Oscilloscopes

Users of Philips oscilloscopes get the benefits of advanced performance and easy operation through a constant program of technology development and innovation. Advanced design principles give Philips 'scopes state-of-the-art performance in every class: from ultra-fast digital storage instruments to real- time analog 'scopes for everyday service and test applications.

Just a few of the Philips innovative features are: AUTOSET for instant signal display; P2CCDs for high sampling rates; high-resolution electroluminescent displays; auto pk-pk triggering; dual delay/time interval for accurate time measurements; cursors for instant signal analysis; and a travelling wave CRT with a helical scanning system for VHF oscilloscopes.

The Philips oscilloscopes in this catalog cover every need: from basic low-cost portables, right up to analog instruments with a 400 MHz frequency range, and digital storage oscilloscopes with sampling rates up to 500 Msamples/s. Plus our advanced 'combi' oscilloscopes that offer easy-to-use digital and analog functionality in a single instrument.

Meeting the fast-increasing demand for digital signal acquisition and analysis, the Philips range of DSOs offer a selection of signal-acquisition principles and sampling rates to meet specific application demands. All models have a wide range of on-board measurement and calculation functions, plus standard or optional interfaces for remote PC-based control and analysis.

The available measuring functions include:

dV	dt
RMS	1/d
Pk-Pk	Delay
Max.	Rise/fall
Min.	Rise/fall-ECL
Overshoot	Rise/fall-Var.
Preshoot	Frequency
Mean	Period
Absolute volts	Width
Volts Ch.-Ch.	Duty
Volts Reg.-Reg.	Phase
Relative time	Time Ch.-Ch.
Relative volts	Time Reg.-Reg.

Additional post-processing calculation functions include:

Add	Integrate
Subtract	Amplitude histogram
Multiply	FFT (optional)
Divide	Digital filter
Differentiate	

With this array of instantly accessible measuring and analysis functions, it's clear that these Philips DSOs far exceed basic oscilloscope functionality. Instead, they provide fully-fledged signal analysis and qualification capabilities for a wide range of applications in electronics, physical and mechanical environments.

PM 3323

Digital storage oscilloscope

GPIB IEEE-488

- 300 MHz bandwidth
- 500 Ms/s sampling on each channel
- Risetime 1.16 ns
- 2 ns horizontal resolution
- 4 x 4 K memory registers

The dual-channel PM 3323, with its 500 MS/s sampling rate, offers powerful, high-speed signal-acquisition performance to capture fast single-shot phenomena. The additional glitch-capture mode can catch intermittent failures down to 3 ns. After acquisition, over 25 measurement functions are available to get instant read-outs of signal parameters. Advanced signal-processing modes include calculation functions like multiply, differentiate, integrate, amplitude histogram and optional FFT.

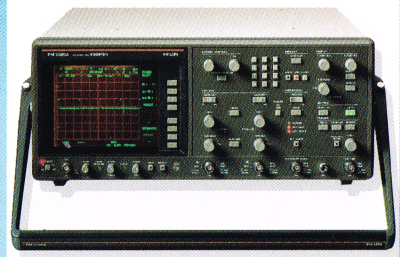
SPECIFICATION SUMMARY

DISPLAY: CRT: rectangular tube with 10x12 cm internal graticule; **Acceleration voltage:** 16 kV
VERTICAL DEFLECTION: Bandwidth: DC...300 MHz; **Deflection coefficient:** 5 mV/div; **Input impedance:** 50Ωor 1 MΩ/14 pF
SIGNAL ACQUISITION: Real time: 100 ns/div...360 s/div; **Equivalent time:** 5 ns/div...50 ns/div; **Sampling rate:** max 500 MS/s; **Vertical res:** 10 bit or 50 μV; **Horizontal res:** max 4096 s/acquisition for single shot
TIMEBASE: Deflection coefficient: 5 ns...5 s/div (recurrent, single/multiple scan, absolute, min/max and stop/save on difference); 200 ns...5 s/div (single/multiple shot), 50 ms...360 s/div (roll)
MEMORY: Registers: 4 x 4 K, 10 bit; **Expansion:** vertical 5x, horizontal 64x; **Signal handling:** smoothed, dots, dots joined, inversion
Power: 100...240 VAC/50...400 Hz, 160 W
Dimensions: 419x176x570 mm (WxHxD)
Weight: 18 kg

PM 3320A

Digital storage oscilloscope

GPIB IEEE-488



- 200 MHz bandwidth
- 250 Ms/s sampling on each channel
- Risetime 1.75 ns
- 4 ns horizontal resolution
- 4 x 4 K memory registers

The dual-channel PM 3320A offers one of the fastest sampling rates available today in an ergonomic package. Additionally, signals with a hidden DC component can be captured and displayed with the AUTO-OFFSET function. More than 25 versatile measurement functions are available to extract the required information from acquired signals. Advanced signal-processing modes include calculation functions like multiply, differentiate, integrate, amplitude histogram and optional FFT.

SPECIFICATION SUMMARY

DISPLAY:
CRT: rectangular tube with 10x12 cm internal graticule; **Acceleration voltage:** 16 kV
VERTICAL DEFLECTION: Bandwidth: DC...200 MHz; **Deflection coefficient:** 5 mV/div; **Input impedance:** 50Ω or 1 MΩ/14 pF
SIGNAL ACQUISITION: Real time: 200 ns/div...360 s/div; **Equivalent time:** 5 ns/div...100 ns/div; **Sampling rate:** max 250 MS/s; **Vertical res:** 10 bit or 50 V; **Horizontal res:** max 4096 s/acquisition for single shot
TIMEBASE: Deflection coefficient: 5 ns...5 s/div (recurrent, single/multiple scan, absolute, min/max and stop/save on difference); 200 ns...5 s/div (single/multiple shot), 50 ms...360 s/div (roll)
MEMORY: Registers: 4 x 4 K, 10 bit; **Expansion:** vertical 5x, horizontal 64x; **Signal handling:** smoothed, dots, dots joined, inversion
Power: 100...240 VAC/50...400 Hz, 160 W
Dimensions: 419x176x570 mm (WxHxD)
Weight: 18 kg

PM 3340

Digitizing oscilloscope

GPIB IEEE-488

- 2 GHz bandwidth
- Risetime 175 ps
- Wide dynamic range
- Eye pattern display
- 1 mV/div sensitivity

Using sequential sampling, the PM 3340 allows acquisition, storage, measurement and analysis of recurrent input signals up to 2 GHz. High dynamic range and delay facilities allow detailed signal investigation at full 10-bit resolution. The four registers allow direct comparisons of up to 8 waveforms. Calculation functions provide automatic amplitude, frequency, time or phase measurements, and the 'eye pattern' mode allows display of random pulse patterns. The PM 3340 offers triggering over the full 2 GHz range, plus AUTOSET and comprehensive signal processing functions to facilitate operation.

SPECIFICATION SUMMARY

CRT: Rectangular tube 8 x 12 cm with internal graticule; **Acceleration voltage:** 16 kV
VERTICAL DEFLECTION:
Bandwidth: 0...2 GHz (-3 dB); Single/dual channel-added; **Deflection coefficient:** 1 mV/div...200 mV/div; **Input impedance:** 50 Ω; **Acquisition:** sequential sampling (512 samples); **Vertical resolution:** 10 bit
HORIZONTAL ACQUISITION:
Timebase: 20 μs/div...1 ns/div; **Magnifier:** up to x50, i.e. 20 ps/div; **Triggering:** YA, YB, Ext.; **Modes:** trigger synchronize, countdown and select
MEMORY: 4 memories of 4 K x 10-bit words
MEASURING FUNCTIONS: RMS, mean, peak risetime, pulse width frequency, phase etc.
SIGNAL PROCESSING: absolute min/max (envelope mode), save on difference, FFT mode etc.
Power: 90...264 VAC, 45...440 Hz, 136 W
Dimensions: 419x176x570 mm (WxHxD)
Weight: 18.7 kg

PM 3308

Compact, portable DSO

- High-res 512 x 256 pixel electroluminescent display
- 40 MS/s sampling rate
- 100 MHz bandwidth
- Non-volatile 204 KB RAMdisk stores 99 traces or over 99 complete settings

The all-new PM 3308 revolutionizes DSO functionality with its compact dimensions and easy portability. The advanced electroluminescent screen is perfectly flat and parallax-free, and gives a clear, high-resolution display of waveforms and measurements with a contrast far superior to that of conventional CRTs. Despite its compact size, the PM 3308 makes no compromises on performance. Bandwidth is a full 100 MHz, with a maximum sampling rate of 40 MS/s on one channel at a long record length of 8 KB. The non-volatile 204 KB RAMdisk allows fast comparison of waveforms, and makes setting-up quick and precise by just recalling any of over 99 instrument settings.

SPECIFICATION SUMMARY

DISPLAY:
Type: 191.9 x 95.9 mm rectangular electroluminescent display with 0.275 x 0.225 mm pixel size
SIGNAL ACQUISITION:
Sampling modes: real time 1 µs/div...1 h/div
Equivalent time 10 ns/div...0.5 µs/div
Maximum sampling rate: real time sampling, 40 MS/s in single-channel operation
Vertical (voltage) resolution: 8 bits or 0.4% of full range; 7 bits at 5 mV/div
Horizontal (time) resolution (single-channel acquisition): **MaxMem off:** 512 samples/acquisition; **MaxMem on:** 1 µs/div...1 h/div at 8192 samples/acquisition
Deflection coefficient: 5 mV/div...5 V/div in a 1-2-5 sequence of 10 steps. Error limit overall ±1.5%
TIMEBASE:
Modes: recurrent, single shot, roll
Dimensions: 122x276x410 mm (HxWxD)
Weight: 6.5 kg

PM 3365

Digital/analog 'Smart Scope'

- 100 MHz analog bandwidth
- 100 Ms/s sampling on each channel
- 10 ns horizontal resolution
- AUTOSET
- Calculation functions

The PM 3365 offers powerful acquisition and measuring performance, plus easy operation with a built-in real- time analog mode and a 100 MHz bandwidth. The fast 100 MS/s sampling rate allows successful acquisition of high-frequency single-shots. The big extra benefit of sequential sampling allows high-resolution acquisition of repetitive signals up to 100 MHz. Other valuable acquisition capabilities are the extra- long post-trigger memory allows and the 'dual timebase referencing' mode, both of which provide valuable additional signal information. Extensive measurement and calculation functions make the PM 3365 ideal for detailed signal analysis, with instant on-screen display of the results.

SPECIFICATION SUMMARY

ANALOG MODE: see PM 3065
DIGITAL MODE:
SIGNAL ACQUISITION:
Maximum sampling rate: 100 MS/s, dual channel
Repetitive sampling: Vertical resolution: 8 bits
Horizontal display modes: recurrent, single shot, multiple shot (up to 2), autozoom
Timebase: 0.5 s/div...20 ns/div (repetitive sampling - recurrent signals)
CURSORS:
Horizontal resolution:
Single channel: 1:4096 over 10 divisions; **Dual channel:** 1 x 2048, 2 ms/div...20 ns/div; 1:512 (1:1024 in dot join)
MEMORY: Depth 4096 words for acquisition as well as reference memory

PM 3350

Digital/analog 'Smart Scope'

- 50 MHz analog bandwidth
- 100 Ms/s sampling on each channel
- 10 ns horizontal resolution
- AUTOSET
- Calculation functions

The PM 3350 is a full-specification DSO with the extra benefit of an analog real-time capability. The 100 MS/s sampling rate allows signals to be stored with excellent resolution. Also incorporated in this unit is a P2CCD (profiled peristaltic charge coupled device), which is a combination of a fast track-and-hold input circuit and an analog shift register. Additionally, signals can be stored in two large 4 K x 8-bit memories. The PM 3350 also has an analog/digital plot capability.

SPECIFICATION SUMMARY

ANALOG MODE: see PM 3050
DIGITAL MODE:
SIGNAL ACQUISITION:
Sampling: 0.5 µs/div...50 s/div; **Sampling rate:** 100 Ms/s max on both channels; **Display expansion:** x1...x32 horizontal
TIMEBASE:
Modes: recurrent, single, multiple and roll; **Time coefficients:** 0.5 µs/div...0.5 s/div (recurrent); 0,5 µs/div...50 s/div (single and multiple)
TRIGGERING:
Trigger delay: -10...+250 div; **Auto setting:** available in analog mode
CURSORS:
Horizontal resolution: single-channel mode 1:4096, dual-channel mode: 1:2048
Calculation functions: peak-to-peak value, rise or fall time, frequency
MEMORY:
Registers: 2: **Depth register:** 4096 words;
Vertical resolution: 8 bit

PM 3335

Digital/analog 'Smart Scope'

- 50 MHz analog bandwidth
- 20 Ms/s sampling on each channel
- AUTOSET
- Large 8 K acquisition memory
- Versatile cursor measurement

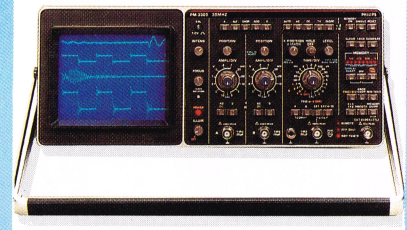
The PM 3335 gives you excellent performance at an attractive price. Like all the Philips 'combi' models, the PM 3335 has both digital storage and real-time analog modes, both of them equally easy to use. This instrument's large 8 K memory, together with the 20 MS/s sampling rate, ensures high-resolution acquisition and storage for detailed signal information. In analog mode, signals with a bandwidth up to 50 MHz can be displayed.
A unique feature in this price class are cursors, for accurate measurements and calculations on stored signals. All that's necessary is to place the cursors on the waveform, and read out the desired values.

SPECIFICATION SUMMARY

ANALOG MODE: see PM 3050
DIGITAL MODE:
SIGNAL ACQUISITION:
Maximum sampling rate: 20 MS/s, simultaneously on both channels; **Trigger delay:** 20 divisions of pre-trigger
VERTICAL:
Resolution: 8 bits; **Display modes:** YA, YB, -B;
HORIZONTAL: Display modes: recurrent, single shot, multiple shot (up to 2)
TIMEBASE: Recurrent, single shot, multiple shot: 50 s/div...10 µs/div
HORIZONTAL RESOLUTION:
Single channel: 8192 samples/channel; **Dual channel:** 4096 samples/channel
CURSORS: Horizontal resolution (all display modes): 1:1000 over 10 divisions
Vertical resolution: 1:200 over 8 divisions
Read-out resolution: 3 digits amplitude and time
MEMORY: Depth: 4096 words for acquisition as well as reference memory

PM 3305

Digital storage oscilloscope



- 35 MHz, 2 Msamples/s
- Four channels
- 4 K x 8-bit memory
- Pretrigger 4096 bits max
- Min/max mode

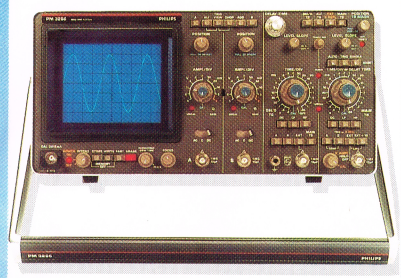
The PM 3305 combines the best of digital 'scope capabilities with those of a high-speed analog oscilloscope. It offers all standard features together with a digital storage memory, 4 channels, compare mode and, thanks to the min/max mode, capture of peaks and glitches down to 10 ns. The PM 3305 also offers features such as dual slope triggering, X-Y display and roll mode with up to 40 hours continuous recording for slow signal registration.

SPECIFICATION SUMMARY

DISPLAY:
CRT: rectangular tube with 8 x 10 cm internal graticule; **Acceleration voltage:** 10 kV
VERTICAL DEFLECTION (CHANNELS A & B):
Bandwidth: DC...35 MHz; **Deflection coefficient:** 2 mV/div...10 V/div
VERTICAL DEFLECTION (CHANNELS C & D):
Bandwidth: DC...1 MHz; **Deflection coefficient:** 0.1 V/div or 1 V/div
TIMEBASE (ANALOG):
Deflection coefficient: 0.5 s...100 ns/div
TIMEBASE (DIGITAL):
Deflection coefficient: 5 s...100 ns/div
MEMORY:
Size: 4 K x 8 bit; **Pre-trigger:** 4096 samples max;
Vertical resolution: 256 steps over 8 cm;
Horizontal resolution: single trace max. 1:4096;
Sampling frequency: 2 MHz max

PM 3266

Transfer storage oscilloscope



- 100 MHz/5 mV (2 mV at 35 MHz)
- 1000 div/μs writing speed
- Adjustable backlight level
- Auto erase
- Storage times up to 1 hour

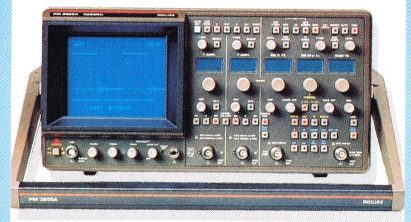
The PM 3266 captures and stores single high-speed or repetitive events. The storage time is variable from 15 s up to 1 h. In addition, two writing modes are available in storage operation: FAST mode with a writing speed of 1000 div/μs, and WRITE mode with a writing speed of 2.5 div/μs. An auto erase facility in FAST mode refreshes the signal, with a refresh delay which is variable between 3 and 8 s.

SPECIFICATION SUMMARY

DISPLAY:
Type: high-speed image transfer storage tube, 8x10 div (7.2x9 cm) with internal graticule; **Writing speed:** fast, 1000 div/μs, max. write 2.5 div/μs; **Storage time:** max. 1 h; **Persistence:** 0.3...60 s; **Erasure time:** 1.3 or 1.6 s
VERTICAL DEFLECTION:
Sources: YA, YB, -YA, -YB, YA + YB, alt, chop, trig view; **Bandwidth:** DC...100 MHz; **Deflection coefficient:** 2 mV/div (35 MHz)...5 V/div
HORIZONTAL DEFLECTION:
Sources: MTB, MTB intensified by DTB, DTB, MTB+DTB alt, ext, line; **Deflection coefficient:** 50 mV/div with ext. YA, YB sensitivities 2 mV...5 V/div; **MTB modes:** auto, trig, single; **DTB modes:** after delay, first trigger after delay
TRIGGERING MTB:
Sources: YA, YB, composite, ext, ext/10, line
Sensitivity: int - 0.5 div/30 MHz, 1.5 div/100 MHz; ext - 50 mV/30 MHz, 150 mV/100 MHz

PM 3295A/96A

VHF oscilloscopes



- 1000 analog measurements/s
- Touch-sensitive graphic display
- Full BASIC programmability
- IEEE-488, RS 232C/RS 422 interfaces
- 400 KB floppy disk

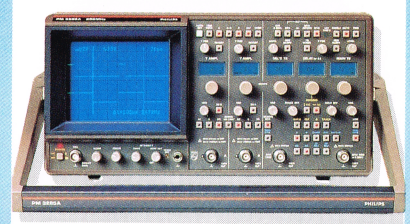
The PM 3295/96A offer an extremely high analog bandwidth of 400 MHz, while the PM 3296A has an IR remote control with a memory for 75 complete panel settings. The use of these instruments is made surprisingly easy by cursors with digital display of parameters and measuring results plus an LCD status display. Read-outs include amplitude, trigger level, time and frequency.

SPECIFICATION SUMMARY

DISPLAY:
Type: Philips high PDA CRT, 8x10 cm with internal graticule: **Acceleration voltage:** 24 kV
VERTICAL DEFLECTION:
Sources: YA, YB, YA + YB, both can be inverted, trigger view; **Bandwidth:** DC...400 MHz (-3 dB) or DC...70 MHz in 1 or 2 mV/div; **Deflection coefficient:** 1 mV/div...5 V/div; **Input impedance:** 1 MΩ/9 pF or 50 Ω
HORIZONTAL DEFLECTION:
Sources: MTB, MTB intensified by single or dual DTB, DTB, MTB and DTB alternate, ext, line; **Deflection coefficient:** MTB: 1 s/div...10 ns/dv plus magnifier x10; DTB: 0.5 s/div...10 ns/div; **MTB modes:** auto, trig, single; **DTB modes:** after delay, first trigger after delay
TRIGGERING MTB:
Sources: YA, YB, composite, ext, ext/10, line; **Coupling:** slope + or -, DC/AC, LF rej, HF rej; **Sensitivity:** int - 0.5 div/100 MHz, 2 div/400 MHz; ext - 50 mV/100 MHz, 300 mV/400 MHz

PM 3285A/86A

VHF oscilloscopes



- 200 MHz bandwidth
- 2 div/ns CRT writing speed
- Rise time 1,75 ns
- AUTOSET function
- Measurement cursors

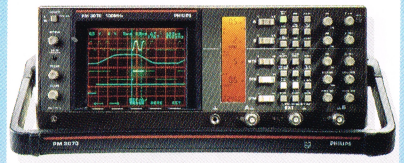
The PM 3285A/86A offer a real-time bandwidth of 200 MHz and, on the PM 3286A an IR remote control with a memory for 75 front-panel settings. These 200 MHz models offer the same ease of use as the 400 MHz models PM 3295A/96A, plus all the other benefits of these models. These include, for example, the use of opto-encoders to replace the mechanical switches of conventional instruments.

SPECIFICATION SUMMARY

DISPLAY:
Type: Philips high PDA CRT, 8x10 cm with internal graticule: **Acceleration voltage:** 16.5 kV
VERTICAL DEFLECTION:
Sources: YA, YB, YA + YB, both can be inverted, trigger view; **Bandwidth:** DC...200 MHz (-3 dB) or DC...70 MHz in 1 or 2 mV/div; **Deflection coefficient:** 1 mV/div...5 V/div; **Input impedance:** 1 MΩ/9 pF or 50 Ω
HORIZONTAL DEFLECTION:
Sources: MTB, MTB intensified by single or dual DTB, DTB, MTB and DTB alternate, ext, line; **Deflection coefficient:** MTB: 1 s/div...20 ns/dv plus magnifier x10; DTB: 0.5 s/div...20 ns/div; **MTB modes:** auto, trig, single; **DTB modes:** after delay, first trigger after delay
TRIGGERING MTB:
Sources: YA, YB, composite, ext, ext/10, line; **Coupling:** slope + or -, DC/AC, LF rej, HF rej; **Sensitivity:** int - 0.5 div/100 MHz, 2 div/200 MHz; ext - 50 mV/100 MHz, 300 mV/200 MHz

PM 3065/70

Analog 'Smart Scopes'



- 100 MHz bandwidth
- 16 kV CRT
- AUTOSET function
- Triggering to 150 MHz
- Front panel LCD display

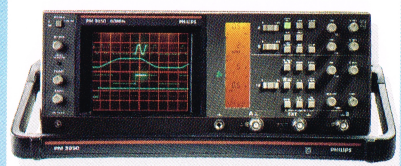
The PM 3065/70 set new standards for 100 MHz oscilloscopes in ease of use and economy. Instant display of connected waveforms is achieved at a touch of the AUTOSET button. The innovative design is truly ergonomic, with fast-action controls and a logical front-panel layout, plus an at-a-glance LCD readout of status. On the PM 3070, cursors allow direct on-screen measurements and analyses to be made.

SPECIFICATION SUMMARY

DISPLAY:
Type: CRT, 8x10 cm with internal graticule; **Acceleration voltage:** 16 kV
VERTICAL DEFLECTION:
Sources: YA, YB, -YB, YA + YB, YA -YB, trigger view; **Bandwidth:** DC...75 MHz (-3 dB), 2 mV/div...10 mV/div; DC... >100 MHz (-3 dB), 20 mV...10 V/div.; **Risetime:** < 3.5 ns; **Deflection coefficient:** 2 mV/div...10 V/div in 1, 2, 5 sequence; **Input impedance:** 1 MΩ/20 pF
HORIZONTAL DEFLECTION:
Sources: MTB, MTBI, alt, TB, DTB, X-defl via A or B; **Deflection coefficient:** MTB - 0.5 s/div...50 ns/div plus magnifier x 10 DTB - 1 ms/div...50 ns/div
TRIGGERING MTB:
Modes: auto, trig, single; **Sources:** YA, YB, composite, ext, line; **Coupling:** p-p, DC TVL, TVF slope + or -; **Sensitivity:** int - 0.5 div/10 MHz, 2 div/150 MHz; ext - 50 mV/10 MHz, 500 mV/150 MHz
TRIGGERING DTB: starts, YA, YB, composite, ext, TVL

PM 3050/55

Analog 'Smart Scopes'



- 60 MHz bandwidth
- 16 kV CRT
- AUTOSET function
- Triggering to 100 MHz
- Front panel LCD

The PM 3050/55 set new standards for 60 MHz oscilloscopes in ease of use and economy. Instant display of connected waveforms is achieved at a touch of the AUTOSET button. The innovative design approach used on these 'scopes can be seen in the layout of the front panel, which is much more ergonomic than those of conventional 'scopes; and in the use of an LCD panel for at-a-glance viewing of status and settings.

SPECIFICATION SUMMARY

DISPLAY:
Type: CRT, 8x10 cm with internal graticule
Acceleration voltage: 16 kV
VERTICAL DEFLECTION:
Sources: YA, YB, -YB, YA + YB, YA -YB, trigger view; **Bandwidth:** DC... > 60 MHz (-3 dB, 20 mV...10 V/div); DC... > 35 MHz (-3 dB, 2 mV/div...10 V/div); **Deflection coefficient:** 2 mV/div...10 V/div in 1,2,5 sequence; **Risetime:** 5.8 ns; **Input impedance:** 1 MΩ/20 pF
HORIZONTAL DEFLECTION:
Sources: TB, X-defl (PM 3050); MTB, MTBI, DTB, alt for PM 3055; **Deflection coefficient:** MTB - 0.5 s/div...50 ns/div plus magnifier x10, DTB - 1 ms/div...50 ns/div
TRIGGERING MTB:
Sources: YA, YB, composite, ext, line; **Modes:** auto, trig, single; **Coupling:** p-p, DC, TVL, TVP slope + or -; **Sensitivity:** int - 0.5 div/10 MHz, 3 div/100 MHz, ext - 50 mV/10 MHz, 500 mV/100 MHz
TRIG. DTB: starts, YA, YB, composite, ext, TVL

PM 3208/09

General Purpose oscilloscopes

- 20 MHz bandwidth single timebase (PM 3208)
- 40 MHz bandwidth dual timebase (PM 3209)
- Variable hold-off trigger delay
- Z-input and Y-output
- TV line and frame triggering

These dual-channel oscilloscopes have complete specifications that meet virtually all the demands of general-purpose portable and benchtop applications, yet their price tag is within reach of hobbyists.
The high 1 mV sensitivity helps you to find disturbances, noise, overshoot and glitches on small signal amplitudes. In brief, the PM 3208 and PM 3209 are 'scopes with totally professional performance in the low-budget price range.

SPECIFICATION SUMMARY

DISPLAY: Type: CRT, 8x10 cm with internal graticule
Acceleration voltage: 12,5 kV (PM 3209); 2 kV (PM 3208)
VERTICAL DEFLECTION:
Sources: YA, YB, -YB, YA + YB, YA - YB
Bandwidth: DC...20 kHz (-3 dB), 5 mV...5 V/div (PM 3208); DC...40 kHz (-3 dB), 5 mV...5 V/div (PM 3209)
Risetime: 17.5 ns (PM 3209); 8.8 ns (PM 3209)
Deflection coefficient: 5 mV/div...5 V/div in 1, 2, 5 sequence plus magnifier x5;
HORIZONTAL DEFLECTION:
Sources: TB, YA, YB, X defl, line (PM 3208); MTB, YA, YB, MTBi, DTB, alt, line (PM 3209)
Deflection coefficient: MTB 0.5 s/div...200 ns/div plus magnifier x10, DTB (PM 3209 0.5 ms...200 ns/div)
TRIGGERING MTB:
Sources: YA, YB, ext, line; **Modes:** auto, trigger, single
Coupling: DC, AC, AC/LF, TV (line frame selection by timebase switch); **Sensitivity:** int - 1 div/1 kHz, 2 div at bandwidth limit

PM 8917

Video line selector

- Allows video waveform display on any Philips oscilloscope
- Accepts both 625- and 525-line composite video signals
- Provides trigger outputs for any selected line and frame/field signals
- Ideal for high-bandwidth video work with Philips PM 3285A/95A or PM 3295A/96A

The PM 8917 Video Line Selector adds the valuable function of video waveform display to any of the Philips range of oscilloscopes. Using a composite video input signal, the PM 8917 generates trigger signals for the display of frames, fields and lines, plus any selected line of a complete video frame. These functions make the PM 8917 a powerful tool for quality assurance, trouble-shooting and fault-finding in all kinds of video systems and equipment.

SPECIFICATION SUMMARY

SYSTEM: accepts both CCIR/EBU (625-line system) and CCIR/FCC (525-line system)
VIDEO INPUT: 0.5 V...3 V composite video
INPUT IMPEDANCE: 1 ΩM//30 pF; 75 Ω if feed-through input is terminated in 75 Ω
MAXIMUM NON-DESTRUCTIVE INPUT VOLTAGE: 50 V
OUTPUT FUNCTIONS: frame trigger, field trigger, line trigger, selected line trigger
OUTPUT VOLTAGE: 1 V into 75 Ω
PULSE WIDTH:
Frame pulse: 0.5x field width; **Field pulse:** 1 μs; **Line pulse:** 1 μs; **Selected line pulse:** 64 μs
Supply voltage: 90...264 V
Supply frequency: 44...440 Hz
Power consumption: 5 VA max.

PM 2260

Oscilloscope Signal Processing Software

- Extensive waveform analysis and display functions, all accessible via menus and function keys
- Menu-driven data transfer from Philips digital storage oscilloscopes to PC
- Fast data transfer via GPIB/IEEE-488
- On-line help facility

The PM 2260 Oscilloscope Signal Processing (OSP) software combines the extensive range of waveform analysis functions of the ASYSTANT™ GPIB software package with the very advanced data acquisition capabilities of Philips digital storage oscilloscopes. Data captured by a Philips DSO can easily be transferred to the PC via the GPIB/IEEE-488 interface, under control of a menu-oriented driver, with no programming skill or effort required. Data can then be quickly analyzed, processed and displayed on the PC. Processing functions include FFT, power spectrum, inverse FFT, differentiation, integration, Blackman window, curve fitting, cross-correlation and many more. Additional mathematical functions include extensive array operations, statistics and multi-window graphic facilities; Hard copy output to printers and plotters is also supported.

System requirements:
IBM PC/XT/AT or 100% compatible, or PS/2 Model 30, with MS-DOS:
Minimum 640 KB memory, floppy and hard disk drives
8087, 80287 or 80387 numeric coprocessor
Philips PM 2201/99 or National Instruments PC-IIA/IIB GPIB interface cards

Ordering information:
PM 2260/002: Oscilloscope Signal Processing software package

Accessories

Probes. Accuracy of measurements with oscilloscopes largely depends on the quality of the probes that pick up the signals. Philips has invested a great deal of development effort in the creation of accurate and reliable probes that place the minimum electrical and mechanical loads on the circuits under test.

Passive probes. The range comprises 1:1 - 10:1 and 100:1 probes that match the high-impedance input of the oscilloscope. A special set of probes is available for oscilloscopes with additional 50 Ω inputs. For oscilloscopes used in systems, it is necessary for correct interpretation of the measuring results that the oscilloscope knows which probe is connected. Probes with a range indicator are available for this purpose. All passive probes are supplied with a number of probe fittings such as wire-wrap adapter, dual-in-line adapter, retractable lock etc.

Active probes. Active probes are effectively small instruments with their own power supply.

PM 8943 FET probe. Although 100:1 passive probes have an extremely low capacitive load on the device under test, their attenuation is too high in many applications. A FET probe is then the right answer. The Philips probe has a low input capacitance at up to 650 MHz.

PM 8940 isolation amplifier. For accurate and safe measurement of small signals floating on high potentials and at high frequencies. The unit has a frequency response up to 1.5 MHz, with a maximum differential or input voltage of 650 Vrms.

PM 9355 current probe. Probe and amplifier combination for measuring currents in the frequency range 12 Hz...70 MHz. A clip-on current transformer allows measurements on wires up to 3 mm in diameter.

Various accessories. A number of accessories have been developed for a specific oscilloscope or family of oscilloscopes. A few examples are rackmount kits, battery packs, DC converters, trolleys, viewing hoods and accessory pouches. Also available are general-purpose accessories like BNC cables with various adapters/terminals and GPIB/IEEE-488 connection cables.