

# BIGGEST TOUCH. BEST VALUE.



WaveSurfer 3000z

100 MHz – 1 GHz Oscilloscopes



10.1" Capacitive Touch Screen

20 Mpts Memory

Powerful, Deep Toolbox

The WaveSurfer 3000z has a 10.1" capacitive touch display, the longest memory, and the deepest toolbox – all at an affordable price.

teledynelecroy.com/oscilloscope/wavesurfer-3000z-oscilloscopes





# BIGGEST TOUCH. BEST VALUE.

WaveSurfer 3000z

# Biggest Touch



Best Value 30% Larger



Digital Voltmeter Logic Analysis with 16 Mixed Signal Capabilities

20 Mpts Powerful Triggering Superior Measurement Tools

History Mode Anomaly Detection

WaveScan LabNotebook Waveform Generator

Multi-Instrument Capabilities (AFG)

Powerful, Protocol Analysis with Serial Trigger and Decode

Pass/Fail Deep Toolbox

Testing Advanced Math Fast Waveform Update

The WaveSurfer 3000z has a 10.1" capacitive touch display, the longest memory, and the deepest toolbox – all at an affordable price.

- 10.1" Capacitive Touch Screen
- 20 Mpts Memory
- 3 Powerful, Deep Toolbox

# Faster Time to Insight

# Insight alone is not enough.

Markets and technologies change too rapidly.

The timing of critical design decisions is significant.

Faster Time to Insight is what matters.



# THE WAVESURFER 3000Z ATTRIBUTES

The WaveSurfer 3000z provides the Most Advanced User Interface (MAUI) through a 10.1" capacitive touch screen. It promotes true versatility with 20 Mpts of memory, multi-instrument capabilities, a powerful, deep toolbox, and 100 MHz - 1 GHz of bandwidth.

#### **Key Attributes**

- 10.1" widescreen capacitive touch screen display
- 2. MAUI Most Advanced User Interface
- Waveform Control Knobs for channel, zoom, math and memory traces
- **4.** "Push" Knobs push functionality provides shortcuts to common actions
- **5.** Dedicated buttons to quickly access popular debug tools.
- **6.** Mixed Signal Capability 16 channel mixed signal capability
- **7.** Easy connectivity with an ethernet and four USB 2.0 Ports
- Rotating and tilting feet for four different viewing positions







- WaveSource Ouput for Built-in Function Generator
- Micro SD Port 16 GB (or larger) micro SD card installed standard
- **11.** External Monitor DB-15 connector (Support resolution of 1024 x 600)
- **12.** USBTMC (Test and Measurement Class) over USB 2.0 for remote connectivity
- 13. Small Footprint



# **WAVESURFER 3000z AT A GLANCE**

#### **Key Features**

100 MHz, 200 MHz, 350 MHz, 500 MHz and 1 GHz bandwidths

Up to 4 GS/s sample rate

Long Memory – up to 20 Mpts

10.1" capacitive touch screen display

16 Digital Channel MSO option

#### **MAUI - Most Advanced User Interface**

- Designed for Touch
- Built for Simplicity
- Made to Solve

#### **Advanced Anomaly Detection**

- Fast Waveform Update
- History Mode Waveform Playback
- WaveScan Search and Find

#### **Multi-Instrument Capabilities**

- Protocol Analysis -Serial Trigger and Decode
- Waveform Generation Built-in Function Generator
- Digital Voltmeter and Frequency Counter

#### **Future Proof**

- Upgradeable Bandwidth
- Field Upgradable Software and Hardware Options



#### **Superior User Experience**

MAUI is the most advanced oscilloscope user interface. It is designed for touch, built for simplicity, and made to solve.

#### **Advanced Anomaly Detection**

A fast waveform update rate, used in conjunction with history mode, WaveScan, sequence mode, and mask testing facilitates outstanding waveform anomaly detection.

#### **Biggest Touch Display**

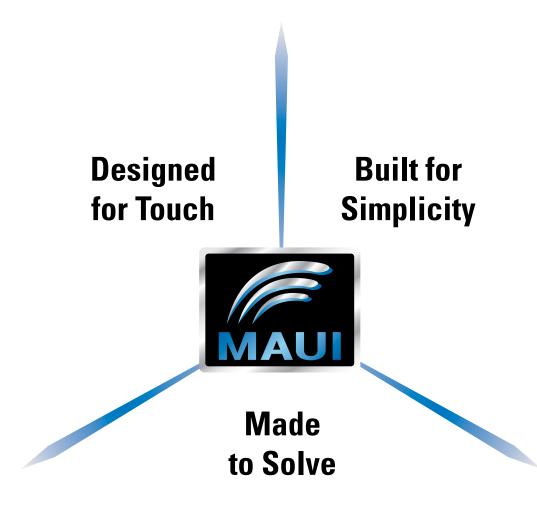
A large capacitive touch screen enables accessible and responsive touch operation. The 10.1" display is 30% larger than competitive offerings, providing more waveform viewing area.

#### Powerful, Deep Toolbox

The standard collection of math, measurement, debug, and documentation tools provides unsurpassed analysis capabilities.



# MAUI - SUPERIOR USER EXPERIENCE



## Designed for Touch

MAUI is designed for touch. Operate the oscilloscope just like a phone or tablet with the most unique touch screen features on any oscilloscope. All important controls are always one touch away. Touch the waveform to position or zoom in for more details using intuitive actions.

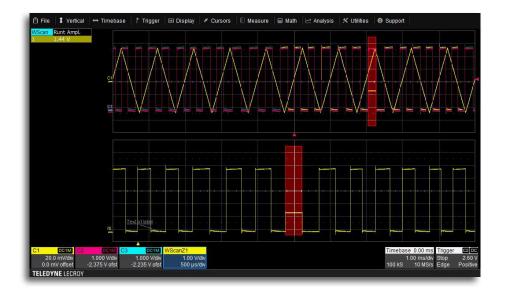
## **Built for Simplicity**

MAUI is built for simplicity. Basic waveform viewing and measurement tools as well as advanced math and analysis capabilities are seamlessly integrated in a single user interface. Time saving shortcuts and intuitive dialogs simplify setup and shorten debug time.

#### Made to Solve

MAUI is made to solve. A deep set of integrated debug and analysis tools help identify problems and find solutions quickly. Unsurpassed integration provides critical flexibility when debugging. Solve problems fast with powerful analysis tools.

# **ADVANCED ANOMALY DETECTION**



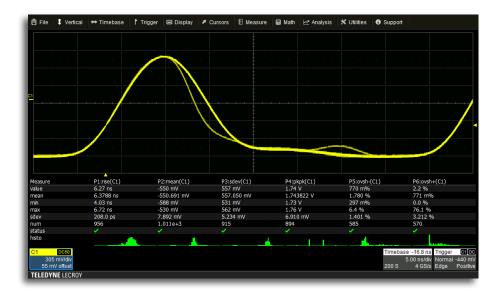
#### **WaveScan Advanced Search**

- Locate unusual events in a single capture or scan for an anomalies across many acquisitions
- More than 20 modes can be applied to analog or digital channels



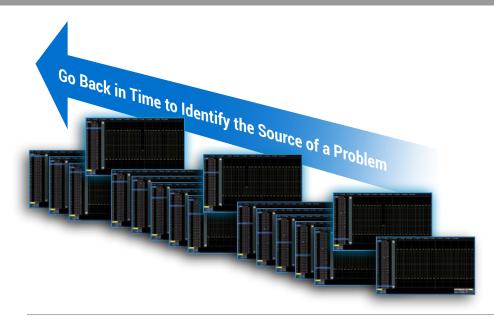
#### **Pass/Fail Mask Testing**

- Mask testing to quickly identify anomalies and mark their location.
- A history of these pass/fail results can be displayed



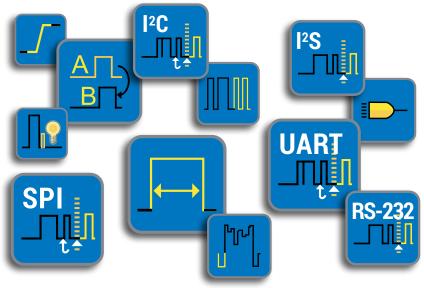
#### **Fast Waveform Update**

- An update rate of over 130,000 waveforms per second will easily display random or infrequent events
- Changes over time can be seen with the intensity graded persistence display



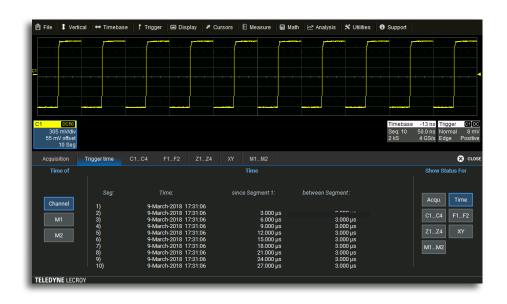
#### History Mode Waveform Playback

- View previous waveforms to discover past anomalies
- Use cursors and measurement parameters to quickly identify the source of problems
- History mode is always enabled and accessible through the click of a button



#### **Powerful Triggering**

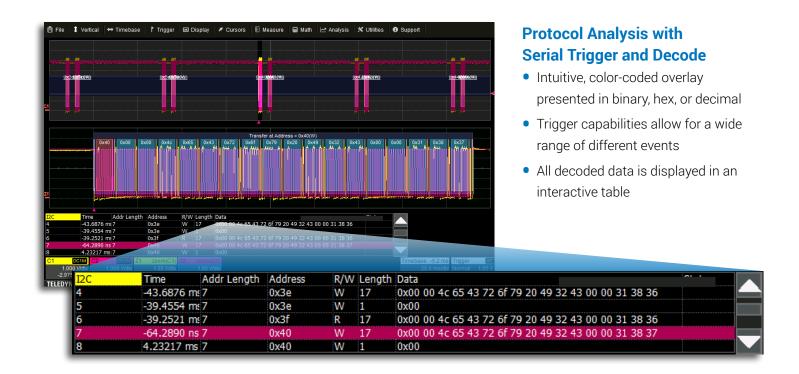
- Basic triggering such as edge or width can be used for everyday solutions
- Qualified triggering enables the ability to trigger across multiple channels
- Powerful logic triggering can be setup to catch a parallel pattern
- Smart triggers such as runt, dropout, or interval help isolate anomalies quickly
- Serial data triggering adds protocol specific triggers



#### Advanced Waveform Capture with Segmented Memory

- Save waveforms into segmented memory
- Capture fast pulses in quick succession or events separated by long time intervals
- Combine Sequence mode with advanced triggers to isolate rare events

# **MULTI-INSTRUMENT CAPABILITIES**





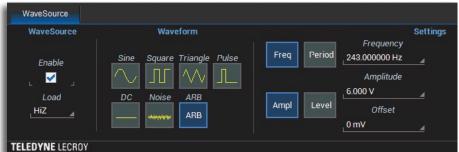
The DVM license key can be downloaded at no charge from *teledynelecroy.com/redeem/dvm*.

#### Precise Measurements with Digital Voltmeter

- 4-digit digital voltmeter
- 5-digit frequency counter
- Any channel can be selected as a source
- Voltage readings can be set to DC, DC RMS, or AC RMS
- Measurements will continue to be updated even when triggering is stopped



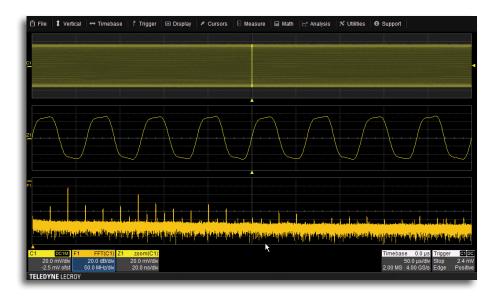




# Waveform Generation with Built-in Function Generator

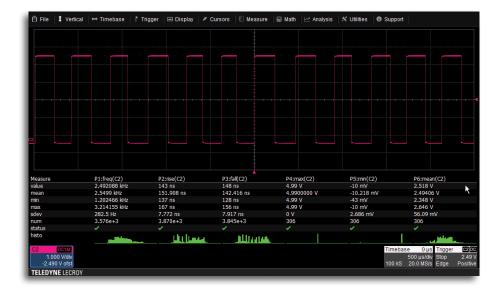
- Frequencies of up to 25 MHz
- Waveform Options: sine, square, pulse, ramp, triangle, noise and DC waveforms
- Rear panel BNC output
- Saved waveforms can be uploaded into the WaveSource to generate arbitrary waveforms

# POWERFUL, DEEP TOOLBOX



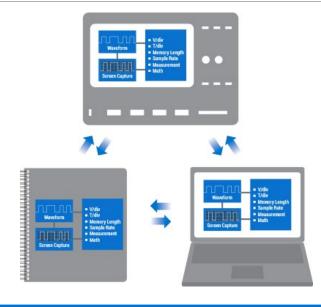
#### **Advanced Math Capabilities**

- A deep set of 20 math functions provide quick insight into waveforms
- Dedicated Grid for Math Traces
- Any Channel, Measurement, or Analysis Package can have a math function applied



#### **Superior Measurement Tools**

- 24 measurement parameters
- Additional statistics and histicons can be applied to each parameter
- Trends can be displayed for any measurement



# LabNotebook Documentation Tool

- Save all displayed waveforms, oscilloscope setup file, and a screen image with a single button press
- Recall LabNotebook files onto the oscilloscope
- View the LabNotebook files on a PC using WaveStudio



#### **PROBES**

#### Teledyne LeCroy offers an extensive range of probes to meet virtually every probing need.

ZS Series High Impedance Active Probes (1 GHz - 1.5 GHz)



The active voltage probe can become the everyday probe for all different types of signals and connection points.

Differential Probes (200 MHz - 1.5 GHz)



These active differential probes are ideal for applications such as automotive electronics and data communications.

Active Voltage/Power Rail Probe (4 GHz)



The Active Rail Probe is specifically designed to probe a low impedance power/voltage rail.

High Voltage Fiber Optically-isolated Probes



The HVF0108 is ideal for measurement of small signals floating on an HV bus in power electronics designs or for EMC, EFT, ESD, and RF immunity testing sensor monitoring.

High Voltage Differential Probes (120 MHz)



HVDs are rated for wide differential voltage swings - ideal for power electronics circuits.

High Voltage Passive Probes



High Voltage Single-ended passive probes that are ideal for lightning/surge or EFT testing, or for probing in-circuit beyond the range of a LV-rate passive probe.

Current Probes (100 MHz)



Current probes with peak currents of 700 A and sensitivities to 1 mA/div. Ideal for component or power conversion system input/output measurements.

Probe and Current Sensor Adapters



TPA10 adapts supported Tektronix TekProbe-compatible probes to Teledyne LeCroy ProBus interface.



# **SPECIFICATIONS**

#### WaveSurfer 3014z WaveSurfer 3024z WaveSurfer 3034z WaveSurfer 3054z WaveSurfer 3104z

| Analog - Vertical                                    | WaveSurier 30142   | Waveourier 00242                                   | Waveourier 000 12   | Waveourier 00042                               | waveSurier 51042              |  |
|--|--|--|---|--|-------------------------------|--|
| Analog Bandwidth @ 50Ω (-3dB)                        | 100 MHz  | 200 MHz  | 350 MHz   | 500 MHz  | 1 GHz                         |  |
| Rise time  | 3.5 ns (typical)   | 1.75 ns (typical)                                  | 1 ns (typical)  | 800 ps (typical)                               | 430 ps (typical)              |  |
| Input Channels                                       | 4  |  |   |  |                               |  |
| Vertical Resolution                                  |  | h enhanced resolution (I                           |   |  |                               |  |
| Sensitivity  |  | 50 Ω: 1mV/div - 1 V/div; 1 MΩ: 1 mV/div - 10 V/div |   |  |                               |  |
| DC Gain Accuracy                                     |  | et at 0V, $> 5$ mV/div; $\pm$ (2.                  | 5%) < 5 mV/div  |  |                               |  |
| BW Limit   |  | MHz  |   | 20 MHz, 200 MHz                                |                               |  |
| Maximum Input Voltage                                |  | ak; 1 M $\Omega$ : 400 V max (D                    | <u>C + Peak AC ≤ 10 kHz)</u>  | -  |                               |  |
| Input Coupling                                       | 50 Ω: DC, GND; 1 MΩ: A   |  |   |  |                               |  |
| Input Impedance                                      | 50 Ω ±2.0%, 1 MΩ ±2.0  |  |   |  |                               |  |
| Offset Range   | 50 <b>Ω</b> : 1 mV - 19.8 mV: ±2 V, 20 mV - 100 mV: ±5 V, 102 mV - 198 mV: ±20 V, 200 mV - 1 V: ±50 V<br>1 M <b>Ω</b> : 1 mV - 19.8 mV: ±2 V, 20 mV - 100 mV: ±5 V, 102 mV - 198 mV: ±20 V, 200 mV - 1 V: ±50 V,<br>1.02 V - 1.98 V: ±200 V, 2 V - 10 V: ±400 V  |  |   |  |                               |  |
| Offset Accuracy                                      | ±(1.0% of offset value +   |  |   |  |                               |  |
| Analog - Acquisition                                 |  |  |   |  |                               |  |
| Sample Rate (Single-shot)                            | 1 GS/s<br>(2 GS/s interleaved)   |  |   | SS/s<br>aterleaved)                            |                               |  |
| Sample Rate (Repetitive)                             | 50 GS/s  |  | (100,011  |  |                               |  |
| Standard Memory ( 4 Ch / 2 Ch)                       | 10 Mpts / 20 Mpts  |  |   |  |                               |  |
| Acquisition Modes                                    | Real Time, Roll, RIS (Ra   | andom Interleaved Samp<br>Memory up to 1,000 se    | oling),<br>gments with 1µs minimi   | um intersegment time)                          |                               |  |
| Real Time Timebase Range                             | 5 ns/div - 100 s/div   | 2 ns/div -   | 100 s/div   | 1 ns/div - 100 s/div                           | 500 ps/div - 100 s/div        |  |
| RIS Mode Timebase Range                              | 5 ns/div - 10 ns/div   |  | 10 ns/div   | 1 ns/div - 10 ns/div                           | 500 ps/div - 10 ns/div        |  |
| Roll Mode Timebase Range                             |  | ode is user selectable at                          | ≥ 50 ms/div)  |  |                               |  |
| Timebase Accuracy                                    | ±10 ppm measured over  | er > 1ms interval                                  |   |  |                               |  |
| <b>Digital - Vertical and Acquisit</b>               | ion (WS3K-MSO Optio  | on Only)   |   |  |                               |  |
| Input Channels                                       | 16 Digital Channels  |  |   |  |                               |  |
| Threshold Groupings                                  | Pod 2: D15 - D8, Pod 1: D  | 7 - D0   |   |  |                               |  |
| Threshold Selections                                 |  | 2.5V), ECL (-1.3V) or User                         | Defined   |  |                               |  |
| Maximum Input Voltage                                | ±30V Peak  | ,,   |   |  |                               |  |
| Threshold Accuracy                                   | ±(3% of threshold setting  | g + 100mV)   |   |  |                               |  |
| Input Dynamic Range                                  | ±20V   |  |   |  |                               |  |
| Minimum Input Voltage Swing                          | 500mVpp  |  |   |  |                               |  |
| Input Impedance (Flying Leads)                       | 100 kΩ    5 pF   |  |   |  |                               |  |
| Maximum Input Frequency                              | 125 MHz  |  |   |  |                               |  |
| Sample Rate  | 500 MS/s   |  |   |  |                               |  |
| Record Length  | 10MS - 16 Channels   |  |   |  |                               |  |
| Minimum Detectable Pulse Width                       | 4 ns   |  |   |  |                               |  |
| Channel-to-Channel Skew User defined threshold range | ± (1 digital sample inte<br>±10V in 20mV steps   | rval)  |   |  |                               |  |
| Trigger System                                       |  |  |   |  |                               |  |
| Modes  | Auto, Normal, Single, S  | top  | and tour to the   | h  | 4-2                           |  |
| Sources  |  | ernal, Ext/5, or line; slope                       | and level unique to eac   | n source (except for line                      | e trigger)                    |  |
| Coupling  Pro trigger Delay                          | DC, AC, HFREJ, LFREJ   | <del>,                                      </del> |   |  |                               |  |
| Pre-trigger Delay                                    | 0-100% of full scale<br>0-10,000 Divisions   |  |   |  |                               |  |
| Post-trigger Delay Hold-off                          | 10ns up to 20s or 1 to   | 100 000 000 ovente                                 |   |  |                               |  |
| Internal Trigger Level Range                         | ±4.1 Divisions   | 100,000,000 EVENIS                                 |   |  |                               |  |
| External Trigger Level Range                         | Ext: ±610mV, Ext/5: ±3.  |  |   |  |                               |  |
| Trigger Types  | Edge, Width, Logic (Pat  | tern), TV (NTSC, PAL, SE                           | ECAM, HDTV - 720p, 108<br>State or Edge); External :                          |  |                               |  |
| Measure, Zoom and Math To                            | ols  |  |   |  |                               |  |
| Measurement Parameters                               | Up to 6 of the following<br>Duty Cycle, Fall Time (9<br>Overshoot-, Peak-Peak,   | 90%–10%), Fall Time (80<br>Period, Phase, Rise Tim | culated at one time on a<br>1%–20%), Frequency, Ma<br>1e (10%–90%), Rise Time | aximum, Mean, Minimur<br>e (20%–80%), RMS, Ske | n, Overshoot+,<br>w, Standard |  |
| 7  |  |  | isticons can be added to  |  |                               |  |
| Zooming Math Functions                               | Use front panel QuickZoom button, or use touch screen or mouse to draw a box around the zoom area.  Up to 2 of the following functions can be calculated at one time: 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 (up to 1 Mpts with power spectrum output and rectangular, VonHann, and FlatTop windows). |  |   |  |                               |  |
| Probes   |  |  |   |  |                               |  |
| Standard Probes                                      | One PP019 (5n  | nm) per channel                                    | One   | e PP020 (5mm) per cha                          | nnel                          |  |
| Probing System                                       |  |  | Itage, current and differen   |  |                               |  |

# **SPECIFICATIONS**

|  | veSurter 3024z WaveSurter 3   | 3034z WaveSurfer 3054z WaveSurfer 3104z   |  |  |  |
|--|---|---|--|--|--|
| 10.1" widescreen capacitive t  | touch screen  |   |  |  |  |
| 1024 x 600   | •   |   |  |  |  |
|  |   |   |  |  |  |
| 10/100Rase-T Ethernet inter  | face (B I-45 connector)   |   |  |  |  |
|  |   |   |  |  |  |
|  |   |   |  |  |  |
|  | 110H 00D 2.01 0H3   |   |  |  |  |
|  |   |   |  |  |  |
|  | support resolution of 1024x600)   |   |  |  |  |
|  |   | mand Set  |  |  |  |
|  | The release to the received to the  | Thank out   |  |  |  |
| '  |   |   |  |  |  |
|  |   |   |  |  |  |
|  | 0.11= 1.7 507.100 100.740 11007   | at 400 He II / F0/. Automotic AO Valtaria Calcation   |  |  |  |
|  | 100 - 240 VAC ± 10% at 50-60 Hz +/-5%; 100 - 120 VAC ± 10% at 400 Hz +/- 5%; Automatic AC Voltage Selection   |   |  |  |  |
|  | paripharala digital landaat and acti  | va probas connected to 4 shannels)  |  |  |  |
| Tax) T50 W / T50 VA (WILITAII PC L   | periprierais, digital leadset and acti  | ve probes connected to 4 channels)  |  |  |  |
|  |   |   |  |  |  |
| Operating: 0 °C to 50 °C; Non  | n-Operating: -30 °C to 70 °C  |   |  |  |  |
|  |   | ≤ 30 °C, Upper limit derates to 50% relative humidity   |  |  |  |
| (non-condensing) at +50 °C   |   |   |  |  |  |
|  |   |   |  |  |  |
| Operating: 3,048 m (10,000 f   | t) max at ≤ 25C; Non-Operating: Up  | o to 12,192 meters (40,000 ft)  |  |  |  |
|  |   |   |  |  |  |
| 10 63"H v 14 96"W v 4 92"D (   | 270 mm v 380 mm v 125 mm)   |   |  |  |  |
|  | 270 11111 × 300 11111 × 123 11111)  |   |  |  |  |
| 1.5 r Ng (10.5 150)  |   |   |  |  |  |
|  |   |   |  |  |  |
|  |   |   |  |  |  |
|  |   |   |  |  |  |
| UL 61010-1, UL 61010-2-030   | 0:2010, 3rd Edition; CAN/CSA C22.2  | 2 No. 61010-1-12  |  |  |  |
| otional)   |   |   |  |  |  |
|  | CV  |   |  |  |  |
|  |   |   |  |  |  |
|  |   | es/second   |  |  |  |
|  |   |   |  |  |  |
| ,  | ,   |   |  |  |  |
| on Generator (optional)  |   |   |  |  |  |
| (oparetta)   | DC Offset   |   |  |  |  |
| 25 MHz   | Range (DC)  | ±3V (HiZ); ±1.5V (50 Ω)   |  |  |  |
| 1  |   | ±(1% of offset value + 3 mV)  |  |  |  |
| 125 MS/s   |   | ,   |  |  |  |
|  | Waveform Output   |   |  |  |  |
| 16 KPTS  | Impedance   | 50 <b>Ω</b> ± 2%  |  |  |  |
| 1 μHz  | Protection  | Short-circuit protection  |  |  |  |
| 14-bit   | Sin a Constantin De   |   |  |  |  |
| ±3V (HiZ); ±1.5V (50 Ω)  |   |   |  |  |  |
| Sine, Square, Pulse, Ramp, Noise, DC   |   |   |  |  |  |
| on   | <u>DC-1 MHz</u><br>1 MHz - 5 MHz  | -60dBc  |  |  |  |
| )N   |   | -55dBc<br>-50dBc  |  |  |  |
|  |   |   |  |  |  |
| 1 μHz - 25 MHz   | 5 MHz - 25 MHz  |   |  |  |  |
| 1 μHz - 25 MHz<br>1 μHz - 10 MHz   | Harmonic Distortion   | on @1.265Vpp  |  |  |  |
| 1 μHz - 25 MHz<br>1 μHz - 10 MHz<br>1 μHz - 300 KHz  | Harmonic Distortion DC - 5 MHz  | on @1.265Vpp<br>-50dBc  |  |  |  |
| 1 μHz - 25 MHz<br>1 μHz - 10 MHz<br>1 μHz - 300 KHz<br>25 MHz (-3dB)   | Harmonic Distortion   | on @1.265Vpp  |  |  |  |
| 1 μHz - 25 MHz<br>1 μHz - 10 MHz<br>1 μHz - 300 KHz<br>25 MHz (-3dB)<br>1 μHz  | Harmonic Distortion DC - 5 MHz  | on @1.265Vpp<br>-50dBc<br>-45dBc  |  |  |  |
| 1 μHz - 25 MHz<br>1 μHz - 10 MHz<br>1 μHz - 300 KHz<br>25 MHz (-3dB)<br>1 μHz<br>±50 ppm, over temperature   | Harmonic Distortion DC - 5 MHz 5 MHz - 25 MHz  Square/Pulse Rise/fall time  | on @1.265Vpp<br>-50dBc<br>-45dBc<br>24 ns (10% - 90%)   |  |  |  |
| 1 μHz - 25 MHz<br>1 μHz - 10 MHz<br>1 μHz - 300 KHz<br>25 MHz (-3dB)<br>1 μHz  | Harmonic Distortion DC - 5 MHz 5 MHz - 25 MHz  Square/Pulse Rise/fall time Overshoot  | on @1.265Vpp<br>-50dBc<br>-45dBc<br>24 ns (10% - 90%)<br>3% (typical - 1 kHz, 1 Vpp)  |  |  |  |
| 1 μHz - 25 MHz<br>1 μHz - 10 MHz<br>1 μHz - 300 KHz<br>25 MHz (-3dB)<br>1 μHz<br>±50 ppm, over temperature<br>±3 ppm/year, first year  | Harmonic Distortion DC - 5 MHz 5 MHz - 25 MHz  Square/Pulse Rise/fall time Overshoot Pulse Width  | on @1.265Vpp  -50dBc  -45dBc  24 ns (10% - 90%)  3% (typical - 1 kHz, 1 Vpp)  50 ns min.  |  |  |  |
| 1 μHz - 25 MHz<br>1 μHz - 10 MHz<br>1 μHz - 300 KHz<br>25 MHz (-3dB)<br>1 μHz<br>±50 ppm, over temperature<br>±3 ppm/year, first year<br>4 mVpp - 6 Vpp (HiZ); 2 mVpp - 3 Vpp(50 | Harmonic Distortion DC - 5 MHz 5 MHz - 25 MHz  Square/Pulse Rise/fall time Overshoot Pulse Width  | on @1.265Vpp<br>-50dBc<br>-45dBc<br>24 ns (10% - 90%)<br>3% (typical - 1 kHz, 1 Vpp)  |  |  |  |
| 1 μHz - 25 MHz 1 μHz - 10 MHz 1 μHz - 300 KHz 25 MHz (-3dB) 1 μHz ±50 ppm, over temperature ±3 ppm/year, first year  4 mVpp - 6 Vpp (HiZ); 2 mVpp - 3 Vpp(50±(0.3dB + 1 mV)      | Harmonic Distortion DC - 5 MHz 5 MHz - 25 MHz  Square/Pulse Rise/fall time Overshoot Pulse Width Jitter   | on @1.265Vpp -50dBc -45dBc  24 ns (10% - 90%) 3% (typical - 1 kHz, 1 Vpp) 50 ns min.  |  |  |  |
| 1 μHz - 25 MHz<br>1 μHz - 10 MHz<br>1 μHz - 300 KHz<br>25 MHz (-3dB)<br>1 μHz<br>±50 ppm, over temperature<br>±3 ppm/year, first year<br>4 mVpp - 6 Vpp (HiZ); 2 mVpp - 3 Vpp(50 | Harmonic Distortion DC - 5 MHz 5 MHz - 25 MHz  Square/Pulse Rise/fall time Overshoot Pulse Width Jitter  Ramp/Triangle  | on @1.265Vpp -50dBc -45dBc  24 ns (10% - 90%) 3% (typical - 1 kHz, 1 Vpp) 50 ns min. 500ps + 10ppm of period (RMS cycle to cycle)   |  |  |  |
| 1 μHz - 25 MHz 1 μHz - 10 MHz 1 μHz - 300 KHz 25 MHz (-3dB) 1 μHz ±50 ppm, over temperature ±3 ppm/year, first year  4 mVpp - 6 Vpp (HiZ); 2 mVpp - 3 Vpp(50±(0.3dB + 1 mV)      | Harmonic Distortion DC - 5 MHz 5 MHz - 25 MHz  Square/Pulse Rise/fall time Overshoot Pulse Width Jitter   | on @1.265Vpp<br>-50dBc<br>-45dBc<br>24 ns (10% - 90%)<br>3% (typical - 1 kHz, 1 Vpp)<br>50 ns min.  |  |  |  |
|  | (1) MicroSD Port - 16 GB mic (4) USB 2.0 Ports Total – (2) (1) USBTMC Supports IEEE – 488.2 Standard DB-15 connector (s Via Windows Automation, or on VICP and LXI compatible  SS  100 - 240 VAC ± 10% at 50-6 Nominal) 80 W / 80 VA Max) 150 W / 150 VA (with all PC p  Operating: 0 °C to 50 °C; Nor Operating: 5% to 90% relative (non-condensing) at +50 °C Non-Operating: 5% to 95% re Operating: 3,048 m (10,000 f  10.63"H x 14.96"W x 4.92"D ( 4.81 kg (10.6 lbs)  Low Voltage Directive 2014/30/EU; E UL 61010-1, UL 61010-2-030  ptional)  ACrms, DC, DCrms, Frequenc ACV/DCV: 4 digits, Frequenc 100 times/second, measure ange Automatic adjustment of ver  on Generator (optional)  25 MHz 1 125 MS/s 16 kpts 1 μHz 14-bit ±3V (HiZ); ±1.5V (50 Ω) | Supports IEEE − 488.2  Standard DB-15 connector (support resolution of 1024x600)  Via Windows Automation, or via Teledyne LeCroy Remote Com  on VICP and LXI compatible  100 - 240 VAC ± 10% at 50-60 Hz +/-5%; 100 - 120 VAC ± 10% at 100 - 240 VAC ± 100 VAC |  |  |  |



## **ORDERING INFORMATION**

| Product Description                    | Product Code     |
|--|------------------|
| WaveSurfer 3000z Oscilloscopes         |                  |
| 100 MHz, 2 GS/s, 4 Ch, 10 Mpts/Ch with | WaveSurfer 3014z |
| 10.1" Capacitive Touch Screen Display  |                  |
| 20 Mpts /Ch in interleaved mode        |                  |
| 200 MHz, 4 GS/s, 4 Ch, 10 Mpts/Ch with | WaveSurfer 3024z |
| 10.1" Capacitive Touch Screen Display  |                  |
| 20 Mpts /Ch in interleaved mode        |                  |
| 350 MHz, 4 GS/s, 4 Ch, 10 Mpts/Ch with | WaveSurfer 3034z |
| 10.1" Capacitive Touch Screen Display  |                  |
| 20 Mpts /Ch in interleaved mode        |                  |
| 500 MHz, 4 GS/s, 4 Ch, 10 Mpts/Ch with | WaveSurfer 3054z |
| 10.1" Capacitive Touch Screen Display  |                  |
| 20 Mpts /Ch in interleaved mode        |                  |
| 1 GHz, 4 GS/s, 4 Ch, 10 Mpts/Ch with   | WaveSurfer 3104z |
| 10.1" Capacitive Touch Screen Display  |                  |
| 20 Mpts /Ch in interleaved mode        |                  |
| Included with Standard Configurations  |                  |

÷10 Passive Probe (Total of 1 Per Channel), 1 Micro SD card (Installed), Micro SD card adapter, Protective Front Cover, Getting Started Guide, Commercial NIST Traceable Calibration with Certificate, Power Cable for the Destination Country, 3-year Warranty

#### **General Accessories**

| External GPIB Accessory | USB2-GPIB     |
|-------------------------|---------------|
| Soft Carrying Case      | WS3K-SOFTCASE |
| Rack Mount Accessory    | WS3K-RACK     |

#### **Multi-Instrument Options**

| mail: motiument options  |                    |
|--|--------------------|
| MSO software option and 16 Channel Digital probe lea                     | adset WS3K-MS0     |
| MSO License (MS Probe Not Included)                                      | WS3K-MSO-LICENSE   |
| Function Generator Option  | WS3K-FG            |
| Spectrum Analyzer for WaveSurfer 3000z                                   | WS3K-SPECTRUM-1    |
| Audiobus Trigger and Decode Option for I <sup>2</sup> S, LJ, RJ, and TDM | WS3K-Audiobus TD   |
| CAN and LIN Trigger and Decode Option                                    | WS3K-AUTO          |
| CAN FD Trigger and Decode Option   | WS3K-CAN FDbus TD  |
| I <sup>2</sup> C, SPI, UART and RS-232 Trigger and Decode Option         | WS3K-EMB           |
| FlexRay Trigger and Decode Option  | WS3K-FlexRaybus TD |
| Power Analysis Option  | WS3K-PWR           |

| Product Description   | Product Code |
|---|--------------|
| Probes  |              |
| 250 MHz Passive Probe 10:1, 10 M $\Omega$   | PP019        |
| 500 MHz Passive Probe 10:1, 10 MΩ   | PP020        |
| 700 V, 15 MHz High-Voltage Differential Probe   | AP031        |
| Power/Voltage Rail Probe. 4 GHz bandwidth,<br>1.2x attenuation, ±30V offset, ±800mV                   | RP4030       |
| Browser for use with RP4030 RP40  | 00-BROWSER   |
| 1,500 V, 120 MHz High-Voltage Differential Probe  | HVD3106A     |
|   | HVD3106A-6M  |
| 1kV, 120 MHz High Voltage Differential Probe without tip Accessories HVD3                             | 3106A-NOACC  |
| 1,500 V, 25 MHz High-Voltage Differential Probe   | HVD3102A     |
| 1kV, 25 MHz High Voltage Differential Probe without HVD3 tip Accessories                              | 3102A-NOACC  |
| 2kV, 120 MHz High Voltage Differential Probe  | HVD3206A     |
| 2kV, 80 MHz High Voltage Differential Probe with 6m cable F   | IVD3206A-6M  |
| 2kV, 400 MHz High Voltage Differential Probe  | HVD3220      |
| 6kV, 100 MHz High Voltage Differential Probe  | HVD3605A     |
| High Voltage Fiber Optic Probe, 150 MHz (requires accessory tip)                                      | HVF0108      |
|   | F0100-1X-TIP |
|   | F0100-5X-TIP |
|   | 0100-20X-TIP |
| 30 A; 100 MHz Current Probe – AC/DC; 30 A <sub>rms;</sub> 50 A <sub>peak</sub> Pulse                  | CP031        |
| 30 A; 100 MHz High Sensitivity Current Probe – AC/DC; 30 A <sub>rms;</sub> 50 A <sub>peak</sub> Pulse | CP031A       |
| 30 A; 50 MHz Current Probe – AC/DC; 30 A <sub>rms</sub> ; 50 A <sub>peak</sub> Pulse                  | CP030        |
| 30 A, 10 MHz Current Probe - AC/DC, 30 A rms, 50 $A_{\text{Peak}}$ Pulse, 3 meter cable               | CP030-3M     |
| 30 A; 50 MHz High Sensitivity Current Probe – AC/DC; 30 $A_{rms;}$ 50 $A_{peak}$ Pulse                | CP030A       |
| 150 A; 10 MHz Current Probe – AC/DC; 150 A <sub>rms;</sub> 500 A <sub>peak</sub> Puls                 | se CP150     |
| 150 A, 5 MHz Current Probe - AC/DC, 150 A rms, 500 A <sub>Peak</sub><br>Pulse, 6 meter cable          | CP150-6M     |
| 500 A; 2 MHz Current Probe – AC/DC; 500 A <sub>rms</sub> ; 700 A <sub>peak</sub> Pulse                | e CP500      |
| Deskew Calibration Source for CP031, CP030 and AP015  | DCS025       |
| 500 MHz Differential Probe  | AP033        |
| 200 MHz, 3.5 pF, 1 M $\Omega$ Active Differential Probe, $\pm 20$ V, 60V common-mode                  | ZD200        |
| 1 GHz, 1.0 pF, 1 M $\Omega$ Active Differential Probe, $\pm 8$ V, 10V common-mode                     | ZD1000       |
| 1.5 GHz, 1.0 pF, 1 M $\Omega$ Active Differential Probe, ±8 V, 10V common-mode                        | ZD1500       |
| 1 GHz, 0.9 pF, 1 MΩ High Impedance Active Probe   | ZS1000       |
| 1.5 GHz, 0.9 pF, 1 MΩ High Impedance Active Probe   | ZS1500       |
| 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.<br>Includes standard set of leads and tips.              | DL05-HCM     |
| 1 GHz 60 V Common Mode Differential Probe.<br>Includes standard set of leads and tips.                | DL10-HCM     |
| Probe Adapters  TekProbe to ProBus Probe Adapter  | TPA10        |
| reknione to Probus Probe Adapter  | IPAIU        |

#### **Customer Service**

Teledyne LeCroy oscilloscopes and probes are designed, built, and tested to ensure high reliability. In the unlikely event you experience difficulties, our digital oscilloscopes are fully warranted for three years and our probes are warranted for one year. This warranty includes:

aluetesters.com

• No charge for return shipping • Long-term 7-year support • Upgrade to latest software at no charge



1-800-5-LeCroy teledynelecroy.com

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

© 2022 Teledyne LeCroy, Inc. All rights reserved. Specifications, prices, availability, and delivery subject to change without notice. Product or brand names are trademarks or requested trademarks of their respective holders.

