



## Specifications

The tables in this chapter list the characteristics and features that apply to this instrument after it has had a warm-up period of at least five minutes.

The Performance Requirement column describes the limits of the Characteristic. Supplemental Information describes features and typical values or other helpful information.

### Electrical Characteristics

Characteristic	Performance Requirement	Supplemental Information
Excitation Pulse Reflected Pulse	$\leq 200$ ps (0.096 feet)	Vp set to 0.99; 10 to 90%, into a precision short
Aberrations	$\pm 5\%$ peak within 0 to 10 feet after rise $\pm 0.5\%$ peak beyond 10 feet	Excluding front panel aberrations
Jitter	$\leq 0.02$ feet ( $\leq 40$ ps) p-p Horz scale 0.1 ft/div $\leq 0.2$ feet ( $\leq 400$ ps) p-p Horz scale 1 ft/div	Vp set to 0.99, DIST/DIV set to 0.1 ft/div At 23.4 feet to 46.8 feet, jitter is $\leq 0.04$ feet.
Output Impedance	$50\Omega \pm 2\%$	After risetime stabilizes into $50\Omega$ termination
Pulse Amplitude		300 mV nominal into $50\Omega$ load
Pulse Width		25 $\mu$ s nominal
Pulse Repetition Time		200 $\mu$ s nominal
Vertical Scales	0.5 mp/div to 500 mp/div,	> 240 values, includes 1, 2, 5 sequences
Accuracy	Within $\pm 3\%$ of full scale	
Set Adj	Set incident pulse within 3%	
Vertical Position		Any waveform point is moveable to center screen
Displayed Noise	$\pm 5$ mp peak or less, filter set to 1 $\pm 2$ mp peak or less, filter set to 8	
Distance Cursor Resolution		1/25th of 1 major division
Cursor Readout Range		-2 ft to $\geq 2,000$ ft
Resolution		0.004 ft
Distance Measurement Accuracy	1.6 inches or $\pm 1\%$ of distance measured, whichever is greater	For cables with Vp = 0.66 For delta mode measurements Error $\leq 0.5\%$ for distance $\geq 27$ ft Error $\leq 1.0\%$ for distance $\geq 14$ ft Error $\leq 2.0\%$ for distance $\geq 7$ ft Error $\leq 10\%$ for distance $\geq 1.5$ ft

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Characteristic	Performance Requirement	Supplemental Information
Cursor Ohms Readout Range  Resolution  Accuracy		1 $\Omega$ to 1 k $\Omega$  3 significant digits  $\pm 10\%$ with serial cable impedance correction (relative impedance measurements $\pm 2\%$ )
Horizontal Scales  Range		11 values, 1, 2, 5 sequence 0.1 ft/div to 200 ft/div (0.025 m/div to 50 m/div) 1 ft to 2,000 ft (2.5 m to 500 m)
Horizontal Position		Any distance to full scale can be moved on screen
V <sub>p</sub> Range  Resolution  Accuracy	Within $\pm 1\%$	Propagation velocity relative to air 0.30 to 0.99  0.01  Included in total timebase error tolerance
Custom Option Port		Tektronix Chart Recorders YT-1 and YT-1S are designed to operate with the 1502B. Produces a high resolution thermal dot matrix recording of waveform and switch values.
Line Voltage	115 VAC (90 to 132 VAC) 45 to 440 Hz, or 230 VAC (180 to 250 VAC) 45 to 440 Hz, or 12 VDC through battery pack connector	Fused at 0.3 A Fused at 0.15 A
Battery Pack Operation   Full Charge Time  Overcharge Protection   Discharge Protection  Charge Capacity  Charge Indicator	5 hours minimum, 20 chart recordings maximum	+15° C to +25° C charge and discharge temp, LCD backlight off. Operation of instrument with backlight on or at temps below +10° C will degrade battery operation specification  20 hours maximum  Limited to 10 days continuous charge. Battery will charge whenever instrument is plugged in. Battery can be removed during AC operation.  Operation terminates prior to cell reversal  2 Amp-hours typical  Bat/low will be indicated on LCD when capacity reaches approximately 10%

## Environmental Characteristics

Characteristic	Performance Requirement	Supplemental Information
Temperature Operating	-10° C to +55° C	Battery capacity reduced at other than +15°C to +25°C
Non-operating	-62° C to +85° C	With battery pack removed. Storage temp with battery pack in is -20° C to +55° C. Contents on non-volatile memory (stored waveform) might be lost at temps below -40° C.
Humidity	to 100%	Internal desiccant
Altitude Operating	to 15,000 ft	MIL-T-28800C, Class 3
Non-operating	to 40,000 ft	
Vibration	5 to 15 Hz, 0.06 inch p-p 15 to 25 Hz, 0.04 inch p-p 25 to 55 Hz, 0.013 inch p-p	MIL-T-28800C, Class 3
Shock, Mechanical Pulse	30 g, 11 ms 1/2 sine wave, total of 18 shocks	MIL-T-28800C, Class 3
Bench Handling		MIL-STD-810, Method 516, Procedure V
Operating	4 drops each face at 4 inches or 45 degrees with opposite edge as pivot	Cabinet on, front cover off
Non-operating	4 drops each face at 4 inches or 45 degrees with opposite edge as pivot. Satisfactory operation after drops.	Cabinet off, front cover off
Loose Cargo Bounce	1 inch double-amplitude orbital path at 5 Hz, 6 faces	MIL-STD-810, Method 514, Procedure XI, Part 2
Water Resistance Operating	Splash-proof and drip-proof	MIL-T-28800C, Style A Front cover off
Non-operating	Watertight with 3 feet of water above top of case	Front cover on
Salt Atmosphere	Withstand 48 hours, 20% solution without corrosion	
Sand and Dust	Operates after test with cover on, non-operating	MIL-STD-810, Method 510, Procedure I
Washability	Capable of being washed	
Fungus Inert	Materials are fungus inert	

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Characteristic	Performance Requirement	Supplemental Information
Electromagnetic Compatibility	VDE 0871 Class B  MIL-T-28800C MIL-STD-461A notice 4(EL)	CE02, CE04, CS02, CS06, RE02, RE02.1  RS03, RS03.1 from 14 kHz to 10 GHz
Radiated Susceptibility	MIL-STD-461A notice 4(EL), method MIL-STD-462 notice 3 for RS03 and RS03.1	Limited to 1 V/m (greater than 1 GHz, displayed noise characteristics performance shall be: $\pm 10$ m $\mu$ peak or less, with 50 $\Omega$ termination connected to RF input (16 averages)).

## Physical Characteristics

Characteristic	Description	
Weight	without cover	14.25 lbs (6.46 kg)
	with cover	15.75 lbs (7.14 kg)
	with cover, chart recorder, and battery pack	19.75 lbs (8.96 kg)
Shipping Weight	domestic	25.5 lbs (11.57 kg)
	export	25.5 lbs (11.57 kg)
Height	5.0 inches (127 mm)	
Width	with handle	12.4 inches (315 mm)
	without handle	11.8 inches (300 mm)
Depth	with cover on	16.5 inches (436 mm)
	with handle extended to front	18.7 inches (490 mm)