FLUKE

199C

The Fluke 199C ScopeMeter is a high-performance handheld oscilloscope designed for demanding applications. Featuring a 200 MHz bandwidth, 2.5 GS/s real-time sampling rate, and a high-resolution color display, it combines the analytical power of a benchtop oscilloscope with the rugged portability of a handheld field tool.

SPECIFICATIONS

General

Interfaces	Optically isolated RS-232 / USB (via optional PM9080 or OC4USB adapter cable)
Display	144 mm (5.7 in) Color Active Matrix TFT LCD, 320 x 240 pixels
Calibration Interval	1 year
Warranty	3 years (instrument), 1 year (accessories)

Physical

Power Supply	Rechargeable Ni-MH battery pack (BP190) or external mains adapter/charger BC190
Operating Temperature	0 °C to 50 °C °C
Dimensions (W×H×D)	256 mm × 169 mm × 64 mm mm
Weight	2.0 kg kg

Oscilloscope Specifications

Bandwidth	200 MHz
Number of Channels	2 channels plus isolated DMM input
Max. Real-time Sampling Rate	2.5 GS/s (single channel), 1.25 GS/s (dual channels)
Rise Time	1.75 ns
Record Length	3,000 points per channel (Scope mode), 27,500 points per channel (ScopeRecord mode)
Input Sensitivity	2 mV/div to 100 V/div
Vertical Resolution	8-bit
Input Coupling	AC, DC
Input Impedance	1 MΩ ±1% // 15 pF ±2 pF
Max. Scope Input Voltage	1000 V CAT II / 600 V CAT III (independently floating isolated inputs)
Vertical Accuracy	±(1.5% of reading + 0.05 range/div)
Timebase Range	5 ns/div to 5 s/div
Timebase Accuracy	±(0.01% + 1 pixel)
Trigger Modes	Connect-and-View, Free Run, Single Shot, Edge, Delay, Video, Selectable Pulse Width, External
Trigger Sources	Input A, Input B, External (via DMM input)
Glitch Capture	50 ns
Frequency Spectrum Analysis	FFT (Fast Fourier Transform) standard
Digital Persistence	Yes, with envelope, decay, and persistence modes
Waveform Capture and Replay	Automatic capture and replay of last 100 screens
Vpwm Function	Yes (for motor drive and frequency inverter applications)
Waveform Pass/Fail Testing	Yes, using waveform reference
Automatic Measurements	30 automatic measurements

Digital Multimeter (DMM) Specifications

DMM Channels	1 (isolated from oscilloscope inputs)
DMM Resolution	5,000 counts
DC Voltage Ranges	500 mV, 5 V, 50 V, 500 V, 1000 V
DC Voltage Accuracy	±(0.5% + 5 counts)
AC Voltage Ranges	500 mV, 5 V, 50 V, 500 V, 1000 V
AC Voltage Accuracy	±(1.0% + 10 counts)
Resistance Ranges	500 Ω, 5 kΩ, 50 kΩ, 500 kΩ, 5 MΩ, 30 MΩ
Resistance Accuracy	±(0.6% + 5 counts)
Continuity Threshold	Audible alert at < 50 Ω (±30 Ω)
Diode Test	Up to 2.8 V
Capacitance Ranges	50 nF, 500 nF, 5 µF, 50 µF, 500 µF
Current Measurement	Via optional current clamp or shunt

Recorder Mode

TrendPlot Record Time	Up to 22 days
ScopeRecord Capacity	27,500 points per input
ScopeRecord Sampling Rate	20 MS/s (maximum in roll mode)
ScopeRecord Timebase	5 ms/div to 2 min/div
Recorder Functions	TrendPlot (chart recorder) and ScopeRecord (roll mode)

Display and User Interface

Display Type	Color Active Matrix TFT LCD
Display Size	144 mm (5.7 in) diagonal
Display Resolution	320 x 240 pixels
Backlight	Cold Cathode Fluorescent (CCFL) backlight
Contrast Adjustment	Brightness adjustment (no contrast adjustment)

Connectivity and Interfaces

Isolated Interface Port	Yes, optical isolation
PC Software Support	FlukeView® ScopeMeter software

Power Specifications

Battery Type	Ni-MH rechargeable battery pack (BP190)
Battery Operating Time	Up to 4 hours
Battery Charging Time	4 hours (when instrument is off)
Mains Adapter	BC190 Charger/Adapter included
Mains Input Voltage	115 V or 230 V (dependent on model version)

Environmental and Safety

Storage Temperature	-20 °C to 60 °C
Safety Category Rating	1000 V CAT II, 600 V CAT III (IEC 1010-1)
Pollution Degree	2
IP Rating	IP51 (drip proof and dust protected)
Shock and Vibration	MIL-PRF-28800F Class 2

Physical Characteristics

Enclosure Material	Rugged, shock-proof with integrated protective holster

Triggering

Video Triggering	NTSC, PAL, SECAM, and non-standard video (up to 2800 lines)
Pulse Width Triggering Range	15 ns to 40 s
Trigger Delay Range	Up to 12 divisions pre-trigger, up to 650 divisions post-trigger
Connect-and-View Triggering	Continuous hands-off auto-triggering on fast, slow, and complex signals

Measurement & Analysis

Waveform Math Functions	Addition, Subtraction, Multiplication, FFT
Frequency Counter Resolution	5 digits

Power & Charger

Mains Adapter Output	17.8 V DC, 840 mA (via BC190)

Environmental

Operating Altitude	3000 m (10000 ft)
Storage Altitude	12000 m (40000 ft)
Operating Humidity	0% to 95% (0 °C to 30 °C) / 0% to 75% (30 °C to 40 °C) / 0% to 45% (40 °C to 50 °C)

Safety & Compliance

Maximum Floating Voltage	1000 V rms CAT II / 600 V rms CAT III (between any terminal and earth ground)
Safety Standards	EN 61010-1 2nd Edition
Electromagnetic Compatibility (EMC)	EN 61326-1

Memory & Storage

Setup Memories	15 screen and setup memories
Waveform Memories	15 screen and setup memories
Recording Memories	2 records (each stores 100 replay screens, ScopeRecord, or TrendPlot)

Measurement Modes & Functions

Zoom Function	Up to 16x (in Scope mode) / up to 100x (in ScopeRecord mode)

TECHNOLOGY

Digital Storage Oscilloscope (DSO)

APPLICATIONS

Industrial electronic troubleshooting, field service, electrical testing, and motor drive maintenance