

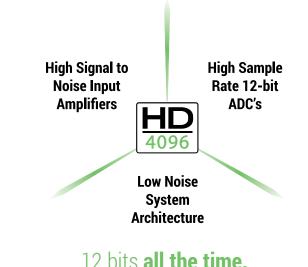
Highest Resolution HD4096 technology, 12 bits all the time

**Comprehensive Probe Support** Over 30 probes in 9 categories

More Capability than you imagined



# Highest Resolution





More Capability Spectrum Analysis LabNotebook

170,000
wfms/sec

OneTouch
Frequency
Counter

HD 4096

AFG
Protocol

Analysis

16 ch History Mode MSO Touch Pass/Fail



Comprehensive Probe Support





WaveSurfer 4000HD extends Teledyne LeCroy's leadership in High Definition Oscilloscopes with a bright,

12.1" touch screen display, performance without compromise, and price points that fit your budget.

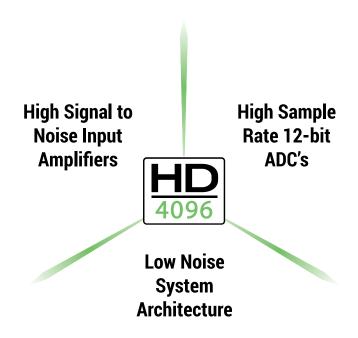
# 12 bits all the time.





WaveSurfer 4000HD

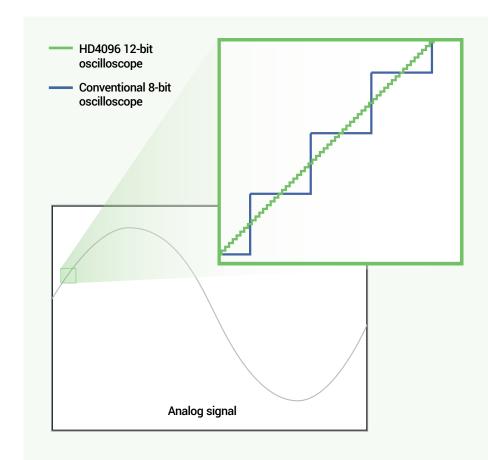
## HD4096 TECHNOLOGY - 12 BITS ALL THE TIME



Teledyne LeCroy high definition 12-bit oscilloscopes use unique HD4096 technology to provide superior and uncompromised measurement performance:

- 12-bit ADCs with high sample rates
- High signal-to-noise amplifiers
- Low noise system architecture (to 1 GHz)

Oscilloscopes with HD4096 technology have higher resolution than conventional 8-bit oscilloscopes (4096 vs. 256 vertical levels) and low noise for uncompromised measurement performance. The 12-bit ADCs support capture of fast signals and oscilloscope bandwidth ratings up to 1 GHz, while 5 GS/s sample rate ensures the highest measurement accuracy and precision. The high performance input amplifiers deliver pristine signal fidelity, and the low-noise system architecture provides an ideal signal path to ensure that signal details are delivered accurately to the oscilloscope display – 16x closer to perfect.



## 16x Closer to Perfect

#### 16x more resolution

HD4096 technology provides 12 bits of vertical resolution — 16x more resolution than conventional 8-bit oscilloscopes. The 4096 discrete vertical levels reduce the quantization error compared to 256 vertical levels. This improves the accuracy and precision of the signal capture and increases measurement confidence.

## **EXPERIENCE THE DIFFERENCE**



Experience HD4096 accuracy, detail, and precision and never use an 8-bit oscilloscope again. Whether the application is general-purpose design and debug, high-precision analog sensors, power electronics, automotive electronics, mechatronics, or other specialized applications, the HD4096 technology provides unsurpassed confidence and measurement capabilities.

#### Clean, crisp waveforms

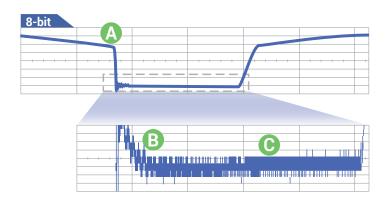
When compared to waveforms acquired and displayed using conventional 8-bit oscilloscopes, waveforms captured with HD4096 12-bit technology are dramatically crisper and cleaner, and are displayed more accurately. Once you see a waveform acquired with HD4096 technology, you will not want to go back to using a conventional 8-bit oscilloscope.

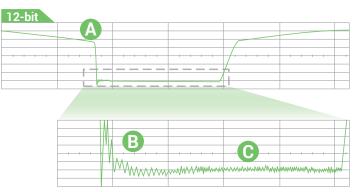
#### More signal details

16x more resolution provides more signal detail. This is especially helpful for analyzing wide dynamic range signals where very small amplitude signal details must be viewed. 12-bit acquisitions combined with the oscilloscope's vertical and horizontal zoom capabilities provide unparalleled insight into system behaviors and problems.

#### **Unmatched measurement precision**

HD4096 technology delivers measurement precision several times better than conventional 8-bit oscilloscopes. Higher oscilloscope measurement precision results in better ability to assess corner cases and design margins, perform root cause analysis, and create the best possible solution for any discovered design issue.





- (A) Clean, crisp waveforms | Thin traces show the actual waveform with minimal noise interference.
- **More signal details** | Waveform details can now be clearly seen on an HD4096 12-bit oscilloscope.
- Unmatched measurement precision | Measurements are more precise and not affected by quantization noise.

## MORE CAPABILITY THAN YOU IMAGINED





## Protocol Analysis with Serial Trigger and Decode

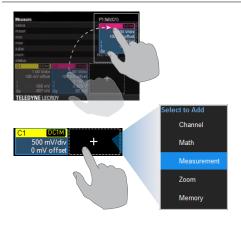
- Intuitive, color-coded overlays make it easy to understand serial data information
- Powerful, conditional data triggering capabilities
- Interactive decode table summarizes results of two different protocol decodes
- Touch a row in the table to automatically zoom and display the selected packet
- Search and conditional filtering

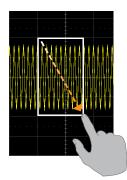
Index	Time	Protocol	→ Message	Data	CRC	Status
▶ 11	323.943 µs	SSPI	0x43	0x43		Ľ
▶ 12	419.72 µs	UART	254	0xfe		
▶ 13	422.595 µs	SSPI	0x72	0x72		
▶ 14	521.247 µs	SSPI	0x6f	0x6f		
▶ 15	529.70 µs	UART	254	0xfe		



## Logic Analysis with 16-channel Mixed Signal Capability

- Simultaneously view, measure, and analyze
   4 analog and 16 digital channels
- Dedicated digital logic port does not consume analog channels
- Analog and digital channels can be incorporated into a single pattern trigger
- Find anomalies in digital waveforms using WaveScan, trends, statistics, and histicons

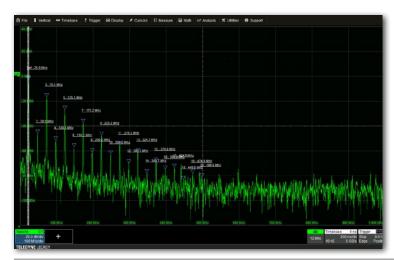




#### **MAUI** with OneTouch

- Most unique touch screen features on any oscilloscope
- Drag-and-drop to dramatically reduce setup time
- All common operations can be performed with one touch





#### **Spectrum Analyzer**

- Spectrum analyzer style controls
- Logarithmic scales
- Pop up Peaks and Markers table



#### **Built-in Waveform Generator**

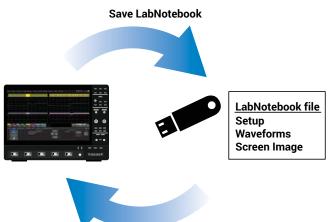
- Frequencies of up to 25 MHz
- Wide variety of waveform sources available
- Saved waveforms can be uploaded to oscilloscope to generate arbitrary waveforms



#### **DVM and Frequency Counter**

- 4-digit digital voltmeter, 5-digit frequency counter
- Works with any channel; measurements update even when system is not triggering
- Set voltage readings to DC, DC RMS, or AC RMS

The DVM license key can be downloaded at no charge from teledynelecroy.com/ws4000hd/redeemdvm



#### LabNotebook

- Store all setups, waveforms, and screen image in a single LabNotebook file
- Add descriptive notes to LabNotebooks, or mark up screen images
- Recall ("Flashback") LabNotebooks to restore oscilloscope to past state—including all setups, waveforms, and table data
- Extract component files from .LNB format files, or append other files to .LNB

## **COMPREHENSIVE PROBE SUPPORT**





#### **Active Power Rail Probe**

**Active Voltage Probes** 

**Current Probes** 



**RP4030** 

- Large (30 V) built-in offset, low noise
- Perfect for low impedance power rails
- Solder-in & U.FL connections



ZS1000 ZS1500

- Low 0.9 pF input capacitance
- High input impedance (1 M $\Omega$ )
- Low cost



CP030, CP030-3M, CP030A CP031, CP031A CP150, CP150-6M CP500, DCS025

- Peak currents up to 700 A
- Sensitivities to 1 mA/div
- Bandwidth up to 100 MHz

#### **Differential Probes**



ZD1500, ZD1000, ZD500, ZD200 AP033

- High CMRR, high bandwidth, low noise
- 1 pF capacitance, wide dynamic range
- Series/shunt voltage measurement

**High Voltage Differential Probes** 



HVD3102A, HVD3106A (1 kV) HVD3206A, HVD3220 (2 kV) HVD3605A (6 kV)

- 1, 2, or 6 kV common-mode ratings
- Excellent CMRR (65 dB at 1 MHz)
- 1% gain accuracy

**High Voltage Passive Probes** 



HVP120 PPE6KV-A

- 1 kV to 6 kV ratings
- Safe and easy probing accessories
- Sense pin for automatic scaling

#### High Voltage Fiber Optically-isolated Probes



#### **HVF0108**

- 35 kV common-mode rating
- Highest possible CMRR (140 dB)
- Ideal for gate-drive measurements

#### **Passive Probes**



#### PP019, PP026

- Rated for 500 V
- Sense pin for automatic scaling
- High input impedance of 10 MΩ

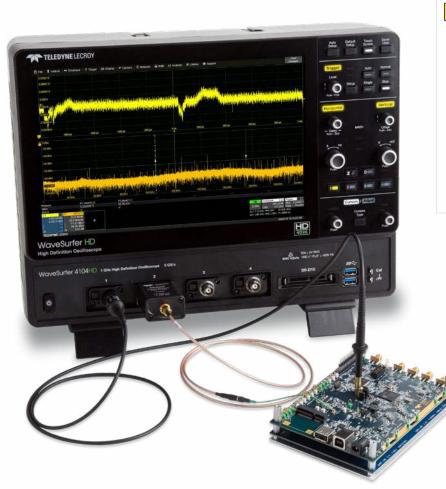
#### **Probe Adapters**

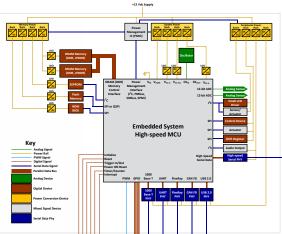


#### TPA10

- Supports TekProbe interface level II
- Configure power and offset control
- Supports wide variety of Tek probes





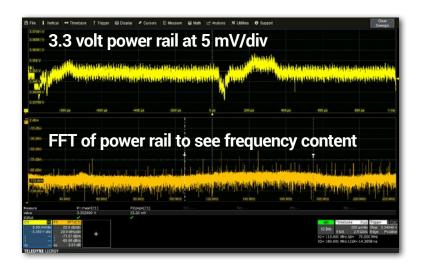




## **Clock Analysis**

- Capture long records to build statistics faster
- All-instance measurements measure every clock edge in any acquisition length
- Trend values over time
- Histicons show statistical distribution





#### **Power Rail Analysis**

- 12-bit resolution and low noise clearly shows small signal details in power rails
- FFT or Spectrum Analyzer determines root cause of high noise events
- Built-in high offset capability permits native probing of power rails



#### **Protocol Analysis**

- Trigger on protocol elements or specific DATA patterns using powerful conditional DATA triggering
- Highly adaptable ERROR frame triggering isolates protocol errors
- Combine UART/SPI bytes into single "message frame" to trigger on proprietary protocols
- Use Search and Zoom to correlate protocol events to other embedded signals



#### **Power Analysis**

- Measure and analyze operating characteristics of power conversion circuits
- Identify turn-on and turn-off transitions using color-coded overlays
- Automatically calculate switching device measurements
- Measure input/output power and input harmonics





### **Key Attributes**

- 1. 12.1" 1280 x 800 capacitive touch screen display
- 2. Buttons/indicators color-coded to associated waveform on display
- **3.** MAUI with OneTouch user interface for intuitive and efficient operation
- **4.** HD4096 Technology 12 bits all the time
- **5.** Use cursors and adjust settings without opening a menu

- **6.** ProBus input supports over 30 probes in 9 product categories
- 7. Mixed Signal capability with 16 channel dedicated digital logic port
- 8. USB 3.1 ports for easy connectivity
- WaveSource Arbitrary Waveform Generator
- 10. HDMI output
- **11.** USBTMC over USB 2.0 for data offload



# SPECIFICATIONS



Vertical Apple of Changele	WaveSurfer 4024HD	WaveSurfer 4034HD	WaveSurfer 4054HD	WaveSurfer 4104HD	
Vertical - Analog Channels	000 MILE	050 MH-	FOO MILE	1.011-	
Analog Bandwidth @ 50 $\Omega$ (-3 dB) Rise Time (10-90%)	200 MHz 1.75 ns	350 MHz 1 ns	500 MHz 700 ps	1 GHz 450 ps	
Input Channels	4	I IIS	700 ps	450 μς	
Vertical Resolution	12 bits				
Effective Number of Bits (ENOB)	8.7	8.6	8.5	8.3	
Vertical Noise Floor (rms, 50 $\Omega$ )	0.1	0.0	0.0	0.0	
1 mV/div	65 μV	70 μV	90 μV	125 μV	
2 mV/div	65 μV	70 µV	90 μV	125 μV	
5 mV/div	65 μV	70 μV	90 μV	125 µV	
10 mV/div	70 μV	75 µV	95 µV	130 µV	
20 mV/div	95 μV	95 µV	115 µV	160 μV	
50 mV/div	160 µV	175 μV	210 µV	280 µV	
100 mV/div	270 μV	290 µV	350 µV	465 μV	
200 mV/div	960 µV	925 μV	1.10 mV	1.65 mV	
500 mV/div	1.60 mV	1.75 mV	2.10 mV	2.75 mV	
1 V/div	2.70 mV	2.90 mV	3.50 mV	4.70 mV	
Sensitivity		iable; <b>1 M</b> Ω: 1 mV-10 V/div, f		T. 1 O 111V	
DC Vertical Gain Accuracy (Gain Component of DC Accuracy)	±0.5% FS, offset at 0 V	1001C, 1 10132. 1 1111V 10 V/GIV, 1	uny variable		
Channel-Channel Isolation	60 dB	60 dB up to 200 MHz 50 dB up to 350 MHz	60 dB up to 200 MHz 50 dB up to 500 MHz	60 dB up to 200 MHz 50 dB up to 500 MHz 40 dB up to 1 GHz	
Offset Range	50 Ω: 1 mV to 4.95 mV: ±1.6 V; 5 mV to 9.9 mV: ±4 V; 10 mV to 19.8 mV: ±8 V; 20 mV to 1 V: ±10 V  1 MΩ: 1 mV to 4.95 mV: ±1.6 V; 5 mV to 9.9 mV: ±4 V; 10 mV to 19.8 mV: ±8 V; 20 mV to 100 mV: ±16 V;  102 mV to 198 mV: ±80 V; 200 mV to 1 V: ±160 V; 1.02 V to 10 V: ±400 V				
DC Vertical Offset Accuracy	$\pm (1.0\% \text{ of offset setting} + 0.5)$		+ 1 mV)		
Maximum Input Voltage	50 Ω: 5 Vrms, 1 MΩ: 400 V ma				
Input Coupling	1 MΩ: AC, DC, GND; 50 Ω: DC				
Input Impedance	50 Ω: ±2.0%; 1 MΩ: ±2.0%    1				
Bandwidth Limiters	20 MHz	20 MHz, 200 MHz	20 MHz, 200 MHz	20 MHz, 200 MHz	
Rescaling	Electrical: Volts, Amps				
Horizontal - Analog Channels Acquisition Modes	Dool time Doll Average Cog	uence (Segmented Memory L	up to 1000 aggments with 1 u	na min_interpagment time)	
Timebases	Internal timebase common to		ip to 1000 segments with 1 p	is min. intersegment time)	
Time/Division Range	500 ps/div to 100 s/div	0 4 input channels			
Clock Accuracy	±2.5 ppm + 1.0 ppm/year fro	m calibration			
Acquisition - Analog Channels	±2.5 ppm + 1.0 ppm/year no	iii caibration			
Sample Rate (Single-Shot)	2.5 GS/s on 4 Ch, 5 GS/s on 2	2 Ch			
Standard Memory (4 Ch / 2 Ch)	12.5 Mpts / 25 Mpts	2 011			
Averaging	Summed averaging to 1024	sweeps			
Vertical, Horizontal, Acquisition		ID-MSO option only)			
Input Channels	16 Digital Channels				
Threshold Groupings	Pod 2: D15 to D8, Pod 1: D7 to	DO			
Threshold Selections	TTL (+1.4 V), 5 V CMOS (+2.5 \	V), ECL (-1.3 V) or User Defined			
Maximum Input Voltage	±30 V Peak				
Threshold Accuracy	±(3% of threshold setting + 100	0 mV)			
Input Dynamic Range	±20 V	•			
Minimum Input Voltage Swing	500 mVpp				
Input Impedance (Flying Leads)	100 kΩ    5 pF				
Maximum Input Frequency	125 MHz				
Sample Rate	500 MS/s				
Record Length	12.5 Mpts - 16 Channels				
Minimum Detectable Pulse Width	4 ns				
Channel-to-Channel Skew	±(1 digital sample interval)				
User-defined Threshold Range	±10 V in 20 mV steps				
-					

## **SPECIFICATIONS**



WaveSurfer 4024HD WaveSurfer 4034HD WaveSurfer 4054HD WaveSurfer 4104HD **Triggering System** Normal, Auto, Single, and Stop Modes Sources Any input channel, Ext, Ext/5, or Line; slope and level unique to each source (except Line trigger) DC, AC, HFRei, LFRei Coupling From 10 ns up to 20 s or from 1 to 100,000,000 events Hold-off Pre-trigger Delay 0 to 100% of full scale Post-trigger Delay 0 to 10,000 divisions ±4.1 div from center (typical) Internal Trigger Level Range External Trigger Level Range Ext (±0.610 mV); Ext/5 (±3.05 V) Maximum Trigger Rate 175,000 waveforms/second Trigger Sensitivity with Edge Trigger 0.9 division @ 10 MHz (Ch 1-4)1.0 division @ 200 MHz 1.0 division @ 350 MHz 1.0 division @ 500 MHz 1.0 division @ 1 GHz Edge, Width, Logic (Pattern), TV (NTSC, PAL, SECAM, HDTV - 720p, 1080i, 1080p), Runt, Slew Rate, **Trigger Types** Interval (Signal or Pattern), Dropout, Qualified (State or Edge). External input supports Edge trigger only. Low Speed Serial Protocol Triggering (Optional) 12C, SPI (SPI, SSPI, SIOP), UART-RS232, CAN1.1, CAN2.0, CAN FD, LIN, FlexRay Measure, Zoom, and Math Tools Up to 6 parameters can be calculated at one time on any waveforms, selected from the following list of measurements: Amplitude, Area, Base, Delay, Duty Cycle (50%, @level), Edge (@level), Fall Time (90%–10%), Fall Time (80%–20%), Frequency (50%, @level), Maximum, Mean, Minimum, Overshoot+, Overshoot-, Peak-Peak, Measurement Parameters Period (50%, @level), Phase, Risé Time (10%-90%), Rise Time (20%-80%), RMS, Skew, Standard Deviation, ΔTime (@level) Top, ΔWidth (@level) Width+, Width-. Statistics and histicons can be added to measurements. Measurements can be gated Zooming Use front panel QuickZoom button, or Rectangle-Zoom using touch screen or mouse. Up to 2 math functions can be calculated at one time on any waveforms, selected from the following list of operations: Sum, Difference, Product, Ratio, Absolute Value, Average, Derivative, Enhanced Resolution, Envelope, Floor, Integral, Invert, Reciprocal, Rescale, Roof, SinX/x, Square, Square Root, Trend, Zoom and FFT (with Power Spectrum output; Rectangular, VonHann and FlatTop windows). Math Functions **Display System** Size 12.1" widescreen capacitive touch screen Resolution 1280 x 800 pixels **Probes** Standard Probes PP019 (5 mm), PP026 (5 mm), 1 per channel 1 per channel BNC and Teledyne LeCroy ProBus for active voltage, current, and differential probes **Probing System** Connectivity **Ethernet Port** 1 x 10/100BaseT Ethernet interface (RJ45 port) 1 Micro SD port, 16 GB Micro SD card installed standard Removable Storage 2 front USB 3.1 Gen1 ports, 2 back USB 2.0 ports **USB Host Ports USB Device Port** 1 USBTMC over USB 2.0 port **External Monitor Port** 1 HDMI port, supports up to 1280 x 800 pixels Remote Control Microsoft COM Automation or LeCroy Remote Command Set Network Communication Standard VICP or VXI-11, LXI compatible **Power Requirements** 100 to 240 VAC ±10% @ 50 to 60 Hz ±10%; 100 to 120 VAC ±10% @ 400 Hz ±5%; automatic AC voltage selection Voltage Nominal Power Consumption 90 W / 90 VA Max Power Consumption 150 W / 150 VA **Environmental** Operating: 0 °C to +50 °C; Non-operating: -30 °C to +70 °C Temperature Operating: 5% to 90% RH (non-condensing) at ≤30 °C, upper limit derates to 50% RH (non-condensing) at +50 °C; Humidity Non-operating: 5% to 95% relative humidity (non-condensing) as tested per MIL-PRF-28800F Altitude Operating: 3,048 m (10,000 ft) max at ≤ 25 °C; Non-operating: up to 12,192 meters (40,000 ft) Size and Weight Dimensions (HWD) 10.7" H x 14.9" W x 6.3" D (273 mm x 380 mm x 160 mm) Weight 11.7 lbs (5.3 kg) **Certifications CE Certification** CE compliant, UL and cUL listed; conforms to UL 61010-1 (3rd Edition), UL 61010-2-030 (1st Edition), and CAN/CSA C22.2 No. 61010-1-12 UL and cUL Listing **Warranty and Service** 3-year warranty; calibration recommended annually. Optional service programs include extended warranty,

upgrades, and calibration services.

# **SPECIFICATIONS**

Symmetry

0% to 100%



WaveSurfer 4024HD WaveSurfer 4034HD WaveSurfer 4054HD WaveSurfer 4104HD

Digital Voltmeter (Optional, avai	ilable no charge at teledynelecroy.com/ws4000hd/redeemdvm)	
Functions	AC <sub>rms</sub> , DC, DC <sub>rms</sub> , Frequency	
Resolution	ACV/DCV: 4 digits, Frequency: 5 digits	
Measurement Rate	100 times/second, measurements update on the display 5 times/second	
Vertical Settings Autorange	Automatic adjustment of vertical settings to maximize the dynamic range of measurements	
	n Generator (WS4KHD-FG option only)	
General		
Max Frequency	25 MHz	
Channels	1	
Sample Rate	125 MS/s	
Arbitrary Waveform Length	16 kpts	
Frequency Resolution	1 μHz	
Vertical Resolution	14 bits	
Vertical Range	±3 V (HiZ); ±1.5 V (50 Ω)	
Waveform Types	Sine, Square, Triangle, Pulse, DC, Noise, ARB, Exponential Fall, Exponential Rise, Ramp, Gaussian, Lorentz, Cardia Haversine	
Frequency Specification		
Sine/Haversine	1 μHz - 25 MHz	
Square/Pulse	1 μHz - 10 MHz	
Ramp/Triangular	1 μHz - 300 KHz	
Exponential Fall/Rise	1 μHz - 1 MHz	
Gaussian, Lorentz, Cardiac	1 μHz - 5 MHz	
Noise	25 MHz (-3 dB)	
Resolution	1 μΗz	
Accuracy	±50 ppm, over temperature	
Aging	±3 ppm/year, first year	
Output Specification		
Amplitude	4 mVpp - 6 Vpp ( HiZ); 2 mVpp - 3 Vpp (50 Ω)	
Vertical Accuracy	$\pm (0.3 \text{ dB} + 1 \text{ mV})$	
Amplitude Flatness	±0.5 dB	
DC Offset		
Range (DC)	±3 V (HiZ); ±1.5 V (50 Ω)	
Offset Accuracy	$\pm (1\% \text{ of offset value} + 3 \text{ mV})$	
Waveform Output		
Impedance	50 Ω ±2%	
Protection	Short-circuit protection	
Sine Spectrum Purity		
SFDR (Non Harmonic) @1.265 Vpp		
DC-1 MHz	-60 dBc	
1 MHz - 5 MHz	-55 dBc	
5 MHz - 25 MHz	-50 dBc	
Harmonic Distortion @1.265 Vpp		
DC - 5 MHz	-50 dBc	
5 MHz - 25 MHz	-45 dBc	
Square/Pulse		
Rise/Fall time	24 ns (10% - 90%)	
Overshoot	3% (typical - 1 kHz, 1 Vpp)	
Pulse Width	50 ns minimum	
Jitter	500 ps + 10 ppm of period (RMS cycle to cycle)	
Ramp/Triangle		
Linearity	0.1% of Peak value output (typical - 1 kHz, 1 Vpp, 100% symmetric)	

## ORDERING INFORMATION



			4090
Product Description	Product Code	Product Description	Product Code
WaveSurfer 4000HD Oscilloscopes		Probes	
200 MHz, 2.5 GS/s, 4 Ch, 12.5 Mpts/Ch	WaveSurfer 4024HD	250 MHz Passive Probe – 5 mm, 10:1, 10 MΩ	PP019
High Definition Oscilloscope		500 MHz Passive Probe – 5 mm, 10:1, 10 M $\Omega$	PP026
with 12.1" capacitive touch screen		7.5 GHz Low Capacitance Passive Probe (÷10, 1 kΩ; ÷	÷20, 500 Ω) PP066
350 MHz, 2.5 GS/s, 4 Ch, 12.5 Mpts/Ch High Definition Oscilloscope	WaveSurfer 4034HD	Power/Voltage Rail Probe with 4 GHz bandwidth, 1.2x attenuation, ±30 V offset, ±800 mV	RP4030
with 12.1" capacitive touch screen		RP4030 Browser Tip Accessory	RP4000-BROWSER
500 MHz, 2.5 GS/s, 4 Ch, 12.5 Mpts/Ch High Definition Oscilloscope	WaveSurfer 4054HD	30 A, 50 MHz Current Probe – AC/DC, 30 Arms,50 A peak pulse, 1.5-meter cable	CP030
with 12.1" capacitive touch screen	WaveSurfer 4104HD	30 A, 10 MHz Current Probe – AC/DC, 30 Arms, 50 A peak pulse, 3-meter cable	CP030-3M
1 GHz, 2.5 GS/s, 4 Ch, 12.5 Mpts/Ch High Definition Oscilloscope	waveSurier 4104HD	30 A, 50 MHz High Sensitivity Current Probe – AC/DC, 30 Arms, 50 A peak pulse, 1.5-meter cable	CP030A
with 12.1" capacitive touch screen		30 A, 100 MHz Current Probe – AC/DC, 30 Arms, 50 A peak pulse, 1.5-meter cable	CP031
Included with Standard Configurations ÷10 passive probes (Qty. 4), Micro SD card (install-	ad) Miara CD aard	30A, 100 MHz High Sensitivity Current Probe – AC/DC, 30 Arms, 50 A peak pulse, 1.5-meter cable	CP031A
adapter, protective cover, Getting Started Guide, co	ommercial NIST	150 A, 10 MHz Current Probe – AC/DC; 150 Arms; 500 A peak pulse, 2-meter cable	CP150
traceable calibration with certificate, power cable country, 3-year warranty	for the destination	150 A, 5 MHz Current Probe – AC/DC, 150 Arms, 500 A peak pulse, 6-meter cable	CP150-6M
Multi-Instrument Options		500 A, 2 MHz Current Probe – AC/DC, 500 Arms, 700 A peak pulse, 6-meter cable	CP500
Mixed-Signal Oscilloscope (incl. 16-channel digital	WS4KHD-MS0	Deskew Calibration Source	DCS025
leadset, 22 extra large gripper probes, 20 ground	WO HAID MICO	700 V, 25 MHz High Voltage Differential Probe (÷10, ÷	
extenders, 5 flexible ground leads and license)		1 kV, 25 MHz High Voltage Differential Probe	HVD3102A
Spectrum Analyzer for WaveSurfer 4000HD WaveSource Arbitrary Waveform Generator	WS4KHD-SPECTRUM-1 WS4KHD-FG	1 kV, 25 MHz High Voltage Differential Probe (without tip accessories)	HVD3102A-NOACC
WaveSource Arbitrary Waverorm Generator	W34KHD-1 G	1 kV, 120 MHz High Voltage Differential Probe	HVD3106A
Serial Trigger and Decode Options	WO ALCI ID ALIDIO TO	1 kV, 80 MHz High Voltage Differential Probe with 6-meter Cable	HVD3106A-6M
AudioBus Trigger and Decode Automotive Bundle: CAN, CAN FD, LIN,	WS4KHD-AUDIO TD WS4KHD-AUTO TD	1 kV, 120 MHz High Voltage Differential Probe (without tip accessories)	HVD3106A-NOACC
FlexRay Trigger and Decode		2 kV, 120 MHz High Voltage Differential Probe	HVD3206A
Embedded Bundle: I2C, SPI, UART-RS232 Trigger and Decode	WS4KHD-EMB TD	2 kV, 80 MHz High Voltage Differential Probe with 6-meter Cable	HVD3206A-6M
		2W/ 400 MHz High Voltage Differential Probe	TI/U333U

WS4KHD-PWR

WS4KHD-RACK

WS4KHD-SOFTCASE

Bandwidth upgrades can be made at any time. Contact your local Teledyne LeCroy sales office.

RP4030 Browser TIP Accessory	RP4000-BROWSER
30 A, 50 MHz Current Probe – AC/DC, 30 Arms,50 A peak pulse, 1.5-meter cable	CP030
30 A, 10 MHz Current Probe – AC/DC, 30 Arms, 50 A peak pulse, 3-meter cable	CP030-3M
30 A, 50 MHz High Sensitivity Current Probe – AC/DC, 30 Arms, 50 A peak pulse, 1.5-meter cable	CP030A
30 A, 100 MHz Current Probe –	CP031
AC/DC, 30 Arms, 50 A peak pulse, 1.5-meter cable 30A, 100 MHz High Sensitivity Current Probe – AC/DC, 30 Arms, 50 A peak pulse, 1.5-meter cable	CP031A
150 A, 10 MHz Current Probe –	CP150
AC/DĆ; 150 Arms; 500 A peak pulse, 2-meter cable	CP150-6M
AC/DC, 150 Arms, 500 A peak pulse, 6-meter cable 500 A, 2 MHz Current Probe –	CP500
AC/DC, 500 Arms, 700 A peak pulse, 6-meter cable	D0000F
Deskew Calibration Source	DCS025
700 V, 25 MHz High Voltage Differential Probe (÷10, ÷	
1 kV, 25 MHz High Voltage Differential Probe 1 kV, 25 MHz High Voltage Differential Probe	HVD3102A HVD3102A-NOACC
(without tip accessories)	
1 kV, 120 MHz High Voltage Differential Probe	HVD3106A
1 kV, 80 MHz High Voltage Differential Probe with 6-meter Cable	HVD3106A-6M
1 kV, 120 MHz High Voltage Differential Probe (without tip accessories)	HVD3106A-NOACC
2 kV, 120 MHz High Voltage Differential Probe	HVD3206A
2 kV, 80 MHz High Voltage Differential Probe with 6-meter Cable	HVD3206A-6M
2kV, 400 MHz High Voltage Differential Probe	HVD3220
6 kV, 100 MHz High Voltage Differential Probe	HVD3605A
High Voltage Fiber Optic Probe, 150 MHz bandwidth	HVF0108
HVF0100 Universal ±1 V Tip Accessory	HVF0100-1X-TIP-U
HVF0100 Universal ±5 V Tip Accessory	HVF0100-5X-TIP-U
HVF0100 Universal ±10 V Tip Accessory	HVF0100-10X-TIP-U
HVF0100 Universal ±20 V Tip Accessory	HVF0100-20X-TIP-U
HVF0100 Universal ±40 V Tip Accessory	HVF0100-40X-TIP-U
100:1 400 MHz 50 MΩ 1 kV High Voltage Probe	HVP120
2 kV HV Probe, 6 kV overvoltage capability	PPE6KV-A
500 MHz, 60 V Common Mode Differential Probe. Includes standard set of leads and tips.	DL05-HCM
1 GHz, 60 V Common Mode Differential Probe. Includes standard set of leads and tips.	DL10-HCM
200 MHz, 3.5 pF, 1 MΩ Active Differential Probe, ±20	V ZD200
500 MHz, 1.0 pF Active Differential Probe, ±8 V	ZD500
500 MHz Active Differential Probe (÷1, ÷10, ÷100)	AP033
1 GHz, 1.0 pF Active Differential Probe, ±8 V	ZD1000
1.5 GHz, 1.0 pF Active Differential Probe, ±8 V	ZD1500
1 GHz, 0.9 pF, 1 M $\Omega$ High Impedance Active Probe	ZS1000
$1.5~\mathrm{GHz}$ , $0.9~\mathrm{pF}$ , $1~\mathrm{M}\Omega$ High Impedance Active Probe	ZS1500
Probe Adapters Tek Probe to ProBus Probe Adapter	
TER FIODE tO FIODUS FIODE Adapter	IPAIU



**Power Analysis Options** 

**General Accessories** 

Power Analysis

Softcase Rackmount Kit

> 1-800-5-LeCroy teledynelecroy.com

Local sales offices are located throughout the world. Visit our website to find the most convenient location.