

10. SPECIFICATIONS

	V-1585 V-1085	V-1565 V-1065A	V-1560 V-1060	V-695 V-665A	V-660
CRT					
Graticule	6-inch screen with internal graticule 0%, 10%, 90% and 100% markers 8 × 10 DIV (1 DIV = 1cm)	←	←	←	←
Phosphor	P31	←	←	←	←
Accelerating potential	17kV approx.	←	←	12kV approx.	←
External intensity modulation	Coupling: DC coupling Voltage: 5V or more Maximum input voltage: 30V (DC + AC peak or 30Vp-p AC at 1kHz or less Bandwidth: DC to 5MHz	←	←	←	←
Vertical deflection system					
Sensitivity	<CH1 and CH2> 2mV/DIV to 5V/DIV ±3% (switchable in 11 steps) Continuously variable	←	←	←	←
	<CH3 and CH4> 0.1V/DIV and 0.5V/DIV ±3% selectable	Not provided	←	←	←

	V-1585 V-1085	V-1565 V-1065A	V-1560 V-1060	V-695 V-665A	V-660
Bandwidth	DC to 100MHz -3dB 2mV/DIV: DC to 20MHz -3dB AC low pass:10Hz	←	←	DC ~ 60MHz DC ~ 10MHz	←
Rise time	3.5ns approx. 2mV/DIV: 17.5ns approx.	←	←	5.9ns approx. 35ns approx.	←
Delay time	Leading edge can be monitored	←	←	←	←
Maximum input voltage	400V (DC + AC peak) at 1kHz or less	←	←	←	←
Input coupling	< CH1 and CH2 > AC, DC, GND	←	←	←	←
	< CH3 and CH4 > AC, DC	Not provided	←	←	←
Input impedance	1M ohms + 1.5%, 23pF approx.	←	←	←	←
Display modes	CH1, CH2, DUAL, CHOP (250kHz approx.) QUAD, ADD (DIFF mode can be established when the CH2 is in the INVERT mode.)	QUAD mode is not provided	←	←	←
Bandwidth limiting function	20MHz	←	←	10MHz	←
Polarity selection	± (CH2 only)	←	←	←	←

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Common-mode rejection ratio		20dB minimum at 20MHz		←	←	10MHz	←
X-Y operation		X-axis, Y-axis selectable		←	←	←	←
	Sensitivity	X axis	CH1, CH2 2mV to 5V/div ± 5%	←	←	←	←
			CH3, CH4 0.1V, 0.5V/div ± 5%	Not provided	←	←	←
				EXT 0.1V/div ± 5% EXT ÷ 10 1V/div ± 5%	←	←	←
		Y axis 2mV to 5V/DIV ± 3%		←	←	←	←
	Phase error	3° or less from DC to 50kHz		←	←	←	←
	X bandwidth	DC to 500kHz (−3dB)		←	←	←	←
Horizontal deflection system							
Trigger mode		Norm trigger, auto trigger		←	←	←	←
Sweep mode		Main sweep, continuous delay sweep, alternate sweep, single sweep		←	←	←	←
Trigger source		A: CH1, CH2, ALT, CH3, CH4 LINE (ALT is available at NORM trigger) B: Follows A sweep.		CH1, CH2, EXT (AC, DC, DC ÷ 10), LINE	←	←	←

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TV trigger		Exclusive sync separator circuit provided Sync polarity: -	←	←	←	←
Trigger sensitivity						
	NORM mode	See table 10-1	See table 10-2	←	See table 10-3	←
	AUTO mode	See table 10-4	See table 10-5	←	See table 10-6	←
	TV mode	Sync signal INT:1div or more	INT: 1div or more EXT: 200mVp-p or more	←	←	←
Trigger level: Variable range						
	AUTO	Automatically corresponds to the trigger signal	←	←	←	←
	NORM	± 4DIV or more	INT: ± 4div or more EXT: ± 0.4V or more EXT: ÷ 10 ± 4V or more	←	←	←
Slope		±	←	←	←	←
External input impedance		Not provided	1MΩ ± 5%, 25pF ± 6pF	←	←	←

	V-1585 V-1085	V-1565 V-1065A	V-1560 V-1060	V-695 V-665A	V-690
External input voltage	Not provided	400V(DC + AC peak) at 1kHz	←	←	←
Sweep time A(main) sweep B(delay) sweep	50ns/DIV to 0.5s/DIV Continuously variable (UNCAL) 50ns/DIV to 50ms/DIV	←	←	←	←
Accuracy		←	←	←	←
	10 to 35°C				
	0 to 50°C				
	X1				
	± 3 %	± 4 %			
	MAG × 10	± 4 %	± 6 %		
Sweep magnification	X10	←	←	←	←
Maximum sweep rate	5ns/DIV	←	←	←	←
Hold off time	Variable	←	←	←	←
Delay time	1μs to 5s	←	←	←	←
Delay jitter	1/20,000 or less	←	←	←	←
Alternate separation	Variable	←	←	←	←
Trigger lock function	Provided	←	←	←	←
Auto range function	Provided	←	←	←	←

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Single sweep function	Provided	←	←	←	←
Frequency counter Frequency measurement	Source: A trigger signal	←	Not provided	Same as V-1585, V-1085	Not provided
Measuring range	20Hz to 100MHz See table 10-7	50Hz to 100MHz See table 10-8	Not provided	50Hz to 60MHz See table 10-9	Not provided
Time base error (15°C to 35°C)	100PPM See table 10-7	100PPM See table 10-8	Not provided	100PPM See table 10-9	Not provided
Memory backup function	The panel condition can be maintained for 48 hours or more after the power switch is turned to OFF.	Not provided	←	←	←
Readout function (Panel setting display)	Vertical axis: V/DIV (CH1, CH2), UNCAL, probe conversion	←	Not provided	Same as V-1585, V-1085	Not provided
	Sweep speed: S/DIV, UNCAL, MAG(converted value)	←	←	←	←
	Other: Delay time	←	←	←	←
Cursor readout function	Voltage difference ΔV : Δ -REF Time difference ΔT : Δ -REF	←	Not provided	Same as V-1585, V-1085	Not provided

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Cursor readout function	Frequency $1/\Delta V$: Δ -REF	←	Not provided	Same as V-1585, V-1085	Not provided
External output TRIGGER SIGNAL OUT	Output voltage:25mV/DIV approx. (Full scale on the CRT) 50-ohm termination Frequency response:DC to 10MHz Output impedance:50ohms approx.	←	Not provided	Same as V-1585, V-1085	Not provided
Calibration Waveform Voltage	1kHz $\pm$ 20%, square wave 0.5V $\pm$ 1%	←	←	←	←
Power supply	90V to 250V AC 48 to 440Hz	←	←	←	←
	42W approx.	40W approx.	←	←	←
Others Dimensions	310(W) $\times$ 130(H) $\times$ 370(D)mm approx. (12.2(W) $\times$ 5.1(H) $\times$ 14.6(D)in. approx.)	275(W) $\times$ 130(H) $\times$ 360(D)mm approx. (10.8(W) $\times$ 5.1(H) $\times$ 14.2(D)in. approx.)	←	←	←
Weight	7kg approx. (15.4lb. approx.)	6kg approx. (13.2lb. approx.)	←	←	←
Ambient temperature	Operation:0 to 50°C(32 to 122°F)	←	←	←	←

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Ambient temperature	Safe operating:10 to 35°C(50 to 95°F) Storage:-20 to 70°C(-4 to 158°F)	←	←	←	←
Humidity	Operating mode: 35 to 85% Non-operating mode: 45 to 85%	←	←	←	←
EMI	VDE 0871, Category B	←	←	←	←

Table 10-1

Frequency	DC to 20MHz	20MHz to 100MHz
CH1, CH2	0.35 div	1.5 div
CH3, CH4	0.5 div	1.5 div

Table 10-2

Frequency	DC to 20MHz	20MHz to 100MHz
INT	0.35 div	1.5 div
EXT	50 mV	150 mV

Table 10-3

Frequency	DC to 10MHz	10MHz to 60MHz
INT	0.35 div	1.5 div
EXT	50 mV	150 mV

Table 10-4

Frequency	30Hz to 100Hz	100Hz to 20MHz	20MHz to 100MHz
CH1, CH2	1.5 div	1 div	1.5 div
CH3, CH4	1.5 div	1 div	1.5 div

Table 10-5

Frequency	30Hz to 100Hz	100Hz to 20MHz	20MHz to 100MHz
INT	1.5 div	1 div	1.5 div
EXT	150mV	100mV	150mV

Table 10-6

Frequency	30Hz to 100Hz	100Hz to 10MHz	10MHz to 60MHz
EXT	1.5 div	1 div	1.5 div
INT	150mV	100mV	150mV

Table 10-7

Ranges	Display format	Resolution	Accuracy
$20\text{Hz} \leq f < 100\text{Hz}$	99.99Hz	0.01Hz	Ref. signal ± 1 LSD
$100\text{Hz} \leq f < 1\text{kHz}$	999.9Hz	1.0Hz max	
$1\text{kHz} \leq f < 10\text{kHz}$	9.999kHz	0.002kHz max	
$10\text{kHz} \leq f < 100\text{kHz}$	99.99kHz	0.04kHz max	
$100\text{kHz} \leq f < 1\text{MHz}$	999.9kHz	0.1kHz	
$1\text{MHz} \leq f < 10\text{MHz}$	9.999MHz	0.002MHz max	
$10\text{MHz} \leq f < 100\text{MHz}$	99.99MHz	0.01MHz	
$100\text{MHz} \leq f$	(999.9MHz)	Not specified	

Table 10-8

Ranges	Display format	Resolution	Accuracy
$50\text{Hz} \leq f < 100\text{Hz}$	99.99Hz	0.01Hz	Ref. signal ± 1 LSD
$100\text{Hz} \leq f < 1\text{kHz}$	999.9Hz	1.0Hz max	
$1\text{kHz} \leq f < 10\text{kHz}$	9.999kHz	0.002kHz max	
$10\text{kHz} \leq f < 100\text{kHz}$	99.99kHz	0.04kHz max	
$100\text{kHz} \leq f < 1\text{MHz}$	999.9kHz	0.1kHz	
$1\text{MHz} \leq f < 10\text{MHz}$	9.999MHz	0.002MHz max	
$10\text{MHz} \leq f < 100\text{MHz}$	99.99MHz	0.01MHz	
$100\text{MHz} \leq f$	(999.9MHz)	Not specified	

Table 10-8

Ranges	Display format	Resolution	Accuracy
$50\text{Hz} \leq f < 100\text{Hz}$	99.99Hz	1.00Hz	Ref. signal ± 1 LSD
$100\text{Hz} \leq f < 1\text{kHz}$	999.9Hz	1.0Hz max	
$1\text{kHz} \leq f < 10\text{kHz}$	9.999kHz	0.002kHz max	
$10\text{kHz} \leq f < 100\text{kHz}$	99.99kHz	0.04kHz max	
$100\text{kHz} \leq f < 1\text{MHz}$	999.9kHz	0.1kHz	
$1\text{MHz} \leq f < 10\text{MHz}$	9.999MHz	0.002MHz max	
$10\text{MHz} \leq f < 60\text{MHz}$	59.99MHz	0.01MHz	
$60\text{MHz} \leq f$	(59.99MHz)	Not specified	