5); 2 mV/div - 12.5 V/div (with  
vernier)

**Input Coupling:** AC, DC, GND (The  
lowest usable frequency is 4 Hz with  
AC coupling.)

### Channel 3

**Sensitivity:** 50 mV/div, 100 mV/div,  
500 mV/div,  $\pm 2\%$

**Input Coupling:** AC, DC

### A Triggering

**Sources:** CH1, CH2, CH3, LINE

**Coupling:** AC, DC, HFREJ, LFREJ

### B Triggering

**Sources:** CH1, CH2, CH3

**Coupling:** AC, DC, HFREJ, LFREJ

**TV Triggering:** ODD, EVEN, BOTH,  
line selection, TV system (NTSC,  
PAL/SECAM — HDTV optional in  
LA302, standard in LA303)

### Trigger Sensitivity

**LA302:** DC - 10 MHz, 0.4 div  
10 - 100 MHz, 1.0 div

**LA303:** DC - 10 MHz, 0.4 div  
10 - 100 MHz, 1.0 div  
100 - 200 MHz, 1.5 div

### B sweep

#### Sweep Time:

**Model LA302:** Fastest range,  
20 ns/div; slowest range, 5 ms/div;  
accuracy A/B,  $\pm 2\%$

**Model LA303:** Fastest range,  
10 ns/div (1-2-5 step); slowest range,  
5 ms/div; accuracy A/B,  $\pm 2\%$

**Magnifier:** 10 times

**Accuracy:**  $\pm 3\%$

#### Fastest Range:

**Model LA302:** 2 ns/div

**Model LA303:** 1 ns/div

**Delay Jitter:** 1/20,000

**Hold-Off Time:** Variable (up to sweep  
length or longer)

### Auto Setup

**Input Channel:** CH1, CH2

**Frequency Response:** 50 Hz -  
50 MHz

### CH2 Signal Output (factory option):

**Model LA302:** DC 50 MHz

**Model LA303:** DC 100 MHz

**EXT Z-axis Input (factory option):** 0.5 Vp-p

## Utilities

### Calibrator

**Waveform:** Square-wave, 1 kHz  $\pm 0.1\%$ ,  
0.6 Vp-p  $\pm 1\%$

### CTR Readout

**Readout:** Attenuator range, ADD,  
UNCAL, AC/DC/GND, vertical mode, CH2  
polarity, A/B sweep range, x10 MAG,  
UNCAL, horizontal display mode, hold-  
off, trigger coupling, trigger source, trig  
slope, TV-field, TV-line, TV-system (NTSC,  
PAL/SECAM for both models — HDTV  
in the LA303)

### Cursor Measurement

**Time Difference:**  $\Delta T$

**Voltage Difference:**  $\Delta V$

**Division Calculation by  $\Delta T$ :**  $1/\Delta T$

### Frequency Counter

**Display Digits:** 5 digits, decimal

**Accuracy:**  $\pm 0.01\%$

#### Frequency Measurement range:

**Model LA302:** 2 Hz - 100 MHz  
(option six digit)

**Model LA303:** 2 Hz - 200 MHz,  
reciprocal (option six digit)

### Save/Recall Function

#### Number of Panel Setups:

**Model LA302 and LA303:** 32 max

**Model LA302:** 255 in banks of 63

**Backup:** Battery back-up (approx.  
30,000 hr)



### Power Supply

**Voltage Range:** AC 90 V - 132 V/180 V - 250 V

**Frequency Range:** 48 Hz - 440 Hz

**Power Consumption:** 110 VA max

### Dimensions and Weight

**Dimensions:** 272W x 152H x 410L

**Weight:** Approx. 7.5 kg (w/o access)

### Environmental Conditions

**Operating:** 0° C – +40° C, 90% RH (40° C)

**Performance Guarantee:** +10° C – +35° C

### Ordering Information

#### Analog Oscilloscopes

|                    | Product Code |
|--------------------|--------------|
| 100 MHz, 3-Channel | LA302        |
| 200 MHz, 3-Channel | LA303        |

#### Included with Standard Configuration

|  |       |
|--|-------|
| Two each 10:1 10 M $\Omega$ Passive Probes | PP005 |
| Operator's Manual                          |       |
| Panel Cover                                |       |
| Power Cable                                |       |
| Two Fuses                                  |       |

#### Accessories

|                          |              |
|--------------------------|--------------|
| 800 MHz FET Probe        | SFP-4A       |
| 1 GHz FET Probe          | SFP-5A       |
| Calibrator               | IE-1066      |
| NIST Calibration         | LAXXX-CCNIST |
| MIL Standard Calibration | LAXXX-CCMIL  |